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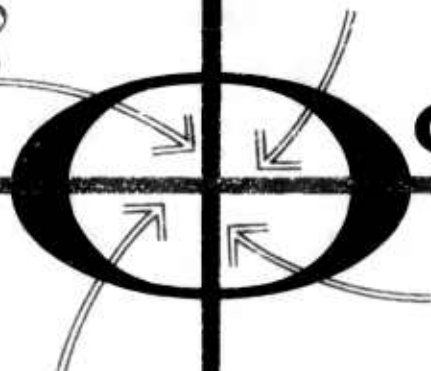
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Reviews in GEOPHYSICS

NO. 7

TEMPERATURE FOR WORLD AIR ROUTES
at heights of 10,000, 20,000, 30,000,
40,000 and 53,000 feet

with supplementary surface temperatures

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286 481

R.M. WELLS



AUGUST 1962

BOEING
TRANSPORT DIVISION

TEMPERATURES FOR WORLD AIR ROUTES

AT HEIGHTS OF 10,000, 20,000, 30,000, 40,000 AND 53,000 FEET

WITH

SUPPLEMENTARY SURFACE TEMPERATURES

REVIEWS IN GEOPHYSICS NO. 7

BY

RAYMOND M. WELLS

August 1962

**THE BOEING COMPANY
Transport Division
Renton, Washington**

Price \$25.00

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ABSTRACT

Seasonal and annual great circle route temperatures in degrees Celsius are computed for 50-, 75- and 85-per cent reliabilities of occurrence, i.e. temperatures which are not expected to be exceeded 50, 75 and 85 per cent of the time respectively. The temperatures and their standard deviations are computed over some 2000 selected air routes at the 10,000-, 20,000-, 30,000-, 40,000- and 53,000-foot levels. The great circle distance between termini is also tabulated. A 7090 was used to compute the route temperatures. Input data for the program consist, for each level, of a grid composed of the mean temperature and its standard deviation at the intersection of each 5° of latitude with each 10° of longitude between 60°S and 60°N and at the intersection of each 5° of latitude with each 20° of longitude south and north of 60°S and 60°N respectively.

Supplementary airport surface temperatures are tabulated by month, quarter, half year and year for the 0, 50, 75, 85, 95 and 100 per cent probability of not being exceeded. Lackey's method, adapted for the 7090, was used to compute the surface temperatures.

FORWARD

In 1962 the Transport Division of The Boeing Company published three documents on equivalent winds over commercial and military air routes. These documents are "Great Circle Equivalent Route Winds for Military Application," D6-9175; "Equivalent Winds For North American Air Routes," D6-9176; and "Equivalent Winds For World Air Routes," D6-9177. As a companion to the "wind books" three documents on route temperature and airport surface temperatures were prepared. These are "Great Circle Route Temperatures For Military Applications," D6-7175; "Temperature For North American Air Routes," D6-7176; and "Temperature For World Air Routes," D6-7177.

The industry and ingenuity of L. W. Stumpf for preparing the route temperature program and of R. C. Langan for preparing the surface temperature program, both of the Engineering Computing and Analysis Staff, are gratefully acknowledged. Thanks are also due Alice Post for preparing the route index and for assisting in preparing the input data.

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TEMPERATURE FOR WORLD AIR ROUTES
at heights of 10,000, 20,000,
30,000, 40,000 and 53,000 feet
with supplementary surface temperatures

I. INTRODUCTION

Aircraft operate in a thermally dynamic environment. To determine the effect of this environment on the economic capability and carrier suitability over established and new route systems requires knowledge of the long term temperature conditions that can be expected at the terminals, during ascent and descent, and along the flight path. This document is an attempt to provide temperature data to meet some of these needs.

Route Temperature. Seasonal and annual great circle route temperatures in degrees Celsius are presented for 50-, 75- and 85-per cent reliabilities of occurrence, i.e. temperatures which are not expected to be exceeded 50, 75, and 85 per cent of the time respectively. These data are presented as the difference between the per cent reliability temperature and the International Standard Atmosphere temperature.

Airport Temperature. Surface temperatures in degrees Fahrenheit are computed for each airport. These surface data are organized by month, by quarter, by half year, and by year for the 0, 50, 75, 85, 95 and 100 per cent probability of not being exceeded.

Because of the broad coverage of route systems and of airports, the temperature tabulations are published in three documents: Great Circle Route Temperatures for Military Applications, D6-7175; Temperature for North American Air Routes, D6-7176; and Temperature for World Air Routes, D6-7177.

II. TEMPERATURE TABULATIONS

A. METHOD

1. Route Temperatures

Route temperatures were computed on the assumption that the distribution of observed temperatures about its mean at each point along a route approximates the normal or Gaussian distribution. This approximation is closely the case for winds but is generally weaker for temperature, since departures of temperature from normality in the vicinity of the polar tropopause and at levels subjected to surface based inversions are sometimes appreciable. Thus temperature estimates of extreme values and of small ranges can result in large errors at levels subjected to seasonal inversions and at mean tropopause heights. A general formula for the "abnormal" distribution of temperature, however, is not available. The mean route temperature and its standard deviation completely describe the normal distribution.

The mean route temperature is determined by first dividing the route into an integral number of segments 200 miles or less in length. Next a temperature is calculated at the mid point of these segments by averaging the four nearest temperature values which enclose each mid-point. These four temperatures in turn are assigned weighted values in proportion to their proximity to the point. The averages at points along the route are used to compute the temperature for the entire route. With reference to Figure 1, the mean route temperature, T_{AB} is given by

$$T_{AB} = \left[\bar{T}_n \right] \quad (1)$$

where $\bar{T}_n$ is the time average temperature at the mid point of segment n. The bar denotes a mean over a long period of time while the brackets denote the mean value over the route.

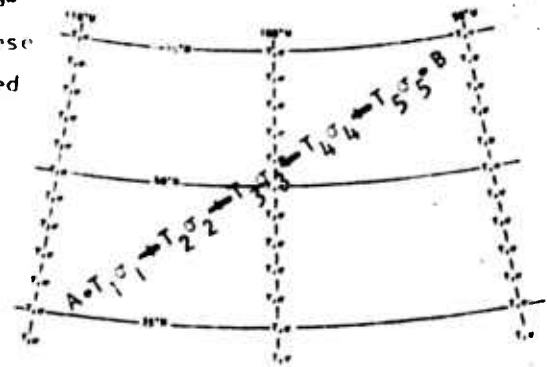


Fig. 1. Route Temperature

2. Standard Deviation

From physical considerations the temperature at points along a route are related to one another¹. It is therefore necessary to consider the correlation between the temperature at one point and the temperature at another point along the route. While the correlation of temperature with distance varies somewhat with height and region¹, such refinements were not incorporated in the tabulations because of the lack of published information on the variability of temperature.

As with mean route temperatures, the route standard deviation is computed by calculating the standard deviation at the mid point of each segment (Fig. 1) by averaging the four nearest standard deviation values which enclose each mid point. The four standard deviations are assigned weighted values in proportion to their proximity to the point. The averages at these points along the route are used to compute the standard deviation for the entire route. The expression for computing the route standard deviation, σ , is

$$\sigma = t \left[\sigma_n^2 \right]^{1/2} \quad (2)$$

where: σ_n = Standard deviation at point n along the route
 t = Factor to convert the mean of the standard deviation at points along the route, $\left[\sigma_n^2 \right]^{1/2}$, into the route standard deviation (Table 1).

Table 1. Correlation of Temperature with Distance

Route Length - n. mi.

	0	500	1000	1500	2000	2500	3000	3500	4000
t	1	0.89	0.79	0.73	0.67	0.61	0.55	0.50	0.45

Durst¹ shows that the correlation of north and south wind components with temperature is small. Consequently the point correlation of equivalent winds with temperature is also likely to be small. As a result equivalent winds and route temperatures may be used together without appreciable error.

3. Great Circle Distance

Route lengths in nautical miles are computed over the great-circle course,

i.e. the least distance on a sphere, between terminals. The expression used to compute great circle distances between terminals $P_1 (\psi_1 \lambda_1)$ and $P_2 (\psi_2 \lambda_2)$ is

$$D = 60 \cos^{-1} \left[\sin \psi_1 \sin \psi_2 + \cos \lambda_1 \cos \lambda_2 \right] \quad (3)$$

where: D = Great circle distance in nautical miles

ψ = Latitude

λ = Longitude

$\cos^{-1} []$ = Angle expressed in minutes.

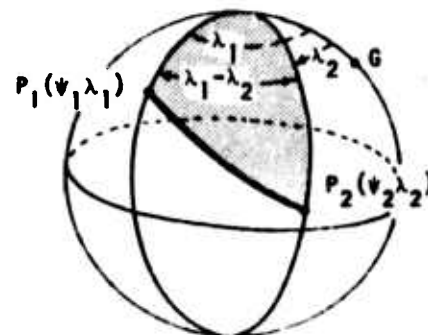


Fig. 2
Great Circle Distance

South latitudes and east longitudes are considered negative and north latitudes and west longitudes are considered positive.

4. Annual Route Temperature

Annual route temperatures are computed from the seasonal values by an iterative process in which temperatures are found such that 50, 75 and 85 per cent of the total area under all four seasonal temperature distribution curves lies to their left. For example in the hypothetical distribution of seasonal route temperatures in Figure 3, the 50-, 75- and 85-per cent annual temperatures are estimated to be -43, -36 and -32 respectively.

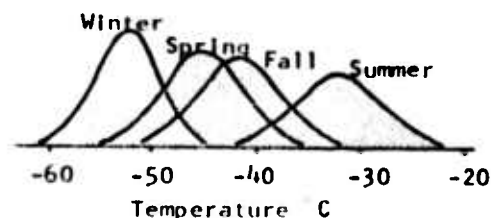


Fig. 3. Hypothetical Seasonal Temperature Distribution

5. Airport Temperature

Lackey's² method was used to compute surface reliability temperatures from the monthly mean, extreme minimum and the extreme maximum temperatures. This technique, as Lackey states, "depends on the statistically demonstrated area-wide similarity of the normalized cumulative frequency curves of observed hourly temperature for given positions of the mean between the absolute extremes."

The substance of Figure 6 was integrated into a 7090 program. This program with the mean, extreme minimum and extreme maximum temperature as input data, was used to compute surface reliability temperatures.

B. INPUT DATA

1. Route Temperatures

The input data for the 7090 program used to compute route temperatures were obtained principally from Upper Air Temperature Over The World³. For each level the data consist of grids composed of the mean temperature and its standard deviation at the intersection of each 5° of latitude with each 10° of longitude between 60°S and 60°N and at the intersection of each 5° of latitude with each 20° of longitude north of 60°N and south of 60°S.

The temperature grids are prepared for the 10,000- (700 mb), 20,000- (500 mb), 30,000- (300 mb), 40,000- (200 mb) and 53,000- (100 mb) foot levels for each of the four mid season months: January, April, July and October.

2. Airport Temperatures

The mean, extreme minimum and extreme maximum temperatures used to compute surface temperatures for given reliabilities of occurrence were obtained from United States^{4, 5}, English⁶, Canadian^{7,8}, and German⁹ climatic summaries.

C. TABULATIONS

1. Route Temperature

Mid season monthly 50-, 75- and 85-per cent reliability temperatures and their standard deviations and the annual 50-, 75- and 85-per cent reliability temperatures are computed over selected air routes (Table 5). The tabulations are arranged such that route temperatures are given as the difference between reliability route temperatures and the International Standard Atmosphere temperature. The mean route temperature for each season is also tabulated. Across from each route pair is listed the great circle distance separating the terminals. The tabulations are ordered alphabetically by the terminals that identify each route. In the index (Table 8), each route is referenced under both of its terminals.

An alphabetical listing of terminals with their airport names, geographical coordinates, elevation, and length of longest runway is presented in Table 7.

2. Airport Temperature

An alphabetical listing of airport monthly, quarterly, semi-annual and annual surface temperature for 0- (extreme minimum), 50- (mean), 75-, 85-, 95- and 100- (extreme maximum) per cent probability of not being exceeded are tabulated (Table 6). The average daily maximum temperature is also tabulated.

III. USE OF TABLES

A. ROUTE TEMPERATURE RELIABILITIES

Two methods are presented for computing route temperatures for reliability values in addition to those tabulated. While these methods apply only to observations which follow the "normal" law, as stated in Upper Air Temperatures Over The World³, "reasonable estimates of the range of temperature can be made wherever the standard deviation does not exceed (as a rough guide) about 4°C". It is further stated that even at levels affected by surface inversions (in January: 700 and 500 mb in Alaska, Canada and the U.S.S.R. and at 700 mb in Japan and Korea) and at levels near varying polar tropopauses (in January and April: 200 and 150 mb in Canada and 200 mb in the United States, British Isles, south Scandinavia and central Europe) a rough estimate can still be made of the temperature range which includes about 80 per cent of the observations. Because of the abnormal shape of the frequency distribution, estimates of smaller ranges or of extreme values will be very badly in error.

1. Error Factor Method

Route temperature reliabilities are computed by adding the product of k times the route standard deviation (tabulated values) to the mean route temperature, where k is a factor derivable from the error function. Values of k are given in Table 2 and are illustrated in Figure 4. Use of Table 2 is illustrated in computing the 85 per cent reliability temperature over the London to New York route during summer at 30,000 feet. From Table 5 the mean July temperature is -42°C and the standard deviation is 4°C. The

estimated temperature which is not exceeded 85 per cent of the time is -38°C ,

$$-42 + (1.04 \times 4) = -38^{\circ}\text{C}.$$

For some problems it may be necessary to compute the temperature range over a route within which a given per cent of observations lie. Such route temperature ranges may be computed with aid of Table 3. In the above example 80 per cent of the route temperatures at 30,000 feet in July over the London to New York route lie within $-42 \pm (1.28 \times 4)$, i.e. between -37°C and -47°C .

2. Arithmetic Probability Paper Method

Arithmetic probability paper is arranged with the per cent cumulative frequency scale printed on the ordinate such that the integral

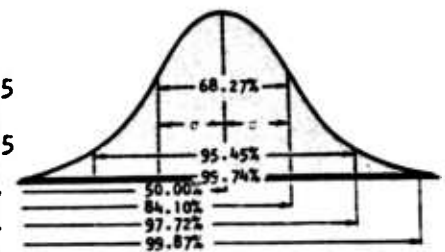
$$Q(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^x e^{-x^2/2} dx \quad (4)$$

of the normal frequency curve plots as a straight line while the abscissa has a linear scale. Thus to obtain a frequency distribution of say the route temperature during summer at 30,000 feet over the London to New York route, look up the 50 per cent (-42°C) route temperature and its standard deviation (4°C) in Table 5. Next plot -42 on the 50 per cent value of the ordinate scale and -38°C ($-42 + 4$) on the 84 per cent ordinate value and draw a straight line through these points. See Figure 5. Use of arithmetic probability paper is illustrated with two examples.

- 85 per cent of route temperatures are less than -37.8°C
- Between 10 and 90 per cent of the time route temperatures range between -42.1°C and -36.9°C .

Table 2.
Error Factor

%	k
50	0.0
55	0.125
60	0.25
65	0.385
70	0.52
75	0.67
80	0.84
85	1.04
90	1.28
95	1.65



(a)

Table 3.
Range Factor

%	r
20	0.25
30	0.39
40	0.53
50	0.67
60	0.84
70	1.04
80	1.28
90	1.65
95	1.96
99	2.58

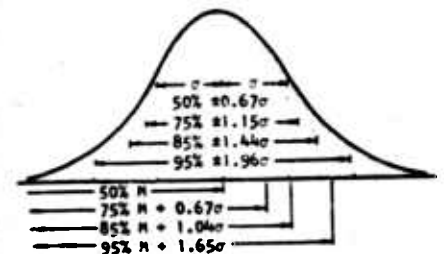
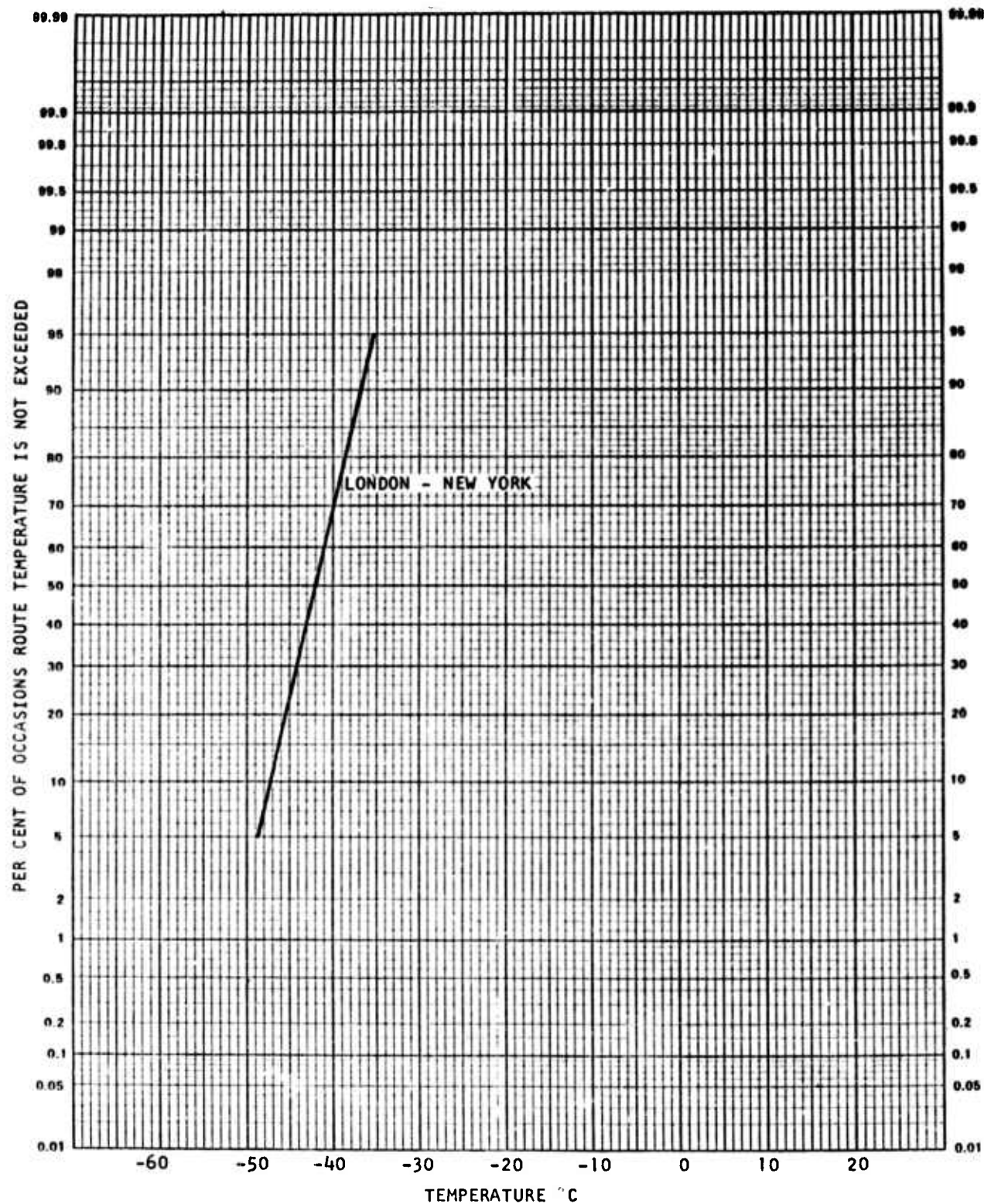


Fig. 4b. Normal Curve



B. GREAT CIRCLE ROUTE LENGTH

The route length in nautical miles is computed over the great-circle course, i.e. the least distance on a sphere, between terminals (Fig. 6). A nautical mile is the length of one minute of arc along a great circle on the earth's surface, i.e. the earth's circumference is $360 \times 60 = 21,600$ n. miles. For example the great circle distance between Rio de Janeiro ($-22^\circ 49'$, $43^\circ 15'$) and Istanbul ($40^\circ 58'$, $-28^\circ 49'$) may be computed from (3).

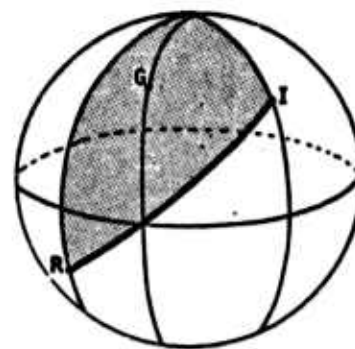


Fig. 6
Great Circle Route Length

$$D = 60 \cos^{-1} \left[\sin \psi_1 \sin \psi_2 + \cos \psi_1 \cos \psi_2 \cos (\lambda_1 - \lambda_2) \right] \quad (3)$$

With the aid of Table 4,

$$\begin{aligned} D &= 60 \cos^{-1} \left[-\sin(22^\circ 49') \sin(40^\circ 58') + \cos(22^\circ 49') \cos(40^\circ 58') \cos(72^\circ 04') \right] \\ &= 60 \cos^{-1} [-0.039930] \\ &= 5537 \text{ n. mi.} \end{aligned}$$

Table 2. Reference Trigonometric Relationships

$$\begin{aligned} \sin(90^\circ + \psi) &= \cos \psi & \cos(90^\circ + \psi) &= -\sin \psi \\ \sin(90^\circ - \psi) &= \cos \psi & \cos(90^\circ - \psi) &= \sin \psi \\ \sin(-\psi) &= -\sin \psi & \cos(-\psi) &= \cos \psi \end{aligned}$$

C. AIRPORT TEMPERATURES

1. Hourly Temperature Nomograph

Surface temperatures for reliabilities of not being exceeded can be computed by mean of the Hourly Temperature Nomograph² (Fig. 7). Use of this nomograph is explained with an example. To compute the July 95 per cent reliability temperature at an airport, it is first necessary to know the July mean, extreme minimum and extreme maximum temperatures, Let these values be 72°F (mean), 50°F (minimum) and 104°F (maximum).

Step One: Normalization to a 100 - scale

Subtract the extreme minimum from the mean to obtain the reduced mean (RMn). Next subtract the mean from the extreme maximum to obtain the reduced maximum (RMx).

$$\text{RMn} = 72 - 50 = 22^\circ\text{F}$$

$$\text{RMx} = 104 - 50 = 54^\circ\text{F}$$

$+\sin$	$+\sin$
$-\cos$	$+\cos$
$-\sin$	$-\sin$
$-\cos$	$-\cos$

HOURLY TEMPERATURE NOMOGRAPH

CT CONVERTED
TEMPERATURE

100

95

90

85

80

75

70

65

60

55

50

45

40

35

30

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REDUCED MEAN (F)

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Step Two: Converted Probable Temperature - PT

At the intersection of RMn and RMx on Section A of the nomograph draw a straight line along the sloping diagonal to obtain the converted mean (CMn) on the converted temperature scale, i.e. CMn = 40.7°.

$$\begin{aligned} \text{CMn} &= \frac{100 (Mn - Ml)}{Mx - Ml} \\ &= \frac{100 (72 - 50)}{104 - 50} = 40.7 \end{aligned} \quad (5)$$

Next enter Section B of the nomogram across to the desired 95 per cent probability sloping line. Read the converted probable temperature at the bottom of Section B, i.e. CT = 74°.

Step Three: Reconversion

Next enter the converted temperature scale at 74° and follow down the sloping line to the intersection with RMx = 54° and then across to the corresponding reduced mean, i.e. RMn = 40°F. The 95 per cent reliability temperature is now obtained by adding the extreme minimum to the reduced mean, i.e. 50 + 40 = 90°F, or alternatively,

$$\begin{aligned} \text{PT} &= \text{CT} + \frac{Mx - Ml}{100} \\ \text{PT(95\%)} &= 74 + \frac{104 - 50}{100} + 50 = 90^\circ\text{F} \end{aligned} \quad (6)$$

Reliability. Hourly temperature records for twenty stations ranging in latitude between 12°N and 70°N were used to prepare the Hourly Temperature Nomograph. The performance of the nomograph was then tested on 40 different and widely scattered stations. For each station, the actual three essential items for each of the four mid season months were processed by the nomograph to determine 13 percentile levels (1,5,10...99%). The hourly temperature frequencies so computed were compared with the actual recorded frequencies. The results of this test revealed that the nomograph is most accurate during summer and that 91 per cent of the divergencies were less than 3°F and 98 per cent were less than 5°F.

2. Alternate Method for Estimating Airport Reliability Temperatures

In the event that the extreme maximum and extreme minimum monthly temperatures

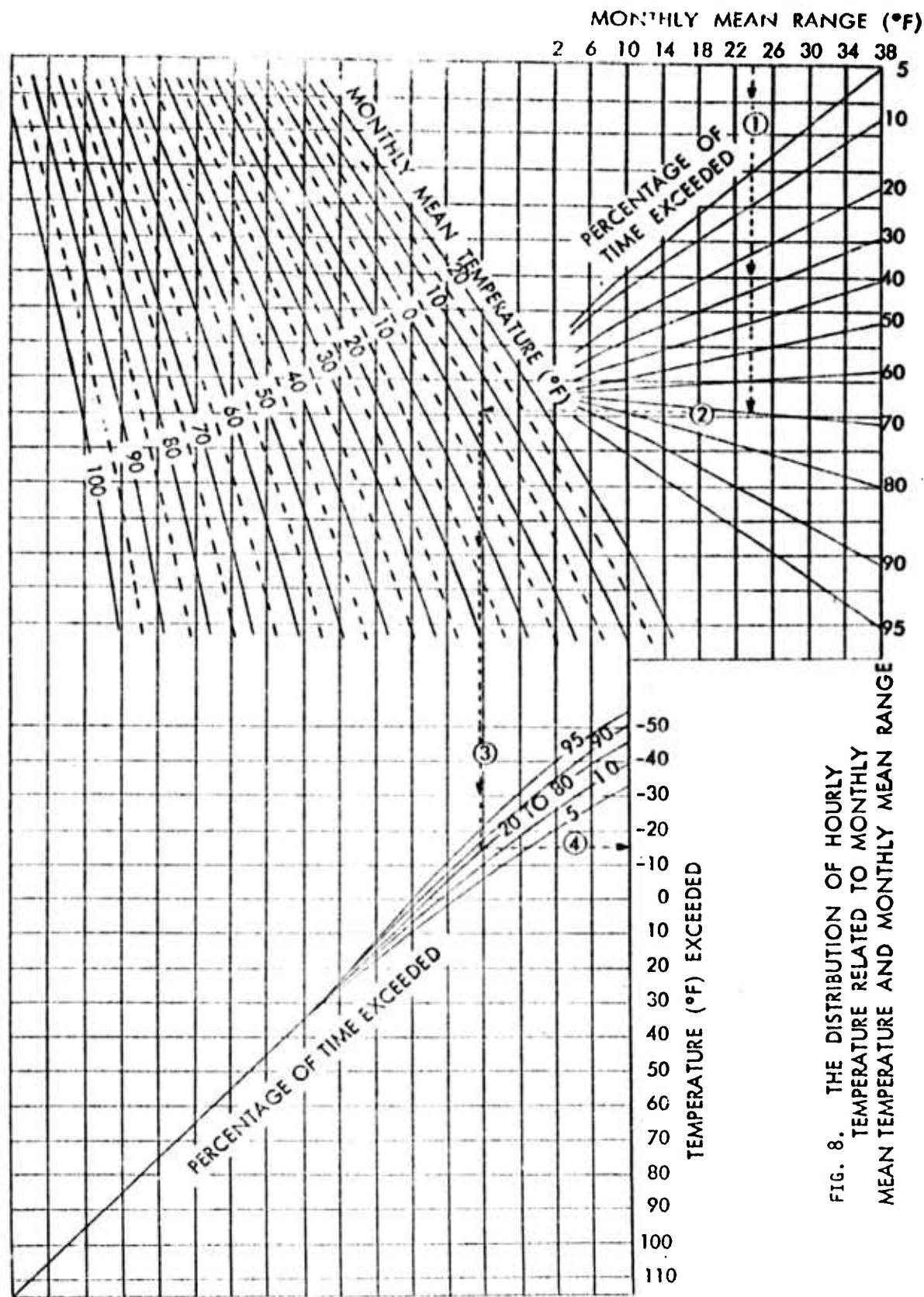


FIG. 8. THE DISTRIBUTION OF HOURLY TEMPERATURE RELATED TO MONTHLY MEAN TEMPERATURE AND MONTHLY MEAN RANGE

are not available for an airport, reliability surface temperatures can be estimated from the monthly mean and monthly mean daily maximum (average daily maximum) temperatures by means of a nomogram¹⁰ developed by the Air Weather Service. The nomogram is based on a graphical correlation method which was used to develop the joint functions between the mean and the monthly mean range and the distribution of hourly temperatures to avoid any assumption concerning the slope of the hourly temperature distribution. The monthly mean range in temperature is the absolute difference between the monthly mean daily maximum and mean daily minimum temperatures or twice the difference between the monthly mean daily maximum and the monthly average daily temperature.

Use of the nomogram is illustrated by estimating the temperature which is exceeded 70 per cent of the time at a station with a January mean monthly temperature of -5°F , a mean maximum temperature of 7°F and a monthly range of 24°F , $2 \times [7 - (-5)]^{\circ}\text{F}$.

Step One. Enter the graph at 24° in the monthly mean range axis and proceed vertically downward to the 70 per cent line (Fig. 8).

Step Two: From this intersection proceed horizontally to the -5°F monthly mean temperature isopleth.

Step Three: From this point proceed vertically downward to the intersection with the 20 to 80 per cent line and then go horizontally to the temperature exceeded axis where the temperature estimate of -14.8°F is obtained. Conversely, by proceeding from -14.8°F in the reverse order, the per cent of time that this temperature is exceeded is estimated to be 70 per cent.

3. Aerodrome Reference Temperature

For some purposes the Aerodrome Reference Temperature (A.R.T.) is used as a conservative measure of airport temperature. The A.R.T. is defined as

$$\text{A.R.T.} = T_1 + \frac{T_2 - T_1}{3} \quad (7)$$

where: T_1 = the monthly mean temperature for the hottest month of the year (that which has the highest mean daily temperature).

T_2 = the monthly mean daily maximum temperature for the hottest month.

To use temperature scales, place straight-edge on temperature corresponding to T_1 and T_2 on the outer scale and read A.R.T. from center scale.

With the aid of Figure 9, the A.R.T. at Boston with T_1 (July) = 72°F and $T_2 = 80^\circ\text{F}$ is 74.7°F , or

$$\text{A.R.T.} = 72 + \frac{80 - 72}{3} = 74.7^\circ\text{F}$$

IV. STANDARD ATMOSPHERES

A. INTERNATIONAL STANDARD ATMOSPHERE

A standard atmosphere is a hypothetical vertical distribution of atmospheric temperature, pressure and density which by international or national agreement is taken to be representative of the atmosphere for the purpose of altimeter calibrations, aircraft design and performance calculations, etc. The internationally accepted standard atmosphere is called the International Civil Aeronautical Organization (ICAO) standard atmosphere or the International Standard Atmosphere (ISA) (Fig. 10). It should be emphasized that this model will never completely match the actual atmosphere and only rarely will it approximate the average value at all altitudes simultaneously.

The ISA atmosphere is a self consistent model in which no water vapor is assumed and the air is assumed to obey the perfect gas law, $p = PM/TR$, and the hydrostatic equation, $dP = -g \rho dz$, which when taken together yield the barometric equation which relates temperature, pressure and density variations in the vertical

$$d \ln P = - gM/TR \quad dz \quad (8)$$

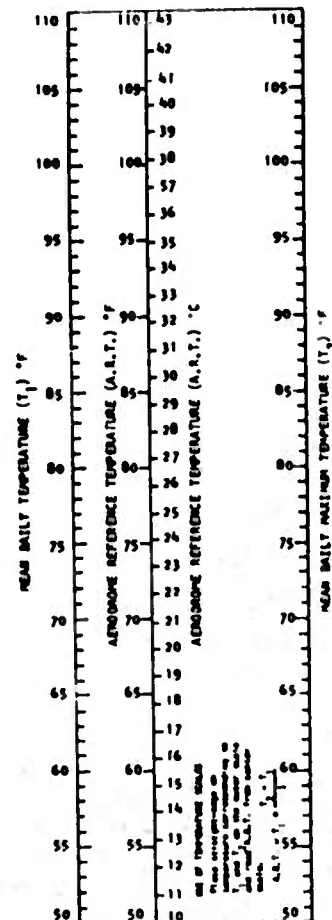


Fig. 9

where: ρ = mass density
P = pressure
M = mean molecular weight of air
T = temperature in degrees absolute
R = universal gas constant
g = acceleration of gravity
Z = geometric altitude

For calculating pressures below 100,000 feet, g and M are usually assumed constant.

B. EXTREME ATMOSPHERES

Atmospheres representative of extreme conditions likely to be encountered over geographical areas of the world are briefly discussed.

1. Arctic Winter Atmosphere

This atmosphere is based on the average January temperature for selected pressure surfaces between 60°N and 90°N. January is representative of the coldest month in the Arctic. The atmosphere is hydrodynamically consistent.

2. Arctic Summer Atmosphere

This atmosphere is based on the average July temperature for selected pressure surfaces between 60°N and 90°N. July is the warmest month in the Arctic. This atmosphere is also hydrodynamically consistent.

3. Tropical Atmosphere

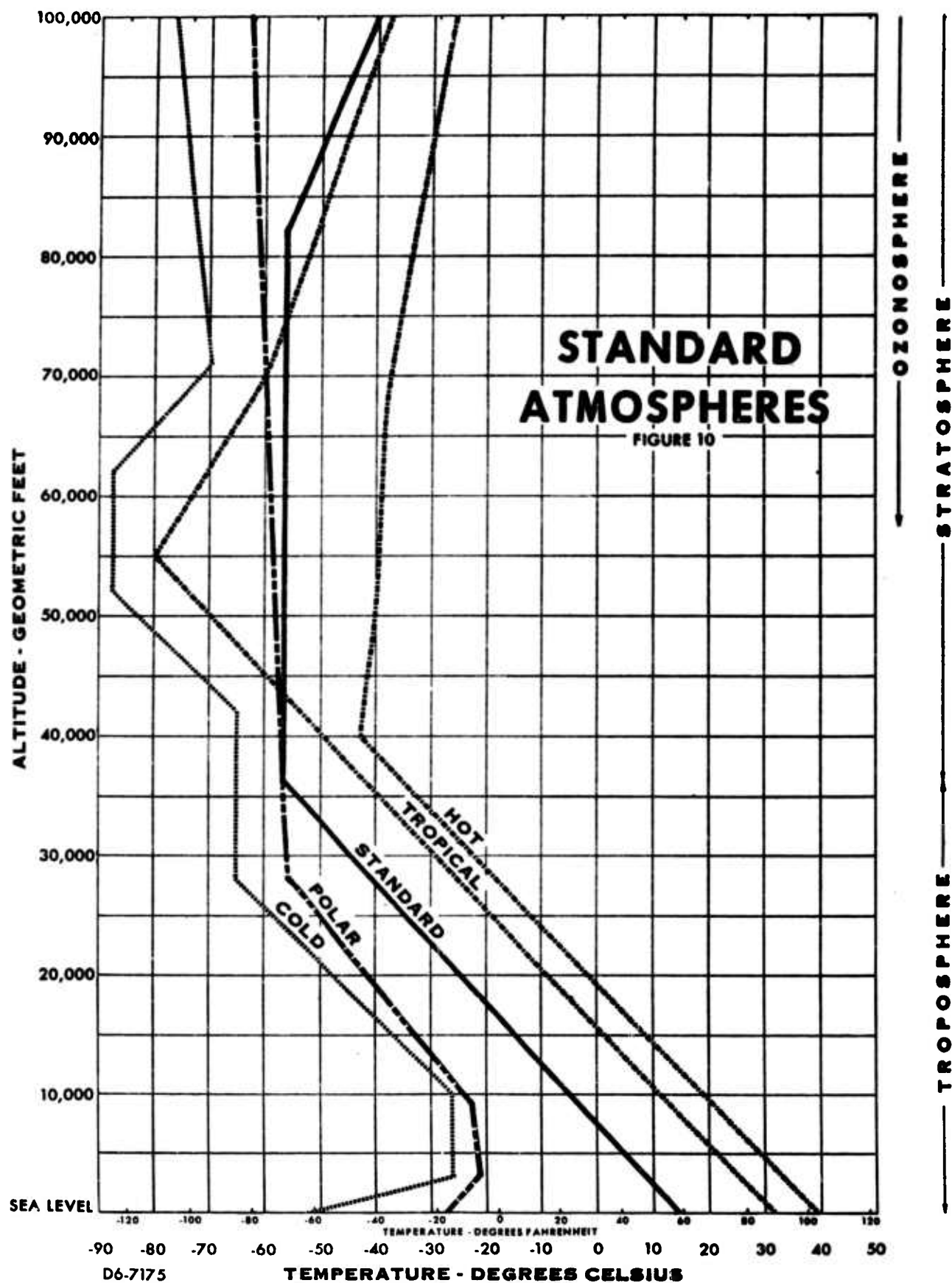
This atmosphere represents conditions which may be encountered between 30°S and 30°N except for desert areas and certain parts of the ocean.

4. Hot Atmosphere

The hot atmosphere represents temperature extremes which are exceeded only 10 per cent of the time in the hottest geographical areas.

5. Cold Atmosphere

The cold atmosphere represents temperature extremes which are exceeded 90 per cent of the time in the coldest geographical areas.



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D6-7176

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TABLE 5

ROUTE TEMPERATURES AT THE 10,000-, 20,000-,
30,000-, 40,000-, AND 53,000-FOOT LEVELS

TABLE 5. ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

TABLE 5. ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																									
HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
ACCRA TO BEIRUT																									
55,000	-56.5	-72	-16	-14	-13	-71	-14	-12	-11	-74	-18	-16	-15	-73	-17	-15	-14	-73	-16	-14	-13			2606	N.M.I.
40,000	-56.5	-54	5	5	6	-53	5	6	7	-51	6	7	8	-53	5	5	6	-53	4	5	6	3	3	3	3
30,000	-44.5	-40	5	6	7	-35	10	11	12	-29	15	17	17	-34	10	12	12	-34	10	13	14	2	2	2	2
20,000	-21.2	-13	9	10	11	-10	11	13	14	-6	17	18	19	-8	13	14	15	-9	12	14	16	2	2	2	2
10,000	-4.6	4	9	10	11	7	12	13	14	12	17	18	19	9	13	14	15	8	13	15	16	2	2	2	2
ACCRA TO CASABLANCA																									
55,000	-56.5	-72	-16	-14	-13	-71	-15	-13	-12	-74	-17	-15	-14	-74	-17	-15	-14	-73	-16	-14	-13			1728	N.M.I.
40,000	-56.5	-55	2	4	5	-53	5	6	7	-53	4	5	6	-53	3	5	6	-53	3	5	5	3	3	3	3
30,000	-44.5	-39	5	7	8	-34	10	11	12	-33	12	13	14	-34	10	12	13	-35	9	11	12	2	2	2	2
20,000	-21.2	-12	9	11	11	-10	12	13	14	-6	15	16	17	-8	14	15	15	-9	12	14	15	2	2	2	2
10,000	-4.6	5	10	11	12	7	12	13	14	13	17	18	19	8	13	14	15	8	13	15	16	2	2	2	2
ACCRA TO OAKHAM																									
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-76	-20	-18	-17	-78	-21	-19	-19	-77	-20	-18	-17			1159	N.M.I.
40,000	-56.5	-54	3	4	5	-52	4	7	8	-54	2	3	4	-52	5	6	7	-53	5	5	6	3	3	3	3
30,000	-44.5	-35	10	11	12	-31	14	15	15	-33	12	13	14	-31	13	14	15	-32	12	14	15	2	2	2	2
20,000	-21.2	-8	15	16	16	-7	15	16	16	-6	16	17	17	-6	16	16	17	-7	15	16	16	1	2	1	1
10,000	-4.6	8	15	16	16	10	16	16	16	10	15	16	16	10	15	16	16	10	14	15	16	1	2	1	1
ACCRA TO FREETOWN																									
55,000	-56.5	-76	-21	-19	-18	-77	-20	-19	-18	-76	-20	-18	-17	-74	-22	-20	-19	-77	-21	-19	-18			797	N.M.I.
40,000	-56.5	-54	2	4	5	-52	5	7	8	-54	2	3	4	-52	5	6	7	-53	4	5	6	3	3	3	3
30,000	-44.5	-34	11	12	12	-30	14	16	16	-32	12	13	14	-31	14	15	15	-32	13	14	15	2	2	2	2
20,000	-21.2	-8	16	16	15	-6	15	16	17	-5	16	17	17	-6	16	16	17	-6	15	16	17	1	2	1	1
10,000	-4.6	9	15	16	15	10	15	16	17	10	14	15	16	10	15	16	16	10	14	15	16	1	2	1	1
ACCRA TO JOHANNESBURG																									
55,000	-56.5	-76	-20	-17	-16	-75	-19	-17	-16	-71	-15	-13	-12	-73	-17	-15	-14	-74	-18	-15	-14			2522	N.M.I.
40,000	-56.5	-55	4	6	7	-52	4	7	8	-52	4	6	7	-52	4	6	7	-52	4	6	8	3	3	3	3
30,000	-44.5	-32	13	14	15	-31	13	15	15	-33	11	13	13	-32	12	14	15	-32	12	14	15	2	2	2	2
20,000	-21.2	-5	16	17	17	-6	15	16	17	-7	16	16	16	-7	15	16	16	-6	15	16	17	1	2	2	2
10,000	-4.6	10	16	15	16	9	14	15	16	6	10	12	13	10	14	16	16	9	13	15	16	2	2	2	2
ACCRA TO KANO																									
55,000	-56.5	-77	-21	-19	-18	-77	-20	-18	-17	-76	-20	-18	-17	-77	-21	-19	-18	-77	-20	-19	-18			644	N.M.I.
40,000	-56.5	-54	3	4	5	-52	5	7	8	-54	2	3	4	-52	5	6	7	-53	4	5	6	3	3	3	3
30,000	-44.5	-34	10	11	12	-30	15	16	16	-32	13	14	15	-31	14	15	15	-32	13	14	15	2	2	2	2
20,000	-21.2	-8	15	16	15	-6	15	16	17	-5	16	17	18	-6	16	16	16	-6	15	16	17	1	2	1	1
10,000	-4.6	9	15	16	15	10	15	16	17	10	15	16	16	10	15	16	16	10	14	16	16	1	2	1	1
ACCRA TO LAGOS																									
55,000	-56.5	-77	-21	-19	-18	-77	-20	-19	-18	-76	-20	-18	-17	-76	-21	-20	-19	-77	-21	-19	-18			217	N.M.I.
40,000	-56.5	-54	2	4	5	-52	5	7	8	-54	2	3	4	-52	5	6	7	-53	4	5	6	3	3	3	3
30,000	-44.5	-34	11	12	12	-30	15	16	17	-32	12	13	14	-31	14	15	16	-32	13	14	15	2	2	2	2
20,000	-21.2	-7	16	15	15	-6	16	17	17	-5	16	17	17	-6	16	16	17	-6	15	16	17	1	2	1	1
10,000	-4.6	9	16	16	15	10	15	16	17	9	14	15	15	10	15	16	16	10	14	15	16	1	2	1	1
ACCRA TO LAJES																									
55,000	-56.5	-71	-14	-12	-11	-70	-13	-11	-10	-71	-15	-13	-12	-72	-16	-14	-13	-71	-14	-12	-11			2469	N.M.I.
40,000	-56.5	-56	1	5	5	-55	1	5	6	-54	3	4	5	-54	3	4	5	-54	2	4	5	4	4	2	2
30,000	-44.5	-40	5	6	7	-36	9	10	11	-34	11	12	13	-35	10	11	12	-36	9	10	11	2	2	2	2
20,000	-21.2	-15	8	10	11	-11	11	12	13	-7	14	15	16	-8	13	14	15	-10	12	13	14	2	2	2	2
10,000	-4.6	4	9	11	11	6	11	12	13	11	15	16	17	8	12	13	14	7	12	14	15	2	2	2	2
ACCRA TO LEGHURVILLE																									
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-76	-19	-17	-16	-77	-21	-19	-18	-77	-20	-18	-17			1110	N.M.I.
40,000	-56.5	-54	3	4	5	-52	5	7	8	-54	3	4	5	-52	5	6	7	-53	4	5	6	3	3	3	3
30,000	-44.5	-32	12	13	14	-30	15	16	17	-32	12	13	14	-31	14	15	16	-31	13	15	16	2	2	2	2
20,000	-21.2	-6	15	16	17	-6	17	18	19	-5	16	17	17	-6	16	17	17	-5	16	17	18	1	2	1	1
10,000	-4.6	10	16	15	16	10	15	16	16	8	13	14	15	10	15	16	17	10	14	15	16	1	2	2	2
ACCRA TO LISBON																									
55,000	-56.5	-71	-14	-12	-11	-69	-13	-11	-10	-72	-15	-14	-12	-72	-15	-13	-12	-71	-14	-12	-11			2049	N.M.I.
40,000	-56.5	-55	1	4	5	-54	3	5	7	-53	4	5	6	-54	3	4	5	-54	3	4	5	4	4	2	2
30,000	-44.5	-40	4	6	7	-36	9	10	11	-33	11	13	14	-35	10	11	12	-36	8	11	12	2	2	2	2
20,000	-21.2	-13	8	10	10	-11	10	12	13	-7	15	16	16	-8	13	14	15	-10	12	13	14	2	2	2	2
10,000	-4.6	4	9	10	11	6	11	12	13	12	17	18	19	7	12	13	14	8	12	14	15	2	2	2	2
ACCRA TO LONDON																									
55,000	-56.5	-67	-11	-8	-7	-66	-9	-7	-6	-68	-11	-9	-8	-68	-12	-10	-9	-67	-11	-8	-7			2752	N.M.I.
40,000	-56.5	-56	1	4	5	-55	2	5	7	-52	4	6	7	-54	2	4	5	-54	2	4	6	4	5	3	3
30,000	-44.5	-43	2	4	5	-39	6	7	8	-34	10	12	13	-37	7	9	10	-38	6	9	10	3	3	3	3
20,000	-21.2	-16	5	7	8	-13	8	10	11	-8	13	15	15	-11	11	12	13	-12	9	11	13	3	3	2	2
10,000	-4.6	1	5	8	9	4	8	10	11	11	15	17	17	5	10	11	12	5	10	12	14	3	3	2	2
ACCRA TO PORT OF SPAIN																									
55,000	-56.5	-78	-22	-20	-19	-78	-21	-20	-19	-75	-18	-16	-15	-78	-22	-20	-19	-77	-21	-18	-17			3642	N.M.I.
40,000	-56.5	-54	3	4	5	-53	5	6	7	-54	2	3	4	-53	4	5	6	-54	3	4	5	3	3	3	3
30,000	-44.5	-34	11	12	13	-31	14	15	15	-33	12	13	13	-31	13	15	15	-32	12	14	15	2	2	2	2
20,000	-21.2	-7	14	15	16	-6	15	16	17	-6	15	16	16	-6	16	17	17	-6	15	16	17	2	2	2	2
10,000	-4.6	9	13	14	15	9	14	15	16	9	14	15	15	10	15	16	16	9	14	15	16	1	2	1	2
ACCRA TO RIO DE JANEIRO																									
55,000	-56.5	-77	-20	-18	-17	-77	-20	-18	-17	-72	-15	-13	-12	-74	-17	-15	-14	-75	-18	-15	-14			5047	N.M.I.
40,000	-56.5	-54	3	5	6	-52	4	7	8	-53	4	5	6	-53	4	5	6	-53	4	6	7	4	4	3	3
30,000	-44.5	-32	12	14	14	-31	13	15	16	-33	12	13	14	-32	12	14	15	-32	12	14	15	2</			

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY 50 050 075 085				APRIL 50 050 075 085				JULY 50 050 075 085				OCTOBER 50 050 075 085				ANNUAL 50 050 075 085				JAN	APR	JUL	OCT
ADDIS ABABA TO ADDIS																		457 N.M.I.							
55,000	-56.5	-76	-22	-20	-19	-76	-22	-20	-18	-76	-20	-18	-17	-76	-22	-20	-19	-76	-21	-19	-16	5	5	5	5
40,000	-56.5	-54	5	4	4	-52	5	7	8	-52	4	6	6	-52	4	5	6	-53	4	6	7	2	5	2	2
30,000	-44.5	-52	12	15	16	-50	14	16	16	-50	14	16	16	-51	14	15	16	-51	14	15	16	2	2	2	2
20,000	-21.2	-4	17	16	16	-5	16	17	18	-5	17	18	18	-6	16	17	17	-5	16	17	18	2	2	2	1
10,000	-4.6	10	15	16	16	10	15	16	17	15	18	19	19	10	14	15	16	11	15	17	18	2	2	2	1
ADDIS ABABA TO DASHA																		1590 N.M.I.							
55,000	-56.5	-76	-17	-15	-14	-76	-17	-15	-14	-75	-18	-16	-15	-75	-19	-16	-15	-74	-18	-15	-14	5	5	5	5
40,000	-56.5	-54	5	4	5	-53	4	6	7	-50	7	8	9	-51	5	5	6	-52	4	6	8	5	5	2	2
30,000	-44.5	-57	8	9	10	-54	11	13	15	-58	17	16	19	-51	12	13	14	-55	12	14	15	5	2	2	2
20,000	-21.2	-10	11	13	14	-6	13	14	15	-4	17	19	20	-7	14	15	16	-7	14	16	17	2	2	2	2
10,000	-4.6	6	11	12	13	4	13	15	15	15	20	21	21	9	14	15	15	10	14	17	18	2	2	2	2
ADDIS ABABA TO DELHUT																		1501 N.M.I.							
55,000	-56.5	-72	-16	-14	-13	-72	-15	-15	-12	-76	-18	-16	-15	-75	-17	-15	-14	-75	-16	-14	-14	5	5	5	5
40,000	-56.5	-54	5	5	6	-53	5	6	7	-49	7	9	9	-55	5	5	6	-52	4	6	7	5	4	2	2
30,000	-44.5	-57	6	7	8	-55	10	11	12	-24	17	18	19	-54	11	12	13	-54	11	13	15	2	2	2	2
20,000	-21.2	-11	10	11	12	-10	12	13	14	-4	17	19	19	-6	15	15	15	-4	15	15	16	2	2	2	2
10,000	-4.6	5	9	11	12	7	12	13	14	14	19	20	21	9	13	14	15	9	13	15	17	2	2	2	2
ADDIS ABABA TO DROMA																		2072 N.M.I.							
55,000	-56.5	-78	-21	-19	-18	-78	-21	-19	-18	-76	-20	-18	-17	-74	-22	-20	-19	-76	-21	-19	-18	5	4	5	5
40,000	-56.5	-55	2	4	5	-52	3	7	8	-50	6	8	9	-55	4	5	6	-52	4	6	7	5	5	5	5
30,000	-44.5	-52	12	14	15	-51	15	15	16	-29	16	17	18	-51	15	15	16	-51	14	15	16	5	5	2	2
20,000	-21.2	-6	15	16	17	-6	16	17	18	-4	17	18	19	-6	16	17	17	-5	16	17	18	2	2	2	2
10,000	-4.6	9	14	15	16	10	15	16	17	15	18	19	19	9	14	15	16	10	15	17	16	2	2	2	2
ADDIS ABABA TO CAIRO																		1555 N.M.I.							
55,000	-56.5	-75	-17	-15	-14	-75	-16	-14	-13	-75	-18	-17	-16	-75	-18	-16	-15	-74	-18	-15	-14	5	5	5	5
40,000	-56.5	-54	5	4	5	-53	5	6	7	-50	7	8	9	-55	5	5	6	-52	4	6	7	5	5	2	2
30,000	-44.5	-56	7	8	9	-54	11	12	13	-24	16	18	18	-55	11	13	14	-55	11	14	15	2	2	2	2
20,000	-21.2	-10	11	13	13	-9	13	14	15	-4	17	18	19	-7	14	15	16	-7	14	16	17	2	2	2	2
10,000	-4.6	6	11	12	13	8	12	14	15	14	18	20	20	9	14	15	15	9	14	16	17	2	2	2	2
ADDIS ABABA TO COLUMBO																		2448 N.M.I.							
55,000	-56.5	-80	-25	-22	-21	-78	-22	-19	-18	-77	-21	-19	-18	-74	-23	-21	-20	-79	-22	-20	-19	5	5	5	5
40,000	-56.5	-55	2	3	4	-52	3	7	8	-55	4	5	6	-55	4	5	6	-55	3	6	7	5	5	2	2
30,000	-44.5	-51	14	15	16	-50	15	16	17	-50	14	16	16	-51	15	15	16	-50	14	15	16	2	2	2	2
20,000	-21.2	-5	17	18	18	-5	16	17	18	-5	17	18	18	-6	16	17	17	-5	16	17	18	2	2	2	2
10,000	-4.6	10	14	15	16	10	15	16	16	11	15	17	17	9	14	15	16	10	15	16	16	1	2	2	2
ADDIS ABABA TO DHAMMAN																		1224 N.M.I.							
55,000	-56.5	-75	-19	-17	-16	-75	-19	-17	-16	-75	-19	-17	-16	-76	-20	-18	-17	-76	-19	-17	-16	5	5	5	5
40,000	-56.5	-54	5	4	5	-52	4	7	8	-50	6	8	9	-55	4	5	6	-52	4	6	7	2	5	2	2
30,000	-44.5	-55	9	11	12	-52	12	14	15	-28	16	18	18	-52	15	14	15	-52	14	15	16	5	2	2	2
20,000	-21.2	-4	15	16	16	-7	14	16	16	-4	17	19	19	-6	15	16	17	-6	15	17	18	2	2	2	2
10,000	-4.6	8	12	14	15	9	14	15	16	15	20	21	21	9	14	15	16	10	15	17	18	2	2	2	2
ADDIS ABABA TO JIJOA																		750 N.M.I.							
55,000	-56.5	-76	-20	-14	-17	-77	-20	-18	-17	-76	-19	-18	-17	-77	-21	-19	-18	-76	-20	-18	-17	5	5	5	5
40,000	-56.5	-54	5	4	5	-52	4	6	7	-51	5	7	7	-55	4	5	6	-52	4	6	7	2	5	2	2
30,000	-44.5	-55	10	11	12	-52	13	14	15	-29	15	17	17	-51	15	15	15	-52	13	15	16	2	2	2	2
20,000	-21.2	-7	14	15	16	-6	15	16	17	-4	17	18	19	-6	15	16	17	-6	15	17	18	2	2	2	2
10,000	-4.6	9	14	15	16	10	14	16	16	14	19	20	20	10	14	15	16	11	15	17	18	2	2	2	2
ADDIS ABABA TO KANU																		1791 N.M.I.							
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-76	-20	-18	-17	-77	-21	-19	-18	-77	-20	-19	-18	5	5	5	5
40,000	-56.5	-54	5	4	5	-52	5	7	8	-55	5	5	5	-52	5	5	6	-53	4	6	7	2	5	2	2
30,000	-44.5	-54	11	12	12	-50	14	15	16	-51	14	15	16	-51	14	15	16	-51	13	14	15	2	2	2	2
20,000	-21.2	-7	15	16	16	-6	15	17	17	-5	16	17	18	-6	16	17	17	-6	16	17	18	2	2	1	1
10,000	-4.6	10	14	16	16	10	15	16	17	11	15	16	17	10	15	16	16	10	15	16	16	2	2	1	1
ADDIS ABABA TO KHARTOUM																		556 N.M.I.							
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-76	-20	-18	-17	-77	-21	-19	-18	-77	-21	-19	-18	5	5	5	5
40,000	-56.5	-54	5	4	5	-52	5	7	8	-52	4	6	6	-52	4	6	6	-52	4	6	7	2	5	2	2
30,000	-44.5	-54	11	12	13	-51	14	15	16	-50	15	16	16	-51	14	15	16	-51	13	15	16	2	2	2	2
20,000	-21.2	-6	16	17	17	-6	16	17	17	-5	17	18	18	-6	16	16	17	-5	16	17	18	2	2	2	1
10,000	-4.6	10	15	16	17	10	15	16	17	12	17	18	18	10	15	15	16	11	15	17	17	2	2	2	1
ADDIS ABABA TO NAIROBI																		628 N.M.I.							
55,000	-56.5	-78	-22	-20	-19	-78	-22	-19	-18	-76	-19	-18	-17	-78	-21	-20	-19	-78	-21	-19	-18	5	5	5	5
40,000	-56.5	-55	5	4	5	-52	5	7	8	-55	4	5	5	-52	4	6	6	-55	4	6	7	2	5	2	2
30,000	-44.5	-51	15	16	15	-50	15	16	17	-51	14	15	15	-50	14	15	16	-50	14	15	16	2	2	2	2
20,000	-21.2	-4	17	18	19	-4	17	18	18	-5	16	17	18	-6	16	17	17	-5	16	18	18	1	1	1	1
10,000	-4.6	10	15	16	16	10	15	16	16	10	15	16	16	10	15	15	16	10	15	16	16	1	1	1	1
ADELAIDE TO MELBOURNE																		550 N.M.I.							
55,000	-56.5	-62	-6	-5	-2	-61	-5	-2	-1	-58	-1	1	2	-57	-1	1	2	-60	-5	-1	1	4	4	4	5
40,000	-56.5	-55	1	4	5	-57	-0	5	4	-54	5	5	7	-52	4	7	9	-55	2	6	8	4	4	4	5
30,000	-44.5	-59	5	7	9	-44	0	2	4	-48	5	-1	1	-45	-0	2	5	-41	1	4	5	5	5	4	5
20,000	-21.2	-12	9	11	12	-18	4	6	7	-25	-2	0	2	-19	2	5	6	-18	5	6	8	5	5	4	4
10,000	-4.6	4	9	11	12	-1	5	6	7	-6	-1	1	2	-2	2	5	6	-1	5	6	8	5	5	5	4
ADELAIDE TO PERTH																		1142 N.M.I.							
55,000	-56.5	-64	-8	-5	-4	-65	-7	-4	-3	-60	-5	-1	0	-60	-4	-1	0	-62	-5	-2	-1	4	4	4	5
40,000	-56.5	-55	2	4	6	-57	-0	2	4	-54	5	5	7	-52	4	7	9	-54	2	6	7	4	4	4	5
30,000	-44.5	-58	6	8	10	-42	2	4	5	-45	-0	5	4	-45	1	4	5	-42	2	5	7	5	5	4	5
20,000	-21.2	-11	10	12	13	-16	5	7	8	-21	-0	2	4	-17	4	7	8	-16	5	8	9	5	5	4	4
10,000	-4.6	5	10	12	13																				

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																					STANDARD DEVIATION				
HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
ADEN TO BASRA																									
55,000	-56.5	-73	-16	-14	-13	-73	-16	-14	-13	-75	-18	-16	-15	-75	-18	-16	-15	-76	-17	-15	-14	3	5	3	3
40,000	-56.5	-54	3	5	6	-53	4	6	8	-49	8	9	10	-53	3	5	6	-52	4	7	8	3	4	3	2
30,000	-44.5	-37	7	9	10	-34	10	12	13	-27	17	19	20	-33	11	13	14	-33	12	14	16	3	3	2	3
20,000	-21.2	-11	10	12	13	-9	12	14	15	-3	18	19	20	-7	14	15	16	-8	14	16	17	2	2	2	2
10,000	-4.6	6	10	12	13	4	13	14	15	16	20	22	22	9	13	15	15	10	14	17	18	2	2	2	2
ADEN TO BEIRUT																									
55,000	-56.5	-71	-15	-13	-12	-71	-14	-12	-11	-74	-17	-16	-14	-73	-17	-14	-13	-72	-16	-13	-12	3	3	3	3
40,000	-56.5	-54	3	5	6	-53	3	6	7	-49	8	9	10	-54	3	4	5	-52	4	6	8	3	4	2	2
30,000	-44.5	-39	5	7	8	-36	9	11	11	-27	17	19	20	-34	10	12	13	-34	10	13	15	3	3	2	2
20,000	-21.2	-12	9	10	11	-10	11	13	13	-4	18	19	20	-8	13	14	15	-9	13	15	16	2	2	2	2
10,000	-4.6	4	9	10	11	7	11	13	14	15	20	21	21	8	13	14	15	8	13	16	17	3	3	2	2
ADEN TO BOMBAY																									
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-17	-76	-20	-18	-17	-78	-22	-20	-18	-77	-21	-19	-17	3	4	3	3
40,000	-56.5	-55	2	4	5	-52	5	7	8	-50	7	9	10	-53	3	5	7	-52	4	7	8	3	3	3	3
30,000	-44.5	-53	12	14	15	-52	13	15	16	-28	16	18	19	-31	13	15	16	-31	14	16	17	3	3	2	3
20,000	-21.2	-7	14	15	16	-6	15	17	18	-4	17	19	19	-6	15	17	17	-6	16	17	18	2	2	2	2
10,000	-4.6	9	13	15	15	10	15	16	17	14	18	19	20	9	14	15	16	10	15	17	18	2	2	2	2
ADEN TO CAIRO																									
55,000	-56.5	-73	-16	-14	-13	-73	-16	-14	-13	-75	-18	-16	-15	-74	-18	-16	-15	-73	-17	-15	-13	3	3	3	3
40,000	-56.5	-54	3	5	6	-53	3	6	7	-49	7	9	10	-53	3	5	5	-52	4	6	7	3	3	2	2
30,000	-44.5	-38	6	8	9	-34	10	12	12	-27	17	18	19	-33	11	13	14	-33	11	14	15	2	2	2	2
20,000	-21.2	-11	10	12	12	-9	12	14	14	-7	17	19	19	-7	14	15	16	-8	13	15	17	2	2	2	2
10,000	-4.6	5	10	12	12	7	12	14	14	15	19	21	21	9	13	15	15	9	14	16	17	2	2	2	2
ADEN TO COLOMBO																									
55,000	-56.5	-80	-23	-22	-21	-74	-22	-19	-18	-77	-21	-19	-17	-80	-23	-21	-20	-74	-22	-20	-19	3	4	3	3
40,000	-56.5	-55	2	3	4	-52	5	7	8	-52	4	6	7	-53	3	5	6	-53	4	6	7	3	3	2	2
30,000	-44.5	-51	14	15	16	-30	14	16	17	-30	15	16	17	-31	13	15	15	-30	14	16	16	2	2	2	2
20,000	-21.2	-5	16	17	18	-6	16	17	18	-4	17	18	19	-6	16	17	17	-5	16	17	18	2	2	2	2
10,000	-4.6	10	14	15	16	10	15	16	16	11	16	17	18	9	14	15	16	10	15	16	17	2	2	2	2
ADEN TO DHAMMAN																									
55,000	-56.5	-74	-18	-16	-15	-75	-18	-16	-15	-75	-19	-17	-16	-76	-20	-17	-16	-75	-19	-17	-15	3	3	3	3
40,000	-56.5	-54	3	4	6	-52	4	7	8	-50	7	9	10	-54	3	5	6	-52	4	7	8	3	3	2	2
30,000	-44.5	-36	9	11	12	-33	11	13	14	-27	17	18	19	-32	12	14	15	-32	12	15	16	3	3	2	3
20,000	-21.2	-9	12	13	14	-7	14	15	16	-4	17	19	20	-6	15	16	17	-7	15	17	18	2	2	2	2
10,000	-4.6	7	12	13	14	9	14	15	16	16	20	21	22	9	14	15	16	10	15	17	18	2	2	2	2
ADEN TO EL AOEM																									
55,000	-56.5	-72	-15	-13	-12	-71	-14	-12	-11	-74	-18	-16	-15	-73	-17	-15	-14	-73	-16	-14	-13	3	3	3	3
40,000	-56.5	-54	3	5	6	-54	3	5	7	-49	7	9	10	-54	3	4	5	-53	4	6	7	3	4	2	2
30,000	-44.5	-39	5	7	8	-35	9	11	12	-28	17	18	19	-34	10	12	13	-34	10	13	15	2	2	2	2
20,000	-21.2	-12	9	11	12	-10	11	13	14	-4	17	19	19	-8	13	14	15	-8	13	15	16	2	2	2	2
10,000	-4.6	4	9	11	12	7	11	13	14	14	19	20	21	8	13	14	15	8	13	15	17	3	2	2	2
ADEN TO GAN																									
55,000	-56.5	-80	-24	-22	-21	-74	-22	-19	-18	-77	-20	-19	-18	-79	-23	-21	-20	-79	-22	-20	-19	3	3	3	3
40,000	-56.5	-55	2	4	5	-52	5	7	8	-53	3	5	5	-53	4	5	6	-53	5	6	7	3	3	2	2
30,000	-44.5	-31	14	15	16	-30	15	16	17	-30	14	15	16	-31	13	14	15	-31	14	15	16	2	2	2	2
20,000	-21.2	-5	17	18	18	-5	16	17	18	-5	17	18	18	-6	16	17	17	-5	16	17	18	1	2	2	1
10,000	-4.6	10	14	15	16	10	15	16	16	11	15	16	17	9	14	15	16	10	15	16	16	1	1	2	1
ADEN TO JUUDA																									
55,000	-56.5	-76	-19	-18	-17	-76	-20	-18	-16	-76	-19	-17	-16	-77	-20	-18	-17	-76	-20	-18	-17	3	3	3	3
40,000	-56.5	-54	3	4	5	-52	4	6	7	-51	6	7	8	-53	4	5	6	-52	4	6	7	2	3	2	2
30,000	-44.5	-35	9	11	12	-32	12	14	15	-28	16	17	18	-32	13	14	15	-32	13	15	16	2	2	2	2
20,000	-21.2	-8	13	15	15	-7	14	16	16	-4	17	18	19	-6	15	16	17	-6	15	17	18	2	2	2	2
10,000	-4.6	9	13	14	15	10	14	16	16	15	19	21	21	9	14	15	16	11	15	17	18	2	2	2	2
ADEN TO KARACHI																									
55,000	-56.5	-75	-19	-17	-15	-76	-19	-17	-16	-76	-19	-17	-16	-77	-20	-18	-17	-76	-19	-17	-16	3	4	3	3
40,000	-56.5	-54	2	5	6	-52	5	7	8	-49	7	9	10	-53	3	5	6	-52	4	7	8	3	4	3	3
30,000	-44.5	-34	10	12	14	-33	12	14	15	-27	17	19	19	-32	13	15	16	-32	13	15	17	3	3	2	3
20,000	-21.2	-9	13	14	15	-6	13	17	17	-4	17	19	20	-6	15	16	17	-6	15	17	18	2	2	2	2
10,000	-4.6	8	12	14	15	10	15	16	17	15	20	21	22	9	13	15	16	11	15	17	18	2	2	2	2
ADEN TO KHARJOUR																									
55,000	-56.5	-77	-21	-19	-18	-78	-21	-19	-18	-76	-20	-18	-17	-77	-21	-19	-18	-77	-21	-19	-18	3	3	3	3
40,000	-56.5	-54	3	4	5	-52	5	7	8	-52	5	6	7	-52	4	5	6	-52	4	6	6	2	3	2	2
30,000	-44.5	-34	11	12	13	-31	13	15	15	-29	15	16	17	-31	13	15	16	-31	13	15	16	2	2	2	2
20,000	-21.2	-6	15	16	17	-6	15	16	17	-4	17	18	19	-6	15	16	17	-6	16	17	18	2	2	2	1
10,000	-4.6	10	15	16	17	10	15	16	17	14	18	19	20	10	14	15	16	11	16	17	18	2	2	2	2
ADEN TO MAURITIUS																									
55,000	-56.5	-78	-22	-19	-18	-77	-21	-18	-17	-74	-17	-15	-14	-77	-20	-18	-17	-76	-20	-17	-16	3	4	3	3
40,000	-56.5	-53	3	5	6	-52	5	6	7	-53	4	5	6	-53	4	5	6	-53	4	6	7	2	3	2	2
30,000	-44.5	-30	14	15	16	-31	14	15	16	-32	13	14	15	-32	12	14	15	-31	13	15	15	2	2	2	2
20,000	-21.2	-4	17	17	18	-6	16	17	17	-5	16	17	18	-6	15	16	17	-5	16	17	17	1	1	2	2
10,000	-4.6	10	14	15	15	10	14	15	16	9	14	15	15	9	14	15	15	9	14	15	17	1	1	2	2
ADEN TO NAIROBI																									
55,000	-56.5	-79	-22	-20	-19	-78	-22	-19	-18	-76	-19	-18	-17	-78	-21	-20	-19	-78	-21	-19	-18	3	3	3	3
40,000	-56.5	-54	3	4	5	-52	5	7	8	-53	4	5	6	-52	4	6	6	-53	4	6	7	2	3	2	2
30,000	-44.5	-31	13	14	15	-30	14	15	16	-31	14	15	16	-30	14	15	16	-31	14	15	16	2	2	2	2
20,000	-21.2	-4	17	18	19	-5	17	18	19	-5	16	17	18	-6	16	17	17	-5	16	18	18	1	2	1	1
10,000	-4.6	10	15	16</																					

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085			50 050 075 085			50 050 075 085			50 050 075 085			50 050 075 085			
ALGIERS TO INTERPOL																	
55,000	-56.5	-71	-15	-13	-12	-70	-14	-12	-11	-74	-17	-15	-14	-73	-16	-14	-13
40,000	-56.5	-58	5	5	6	-58	5	5	7	-49	7	9	9	-55	4	6	7
30,000	-44.5	-40	8	6	7	-36	9	10	11	-29	16	17	18	-35	10	11	12
20,000	-21.2	-15	9	10	11	-10	11	15	15	-4	17	18	19	-8	15	16	16
10,000	-4.6	8	8	10	11	6	11	15	16	16	18	19	20	8	15	16	16
ALGIERS TO ATHENS																	
55,000	-56.5	-59	-2	1	2	-58	-1	1	2	-65	-6	-4	-3	-62	-5	-3	-2
40,000	-56.5	-57	-0	5	5	-57	-1	5	5	-49	7	9	10	-56	0	2	4
30,000	-44.5	-44	-5	-1	0	-45	-0	2	3	-35	9	11	12	-41	4	6	7
20,000	-21.2	-22	-1	2	3	-18	5	5	7	-9	12	14	15	-14	7	9	10
10,000	-4.6	-6	-1	2	3	-1	6	6	8	9	15	15	16	2	6	8	10
ALGIERS TO BANGKOK																	
55,000	-56.5	-65	-8	-5	-4	-65	-6	-4	-3	-68	-12	-9	-8	-66	-10	-7	-6
40,000	-56.5	-56	1	4	5	-55	2	5	7	-48	8	11	12	-55	1	4	5
30,000	-44.5	-45	1	4	5	-40	4	7	8	-50	15	17	18	-37	7	9	11
20,000	-21.2	-18	5	5	7	-14	7	10	11	-5	16	18	19	-11	10	12	13
10,000	-4.6	-2	2	5	6	5	8	10	11	11	16	17	18	5	9	11	12
ALGIERS TO BARCELONA																	
55,000	-56.5	-59	-5	1	2	-58	-1	1	3	-61	-4	-2	-1	-62	-5	-3	-2
40,000	-56.5	-58	-1	5	5	-57	-1	5	5	-52	5	7	8	-56	0	3	4
30,000	-44.5	-47	-5	-0	1	-45	-1	2	3	-37	8	10	11	-41	4	6	7
20,000	-21.2	-21	-0	5	6	-18	5	5	7	-10	11	15	16	-14	7	9	10
10,000	-4.6	-4	0	5	5	-1	6	6	8	9	15	15	16	1	6	8	10
ALGIERS TO BASHA																	
55,000	-56.5	-61	-5	-2	-1	-60	-5	-1	0	-67	-10	-8	-7	-65	-7	-5	-3
40,000	-56.5	-58	1	4	6	-56	0	4	5	-49	9	11	12	-56	0	3	4
30,000	-44.5	-47	-2	0	1	-46	1	5	6	-41	15	17	18	-40	5	7	8
20,000	-21.2	-21	0	5	6	-17	4	6	8	-5	15	17	18	-13	8	10	11
10,000	-4.6	-5	-0	2	4	0	5	7	9	10	15	17	18	4	8	10	11
ALGIERS TO BEIRUT																	
55,000	-56.5	-60	-4	-1	1	-59	-2	0	1	-65	-9	-7	-6	-63	-6	-4	-3
40,000	-56.5	-58	0	4	5	-57	-0	5	5	-49	8	10	11	-56	0	2	4
30,000	-44.5	-47	-5	-1	0	-46	0	2	3	-35	12	14	15	-41	4	6	7
20,000	-21.2	-22	-0	2	4	-18	4	6	7	-9	15	15	16	-14	7	9	10
10,000	-4.6	-5	-1	2	3	-10	4	6	8	9	14	15	16	5	8	9	11
ALGIERS TO BENGHAZI																	
55,000	-56.5	-61	-5	-2	-1	-60	-5	-1	0	-66	-9	-7	-6	-65	-7	-5	-4
40,000	-56.5	-58	0	4	6	-56	0	5	5	-49	7	9	10	-56	0	3	4
30,000	-44.5	-48	-2	0	1	-46	1	5	6	-41	15	17	18	-40	4	6	7
20,000	-21.2	-20	1	4	5	-16	5	7	8	-8	15	15	16	-13	8	10	11
10,000	-4.6	-4	1	5	5	1	5	8	9	10	15	16	17	5	8	10	11
ALGIERS TO BOMBAY																	
55,000	-56.5	-65	-8	-6	-5	-64	-8	-5	-4	-70	-15	-11	-10	-67	-11	-8	-7
40,000	-56.5	-55	1	4	6	-55	2	5	7	-47	9	11	12	-55	1	4	5
30,000	-44.5	-45	1	4	5	-41	4	6	8	-29	15	17	18	-37	7	9	10
20,000	-21.2	-18	5	6	7	-14	7	9	11	-5	16	18	19	-11	10	12	13
10,000	-4.6	-2	5	5	7	4	8	10	12	12	17	19	19	5	10	12	13
ALGIERS TO CAIRO																	
55,000	-56.5	-62	-5	-3	-2	-60	-4	-2	-0	-67	-10	-8	-7	-64	-4	-3	-2
40,000	-56.5	-58	1	4	6	-56	0	5	5	-49	8	10	11	-56	1	5	4
30,000	-44.5	-46	-2	0	1	-45	1	5	5	-42	12	15	16	-40	5	7	8
20,000	-21.2	-20	1	4	5	-16	5	7	8	-7	14	16	17	-13	8	10	11
10,000	-4.6	-4	1	5	5	1	5	8	9	10	15	16	17	4	9	10	11
ALGIERS TO CALCUTTA																	
55,000	-56.5	-62	-5	-3	-1	-60	-4	-1	-0	-66	-10	-7	-6	-65	-8	-5	-4
40,000	-56.5	-58	1	4	6	-55	1	5	7	-48	9	11	12	-55	1	4	5
30,000	-44.5	-46	-1	2	3	-42	2	5	6	-40	14	17	18	-39	6	8	10
20,000	-21.2	-21	1	5	5	-16	6	8	10	-5	16	18	19	-11	9	11	12
10,000	-4.6	-4	0	5	6	2	6	9	10	11	16	17	18	4	8	11	12
ALGIERS TO CASABLANCA																	
55,000	-56.5	-61	-5	-2	0	-60	-5	-1	1	-64	-8	-5	-4	-63	-7	-5	-3
40,000	-56.5	-57	-1	5	5	-57	-0	5	5	-51	5	7	8	-56	0	3	4
30,000	-44.5	-46	-1	1	2	-44	1	5	4	-46	9	11	12	-40	5	7	8
20,000	-21.2	-19	2	5	6	-16	5	7	8	-9	12	14	15	-13	8	10	11
10,000	-4.6	-2	2	5	6	1	6	8	9	10	15	17	18	5	8	10	11
ALGIERS TO COLOMBO																	
55,000	-56.5	-70	-15	-11	-10	-68	-12	-10	-8	-72	-16	-13	-12	-71	-15	-13	-12
40,000	-56.5	-55	2	4	6	-54	5	5	7	-49	8	10	11	-55	2	4	5
30,000	-44.5	-40	5	7	8	-57	7	9	10	-29	16	17	18	-36	9	11	12
20,000	-21.2	-14	7	9	10	-11	10	12	13	-5	15	18	19	-9	12	13	14
10,000	-4.6	2	7	9	10	5	10	12	13	12	17	18	19	7	11	13	14
ALGIERS TO DAMASCUS																	
55,000	-56.5	-60	-4	-1	0	-59	-2	-0	1	-65	-9	-7	-6	-63	-6	-4	-3
40,000	-56.5	-56	0	4	5	-57	-0	5	5	-48	8	10	11	-56	0	2	4
30,000	-44.5	-47	-5	-1	1	-44	0	2	3	-55	12	14	15	-40	4	6	7
20,000	-21.2	-21	-0	2	4	-18	4	6	7	-8	14	15	16	-14	7	9	10
10,000	-4.6	-5	-1	2	3	-0	4	7	8	9	14	15	16	5	8	10	11
ALGIERS TO DHAKRAH																	
55,000	-56.5	-65	-7	-4	-3	-62	-5	-3	-2	-68	-12	-10	-9	-65	-9	-7	-6
40,000	-56.5	-55	1	4	6	-56	1	4	6	-48	9	11	12	-56	1	5	4
30,000	-44.5	-45	-1	1	2	-42	2	4	6	-30	14	16	17	-39	6	8	9
20,000	-21.2	-19	2	4	6	-16	5	8	9	-6	16	17	18	-12	9	11	11
10,000	-4.6	-5	1	4	5	1	6	8	10	12	16	18	19	5	9	11	12

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION									
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
ALGIERS TO KANO																											
55,000	-56.5	-70	-15	-11	-10	-68	-12	-10	-9	-72	-16	-14	-13	-71	-15	-13	-12	-70	-14	-11	-10	5	5	5	5	1506 N.M.I.	
40,000	-56.5	-55	2	4	6	-54	5	6	7	-51	5	7	7	-54	5	4	5	-55	5	5	6	4	4	2	2	4	
30,000	-44.5	-41	5	5	5	-57	8	9	10	-52	13	14	15	-56	9	10	11	-56	8	11	12	2	2	2	2	4	
20,000	-21.2	-14	7	9	10	-11	10	11	12	-6	15	16	17	-9	12	13	14	-10	11	13	14	5	2	2	2	4	
10,000	-4.6	5	7	9	10	6	11	12	13	15	18	19	20	7	12	13	14	7	12	14	16	2	2	2	2	4	
ALGIERS TO KANAKHI																											
55,000	-56.5	-65	-6	-4	-2	-62	-5	-3	-1	-68	-12	-9	-8	-65	-9	-6	-5	-64	-8	-5	-3	4	5	5	5	5510 N.M.I.	
40,000	-56.5	-55	1	4	6	-55	1	5	6	-47	9	11	12	-56	1	5	5	-55	5	7	8	4	5	5	5	5	
30,000	-44.5	-45	-1	2	3	-42	2	5	6	-30	15	17	18	-39	6	8	9	-39	6	9	12	4	4	5	5	5	
20,000	-21.2	-20	1	4	5	-15	6	8	9	-5	16	18	19	-12	9	11	12	-15	8	12	15	4	5	5	5	5	
10,000	-4.6	-4	1	4	5	2	7	9	10	12	17	18	19	5	9	11	12	4	8	12	16	4	4	5	5	5	
ALGIERS TO LISBON																											
55,000	-56.5	-60	-4	-0	2	-59	-2	1	2	-62	-5	-3	-2	-62	-6	-3	-2	-61	-4	-1	1	5	4	5	5	598 N.M.I.	
40,000	-56.5	-54	-1	5	5	-57	-1	5	5	-52	4	7	8	-56	0	5	4	-56	1	4	5	6	5	4	4	5	
30,000	-44.5	-46	-2	0	1	-44	0	2	4	-36	8	10	11	-40	4	6	8	-42	5	6	7	5	5	5	5	4	
20,000	-21.2	-20	1	4	5	-17	4	6	7	-10	11	13	14	-14	8	10	11	-15	6	9	10	4	5	5	5	5	
10,000	-4.6	-5	1	4	5	-0	5	7	8	9	14	16	17	2	7	9	10	2	7	10	12	4	5	5	5	5	
ALGIERS TO LONDON																											
55,000	-56.5	-58	-2	2	3	-56	0	5	5	-56	0	5	4	-60	-5	-1	0	-58	-1	2	4	5	4	4	4	900 N.M.I.	
40,000	-56.5	-54	-1	5	5	-57	-1	5	5	-52	4	7	8	-56	0	5	4	-56	0	4	6	6	6	4	4	4	
30,000	-44.5	-44	-1	0	1	-46	-2	1	2	-38	6	9	10	-42	2	5	6	-44	1	4	6	6	4	4	4	4	
20,000	-21.2	-23	-2	1	5	-20	1	4	5	-12	9	11	13	-16	5	8	9	-14	4	7	8	5	4	5	4	4	
10,000	-4.6	-6	-2	1	5	-5	2	4	6	5	10	12	13	-0	4	7	8	-1	4	7	9	5	4	5	4	4	
ALGIERS TO MADRID																											
55,000	-56.5	-60	-5	0	2	-54	-2	1	5	-61	-5	-2	-1	-62	-5	-3	-2	-60	-4	-1	1	5	4	5	5	590 N.M.I.	
40,000	-56.5	-54	-1	5	5	-57	-1	5	5	-52	4	7	8	-56	0	5	4	-56	1	4	6	6	5	4	4	5	
30,000	-44.5	-47	-2	0	1	-45	-0	2	4	-36	8	10	11	-41	4	6	8	-42	2	6	7	5	5	5	5	4	
20,000	-21.2	-21	1	5	5	-18	5	6	7	-10	11	13	14	-14	7	9	10	-16	6	9	10	4	5	5	5	4	
10,000	-4.6	-4	1	4	5	-0	4	7	8	9	14	16	17	2	6	8	10	2	6	10	11	4	5	5	5	4	
ALGIERS TO MARSEILLES																											
55,000	-56.5	-54	-2	1	5	-57	-1	2	5	-60	-5	-1	0	-61	-5	-2	-1	-59	-5	0	2	5	4	5	5	455 N.M.I.	
40,000	-56.5	-54	-1	5	5	-57	-1	5	5	-52	4	7	8	-56	0	5	4	-56	1	4	6	6	5	4	4	5	
30,000	-44.5	-47	-5	-1	1	-45	-1	2	5	-37	8	10	11	-41	5	6	7	-45	2	5	7	6	4	5	4	4	
20,000	-21.2	-22	-1	2	4	-14	5	5	6	-10	11	13	14	-15	7	9	10	-16	5	8	10	4	5	5	5	4	
10,000	-4.6	-5	-0	5	4	-1	5	6	7	8	12	14	16	1	6	8	9	1	5	9	11	4	4	5	5	4	
ALGIERS TO MILAN																											
55,000	-56.5	-54	-1	2	4	-57	-0	2	4	-59	-2	0	1	-61	-4	-2	-1	-59	-2	1	5	5	4	5	5	590 N.M.I.	
40,000	-56.5	-54	-1	5	5	-57	-1	5	5	-52	4	7	8	-56	0	5	4	-56	1	4	6	6	5	4	4	5	
30,000	-44.5	-44	-1	0	1	-46	-1	1	5	-37	7	9	11	-42	5	6	7	-45	1	5	7	6	5	4	4	4	
20,000	-21.2	-25	-2	1	5	-19	2	4	6	-11	11	12	13	-15	6	8	10	-17	4	7	9	5	5	5	5	4	
10,000	-4.6	-6	-1	2	4	-2	2	5	6	7	12	14	15	1	5	7	9	-0	5	8	10	5	4	5	5	4	
ALGIERS TO NEW ORLEANS																											
55,000	-56.5	-60	-4	-1	1	-59	-5	-0	1	-65	-8	-6	-5	-65	-6	-4	-2	-62	-5	-2	-1	4	4	4	4	5675 N.M.I.	
40,000	-56.5	-56	1	4	6	-54	1	4	6	-48	9	11	13	-56	1	5	5	-54	5	7	9	5	5	4	4	4	
30,000	-44.5	-47	-2	0	1	-45	1	4	5	-31	14	16	17	-40	5	7	8	-40	4	8	11	5	4	4	4	4	
20,000	-21.2	-27	-1	2	5	-17	5	7	9	-6	15	17	18	-14	8	10	11	-15	7	10	12	4	4	5	5	4	
10,000	-4.6	-6	-1	2	5	1	5	8	9	11	15	17	18	5	8	10	11	2	7	10	12	4	4	5	5	4	
ALGIERS TO PARIS																											
55,000	-56.5	-54	-2	2	5	-57	-0	5	4	-57	-1	2	5	-60	-4	-1	-0	-58	-2	1	5	5	4	4	4	757 N.M.I.	
40,000	-56.5	-54	-1	5	5	-57	-1	5	5	-53	4	7	8	-56	0	5	4	-56	0	4	6	6	6	4	4	4	
30,000	-44.5	-44	-1	0	1	-46	-1	1	5	-38	7	9	10	-42	5	5	7	-45	1	4	6	6	4	4	4	4	
20,000	-21.2	-25	-2	1	5	-20	2	4	6	-11	10	12	13	-16	6	8	9	-17	4	7	9	5	4	5	4	4	
10,000	-4.6	-6	-1	2	5	-5	2	5	6	6	11	13	14	0	5	7	9	-1	4	7	9	5	4	5	4	4	
ALGIERS TO ROME																											
55,000	-56.5	-54	-2	2	5	-58	-1	2	5	-61	-4	-2	-1	-61	-5	-3	-1	-59	-5	0	2	5	4	5	5	552 N.M.I.	
40,000	-56.5	-57	-1	5	5	-57	-1	5	5	-51	4	8	9	-54	0	5	4	-55	1	4	6	5	5	5	5	5	
30,000	-44.5	-44	-3	-1	0	-45	-1	2	5	-37	8	10	11	-41	5	6	7	-45	2	5	7	5	4	5	4	5	
20,000	-21.2	-22	-1	2	5	-18	5	5	6	-10	11	13	14	-15	7	9	10	-16	5	8	10	4	5	5	5	5	
10,000	-4.6	-5	-1	2	4	-1	5	6	7	8	13	15	16	1	6	8	9	1	5	9	11	4	4	5	5	5	
ALGIERS TO TRIPOLI																											
55,000	-56.5	-61	-5	-2	-0	-60	-5	-1	0	-65	-9	-6	-5	-65	-7	-5	-5	-62	-6	-3	-1	4	5	5	5	546 N.M.I.	
40,000	-56.5	-56	0	4	5	-56	0	4	5	-50	7	9	10	-56	0	5	4	-55	2	5	6	5	5	5	5	5	
30,000	-44.5	-46	-2	0	1	-44	1	5	4	-35	10	12	13	-40	4	6	7	-41	5	7	8	5	5	5	5	5	
20,000	-21.2	-20	1	4	5	-16	5	7	8	-8	15	15	15	-15	8	10	11	-14	7	10	11	4	5	2	5	5	
10,000	-4.6	-4	1	4	5	1	6	8	9	10	15	17	18	5	8	10	10	5	7	11	12	4	5	5	5	5	
ALGIERS TO TEL AVIV-JAFFA																											
55,000	-56.5	-61	-4	-2	-0	-60	-5	-1	1	-66	-10	-8	-6	-65	-7	-4	-5	-62	-6	-3	-2	4	5	5	5	1587 N.M.I.	
40,000	-56.5	-56	1	4	6	-57	-0	5	5	-48	8	10	11	-56	0	2	4	-54	2	5	7	5	5	5	5	5	
30,000	-44.5	-47	-2	-0	1	-44	1	5	4	-32	12	14	15	-40	4	6	8	-41	4	7	9	5	5	5	5	5	
20,000	-21.2	-25	-0	5	4	-17	4	6	8	-7	14	16	17	-15	8	9	10	-15	7	10	11	4	5	2	2	5	
10,000	-4.6	-5	-0	2	4	0	5	7	8	10	14	16	17	5	8	10	11	2	7	10	12	4	4	2	2	5	
ALGIERS TO TUNIS																											
55,000	-56.5	-60	-5	-0	2	-59	-2	0	2	-65	-6	-4	-3	-62	-6	-4	-2	-61	-4	-1	0	5	4	5	5	557 N.M.I.	
40,000	-56.5	-57	-0	5	5	-57	-0	5	5	-50	6	8	9	-56	0	2	4	-55	1	5	6	5	5	5	5	5	
30,000	-44.5	-47	-2	-0	1	-45	-0	2	5	-36	9	11	12	-41	4	6	7	-42	5	6	8	5	5	5	5	5	
20,000	-21.2	-21	0	5	5	-17	4	6	7	-9	12	14	15	-14	7	9	10	-15	6	9	10	4	5	2	2	5	
10,000	-4.6	-4	1	5	5	0	5	7	8	9	14	16	17	2	7	9	10	2	7	10	12						

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION															
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN APR JUL OCT							
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
ALLAHABAD TO CALCUTTA																										404 N.M.			
55,000	-56.5	-73	-16	-14	-13	-6V	-12	-10	-H	-75	-19	-15	-14	-73	-17	-14	-12	-72	-16	-12	-11	4	4	5	4				
40,000	-56.5	-55	1	4	6	-53	4	7	9	-49	7	11	13	-54	3	6	8	-53	4	8	10	4	5	5	5				
30,000	-44.5	-37	8	11	12	-35	9	12	14	-26	18	20	21	-32	12	15	16	-33	12	15	17	5	5	5	4				
20,000	-21.2	-11	10	12	13	-9	12	14	16	-2	19	21	21	-6	15	17	18	-7	14	17	18	3	4	2	3				
10,000	-4.6	5	9	11	12	8	13	15	16	12	17	18	19	8	12	14	15	8	13	15	16	3	3	2	3				
AMMAN TO BAGHDAD																										431 N.M.			
55,000	-56.5	-63	-7	-5	-3	-62	-5	-3	-2	-71	-14	-12	-11	-66	-9	-7	-5	-65	-9	-6	-5	4	3	3	4				
40,000	-56.5	-55	2	5	6	-55	2	5	7	-46	10	12	13	-55	1	3	4	-53	4	7	9	4	5	3	3				
30,000	-44.5	-46	-1	1	2	-42	2	5	6	-27	18	20	21	-39	6	8	9	-34	6	10	13	3	3	3	3				
20,000	-21.2	-19	2	4	5	-16	5	7	9	-3	18	20	21	-12	9	11	12	-13	9	12	14	3	3	3	3				
10,000	-4.6	-4	1	3	5	2	6	9	10	14	18	20	21	6	10	12	13	4	9	12	14	4	4	2	3				
AMMAN TO ROME																										1262 N.M.			
55,000	-56.5	-5V	-3	0	2	-58	-2	1	2	-64	-8	-6	-4	-62	-6	-3	-2	-61	-4	-2	-0	4	3	3	3				
40,000	-56.5	-56	0	4	5	-57	-0	3	5	-48	9	11	12	-56	0	2	4	-54	2	6	7	5	5	3	3				
30,000	-44.5	-48	-4	-2	-0	-45	-0	2	3	-35	12	14	15	-41	4	6	7	-42	3	7	9	3	3	3	3				
20,000	-21.2	-23	-1	1	3	-18	3	5	7	-8	13	15	16	-14	7	9	10	-16	5	9	11	4	4	3	3				
10,000	-4.6	-7	-2	1	2	-2	3	6	7	8	13	15	15	3	7	9	10	1	5	9	10	4	4	3	3				
AMSTERDAM TO ANCHORAGE																										3885 N.M.			
55,000	-56.5	-60	-3	0	2	-48	8	11	13	-44	13	14	15	-53	4	6	7	-51	5	8	10	5	4	2	3				
40,000	-56.5	-58	-2	2	4	-49	7	11	13	-46	11	14	16	-52	4	7	9	-51	5	9	12	6	5	5	4				
30,000	-44.5	-56	-12	-9	-8	-52	-8	-5	-3	-45	-1	2	3	-51	-7	-4	-3	-51	-7	-3	-1	4	4	3	4				
20,000	-21.2	-35	-14	-10	-9	-33	-12	-9	-7	-20	1	3	4	-29	-8	-5	-3	-30	-8	-4	-2	5	5	4	5				
10,000	-4.6	-21	-16	-12	-10	-14	-13	-10	-8	-5	-0	2	3	-14	-10	-7	-5	-15	-10	-6	-3	6	5	3	5				
AMSTERDAM TO ANAKA																										1367 N.M.			
55,000	-56.5	-56	0	4	5	-54	2	4	6	-53	4	6	7	-58	-2	1	2	-55	1	4	5	5	4	1	4				
40,000	-56.5	-58	-1	2	4	-56	1	4	6	-50	7	10	11	-56	0	3	4	-55	2	5	7	5	5	4	4				
30,000	-44.5	-51	-7	-4	-3	-47	-3	-0	1	-39	6	8	10	-43	1	4	5	-45	-1	3	5	4	4	4	4				
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	4	-12	9	11	12	-17	4	7	8	-20	2	5	7	5	5	3	4				
10,000	-4.6	-12	-7	-4	-2	-6	-1	2	4	3	7	10	11	-2	3	6	7	-4	1	4	6	5	5	3	4				
AMSTERDAM TO ATHENS																										1173 N.M.			
55,000	-56.5	-56	0	3	5	-55	1	4	5	-55	2	4	5	-59	-3	-0	1	-56	0	3	4	5	4	3	4				
40,000	-56.5	-58	-1	2	4	-57	-0	3	5	-50	4	9	10	-56	0	3	4	-55	1	5	7	5	5	4	4				
30,000	-44.5	-50	-6	-3	-2	-47	-4	-0	1	-38	6	9	10	-43	2	4	6	-45	-0	3	5	4	4	4	4				
20,000	-21.2	-26	-5	-1	0	-21	0	3	4	-12	9	11	12	-17	4	7	8	-19	2	6	7	5	4	3	4				
10,000	-4.6	-10	-6	-2	-0	-5	-0	3	4	4	4	10	12	-1	3	6	8	-3	1	5	7	5	4	3	4				
AMSTERDAM TO BAGHDAD																										2044 N.M.			
55,000	-56.5	-57	-1	2	4	-56	1	3	5	-57	-0	2	1	-59	-3	-0	1	-57	-1	2	3	4	3	3	4				
40,000	-56.5	-57	-1	3	6	-56	1	4	6	-49	8	10	12	-56	0	3	4	-54	2	6	8	5	5	4	4				
30,000	-44.5	-50	-6	-3	-2	-46	-2	1	2	-36	9	11	12	-42	2	4	6	-44	1	5	7	4	4	4	4				
20,000	-21.2	-26	-4	-1	1	-21	1	4	5	-10	11	13	14	-14	3	7	9	-14	3	7	9	5	4	3	4				
10,000	-4.6	-10	-6	-2	-1	-4	1	4	5	5	10	12	13	-0	4	7	9	-2	2	6	8	5	4	3	4				
AMSTERDAM TO BARCELONA																										670 N.M.			
55,000	-56.5	-57	-1	2	4	-55	1	4	6	-54	3	5	7	-59	-2	0	1	-54	0	3	5	5	4	4	4				
40,000	-56.5	-58	-2	2	4	-57	-1	3	6	-53	4	7	9	-56	0	3	5	-56	0	4	6	6	6	5	5				
30,000	-44.5	-49	-5	-2	-1	-47	-2	0	2	-39	5	8	9	-41	2	4	6	-45	-0	3	5	4	4	4	4				
20,000	-21.2	-25	-4	-0	2	-21	0	3	5	-13	9	11	12	-17	4	7	9	-19	2	6	8	5	4	3	4				
10,000	-4.6	-8	-4	-0	2	-4	0	3	4	4	8	10	12	-1	3	6	8	-3	2	6	7	5	4	3	4				
AMSTERDAM TO HASLE																										303 N.M.			
55,000	-56.5	-57	-0	3	5	-54	2	5	6	-51	5	8	9	-58	-1	1	3	-55	2	5	7	5	4	4	4				
40,000	-56.5	-58	-2	2	4	-56	0	3	5	-52	5	8	10	-54	0	3	5	-56	1	5	7	6	6	5	5				
30,000	-44.5	-50	-6	-3	-2	-48	-3	-1	1	-40	6	7	8	-44	1	3	5	-44	-1	2	4	4	4	4	4				
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	7	10	11	-18	3	6	8	-20	1	5	7	6	4	3	5				
10,000	-4.6	-10	-6	-2	0	-6	-1	1	3	2	7	9	10	-2	2	5	7	-4	0	4	6	6	4	3	5				
AMSTERDAM TO BEIKUI																										1721 N.M.			
55,000	-56.5	-57	-1	2	4	-56	1	3	5	-57	-0	2	3	-60	-3	-1	1	-57	-1	2	3	4	4	3	4				
40,000	-56.5	-57	-1	3	6	-56	0	4	6	-49	7	10	11	-56	0	3	4	-55	2	6	7	5	5	4	4				
30,000	-44.5	-50	-6	-3	-2	-47	-2	0	2	-36	8	10	12	-42	2	4	6	-44	1	4	6	4	4	4	4				
20,000	-21.2	-25	-4	-1	1	-21	0	3	5	-11	10	12	13	-16	5	7	9	-14	3	6	8	5	4	3	4				
10,000	-4.6	-10	-5	-2	-1	-4	0	3	5	5	9	11	12	-0	4	7	8	-3	2	6	7	5	4	3	4				
AMSTERDAM TO BELEM																										4143 N.M.			
55,000	-56.5	-69	-12	-9	-8	-67	-11	-8	-7	-66	-9	-7	-6	-69	-13	-11	-9	-68	-11	-9	-7	4	3	3	3				
40,000	-56.5	-57	-0	3	6	-56	0	4	5	-54	3	5	6	-55	2	4	5	-55	1	4	5	4	5	3	3				
30,000	-44.5	-41	4	6	7	-34	6	8	9	-35	9	11	12	-36	4	10	11	-34	7	9	10	3	3	2	3				
20,000	-21.2	-14	7	9	10	-11	9	10	12	-9	12	14	14	-10	11	13	14	-11	10	12	13	3	3	2	3				
10,000	-4.6	2	7	9	10	5	4	9	10	7	12	13	14	5	10	12	13	4	9	11	12	3	3	2	2				
AMSTERDAM TO BERLIN																										515 N.M.			
55,000	-56.5	-57	-0	3	5	-53	3	6	7	-49	7	9	11	-57	-1	2	3	-54	2	6	7	5	4	3	4				
40,000	-56.5	-58	-2	2	4	-55	2	6	8	-51	6	9	11	-56	0	4	5	-55	1	6	8	6	6	5	5				
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-41	3	6	7	-44	0	3	4	-46	-2	2	4	4	4	4	4				
20,000	-21.2	-28	-7	-3	-1	-23	-2	1	3	-15	7	9	10	-19	2	6	7	-21	0	4	6	6	5	3	5				
10,000	-4.6	-12	-7	-4	-1	-7	-3	0	2	1	6	8	9	-4	0	4	5	-6	-1	3	4	6	5	3	5				
AMSTERDAM TO BRUSSELS																										86 N.M.			
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-50	6	9	10	-58	-1	2	3	-55	2	5	7	5	4	4	4				
40,000	-56.5	-58	-2	2	4	-55	1	6	8	-51	6	9	11	-56	0	4	5	-55	1	6	8	6	6	5	5				
30,000	-44.5	-51	-6	-3	-2	-48	-3	-1	1	-41	4	6	8	-44	0	3	4	-46	-1	2	4	4	4	4	4				
20,000	-21.2	-27	-6	-2	1	-23	-2	2	3	-14	7	9	10	-18	3	6	8	-21	1	4	6	6	5	3	5				
10,000	-4.6	-11	-6	-2	-0	-7	-2	1	3	1	6	8	9	-3	2	5	6	-5	-0	3	5	6	4	3	5				
AMSTERDAM TO BUDAPEST																										629 N.M.			
55,000	-56.5	-56	0	4	5	-54	3	5	7	-50	6	8	10	-58	-1	1	3	-55	2	5	7	5	4	3	4				
40,000	-56.5	-58	-2																										

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
AMSTERDAM TO CAIRO																											
55,000	-56.5	-58	-2	1	5	-57	-0	2	5	-59	-2	-0	1	-61	-4	-2	-1	-59	-2	1	2	4	3	5	4	1775 N.MI.	
40,000	-56.5	-57	-0	3	5	-57	-0	3	5	-49	7	10	11	-58	0	3	4	-55	2	5	7	5	5	4	4		
30,000	-44.5	-49	-5	-2	-1	-46	-1	1	2	-36	9	11	13	-42	3	5	6	-43	1	5	7	4	4	3	3		
20,000	-21.2	-24	-5	0	2	-20	1	4	5	-10	11	13	14	-16	6	8	9	-17	4	7	9	5	4	3	3		
10,000	-4.6	-8	-4	-1	1	-3	1	4	5	6	10	12	13	1	5	8	9	-1	3	7	8	4	4	3	4		
AMSTERDAM TO COPENHAGEN																											
55,000	-56.5	-57	-1	3	4	-55	3	6	7	-48	8	10	11	-57	-1	2	4	-54	3	6	8	5	4	3	4	341 N.MI.	
40,000	-56.5	-58	-2	2	4	-54	2	7	9	-50	6	10	12	-56	0	4	6	-55	2	6	9	6	6	5	5		
30,000	-44.5	-51	-7	-4	-3	-49	-4	-2	-0	-41	5	6	7	-45	-0	2	4	-47	-2	1	3	4	4	4	4		
20,000	-21.2	-24	-7	-3	-1	-24	-3	0	2	-15	6	8	10	-19	2	5	7	-22	-1	3	5	6	5	3	3		
10,000	-4.6	-12	-8	-4	-2	-8	-3	-0	2	0	5	7	8	-5	-1	3	4	-6	-2	2	4	6	5	3	5		
AMSTERDAM TO DAKAR																											
55,000	-56.5	-64	-8	-5	-4	-63	-6	-4	-3	-64	-8	-6	-4	-66	-10	-7	-6	-68	-8	-5	-4	4	4	3	3	2495 N.MI.	
40,000	-56.5	-57	-0	3	5	-56	0	4	6	-53	4	6	7	-55	1	3	5	-55	1	4	5	5	5	3	3		
30,000	-44.5	-44	0	2	3	-41	3	5	6	-36	9	10	11	-39	6	8	9	-40	5	7	9	3	3	3	3		
20,000	-21.2	-18	3	6	7	-15	6	8	9	-9	12	13	14	-12	9	11	12	-14	8	10	11	4	3	2	3		
10,000	-4.6	-1	4	6	7	1	6	8	9	9	13	15	16	4	8	10	11	3	8	10	12	5	5	2	3		
AMSTERDAM TO DHAKHA																											
55,000	-56.5	-54	-5	0	2	-54	-1	1	2	-60	-4	-2	-0	-62	-5	-3	-1	-60	-3	-0	1	4	3	3	4	2560 N.MI.	
40,000	-56.5	-56	0	3	5	-55	1	5	6	-48	4	11	12	-56	1	3	4	-54	3	6	8	5	5	4	4		
30,000	-44.5	-49	-4	-2	-0	-45	-0	2	3	-34	11	13	14	-41	3	6	7	-42	2	6	8	4	4	3	3		
20,000	-21.2	-24	-2	1	2	-19	2	5	6	-9	13	15	16	-15	6	9	10	-17	5	8	10	4	4	3	3		
10,000	-4.6	-8	-4	-0	1	-2	2	5	7	7	12	14	15	1	6	8	10	-0	4	8	10	5	4	3	4		
AMSTERDAM TO DUSSELDORF																											
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-50	7	9	10	-58	-1	2	3	-54	2	5	7	5	4	3	4	96 N.MI.	
40,000	-56.5	-58	-2	2	4	-55	1	6	8	-51	6	9	11	-56	0	4	5	-55	1	6	8	6	6	5	5		
30,000	-44.5	-51	-6	-4	-2	-48	-3	-1	0	-41	4	6	8	-44	0	3	4	-46	-1	2	4	6	6	4	4		
20,000	-21.2	-27	-6	-2	0	-24	-2	1	3	-14	7	9	10	-19	5	6	8	-21	0	4	6	6	5	3	3		
10,000	-4.6	-11	-6	-3	-1	-7	-2	1	2	1	6	8	9	-3	1	4	6	-5	-0	3	5	6	4	3	5		
AMSTERDAM TO EDMONTON																											
55,000	-56.5	-54	-1	3	5	-49	8	10	12	-46	11	13	14	-53	3	5	7	-51	5	8	10	6	4	3	4	5739 N.MI.	
40,000	-56.5	-56	0	4	7	-50	6	10	13	-47	9	12	14	-52	5	8	10	-51	5	9	11	6	4	5	5		
30,000	-44.5	-55	-10	-7	-6	-50	-6	-3	-1	-45	-0	2	4	-49	-4	-1	0	-50	-5	-2	0	4	4	4	5		
20,000	-21.2	-35	-14	-10	-8	-31	-9	-6	-4	-19	2	4	6	-26	-5	-1	1	-24	-7	-2	0	6	6	4	6		
10,000	-4.6	-21	-16	-12	-10	-16	-11	-7	-5	-4	1	3	4	-12	-7	-3	-2	-13	-8	-4	-2	6	5	4	5		
AMSTERDAM TO FRANKFURT																											
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-50	6	9	10	-58	-1	2	3	-55	2	5	7	5	4	3	4	197 N.MI.	
40,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	5	9	11	-56	0	3	5	-55	1	5	8	4	6	5	5		
30,000	-44.5	-51	-6	-4	-2	-48	-3	-1	1	-41	4	6	8	-44	0	3	5	-46	-1	2	4	4	4	4	4		
20,000	-21.2	-27	-6	-2	0	-23	-2	1	3	-14	7	9	10	-18	5	6	8	-21	1	4	6	6	5	3	3		
10,000	-4.6	-11	-6	-3	-1	-7	-2	1	2	1	6	8	9	-3	2	5	6	-5	-0	3	5	6	4	3	5		
AMSTERDAM TO GENEVA																											
55,000	-56.5	-57	-0	3	5	-54	2	5	6	-52	5	7	9	-58	-2	1	2	-55	1	4	6	5	4	3	4	369 N.MI.	
40,000	-56.5	-58	-2	2	4	-55	0	4	7	-52	5	8	10	-56	0	3	5	-56	1	5	7	6	6	5	5		
30,000	-44.5	-50	-6	-3	-2	-47	-3	-0	1	-40	4	7	8	-44	1	4	5	-45	-1	3	5	4	4	4	4		
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	8	10	11	-18	4	7	8	-20	1	5	7	6	4	3	5		
10,000	-4.6	-10	-5	-2	0	-6	-1	2	3	2	7	9	10	-2	3	5	7	-4	1	4	6	5	4	3	4		
AMSTERDAM TO GLASGOW																											
55,000	-56.5	-58	-1	2	4	-53	4	6	7	-49	8	10	12	-57	-1	2	4	-54	2	6	8	5	4	3	4	342 N.MI.	
40,000	-56.5	-58	-2	3	5	-54	2	7	10	-50	7	11	13	-56	1	4	6	-55	2	7	9	6	7	6	6		
30,000	-44.5	-51	-6	-3	-2	-48	-3	-1	1	-42	3	6	7	-45	-0	3	4	-46	-2	2	4	4	4	4	4		
20,000	-21.2	-27	-6	-2	0	-24	-2	1	3	-15	6	8	9	-19	2	5	7	-21	-0	4	6	6	5	3	5		
10,000	-4.6	-10	-6	-2	-0	-7	-3	0	2	0	5	7	8	-4	1	4	6	-5	-1	3	4	5	4	3	5		
AMSTERDAM TO GOOSE BAY																											
55,000	-56.5	-57	-0	3	5	-52	5	8	9	-48	8	11	12	-55	2	5	6	-53	4	7	9	5	4	3	4	2281 N.MI.	
40,000	-56.5	-55	2	7	9	-52	4	9	11	-50	7	11	13	-53	3	7	9	-52	4	8	11	7	7	5	6		
30,000	-44.5	-50	-6	-3	-2	-48	-3	-1	1	-45	2	5	6	-45	-1	2	3	-47	-2	1	3	4	4	4	4		
20,000	-21.2	-29	-8	-4	-1	-26	-4	-1	1	-16	5	8	9	-22	-1	3	5	-23	-2	2	4	7	6	4	6		
10,000	-4.6	-14	-10	-6	-4	-10	-5	-2	-0	-1	3	6	7	-7	-2	2	3	-8	-3	0	2	6	5	3	5		
AMSTERDAM TO HAMBURG																											
55,000	-56.5	-57	-0	3	5	-53	3	6	7	-49	7	10	11	-57	-1	2	3	-54	2	6	7	5	4	3	4	204 N.MI.	
40,000	-56.5	-58	-2	2	4	-55	2	6	8	-51	6	10	12	-56	0	4	5	-55	2	6	8	6	6	5	5		
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-41	5	6	7	-45	-0	3	4	-46	-2	2	4	4	4	4	4		
20,000	-21.2	-28	-7	-3	-0	-23	-2	1	3	-15	6	9	10	-19	2	6	7	-21	-0	4	6	6	5	3	5		
10,000	-4.6	-12	-7	-3	-1	-7	-3	0	2	1	5	8	9	-4	0	3	5	-6	-1	2	4	6	5	3	5		
AMSTERDAM TO HELSINKI																											
55,000	-56.5	-57	-1	2	4	-53	4	6	8	-47	9	11	12	-56	0	3	4	-53	3	6	8	5	4	3	4	820 N.MI.	
40,000	-56.5	-59	-2	1	3	-54	3	7	9	-50	7	10	12	-56	1	4	6	-55	2	6	9	6	6	5	5		
30,000	-44.5	-52	-8	-5	-4	-49	-5	-2	-1	-42	3	5	7	-46	-1	2	3	-47	-3	1	3	4	4	4	4		
20,000	-21.2	-30	-9	-5	-2	-25	-4	-0	1	-16	6	8	9	-21	1	4	6	-23	-2	2	4	6	5	4	5		
10,000	-4.6	-14	-10	-6	-4	-9	-5	-1	0	-0	4	7	8	-6	-1	2	4	-7	-3	1	3	6	5	3	5		
AMSTERDAM TO KANO																											
55,000	-56.5	-65	-8	-6	-4	-63	-7	-5	-3	-66	-9	-7	-6	-67	-10	-8	-7	-65	-9	-6	-5	4	3	3	3	2473 N.MI.	
40,000	-56.5	-56	1	4	5	-55	2	5	6	-51	5	7	8	-55	2	4	5	-54	2	5	6	4	5	3	3		
30,000	-44.5	-44	0	2	3	-40	4	6	7	-34	10	12	13	-38	6	8	9	-39	5	8	10	3	3	3	3		
20,000	-21.2	-18	3	5	7	-15	6	8	9	-8	13	15	15	-12	9	11	12	-13	8	10	12	3	3	2	3		
10,000	-4.6	-1	3	6	7	2	7	9	10	10	15	16	17	4	9	11	12	4	8	11	13	3	3	2	3		
AMSTERDAM TO KEFLAVIK																											
55,000	-56.5	-58	-1	2	4	-51	5	8	9	-47	10	12	13	-56	1	4	5	-53	4	7	9	5	4	3	4	1099 N.MI.	
40,000	-56.5	-57	-1	4	6	-52	5	9	12	-48	8	12	14	-55	2	6	8	-53									

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION												
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				STANDARD DEVIATION				
		50-050	D75	085		50	D50	D75	085	50	050	D75	085	50	050	D75	085	50	D50	D75	085	JAN	APR	JUL	OCT	
AMSTERDAM TO LAGOS																										
55,000	-56.5	-66	-10	-7	-6	-65	-8	-6	-5	-67	-11	-8	-7	-68	-11	-9	-8	-67	-10	-8	-6	4	3	3	3	2745 N.MI.
40,000	-56.5	-56	1	4	5	-55	2	5	7	-52	4	6	7	-55	2	4	5	-54	2	5	6	4	4	3	3	
30,000	-44.5	-43	1	3	4	-39	5	7	8	-34	10	12	13	-37	7	9	10	-38	6	9	10	3	3	3	3	
20,000	-21.2	-17	4	7	8	-14	7	9	10	-8	13	15	15	-11	10	12	13	-12	9	11	12	3	3	2	2	
10,000	-4.6	0	5	7	8	3	8	10	11	10	15	16	17	5	10	11	12	5	9	12	13	3	3	2	2	
AMSTERDAM TO LIBREVILLE																										
55,000	-56.5	-68	-11	-9	-7	-66	-10	-8	-7	-68	-12	-10	-9	-69	-13	-10	-9	-68	-11	-9	-8	4	3	3	3	3171 N.MI.
40,000	-56.5	-55	1	4	5	-54	2	5	7	-52	4	6	7	-54	2	4	5	-54	3	5	6	4	4	3	3	
30,000	-44.5	-42	3	4	5	-38	6	8	9	-34	11	12	13	-37	8	10	11	-38	7	9	11	3	3	3	3	
20,000	-21.2	-16	5	8	9	-13	8	10	11	-7	14	15	16	-10	11	12	13	-12	10	12	13	3	3	2	2	
10,000	-4.6	1	6	8	9	6	9	11	12	10	14	16	17	6	10	12	13	5	10	12	13	3	3	2	2	
AMSTERDAM TO LISBON																										
55,000	-56.5	-58	-2	2	3	-56	1	4	5	-55	2	4	5	-59	-3	-0	1	-57	-1	2	4	5	4	4	4	998 N.MI.
40,000	-56.5	-58	-2	2	4	-57	-1	3	6	-53	4	7	8	-56	0	3	5	-56	0	4	6	6	4	4	5	
30,000	-44.5	-48	-4	-1	-0	-46	-2	1	2	-39	6	8	9	-42	2	5	6	-44	1	4	6	6	4	4	5	
20,000	-21.2	-23	-2	1	3	-20	1	4	5	-12	9	11	12	-16	5	8	9	-18	3	6	8	5	4	4	5	
10,000	-4.6	-7	-2	1	3	-3	1	4	5	4	9	11	12	-1	4	7	8	-2	3	6	8	5	4	3	4	
AMSTERDAM TO LONDON																										
55,000	-56.5	-57	-1	3	4	-54	3	5	7	-50	7	9	10	-58	-1	2	3	-55	2	5	7	5	4	4	4	200 N.MI.
40,000	-56.5	-58	-2	2	5	-55	1	6	8	-51	6	9	11	-56	0	4	6	-55	1	6	8	6	4	4	5	
30,000	-44.5	-50	-6	-3	-2	-48	-3	-1	1	-41	4	6	8	-44	0	3	4	-46	-1	2	4	4	4	4	5	
20,000	-21.2	-26	-5	-1	1	-23	-2	2	4	-15	7	9	10	-19	3	6	8	-21	1	4	6	6	5	3	5	
10,000	-4.6	-10	-5	-2	0	-6	-2	1	3	1	6	8	9	-3	2	5	6	-5	0	3	5	5	4	3	5	
AMSTERDAM TO LOS ANGELES																										
55,000	-56.5	-58	-1	2	4	-52	5	7	9	-51	6	8	9	-56	1	3	4	-54	2	5	7	5	4	3	4	4833 N.MI.
40,000	-56.5	-55	1	5	8	-52	4	8	10	-50	7	10	11	-53	3	7	9	-53	4	8	10	6	4	5	5	
30,000	-44.5	-53	-8	-5	-4	-49	-4	-2	-0	-42	3	5	6	-46	-2	1	3	-47	-3	1	2	6	4	4	5	
20,000	-21.2	-32	-10	-6	-4	-27	-6	-2	-0	-16	5	8	9	-23	-1	2	4	-26	-3	1	3	6	5	4	6	
10,000	-4.6	-17	-12	-8	-6	-11	-7	-3	-1	0	5	7	8	-7	-3	1	3	-9	-4	0	2	6	5	4	6	
AMSTERDAM TO MADRID																										
55,000	-56.5	-58	-1	2	4	-55	1	4	5	-54	2	5	6	-59	-3	-0	1	-57	-0	3	4	5	4	4	4	789 N.MI.
40,000	-56.5	-58	-2	2	4	-57	-1	3	6	-53	4	7	9	-56	0	3	5	-56	0	4	6	6	4	5	5	
30,000	-44.5	-49	-4	-2	-0	-47	-2	1	2	-39	5	8	9	-43	2	4	6	-44	0	4	6	4	4	4	5	
20,000	-21.2	-24	-3	1	2	-21	1	3	5	-13	9	11	12	-17	5	7	9	-18	3	6	8	5	4	3	4	
10,000	-4.6	-7	-3	1	2	-4	1	3	5	4	8	11	12	-1	4	6	8	-2	3	6	8	5	4	3	4	
AMSTERDAM TO MIAMI																										
55,000	-56.5	-61	-4	-1	0	-58	-1	1	3	-57	-1	2	3	-61	-5	-2	-0	-59	-3	0	2	4	4	3	4	4016 N.MI.
40,000	-56.5	-57	-0	4	6	-56	1	5	7	-54	3	6	7	-55	2	5	7	-55	1	5	6	6	4	4	5	
30,000	-44.5	-46	-2	1	2	-45	-0	2	3	-38	6	7	10	-41	3	6	7	-43	2	5	7	4	4	3	4	
20,000	-21.2	-22	-1	3	5	-20	1	5	6	-12	9	12	13	-15	6	9	10	-17	4	7	9	5	4	3	4	
10,000	-4.6	-7	-3	1	3	-4	0	3	5	3	8	10	11	-0	4	7	9	-2	3	5	7	5	4	3	4	
AMSTERDAM TO MOSCOW																										
55,000	-56.5	-56	0	3	5	-53	4	6	8	-48	9	11	12	-56	0	3	4	-53	3	7	8	5	4	3	4	1156 N.MI.
40,000	-56.5	-59	-2	1	3	-54	2	6	8	-50	6	10	12	-55	1	4	6	-55	2	6	8	5	4	3	5	
30,000	-44.5	-53	-8	-5	-4	-49	-4	-2	-0	-41	3	6	8	-45	-1	2	4	-47	-2	1	4	6	4	4	5	
20,000	-21.2	-30	-8	-4	-2	-24	-3	1	2	-15	6	9	10	-20	1	5	7	-22	-1	3	5	6	5	3	5	
10,000	-4.6	-14	-10	-6	-4	-8	-4	-0	1	0	5	7	8	-6	-1	2	4	-7	-3	1	3	6	5	3	5	
AMSTERDAM TO MURDEN																										
55,000	-56.5	-55	2	5	7	-50	7	9	11	-46	10	13	14	-53	3	6	7	-51	5	9	11	5	4	4	4	4324 N.MI.
40,000	-56.5	-58	-1	2	4	-51	6	10	12	-48	8	12	14	-53	4	7	9	-52	4	8	11	5	4	4	5	
30,000	-44.5	-55	-10	-8	-6	-49	-5	-2	-0	-38	7	10	12	-47	-3	0	2	-47	-3	2	5	6	4	5	5	
20,000	-21.2	-34	-13	-9	-7	-27	-6	-2	0	-14	8	10	12	-23	-2	2	4	-25	-3	2	4	6	4	4	6	
10,000	-4.6	-20	-16	-11	-9	-13	-8	-4	-2	1	6	8	10	-9	-5	-1	1	-10	-6	-1	2	6	4	4	6	
AMSTERDAM TO NEW YORK																										
55,000	-56.5	-57	-0	3	4	-53	3	6	7	-52	5	7	9	-57	-0	3	5	-55	2	5	7	4	4	4	4	3156 N.MI.
40,000	-56.5	-55	2	6	9	-54	3	7	10	-51	5	8	10	-54	3	6	8	-53	3	7	9	6	4	4	5	
30,000	-44.5	-49	-5	-2	-0	-47	-3	-0	1	-41	4	7	8	-44	0	3	5	-45	-1	3	5	6	4	4	5	
20,000	-21.2	-27	-6	-2	1	-24	-3	1	3	-14	7	9	11	-19	2	6	8	-21	0	4	6	7	5	4	5	
10,000	-4.6	-13	-8	-4	-2	-8	-4	-0	1	1	5	7	9	-4	0	4	6	-6	-2	2	4	6	5	3	5	
AMSTERDAM TO OSLO																										
55,000	-56.5	-58	-1	2	4	-53	4	6	8	-48	9	11	12	-57	-0	3	4	-54	3	6	8	5	4	3	4	495 N.MI.
40,000	-56.5	-59	-2	2	4	-54	3	7	10	-50	7	11	13	-56	0	4	6	-54	2	7	9	6	4	3	5	
30,000	-44.5	-52	-7	-5	-3	-49	-4	-2	-0	-42	3	5	6	-45	-1	2	3	-47	-3	1	3	6	4	4	5	
20,000	-21.2	-29	-8	-4	-2	-25	-3	-0	2	-16	5	8	9	-20	1	4	6	-22	-1	3	5	6	5	4	5	
10,000	-4.6	-13	-8	-4	-2	-9	-4	-1	1	-0	4	6	8	-5	-1	2	4	-7	-2	1	3	6	5	3	5	
AMSTERDAM TO PARIS																										
55,000	-56.5	-57	-1	3	5	-54	3	5	7	-51	6	8	10	-58	-1	1	3	-55	2	5	7	5	4	4	4	220 N.MI.
40,000	-56.5	-58	-2	2	4	-56	1	5	8	-51	5	9	11	-56	0	3	5	-55	1	5	8	6	4	4	5	
30,000	-44.5	-50	-6	-3	-2	-45	-3	-1	1	-41	4	6	8	-44	1	3	5	-46	-1	2	4	6	4	4	5	
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	7	9	11	-18	3	6	8	-20	1	5	6	6	5	3	5	
10,000	-4.6	-10	-5	-2	0	-6	-1	1	3	2	6	8	10	-2	2	5	7	-4	0	4	6	5	4	3	4	
AMSTERDAM TO PRAGUE																										
55,000	-56.5	-56	0	3	5	-54	3	5	7	-50	7	9	10	-58	-1	2	3	-54	2	5	7	5	4	3	4	381 N.MI.
40,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	5	9	11	-56	0	3	5	-55	1	5	8	6	4	4	5	
30,000	-44.5	-51	-7	-4	-2	-48	-4	-1	0	-41	4	6	8	-44	0	3	5	-46	-1	2	4	6	4	4	5	
20,000	-21.2	-27	-6	-2	-0	-23	-2	1	3	-14	7	9	10	-18	3	6	8	-21	0	4	6	6	5	3	5	
10,000	-4.6	-12	-7	-3	-1	-7	-2	1	2	1	6	8	9	-3	1	4	6	-5	-1	3	5	6	4	3	5	
AMSTERDAM TO ROME																										
55,000	-56.5	-56	0	3	5	-55	2	4	6	-53	3	6	7	-59	-2	0	2	-								

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	D75	D85	50	050	D75	D85	50	050	D75	D85	50	050	D75	D85	50	050	D75	D85						
AMSTERDAM TO SAN FRANCISCO																											
53,000	-56.5	-58	-1	3	5	-51	6	8	10	-49	8	10	11	-55	1	4	5	-53	3	6	8	6	4	3	4	4740 N.MI.	
40,000	-56.5	-58	0	5	7	-52	5	9	11	-49	7	10	12	-53	4	7	9	-53	4	8	10	6	6	5	5		
30,000	-44.5	-53	-9	-6	-5	-49	-5	-2	-1	-43	2	4	5	-47	-3	0	2	-48	-4	-0	2	4	4	4	4		
20,000	-21.2	-33	-12	-7	-5	-28	-7	-3	-1	-17	4	7	8	-24	-3	1	3	-25	-4	0	2	6	5	4	6		
10,000	-4.6	-18	-13	-9	-7	-13	-8	-4	-3	-1	3	6	7	-9	-4	-1	2	-10	-6	-1	1	6	5	4	6		
AMSTERDAM TO SHANNON																											
53,000	-56.5	-58	-1	2	4	-53	5	6	7	-50	7	9	11	-57	-1	2	4	-54	2	6	7	5	4	4	4	500 N.MI.	
40,000	-56.5	-58	-1	3	5	-55	2	6	9	-51	6	10	12	-56	0	4	6	-55	2	4	9	6	7	6	5		
30,000	-44.5	-50	-6	-3	-2	-47	-3	-0	1	-41	3	6	7	-44	0	3	4	-46	-1	2	4	4	4	4	4		
20,000	-21.2	-26	-5	-1	1	-23	-2	2	3	-15	6	9	10	-19	2	6	8	-21	1	4	6	6	5	3	5		
10,000	-4.6	-9	-5	-1	0	-7	-2	1	2	1	5	7	9	-3	2	5	6	-5	0	3	5	5	4	3	4		
AMSTERDAM TO SOFIA																											
53,000	-56.5	-54	0	4	5	-54	2	5	6	-52	4	7	8	-58	-2	1	2	-55	1	4	6	5	4	3	4	945 N.MI.	
40,000	-56.5	-58	-1	2	4	-56	0	4	6	-51	6	9	10	-56	0	3	5	-55	1	5	7	5	5	4	4		
30,000	-44.5	-51	-7	-4	-2	-48	-3	-1	1	-39	5	8	9	-43	1	4	5	-45	-1	3	5	4	4	4	4		
20,000	-21.2	-27	-6	-2	0	-22	-1	2	4	-13	8	10	11	-17	4	7	8	-20	1	5	7	5	4	3	4		
10,000	-4.6	-11	-7	-3	-1	-6	-1	2	3	2	7	9	10	-2	2	5	7	-4	0	4	6	5	4	3	4		
AMSTERDAM TO SONDASTROMFJORD																											
53,000	-56.5	-54	-1	2	4	-50	7	10	11	-46	11	13	14	-54	2	5	6	-52	5	8	10	6	4	3	4	1415 N.MI.	
40,000	-56.5	-57	-0	4	7	-50	6	11	13	-47	9	13	15	-53	4	7	9	-52	5	9	12	7	7	5	6		
30,000	-44.5	-53	-8	-6	-4	-49	-4	-1	0	-44	1	3	5	-47	-3	0	2	-48	-4	-0	2	4	4	4	5		
20,000	-21.2	-31	-10	-6	-3	-28	-7	-3	-1	-19	3	5	7	-24	-3	1	3	-25	-4	-0	2	6	5	4	6		
10,000	-4.6	-15	-10	-7	-5	-12	-6	-4	-3	-3	1	4	5	-9	-4	-1	1	-10	-5	-2	0	5	5	3	5		
AMSTERDAM TO STOCKHOLM																											
53,000	-56.5	-57	-1	2	4	-53	4	6	8	-48	9	11	12	-57	-0	3	4	-54	3	6	8	5	4	3	4	421 N.MI.	
40,000	-56.5	-57	-0	2	4	-54	5	7	9	-50	7	10	12	-56	1	4	6	-55	2	7	9	6	6	5	5		
30,000	-44.5	-52	-8	-5	-4	-49	-5	-2	-1	-42	3	5	7	-46	-1	2	3	-47	-3	1	3	4	4	4	4		
20,000	-21.2	-30	-6	-4	-2	-25	-4	-0	1	-16	6	8	9	-20	1	4	6	-23	-1	2	5	4	5	3	5		
10,000	-4.6	-14	-9	-5	-3	-9	-4	-1	1	-0	4	7	8	-6	-1	2	4	-7	-2	1	3	6	5	3	5		
AMSTERDAM TO TEHRAN																											
53,000	-56.5	-57	-0	3	5	-55	2	4	5	-55	2	4	5	-59	-2	1	2	-56	0	3	4	5	4	3	4	2194 N.MI.	
40,000	-56.5	-57	-1	2	4	-55	1	5	7	-49	8	10	12	-56	0	3	5	-54	2	6	8	5	5	4	4		
30,000	-44.5	-51	-6	-4	-2	-46	-2	1	2	-36	8	11	12	-43	2	4	5	-44	0	4	7	4	4	4	4		
20,000	-21.2	-26	-5	-2	0	-21	1	4	5	-11	11	13	14	-17	4	7	8	-19	3	6	8	5	5	3	4		
10,000	-4.6	-11	-7	-3	-1	-4	0	3	5	5	9	11	12	-1	3	6	8	-3	2	5	7	6	5	3	4		
AMSTERDAM TO TEL AVIV-JAFFA																											
53,000	-56.5	-58	-1	2	4	-56	0	3	4	-58	-1	1	2	-60	-4	-1	0	-58	-1	1	3	4	3	3	4	1788 N.MI.	
40,000	-56.5	-57	-0	3	5	-56	0	4	6	-49	7	10	11	-56	0	3	4	-55	2	5	7	5	5	4	4		
30,000	-44.5	-50	-5	-3	-2	-46	-2	1	2	-36	9	11	12	-42	2	5	8	-44	1	5	7	4	4	3	3		
20,000	-21.2	-25	-4	-1	1	-20	1	4	5	-10	11	13	14	-14	5	8	9	-18	3	7	9	5	4	3	4		
10,000	-4.6	-9	-5	-2	-0	-4	1	4	5	5	10	12	13	0	5	7	9	-2	3	6	8	5	4	3	4		
AMSTERDAM TO VANCOUVER																											
53,000	-56.5	-58	-1	3	5	-49	8	10	12	-46	10	12	13	-54	3	5	7	-52	5	8	10	6	4	3	4	4159 N.MI.	
40,000	-56.5	-57	-0	4	6	-50	6	10	12	-48	9	12	14	-52	4	8	10	-52	5	9	11	6	6	5	5		
30,000	-44.5	-55	-10	-7	-6	-50	-6	-3	-2	-44	0	2	4	-49	-4	-1	0	-50	-5	-2	0	4	4	4	4		
20,000	-21.2	-35	-14	-10	-7	-31	-9	-6	-4	-19	2	5	6	-26	-5	-1	1	-24	-7	-2	0	6	5	4	6		
10,000	-4.6	-20	-16	-12	-10	-16	-11	-7	-5	-4	1	5	5	-12	-7	-5	-2	-15	-8	-4	-2	6	5	4	5		
AMSTERDAM TO VIENNA																											
53,000	-56.5	-56	0	4	5	-54	3	5	7	-50	6	9	10	-54	-1	1	3	-55	2	5	7	5	4	3	4	517 N.MI.	
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	9	10	-56	0	3	5	-55	1	5	7	5	6	5	5		
30,000	-44.5	-51	-7	-4	-2	-48	-4	-1	0	-40	4	7	8	-44	1	3	5	-46	-1	2	4	4	4	4	4		
20,000	-21.2	-27	-6	-2	0	-23	-1	2	3	-14	7	9	11	-18	5	6	8	-20	1	4	6	6	4	3	5		
10,000	-4.6	-12	-7	-3	-1	-7	-2	1	3	2	6	8	10	-5	2	5	7	-5	-0	3	5	6	4	3	5		
AMSTERDAM TO ZURICH																											
53,000	-56.5	-57	-0	3	5	-54	2	5	6	-51	5	8	9	-58	-1	1	3	-55	2	5	7	5	4	4	4	326 N.MI.	
40,000	-56.5	-58	-2	2	4	-56	0	5	7	-52	5	8	10	-56	0	3	5	-56	1	5	7	6	6	5	5		
30,000	-44.5	-50	-6	-3	-2	-48	-3	-1	1	-40	4	7	8	-44	1	3	5	-46	-1	2	4	4	4	4	4		
20,000	-21.2	-27	-5	-2	1	-22	-1	2	4	-14	7	10	11	-18	3	6	8	-20	1	5	7	6	4	3	5		
10,000	-4.6	-10	-6	-2	-0	-6	-1	1	3	2	7	9	10	-2	2	5	7	-4	0	4	6	6	4	3	5		
ANCHORAGE TO COPENHAGEN																											
53,000	-56.5	-60	-4	0	2	-44	4	11	12	-44	13	14	15	-53	4	6	7	-51	5	8	10	5	4	2	3	3745 N.MI.	
40,000	-56.5	-58	-2	2	4	-49	8	11	13	-46	11	14	16	-52	4	7	9	-51	5	9	12	5	5	4	4		
30,000	-44.5	-57	-12	-10	-8	-51	-8	-5	-4	-45	-1	2	3	-52	-7	-5	-3	-52	-7	-3	-2	4	4	3	4		
20,000	-21.2	-36	-15	-11	-9	-34	-12	-9	-8	-20	1	3	4	-30	-9	-6	-4	-30	-9	-4	-2	5	5	4	5		
10,000	-4.6	-22	-17	-13	-11	-19	-14	-10	-9	-5	-0	2	3	-15	-11	-8	-6	-15	-11	-6	-4	6	5	3	5		
ANCHORAGE TO EDMONTON																											
53,000	-56.5	-53	5	7	9	-50	6	9	10	-48	8	10	11	-55	4	6	7	-51	5	8	9	6	4	3	4	1245 N.MI.	
40,000	-56.5	-54	2	7	9	-52	5	8	10	-51	6	9	11	-53	4	7	9	-52	4	8	10	6	5	5	5		
30,000	-44.5	-53	-8	-5	-4	-51	-6	-4	-2	-44	1	3	4	-48	-4	-1	1	-49	-4	-1	1	4	4	3	4		
20,000	-21.2	-32	-11	-6	-4	-28	-7	-4	-2	-17	4	7	8	-25	-4	0	2	-25	-4	-0	2	7	5	4	6		
10,000	-4.6	-17	-13	-8	-5	-12	-8	-5	-3	-1	3	6	7	-9	-4	-1	0	-10	-5	-1	1	7	4	3	5		
ANCHORAGE TO FRANKFURT																											
53,000	-56.5	-60	-5	0	2	-48	4	11	12	-44	12	14	15	-53	3	5	7	-51	5	8	10	5	4	2	3	4049 N.MI.	
40,000	-56.5	-58	-2	2	4	-49	7	11	13	-46	11	14	15	-52	4	7	9	-52	5	9	11	6	5	5	4		
30,000	-44.5	-56	-12	-9	-8	-52	-8	-5	-3	-45	-0	2	3	-51	-6	-4	-2	-51	-7	-3	-1	4	4	3	4		
20,000	-21.2	-35	-14	-10	-8	-33	-11	-8	-7	-20	1	3	5	-29	-8	-5	-3	-29	-8	-4	-1	5	5	4	5		
10,000	-4.6	-21	-16	-12	-10	-18	-13	-9	-8	-5	-0	2	3	-14	-10	-7	-5	-14	-10	-5	-3	6	5	3	5		
ANCHORAGE TO GENEVA																											
53,000	-56.5	-59	-5	1	3	-49	8	11	12	-45	12	1															

EXTRITE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

FLIGHT NO.	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION									
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	095	50	050	075	095	50	050	075	095	50	050	075	095	50	050	075	095						
ANCHORAGE TO HAMBURG																											
55,000	-36.5	-60	-5	0	2	-48	8	11	12	-44	15	16	15	-55	4	6	7	-51	5	8	10	5	4	2	3		
40,000	-36.5	-58	-2	2	4	-49	7	11	15	-45	11	14	15	-52	4	7	9	-51	5	9	12	6	5	4	4		
30,000	-44.5	-56	-12	-9	-8	-52	-8	-5	-5	-45	-1	2	3	-51	-7	-4	-5	-51	-7	-5	-1	4	4	5	4		
20,000	-21.2	-56	-14	-11	-9	-55	-12	-9	-7	-20	1	5	5	-50	-8	-5	-4	-50	-9	-4	-2	5	5	4	5		
10,000	-4.6	-21	-17	-15	-11	-18	-14	-10	-8	-5	-0	2	3	-15	-10	-7	-6	-15	-10	-6	-4	6	5	5	5		
ANCHORAGE TO REKLAVIK																											
55,000	-36.5	-57	-2	2	4	-47	10	13	14	-44	15	16	15	-52	5	7	8	-50	6	9	11	6	4	2	3		
40,000	-36.5	-57	-1	3	5	-48	8	11	15	-45	11	14	16	-51	6	8	10	-50	6	10	12	6	5	4	4		
30,000	-44.5	-57	-12	-10	-8	-52	-8	-5	-5	-46	-1	1	2	-52	-8	-5	-4	-52	-7	-4	-2	4	5	3	4		
20,000	-21.2	-57	-16	-12	-11	-55	-15	-10	-8	-21	-0	2	4	-51	-10	-7	-5	-51	-10	-5	-5	5	5	4	5		
10,000	-4.6	-25	-19	-15	-15	-20	-15	-12	-10	-6	-1	1	5	-16	-12	-9	-7	-16	-12	-7	-5	6	5	4	4		
ANCHORAGE TO LONDON																											
55,000	-36.5	-59	-5	1	5	-49	9	11	15	-46	12	16	15	-55	4	6	7	-51	5	9	10	5	4	2	3		
40,000	-36.5	-58	-1	3	5	-49	7	11	15	-46	11	14	15	-52	5	7	9	-51	5	9	12	6	5	4	4		
30,000	-44.5	-56	-11	-9	-7	-52	-7	-4	-5	-45	-1	2	3	-51	-6	-4	-2	-51	-6	-3	-1	4	4	5	4		
20,000	-21.2	-55	-14	-10	-6	-55	-12	-8	-6	-20	1	5	4	-29	-8	-5	-5	-29	-8	-4	-2	5	5	4	5		
10,000	-4.6	-21	-16	-12	-10	-18	-15	-10	-8	-5	-0	2	5	-14	-10	-7	-5	-14	-10	-5	-5	6	5	5	5		
ANCHORAGE TO MISNAPDELIS																											
55,000	-36.5	-55	2	6	8	-52	5	7	9	-51	6	8	9	-55	2	4	5	-55	5	6	8	6	4	5	4		
40,000	-36.5	-58	2	6	9	-55	5	7	9	-52	5	8	10	-54	5	6	8	-55	5	7	9	6	5	5	5		
30,000	-44.5	-55	6	-6	-4	-50	-6	-5	-2	-42	5	5	6	-47	-5	0	1	-48	-4	-0	2	4	4	5	4		
20,000	-21.2	-52	-11	-7	-4	-27	-5	-2	-0	-15	6	6	9	-25	-2	2	4	-24	-5	1	3	7	5	3	5		
10,000	-4.6	-16	-15	-8	-6	-11	-6	-5	-1	1	5	8	9	-7	-5	1	5	-9	-4	0	2	7	5	4	5		
ANCHORAGE TO MONTREAL																											
55,000	-36.5	-55	2	6	8	-50	6	9	10	-49	7	10	11	-54	5	5	7	-52	5	7	9	6	4	3	4		
40,000	-36.5	-54	2	7	9	-52	5	9	10	-50	6	9	11	-52	4	8	10	-52	4	8	10	6	5	5	5		
30,000	-44.5	-54	-9	-7	-5	-51	-7	-4	-5	-45	2	4	5	-48	-4	-1	0	-49	-5	-1	1	4	4	4	4		
20,000	-21.2	-55	-14	-10	-7	-29	-4	-4	-2	-17	4	7	8	-25	-4	0	2	-26	-5	-1	2	6	5	4	6		
10,000	-4.6	-22	-17	-12	-10	-14	-16	-9	-4	-2	5	6	7	-10	-5	-1	1	-12	-7	-5	-0	7	5	4	6		
ANCHORAGE TO NEW YORK																											
55,000	-36.5	-55	1	5	7	-52	5	7	9	-51	6	8	9	-55	2	4	5	-55	5	6	8	5	4	5	4		
40,000	-36.5	-54	2	6	9	-55	4	8	10	-51	5	8	10	-53	4	7	9	-55	4	7	9	6	5	5	5		
30,000	-44.5	-55	-9	-6	-4	-50	-6	-5	-2	-42	5	5	6	-47	-5	0	1	-48	-4	-0	2	4	4	5	4		
20,000	-21.2	-55	-12	-8	-5	-27	-6	-5	-1	-16	6	6	9	-25	-2	2	4	-25	-4	1	3	6	5	4	6		
10,000	-4.6	-26	-15	-10	-8	-12	-6	-4	-5	-0	4	7	6	-8	-5	1	5	-10	-5	-1	1	7	5	4	6		
ANCHORAGE TO PARIS																											
55,000	-36.5	-59	-5	1	5	-49	6	11	12	-46	12	16	15	-55	5	6	7	-51	5	8	10	5	4	2	3		
40,000	-36.5	-58	-2	2	4	-49	7	11	15	-46	11	14	15	-52	4	7	9	-51	5	9	12	6	5	5	4		
30,000	-44.5	-56	-11	-9	-7	-52	-7	-4	-5	-45	-1	2	3	-51	-6	-4	-2	-51	-6	-3	-1	4	4	5	4		
20,000	-21.2	-55	-14	-10	-6	-52	-11	-8	-6	-20	1	5	5	-29	-8	-5	-5	-29	-8	-4	-1	5	5	4	5		
10,000	-4.6	-26	-15	-12	-10	-17	-15	-9	-7	-5	-0	2	4	-14	-9	-6	-4	-14	-9	-5	-5	6	5	5	5		
ANCHORAGE TO SEATTLE																											
55,000	-36.5	-55	5	7	9	-51	5	8	10	-50	7	9	10	-54	5	6	7	-52	5	7	9	5	4	3	4		
40,000	-36.5	-54	2	7	9	-55	4	8	10	-51	5	9	10	-53	4	7	9	-55	4	7	9	7	6	5	5		
30,000	-44.5	-51	6	-4	-2	-49	-5	-2	-1	-55	1	4	5	-47	-2	0	2	-46	-5	0	2	4	3	4	4		
20,000	-21.2	-29	-8	-4	-1	-27	-6	-2	-0	-16	5	8	9	-24	-2	1	5	-24	-5	2	4	6	5	4	5		
10,000	-4.6	-15	-9	-4	-2	-11	-7	-4	-2	-1	4	6	6	-4	-5	0	2	-8	-4	0	2	6	4	5	5		
ANCHORAGE TO SHANNON																											
55,000	-36.5	-59	-2	2	4	-49	9	12	15	-46	12	16	15	-52	4	6	7	-51	6	9	11	6	4	3	5		
40,000	-36.5	-57	-1	3	5	-49	7	11	15	-46	11	14	15	-52	5	8	10	-51	6	10	12	6	5	5	4		
30,000	-44.5	-56	-11	-9	-7	-52	-7	-4	-2	-45	-1	2	3	-51	-6	-4	-2	-51	-6	-3	-1	4	4	4	4		
20,000	-21.2	-55	-14	-10	-6	-55	-12	-8	-6	-21	1	5	5	-29	-8	-5	-5	-29	-8	-4	-2	5	5	4	5		
10,000	-4.6	-21	-16	-15	-11	-14	-15	-10	-8	-5	-0	2	3	-14	-10	-7	-5	-15	-10	-6	-5	6	5	5	5		
ANCHORAGE TO SONDHSTROMFJORD																											
55,000	-36.5	-59	-5	1	5	-47	10	15	14	-44	12	14	15	-51	5	7	8	-50	6	9	11	6	4	2	3		
40,000	-36.5	-57	-0	4	6	-49	6	11	15	-46	10	15	15	-51	4	8	10	-51	6	10	12	6	5	5	4		
30,000	-44.5	-57	-12	-10	-8	-55	-8	-5	-4	-45	-1	1	2	-52	-6	-5	-5	-52	-7	-4	-2	4	4	5	4		
20,000	-21.2	-54	-17	-14	-12	-55	-15	-10	-8	-21	1	5	4	-51	-10	-7	-5	-51	-10	-5	-5	5	5	4	5		
10,000	-4.6	-26	-21	-17	-15	-20	-16	-12	-10	-5	-1	2	5	-17	-12	-9	-7	-17	-12	-7	-5	6	5	4	5		
ANCHORAGE TO TOKYO																											
55,000	-36.5	-59	7	11	15	-51	6	9	10	-51	5	8	9	-52	4	7	8	-51	6	9	11	5	4	4	4		
40,000	-36.5	-57	5	8	10	-51	5	9	11	-50	7	11	15	-52	5	8	10	-51	5	9	12	5	6	5	5		
30,000	-44.5	-51	-7	-4	-2	-54	-4	-1	0	-54	7	10	12	-46	-1	1	5	-45	-1	3	6	4	4	5	4		
20,000	-21.2	-50	-9	-5	-5	-26	-5	-2	0	-12	9	11	15	-24	-2	1	5	-23	-2	3	5	6	5	4	5		
10,000	-4.6	-16	-11	-7	-5	-12	-8	-4	-4	-2	7	9	10	-9	-4	-1	1	-9	-4	0	5	6	5	5	4		
ANCHORAGE TO ZURICH																											
55,000	-36.5	-54	-5	0	2	-49	8	11	12	-44	12	14	15	-55	5	5	6	-51	5	8	10	5	4	2	3		
40,000	-36.5	-58	-2	2	4	-50	7	10	12	-46	10	15	15	-55	4	7	8	-52	5	9	11	6	5	5	4		
30,000	-44.5	-56	-11	-9	-7	-52	-7	-4	-5	-45	-0	2	3	-51	-6	-4	-2	-51	-6	-5	-1	4	4	5	4		
20,000	-21.2	-55	-14	-10	-6	-52	-11	-8	-6	-20	1	4	5	-29	-7	-4	-5	-29	-8	-5	-1	5	5	4	5		
10,000	-4.6	-20	-16	-12	-10	-17	-12	-9	-7	-4	0	2	4	-14	-9	-6	-4	-14	-9	-5	-5	6	5	5	5		
ANKARA TO ATHENS																											
55,000	-36.5	-57	-1	2	5	-57	-0	2	5	-62	-6	-5	-2	-61	-5	-2	-1	-59	-5	-0	1	4	5	5	5		
40,000	-36.5	-56	0	3	5	-57	-0	3	5	-67	9	11	12	-56	0	2	5	-54	2	6	8	5	5	5	5		
30,000	-44.5	-50	-5	-5	-2	-54	-1	1	2	-54	11	15	14	-41	5	5	6	-45	2	6	8	5	3	3	3		
20,000	-21.2	-24	-5	-0	1	-20	2	4	6	-9	12	14	15	-15	6	8	9	-17	4	6	10	4	4	5	5		
10,000	-4.6	-9	-4	-1	0	-5	2	5	6	7	11	15	14	2	6	8	10	-1	4	7	9	4	4	5	5		
ANKARA TO BAGHDAD																											
55,000	-36.5	-60	-5	-0	1	-58	-2	0	1	-66	-10	-8	-7	-62	-6	-3	-2	-62	-5	-2	-1	4	3	5	4		
40,000	-36.5	-56	1	4	5	-55	1	5	6	-66	10	12	15	-56	0	3	4	-55	5	7	8	4	5	5	5		
30,000																											

* (D) -- DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION															
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT				
		50	050	075	UMS	50	050	075	OMS	50	050	075	OMS	50	050	075	OMS	50	050	075	OMS								
ANKARA TO BARCELONA																													
55,000	-56.5	-57	-0	3	5	-56	0	3	4	-59	-2	0	1	-60	-4	-1	-0	-55	-1	1	3	5	4	3	3	3	3	3	3
40,000	-56.5	-57	-1	3	5	-57	-1	3	5	-50	7	9	10	-56	0	2	4	-55	1	5	7	5	5	4	4	4	4	4	
30,000	-44.5	-50	-5	-3	-1	-46	-2	1	2	-36	8	10	12	-42	3	5	7	-48	1	5	7	4	4	3	4	4	4	4	
20,000	-21.2	-24	-5	-0	1	-20	1	4	5	-10	11	13	14	-16	6	8	9	-18	4	7	9	4	4	3	3	3	3	3	
10,000	-4.6	-8	-4	-1	1	-5	2	4	6	6	10	13	14	0	5	7	9	-1	3	7	9	4	4	3	3	3	3	3	
ANKARA TO BASLE																													
55,000	-56.5	-56	0	4	5	-55	1	4	5	-55	2	4	5	-59	-3	-0	1	-56	0	3	4	5	4	3	4	4	4	4	
40,000	-56.5	-57	-1	2	4	-57	-0	3	5	-50	7	9	11	-56	0	3	4	-55	1	5	7	5	5	4	4	4	4	4	
30,000	-44.5	-51	-6	-4	-2	-47	-2	0	2	-38	7	9	11	-43	2	4	6	-44	0	4	6	4	4	3	4	4	4	4	
20,000	-21.2	-26	-5	-2	0	-21	0	3	5	-12	10	12	13	-17	5	7	9	-19	2	6	8	5	4	3	4	4	4	4	
10,000	-4.6	-11	-6	-3	-1	-5	-0	3	4	4	8	11	12	-1	4	6	8	-3	1	5	7	5	4	3	4	4	4	4	
ANKARA TO BASRA																													
55,000	-56.5	-61	-4	-2	-0	-60	-3	-1	0	-68	-11	-9	-8	-63	-7	-4	-3	-63	-6	-4	-2	4	3	3	3	3	3	3	
40,000	-56.5	-55	1	4	6	-55	1	5	7	-46	10	12	13	-56	1	3	4	-53	3	7	9	4	5	3	3	3	3	3	
30,000	-44.5	-47	-5	-1	1	-43	1	3	5	-28	16	18	19	-40	5	7	8	-40	5	9	11	3	3	3	3	3	3	3	
20,000	-21.2	-22	-0	2	3	-17	4	6	8	-5	17	19	20	-13	8	10	11	-14	7	11	13	4	4	3	3	3	3	3	
10,000	-4.6	-6	-1	2	3	1	5	8	9	12	16	18	19	4	9	11	12	3	7	11	13	4	4	3	3	3	3	3	
ANKARA TO BEIRUT																													
55,000	-56.5	-59	-5	-0	1	-58	-2	1	2	-66	-9	-7	-6	-62	-6	-3	-2	-61	-5	-2	-1	4	3	3	3	3	3	3	
40,000	-56.5	-56	1	4	5	-56	1	4	6	-47	10	12	13	-56	0	2	4	-54	3	6	8	4	5	3	3	3	3	3	
30,000	-44.5	-49	-4	-2	-1	-45	-0	2	3	-30	14	16	17	-41	4	6	7	-41	3	8	10	3	3	3	3	3	3	3	
20,000	-21.2	-23	-2	1	2	-14	3	5	7	-7	15	17	18	-14	7	9	10	-15	6	9	11	4	4	3	3	3	3	3	
10,000	-4.6	-7	-5	0	2	-1	4	6	8	9	14	15	16	3	8	10	11	1	6	9	11	4	4	3	3	3	3	3	
ANKARA TO BELEM																													
55,000	-56.5	-64	-15	-10	-9	-68	-12	-10	-9	-70	-15	-11	-10	-71	-14	-12	-11	-69	-13	-11	-10	3	3	3	3	3	3	3	
40,000	-56.5	-55	1	4	5	-55	1	4	6	-52	5	6	7	-55	2	4	5	-54	2	4	6	4	4	2	3	3	3	3	
30,000	-44.5	-41	4	5	6	-37	7	9	9	-34	11	12	13	-36	9	10	11	-37	8	10	11	2	2	2	2	2	2	2	
20,000	-21.2	-14	7	9	10	-12	10	11	12	-7	14	15	16	-9	12	13	14	-11	11	12	14	5	3	2	2	2	2	2	
10,000	-4.6	2	7	9	10	4	9	11	12	10	14	16	16	7	11	13	13	6	10	12	14	3	3	2	2	2	2	2	
ANKARA TO BOMBAY																													
55,000	-56.5	-66	-9	-7	-5	-65	-8	-6	-5	-71	-14	-12	-10	-68	-12	-9	-8	-67	-11	-8	-6	4	4	4	4	4	4	4	
40,000	-56.5	-55	2	5	6	-54	3	6	8	-47	10	12	14	-55	2	4	6	-53	4	8	10	4	5	4	4	4	4	4	
30,000	-44.5	-42	2	5	6	-39	5	8	9	-27	17	19	20	-17	8	10	11	-17	8	12	14	4	4	3	3	3	3	3	
20,000	-21.2	-17	4	6	7	-13	8	11	12	-5	16	20	21	-11	11	13	14	-11	10	14	15	4	3	3	3	3	3	3	
10,000	-4.6	-1	3	6	7	5	9	12	15	14	18	20	21	6	11	13	14	6	10	14	15	4	3	2	3	3	3	3	
ANKARA TO BRUSSELS																													
55,000	-56.5	-56	0	4	5	-55	2	4	6	-54	5	5	6	-59	-2	0	2	-56	1	4	5	5	4	3	4	4	4	4	
40,000	-56.5	-58	-1	2	4	-56	0	4	6	-50	7	9	11	-56	0	3	4	-55	1	5	7	5	5	4	4	4	4	4	
30,000	-44.5	-51	-7	-4	-3	-47	-3	-0	1	-38	6	9	10	-43	2	4	5	-45	-0	3	5	4	4	3	4	4	4	4	
20,000	-21.2	-26	-5	-2	-0	-22	-0	3	4	-12	9	11	12	-17	4	7	8	-19	2	5	7	5	4	3	4	4	4	4	
10,000	-4.6	-11	-7	-5	-1	-5	-1	2	4	5	8	10	11	-2	5	6	7	-4	1	4	6	5	4	3	4	4	4	4	
ANKARA TO BUDAPEST																													
55,000	-56.5	-56	1	4	5	-55	1	4	5	-55	1	4	5	-59	-3	-0	1	-56	0	3	4	5	4	3	4	4	4	4	
40,000	-56.5	-57	-1	2	4	-56	0	4	5	-49	9	10	12	-56	0	3	4	-55	2	6	8	5	5	4	4	4	4	4	
30,000	-44.5	-51	-7	-4	-3	-47	-2	0	2	-37	8	10	11	-45	2	4	6	-45	0	4	6	4	4	3	4	4	4	4	
20,000	-21.2	-26	-5	-2	-0	-21	0	3	5	-11	10	12	13	-17	5	7	8	-19	2	6	8	5	5	3	4	4	4	4	
10,000	-4.6	-11	-7	-4	-2	-5	0	3	5	4	9	11	12	-1	4	6	8	-3	1	5	7	5	5	3	4	4	4	4	
ANKARA TO CAIRO																													
55,000	-56.5	-61	-5	-2	-1	-59	-3	-1	0	-67	-11	-9	-8	-63	-7	-5	-3	-63	-6	-4	-2	4	3	3	3	3	3	3	
40,000	-56.5	-55	1	4	6	-56	1	4	6	-47	10	12	13	-56	0	3	4	-54	3	6	8	4	5	3	3	3	3	3	
30,000	-44.5	-47	-5	-1	0	-44	1	3	4	-29	15	17	18	-40	4	6	7	-40	4	9	11	3	3	3	3	3	3	3	
20,000	-21.2	-21	-0	2	4	-14	4	6	8	-6	15	17	18	-13	8	9	10	-15	7	10	12	4	4	3	3	3	3	3	
10,000	-4.6	-6	-1	1	3	-0	4	7	8	10	14	16	17	4	9	11	12	2	7	10	11	4	4	2	3	3	3	3	
ANKARA TO COPENHAGEN																													
55,000	-56.5	-56	1	4	5	-54	2	5	6	-52	5	7	8	-58	-1	1	2	-55	2	4	6	5	4	3	4	4	4	4	
40,000	-56.5	-58	-1	2	4	-55	1	5	6	-49	7	10	11	-56	0	3	4	-55	2	6	8	5	5	4	4	4	4	4	
30,000	-44.5	-52	-7	-5	-3	-48	-5	-1	1	-39	6	8	10	-44	1	3	5	-45	-1	5	7	4	4	3	4	4	4	4	
20,000	-21.2	-27	-6	-3	-1	-22	-1	2	4	-15	8	10	12	-18	3	6	8	-20	1	5	7	5	5	3	4	4	4	4	
10,000	-4.6	-13	-8	-4	-2	-6	-2	2	3	2	7	9	10	-3	2	5	6	-5	-0	3	5	5	5	3	4	4	4	4	
ANKARA TO DHAMRAN																													
55,000	-56.5	-63	-6	-4	-3	-62	-5	-3	-2	-69	-11	-10	-9	-65	-9	-6	-5	-65	-8	-5	-4	4	3	3	3	3	3	3	
40,000	-56.5	-55	2	4	6	-55	2	5	7	-46	10	12	13	-55	1	3	4	-54	4	7	9	4	5	3	3	3	3	3	
30,000	-44.5	-46	-1	1	2	-42	5	5	6	-28	17	19	20	-19	6	8	9	-18	6	10	12	3	3	3	3	3	3	3	
20,000	-21.2	-20	1	4	5	-16	5	8	9	-4	17	19	20	-12	9	11	12	-13	8	12	14	3	3	3	3	3	3	3	
10,000	-4.6	-4	1	3	5	2	7	9	10	15	17	19	20	5	10	12	13	4	9	12	14	4	4	2	3	3	3	3	
ANKARA TO DUSSELDORF																													
55,000	-56.5	-56	1	4	5	-55	2	4	6	-53	3	5	7	-59	-2	0	2	-56	1	4	5	5	4	3	4	4	4	4	
40,000	-56.5	-58	-1	2	4	-56	0	4	6	-50	7	10	11	-56	0	3	4	-55	2	5	7	5	5	4	4	4	4	4	
30,000	-44.5	-51	-7	-4	-3	-47	-5	-0	1	-38	6	9	10	-43	2	4	5	-45	-0	3	5	4	4	3	4	4	4	4	
20,000	-21.2	-27	-5	-2	-0	-22	-0	3	4	-12	9	11	12	-17	4	7	8	-19	2	5	7	5	5	3	4	4	4	4	
10,000	-4.6	-12	-7	-4	-2	-5	-1	2	4	5	8	10	11	-2	5	6	7	-4	1	4	6	5	5	3	4	4	4	4	
ANKARA TO FRANKFURT																													
55,000	-56.5	-56	1	4	5	-55	2	4	5	-54	3	5	6	-59	-2	0	2	-56	1	3	5	5	4	3	4	4	4	4	
40,000	-56.5</																												

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85				
ANKARA TO ISTANBUL																	
55,000	-56.5	-57	-0	5	4	-56	1	5	4	-60	-4	-1	-0	-58	-2	1	2
40,000	-56.5	-57	-0	5	5	-56	0	4	6	-47	9	11	12	-54	2	6	8
30,000	-56.5	-57	-0	5	5	-56	-1	1	2	-54	10	13	14	-42	3	5	8
20,000	-56.5	-57	-0	5	5	-56	-1	1	2	-54	10	13	14	-42	3	5	8
10,000	-56.5	-57	-0	5	5	-56	-1	1	2	-54	10	13	14	-42	3	5	8
ANKARA TO LONDON																	
55,000	-56.5	-56	0	4	5	-55	2	4	6	-55	3	6	7	-56	1	4	5
40,000	-56.5	-56	-1	2	4	-56	0	4	6	-50	6	9	11	-54	0	5	4
30,000	-56.5	-56	-1	2	4	-56	0	4	6	-50	6	9	11	-54	0	5	4
20,000	-56.5	-56	-1	2	4	-56	0	4	6	-50	6	9	11	-54	0	5	4
10,000	-56.5	-56	-1	2	4	-56	0	4	6	-50	6	9	11	-54	0	5	4
ANKARA TO NAHOMI																	
55,000	-56.5	-57	-1	5	4	-56	0	5	4	-59	-2	0	1	-60	-4	-2	-0
40,000	-56.5	-57	-1	5	5	-57	-1	5	5	-50	6	9	10	-54	0	5	4
30,000	-56.5	-57	-1	5	5	-57	-1	5	5	-50	6	9	10	-54	0	5	4
20,000	-56.5	-57	-1	5	5	-57	-1	5	5	-50	6	9	10	-54	0	5	4
10,000	-56.5	-57	-1	5	5	-57	-1	5	5	-50	6	9	10	-54	0	5	4
ANKARA TO MOSCOW																	
55,000	-56.5	-56	1	4	6	-54	5	5	6	-51	5	7	8	-57	-1	2	3
40,000	-56.5	-56	1	4	6	-54	5	5	6	-51	5	7	8	-57	-1	2	3
30,000	-56.5	-56	1	4	6	-54	5	5	6	-51	5	7	8	-57	-1	2	3
20,000	-56.5	-56	1	4	6	-54	5	5	6	-51	5	7	8	-57	-1	2	3
10,000	-56.5	-56	1	4	6	-54	5	5	6	-51	5	7	8	-57	-1	2	3
ANKARA TO MOKDEN																	
55,000	-56.5	-55	4	7	9	-52	5	7	9	-50	6	9	11	-54	2	5	6
40,000	-56.5	-57	-0	5	5	-52	5	7	9	-48	9	12	14	-53	3	7	9
30,000	-56.5	-57	-0	5	5	-52	5	7	9	-48	9	12	14	-53	3	7	9
20,000	-56.5	-57	-0	5	5	-52	5	7	9	-48	9	12	14	-53	3	7	9
10,000	-56.5	-57	-0	5	5	-52	5	7	9	-48	9	12	14	-53	3	7	9
ANKARA TO NAIJURI																	
55,000	-56.5	-72	-15	-11	-12	-71	-14	-12	-11	-71	-17	-15	-14	-73	-16	-14	-13
40,000	-56.5	-54	2	4	5	-55	5	6	7	-50	7	9	11	-53	5	5	5
30,000	-56.5	-54	2	4	5	-55	5	6	7	-50	7	9	11	-53	5	5	5
20,000	-56.5	-54	2	4	5	-55	5	6	7	-50	7	9	11	-53	5	5	5
10,000	-56.5	-54	2	4	5	-55	5	6	7	-50	7	9	11	-53	5	5	5
ANKARA TO PARIS																	
55,000	-56.5	-56	0	4	5	-55	2	4	5	-54	2	4	5	-56	0	5	5
40,000	-56.5	-56	-1	2	4	-57	-0	1	5	-50	6	9	11	-54	0	5	4
30,000	-56.5	-56	-1	2	4	-57	-0	1	5	-50	6	9	11	-54	0	5	4
20,000	-56.5	-56	-1	2	4	-57	-0	1	5	-50	6	9	11	-54	0	5	4
10,000	-56.5	-56	-1	2	4	-57	-0	1	5	-50	6	9	11	-54	0	5	4
ANKARA TO ROME																	
55,000	-56.5	-56	0	5	5	-56	1	5	4	-59	-2	-0	1	-60	-4	-1	-0
40,000	-56.5	-57	-0	5	5	-57	-1	5	5	-49	8	10	11	-56	0	5	4
30,000	-56.5	-57	-0	5	5	-57	-1	5	5	-49	8	10	11	-56	0	5	4
20,000	-56.5	-57	-0	5	5	-57	-1	5	5	-49	8	10	11	-56	0	5	4
10,000	-56.5	-57	-0	5	5	-57	-1	5	5	-49	8	10	11	-56	0	5	4
ANKARA TO STOCKHOLM																	
55,000	-56.5	-56	0	5	5	-54	5	5	7	-51	6	8	9	-57	-1	2	3
40,000	-56.5	-56	-2	2	5	-55	2	5	7	-49	7	10	12	-56	1	4	5
30,000	-56.5	-56	-2	2	5	-55	2	5	7	-49	7	10	12	-56	1	4	5
20,000	-56.5	-56	-2	2	5	-55	2	5	7	-49	7	10	12	-56	1	4	5
10,000	-56.5	-56	-2	2	5	-55	2	5	7	-49	7	10	12	-56	1	4	5
ANKARA TO TEHRAN																	
55,000	-56.5	-59	-2	1	2	-58	-1	1	2	-65	-8	-6	-5	-61	-5	-2	-1
40,000	-56.5	-56	1	4	5	-55	1	5	7	-46	10	12	13	-54	0	5	4
30,000	-56.5	-56	1	4	5	-55	1	5	7	-46	10	12	13	-54	0	5	4
20,000	-56.5	-56	1	4	5	-55	1	5	7	-46	10	12	13	-54	0	5	4
10,000	-56.5	-56	1	4	5	-55	1	5	7	-46	10	12	13	-54	0	5	4
ANKARA TO TEL AVIV-JAFFA																	
55,000	-56.5	-60	-4	1	0	-57	-2	-0	1	-67	-10	-8	-7	-63	-6	-4	-3
40,000	-56.5	-56	1	4	5	-54	1	4	6	-47	10	12	13	-54	0	5	4
30,000	-56.5	-56	1	4	5	-54	1	4	6	-47	10	12	13	-54	0	5	4
20,000	-56.5	-56	1	4	5	-54	1	4	6	-47	10	12	13	-54	0	5	4
10,000	-56.5	-56	1	4	5	-54	1	4	6	-47	10	12	13	-54	0	5	4
ANKARA TO VIENNA																	
55,000	-56.5	-56	1	4	5	-55	2	4	5	-55	2	4	5	-56	0	5	4
40,000	-56.5	-57	-1	2	4	-56	0	4	5	-49	8	10	11	-54	0	5	4
30,000	-56.5	-57	-1	2	4	-56	0	4	5	-49	8	10	11	-54	0	5	4
20,000	-56.5	-57	-1	2	4	-56	0	4	5	-49	8	10	11	-54	0	5	4
10,000	-56.5	-57	-1	2	4	-56	0	4	5	-49	8	10	11	-54	0	5	4
ANKARA TO WARSAW																	
55,000	-56.5	-56	1	4	5	-54	2	4	6	-53	4	6	7	-58	-2	1	2
40,000	-56.5	-56	1	4	5	-54	2	4	6	-53	4	6	7	-58	-2	1	2
30,000	-56.5	-56	1	4	5	-54	2	4	6	-53	4	6	7	-58	-2	1	2
20,000	-56.5	-56	1	4	5	-54	2	4	6	-53	4	6	7	-58	-2	1	2
10,000	-56.5	-56	1	4	5	-54	2	4	6	-53	4	6	7	-58	-2	1	2
ANKARA TO ZURICH																	
55,000	-56.5	-56	0	4	5	-55	1	4	5	-55	1	4	5	-56	0	5	4
40,000	-56.5	-57	-1	2	4	-57	-0	5	5	-50	7	9	11	-56	0	5	4
30,000	-56.5	-57	-1	2	4	-57	-0	5	5	-50	7	9	11	-56	0	5	4
20,000	-56.5	-57	-1	2	4	-57	-0	5	5	-50	7	9	11	-56	0	5	4
10,000	-56.5	-57	-1	2	4	-57	-0	5	5	-50	7	9	11	-56	0	5	4

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY				APRIL				JULY				OCTOBER			
		50	050	075	085	50	050	075	085	50	150	075	085	50	050	075	085
ANTIGUA TO BARBAZOS																	
55,000	-56.5	-77	-21	-19	-18	-76	-21	-19	-19	-75	-16	-15	-14	-77	-20	-19	-18
40,000	-56.5	-54	5	5	6	-54	5	4	5	-55	1	2	3	-54	5	4	4
30,000	-44.5	-34	10	12	13	-35	12	13	14	-34	11	12	12	-32	13	14	14
20,000	-31.2	-7	14	15	16	-7	14	15	16	-7	14	15	16	-6	16	17	17
10,000	-4.6	8	12	14	14	9	13	14	15	9	14	14	15	9	14	15	15
ANTIGUA TO BERMUDA																	
55,000	-56.5	-73	-16	-15	-14	-72	-15	-15	-12	-70	-15	-12	-11	-74	-17	-15	-14
40,000	-56.5	-55	1	5	5	-56	0	2	3	-56	0	1	2	-55	2	3	4
30,000	-44.5	-34	7	8	9	-37	8	9	10	-34	10	11	12	-34	11	12	13
20,000	-21.2	-10	11	12	13	-10	12	13	14	-7	14	15	16	-9	13	14	15
10,000	-4.6	5	10	11	12	5	10	11	12	8	15	15	16	8	12	13	13
ANTIGUA TO NEW YORK																	
55,000	-56.5	-70	-14	-12	-10	-68	-12	-10	-9	-64	-11	-10	-9	-71	-15	-13	-11
40,000	-56.5	-56	0	4	4	-57	-2	2	3	-56	1	2	3	-55	2	3	4
30,000	-44.5	-40	6	6	7	-39	6	7	8	-34	10	11	12	-35	9	11	12
20,000	-21.2	-14	8	10	11	-12	9	11	12	-8	14	15	16	-9	13	14	15
10,000	-4.6	2	6	9	10	5	8	10	11	8	12	13	14	8	11	12	13
ANTIGUA TO PUNTA A PITRE																	
55,000	-56.5	-77	-20	-14	-17	-77	-21	-19	-14	-72	-16	-14	-14	-77	-20	-18	-17
40,000	-56.5	-54	5	5	6	-54	2	4	5	-54	2	4	5	-54	2	4	5
30,000	-44.5	-35	10	11	12	-35	11	12	13	-34	11	12	13	-32	12	14	14
20,000	-21.2	-4	13	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	4	12	13	14	6	13	14	15	9	14	14	15	9	14	14	15
ANTIGUA TO ST. CROIX																	
55,000	-56.5	-76	-20	-14	-17	-77	-20	-14	-17	-72	-16	-14	-14	-77	-20	-18	-17
40,000	-56.5	-54	5	4	6	-54	2	4	5	-54	1	2	3	-54	5	4	4
30,000	-44.5	-35	10	11	12	-35	11	12	13	-34	11	12	13	-32	12	13	14
20,000	-21.2	-8	13	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	7	12	13	14	6	13	14	15	9	13	14	15	8	13	14	14
ARUNA TO CANALUS																	
55,000	-56.5	-74	-21	-19	-14	-74	-21	-19	-14	-75	-17	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	5	4	5	-52	4	6	6	-55	1	3	3	-54	5	4	4
30,000	-44.5	-35	11	12	13	-35	13	15	15	-35	12	13	13	-31	13	14	15
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17
10,000	-4.6	9	13	14	15	9	14	15	16	9	14	15	15	10	14	15	16
ARUNA TO KINGSTON																	
55,000	-56.5	-77	-21	-19	-16	-77	-20	-19	-16	-75	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	5	4	5	-55	4	5	5	-56	1	2	3	-54	5	4	4
30,000	-44.5	-34	10	12	12	-32	12	13	14	-35	11	12	13	-32	13	14	14
20,000	-21.2	-7	14	15	16	-6	15	16	17	-7	14	15	16	-6	16	17	17
10,000	-4.6	8	13	14	15	9	13	14	15	9	14	15	15	9	14	15	15
ARUNA TO MARACAIBO																	
55,000	-56.5	-74	-21	-19	-14	-74	-21	-19	-14	-75	-17	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	5	4	5	-52	4	6	6	-55	1	2	3	-54	5	4	4
30,000	-44.5	-35	11	12	13	-35	13	15	15	-35	12	13	13	-31	13	14	15
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17
10,000	-4.6	7	13	14	15	9	14	15	16	9	14	15	15	10	14	15	16
ARUNA TO MONTEGO BAY																	
55,000	-56.5	-77	-21	-19	-14	-77	-20	-19	-14	-75	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	5	4	5	-55	4	5	5	-56	1	2	2	-54	5	4	4
30,000	-44.5	-34	10	12	12	-32	12	13	14	-35	11	12	13	-32	13	14	14
20,000	-21.2	-7	14	15	16	-6	15	16	17	-7	14	15	16	-6	15	16	17
10,000	-4.6	8	13	14	15	9	13	14	15	9	14	15	15	9	14	15	15
ARUNA TO SAN JUAN																	
55,000	-56.5	-77	-20	-19	-14	-77	-21	-19	-14	-75	-16	-15	-14	-77	-20	-19	-18
40,000	-56.5	-54	5	4	5	-55	4	5	5	-56	1	2	3	-54	5	4	4
30,000	-44.5	-34	10	12	12	-32	12	13	14	-35	11	12	13	-32	13	14	14
20,000	-21.2	-7	14	15	16	-6	15	16	17	-7	14	15	16	-6	15	16	17
10,000	-4.6	8	12	14	14	9	13	14	15	9	14	14	15	9	14	15	15
ASUNCION TO BELEM																	
55,000	-56.5	-76	-20	-17	-16	-75	-19	-17	-16	-69	-15	-10	-9	-71	-15	-13	-12
40,000	-56.5	-55	4	6	7	-52	5	7	8	-52	4	6	7	-54	5	6	6
30,000	-44.5	-32	12	14	15	-31	13	15	16	-35	11	13	14	-32	13	15	16
20,000	-21.2	-5	16	18	19	-6	16	17	18	-10	12	13	14	-7	15	16	17
10,000	-4.6	10	14	16	16	9	14	15	16	6	11	12	13	9	14	15	16
ASUNCION TO BERMUDA																	
55,000	-56.5	-76	-20	-17	-16	-75	-19	-17	-16	-71	-14	-12	-11	-74	-17	-15	-14
40,000	-56.5	-54	5	5	6	-55	5	5	6	-54	2	4	5	-54	5	4	5
30,000	-44.5	-34	11	12	13	-35	12	13	14	-35	11	13	13	-32	13	14	15
20,000	-21.2	-7	15	16	17	-6	15	16	17	-8	13	14	15	-6	15	16	16
10,000	-4.6	8	13	14	15	8	13	14	15	8	12	13	14	9	14	15	15
ASUNCION TO BUGOTA																	
55,000	-56.5	-77	-20	-14	-17	-76	-19	-17	-14	-71	-14	-12	-10	-75	-16	-14	-13
40,000	-56.5	-55	4	5	7	-52	5	7	8	-55	5	5	6	-54	5	4	5
30,000	-44.5	-32	12	14	15	-31	13	15	16	-35	11	13	14	-32	13	14	15
20,000	-21.2	-5	16	18	19	-5	16	17	18	-9	12	13	14	-6	15	16	17
10,000	-4.6	10	14	16	16	9	14	15	16	7	11	13	14	9	14	15	16
ASUNCION TO BUENOS AIRES																	
55,000	-56.5	-67	-11	-8	-7	-67	-10	-7	-6	-61	-4	-1	0	-62	-5	-2	-1
40,000	-56.5	-55	4	7	8	-55	2	5	7	-52	5	7	9	-54	5	7	9
30,000	-44.5	-37	7	10	11	-34	7	9	10	-32	2	5	6	-37	7	10	11
20,000	-21.2	-9	12	14	15	-12	10	12	13	-18	4	6	7	-11	10	12	13
10,000	-4.6	8	13	15	16	5	10	12	13	-0	4	6	7	4	9	11	13

-00-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85				
ASUNCION TO CAPE TOWN																	
55,000	-56.5	-64	-7	-4	-3	-63	-7	-4	-3	-58	-1	2	5	-60	-5	-1	1
40,000	-56.5	-54	3	6	7	-56	1	4	5	-52	4	7	9	-54	3	6	8
30,000	-44.5	-39	6	8	9	-39	6	8	9	-34	0	3	5	-40	5	7	9
20,000	-21.2	-51	10	12	14	-14	7	10	11	-19	2	5	6	-14	8	10	11
10,000	-4.6	5	10	12	13	5	6	10	11	-2	5	5	6	2	7	9	13
ASUNCION TO CAMACAS																	
55,000	-56.5	-77	-20	-18	-17	-76	-19	-17	-16	-71	-14	-12	-11	-75	-17	-15	-14
40,000	-56.5	-55	3	5	6	-52	4	6	7	-53	3	5	6	-54	3	5	6
30,000	-44.5	-32	12	14	15	-31	13	15	16	-33	12	15	16	-31	13	15	15
20,000	-21.2	-5	16	18	18	-5	16	17	18	-9	12	15	16	-6	15	16	17
10,000	-4.6	10	14	16	16	9	14	15	16	7	12	15	16	9	14	15	16
ASUNCION TO DAKAR																	
55,000	-56.5	-77	-20	-18	-17	-76	-20	-18	-17	-71	-15	-15	-11	-74	-18	-16	-15
40,000	-56.5	-55	3	5	6	-53	4	6	7	-53	3	5	6	-53	3	5	6
30,000	-44.5	-33	12	15	16	-31	13	15	16	-33	12	15	16	-32	13	15	15
20,000	-21.2	-6	15	17	17	-6	15	17	17	-8	15	17	17	-7	15	16	17
10,000	-4.6	9	14	15	16	9	14	15	16	7	12	15	16	9	14	15	16
ASUNCION TO HAVANA																	
55,000	-56.5	-77	-20	-14	-17	-76	-19	-17	-16	-72	-15	-15	-12	-74	-18	-16	-14
40,000	-56.5	-55	3	5	6	-52	4	6	7	-54	2	4	5	-54	3	5	6
30,000	-44.5	-33	12	15	16	-32	13	16	15	-33	11	15	16	-32	13	15	15
20,000	-21.2	-6	16	17	18	-5	16	17	18	-8	15	16	16	-6	15	16	17
10,000	-4.6	9	14	15	16	9	14	15	16	8	12	14	14	9	14	15	16
ASUNCION TO HOUSTON																	
55,000	-56.5	-76	-20	-18	-17	-75	-14	-17	-16	-72	-15	-15	-12	-74	-18	-16	-14
40,000	-56.5	-54	3	4	5	-54	4	6	7	-54	2	4	5	-54	3	5	6
30,000	-44.5	-34	11	12	13	-33	12	15	16	-33	12	15	16	-33	12	15	16
20,000	-21.2	-6	15	16	17	-6	15	16	17	-8	15	16	15	-6	15	16	17
10,000	-4.6	9	13	15	15	9	13	15	16	8	13	14	14	9	13	15	15
ASUNCION TO LA PAZ																	
55,000	-56.5	-74	-14	-15	-14	-73	-17	-14	-13	-67	-11	-8	-7	-68	-11	-9	-8
40,000	-56.5	-52	4	7	8	-53	4	6	8	-52	3	7	8	-54	3	5	6
30,000	-44.5	-33	12	14	15	-34	11	15	16	-36	9	11	12	-34	11	15	16
20,000	-21.2	-6	15	17	18	-7	14	15	16	-12	9	11	12	-8	13	15	15
10,000	-4.6	9	14	15	16	8	12	14	15	4	9	10	11	7	12	14	14
ASUNCION TO LIMA																	
55,000	-56.5	-75	-18	-16	-14	-74	-18	-15	-14	-68	-12	-9	-8	-69	-12	-10	-9
40,000	-56.5	-52	4	6	8	-53	4	6	8	-52	3	5	6	-53	4	6	7
30,000	-44.5	-32	12	14	15	-33	11	15	16	-33	11	15	16	-33	11	15	16
20,000	-21.2	-6	15	17	18	-7	14	16	17	-11	10	11	12	-8	14	15	16
10,000	-4.6	9	14	15	16	8	13	14	15	5	10	11	12	8	12	14	14
ASUNCION TO LISBON																	
55,000	-56.5	-74	-17	-15	-14	-73	-16	-14	-13	-70	-14	-12	-11	-75	-16	-14	-13
40,000	-56.5	-55	2	4	5	-54	2	5	6	-53	4	5	6	-54	3	4	5
30,000	-44.5	-36	9	10	11	-34	11	12	13	-34	11	12	13	-33	11	13	14
20,000	-21.2	-9	12	14	15	-8	13	14	15	-8	13	14	15	-7	14	15	16
10,000	-4.6	7	12	13	14	7	12	13	14	8	13	14	15	8	12	14	14
ASUNCION TO LONDON																	
55,000	-56.5	-71	-15	-12	-11	-70	-15	-11	-10	-67	-11	-9	-7	-70	-14	-12	-11
40,000	-56.5	-55	1	4	5	-55	2	5	6	-53	3	5	6	-54	2	4	5
30,000	-44.5	-38	7	8	9	-36	8	10	11	-35	10	12	12	-35	10	12	13
20,000	-21.2	-11	10	12	13	-10	11	13	14	-9	12	14	15	-10	11	13	14
10,000	-4.6	5	9	11	12	5	10	11	12	7	12	13	14	7	11	13	14
ASUNCION TO LOS ANGELES																	
55,000	-56.5	-75	-19	-17	-16	-74	-18	-16	-15	-72	-15	-15	-12	-74	-18	-16	-15
40,000	-56.5	-54	2	4	6	-54	3	5	6	-54	2	4	5	-54	2	5	6
30,000	-44.5	-35	10	11	12	-34	10	12	13	-33	11	13	14	-34	10	12	13
20,000	-21.2	-8	14	15	16	-7	14	16	16	-8	13	14	15	-7	14	15	16
10,000	-4.6	8	12	14	15	9	13	15	16	9	13	14	15	9	13	15	15
ASUNCION TO MADRID																	
55,000	-56.5	-73	-17	-14	-13	-72	-16	-14	-13	-70	-14	-11	-10	-72	-16	-14	-13
40,000	-56.5	-55	2	4	5	-54	2	5	6	-53	4	5	6	-54	3	4	5
30,000	-44.5	-36	8	10	11	-34	10	12	13	-34	11	12	13	-33	11	13	14
20,000	-21.2	-9	12	15	16	-8	13	14	15	-8	13	14	15	-8	13	14	15
10,000	-4.6	7	11	13	13	7	11	13	14	8	13	14	15	8	13	14	15
ASUNCION TO MEXICO CITY																	
55,000	-56.5	-77	-20	-18	-17	-76	-20	-18	-17	-72	-16	-15	-12	-75	-18	-16	-14
40,000	-56.5	-55	3	5	6	-53	4	6	7	-54	2	4	5	-54	3	5	6
30,000	-44.5	-33	12	15	16	-32	12	14	15	-33	11	15	16	-32	13	14	15
20,000	-21.2	-6	16	17	18	-5	16	17	18	-8	15	16	17	-6	15	16	17
10,000	-4.6	9	14	15	16	9	14	15	16	8	12	14	15	9	14	15	16
ASUNCION TO MIAMI																	
55,000	-56.5	-77	-20	-18	-17	-76	-19	-17	-16	-71	-15	-15	-12	-74	-18	-16	-15
40,000	-56.5	-54	3	5	6	-52	4	6	7	-54	3	5	6	-53	3	5	6
30,000	-44.5	-33	11	13	14	-32	13	14	15	-33	11	13	14	-32	13	14	15
20,000	-21.2	-6	15	17	18	-6	16	17	18	-8	15	16	17	-6	15	16	17
10,000	-4.6	9	14	15	16	9	14	15	16	8	12	14	14	9	14	15	16
ASUNCION TO NAIROBI																	
55,000	-56.5	-76	-19	-17	-15	-75	-19	-16	-15	-69	-12	-10	-8	-71	-14	-12	-11
40,000	-56.5	-53	4	6	7	-52	4	6	7	-52	3	5	6	-53	4	6	7
30,000	-44.5	-32	12	14	15	-32	12	14	15	-34	11	13	14	-32	12	14	15
20,000	-21.2	-5	16	18	18	-6	15	16	17	-10	12	15	16	-7	14	16	17
10,000	-4.6	9	14	15	16	9	14	15	16	6	10	12	13	9	14	15	16

*D--DIFFERENCE BETWEEN INDICATED PER

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION												
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL								
		50	D50	D75	U85	50	D50	D75	U85	50	D50	D75	U85	50	D50	D75	U85	JAN	APR	JUL	OCT					
ASUNCION TO NEW ORLEANS																										
55,000	-56.5	-76	-20	-18	-17	-75	-19	-17	-16	-72	-15	-15	-12	-75	-18	-16	-15	-74	-18	-15	-14	3	5	5	3	5797 N.M.I.
40,000	-56.5	-54	3	4	5	-53	4	6	7	-54	2	4	4	-54	2	4	5	-54	3	5	6	3	5	5	2	2
30,000	-44.5	-34	11	12	13	-32	12	13	14	-33	12	13	14	-32	12	14	15	-33	12	13	14	2	2	2	2	2
20,000	-21.2	-6	15	16	17	-6	15	17	17	-8	15	14	15	-5	15	16	17	-7	15	16	17	2	2	2	2	2
10,000	-4.6	9	13	15	15	9	13	15	16	8	13	14	14	9	14	15	16	9	13	15	17	2	2	2	2	2
ASUNCION TO NEW YORK																										
55,000	-56.5	-75	-18	-16	-15	-75	-17	-15	-14	-70	-14	-12	-10	-75	-17	-15	-13	-73	-16	-14	-12	3	5	5	3	4056 N.M.I.
40,000	-56.5	-54	2	4	5	-54	3	5	6	-54	2	4	4	-54	2	4	5	-54	2	5	6	3	5	5	2	2
30,000	-44.5	-35	9	11	12	-34	11	12	13	-35	11	12	13	-35	12	13	14	-34	11	12	13	2	2	2	2	2
20,000	-21.2	-8	13	15	16	-8	14	15	16	-8	13	14	15	-7	14	16	16	-8	14	15	16	2	2	2	2	2
10,000	-4.6	7	11	13	14	7	12	13	14	8	12	13	14	8	13	14	15	7	12	14	14	2	2	2	2	2
ASUNCION TO PANAMA																										
55,000	-56.5	-77	-20	-18	-17	-76	-19	-17	-16	-71	-15	-12	-11	-75	-17	-15	-14	-74	-18	-15	-13	3	5	5	3	2424 N.M.I.
40,000	-56.5	-53	5	5	6	-52	5	7	8	-53	5	5	6	-54	5	4	5	-53	5	6	7	3	5	5	3	2
30,000	-44.5	-32	12	14	15	-31	13	15	16	-33	11	13	14	-32	13	14	15	-32	12	14	15	2	2	2	2	2
20,000	-21.2	-5	16	18	18	-5	16	17	18	-9	12	14	15	-6	15	16	17	-6	15	16	17	2	2	2	2	2
10,000	-4.6	10	14	15	16	9	14	15	16	7	12	13	14	9	14	15	16	9	13	15	16	2	2	2	2	2
ASUNCION TO QUITO																										
55,000	-56.5	-76	-20	-17	-16	-75	-19	-17	-16	-70	-14	-11	-10	-72	-15	-13	-12	-73	-17	-14	-12	3	5	5	3	1936 N.M.I.
40,000	-56.5	-53	4	6	7	-52	4	7	8	-53	4	5	6	-54	3	4	5	-53	4	6	7	3	5	4	3	3
30,000	-44.5	-32	12	14	15	-32	13	14	15	-34	11	13	14	-32	12	14	15	-32	12	14	15	2	2	2	2	2
20,000	-21.2	-5	16	18	18	-6	16	17	18	-10	11	13	14	-7	14	16	17	-7	14	16	17	2	2	2	2	2
10,000	-4.6	10	14	15	16	9	13	15	16	7	11	12	13	9	13	15	15	8	13	15	15	2	2	2	2	2
ASUNCION TO RIO DE JANEIRO																										
55,000	-56.5	-73	-16	-13	-12	-71	-15	-12	-11	-65	-8	-6	-6	-66	-9	-7	-6	-69	-12	-9	-7	4	4	4	4	795 N.M.I.
40,000	-56.5	-52	5	7	8	-53	5	6	8	-52	5	7	8	-54	5	7	8	-53	4	6	8	4	4	4	4	4
30,000	-44.5	-34	11	13	14	-35	10	12	13	-38	7	9	10	-35	9	12	13	-35	9	12	13	3	3	3	3	3
20,000	-21.2	-6	15	17	18	-9	12	14	15	-13	8	10	12	-9	12	14	15	-9	12	15	16	3	3	3	3	3
10,000	-4.6	9	14	15	16	8	12	14	15	5	8	9	10	7	12	13	14	7	11	13	14	2	2	2	2	2
ASUNCION TO SAN FRANCISCO																										
55,000	-56.5	-75	-18	-16	-15	-75	-17	-15	-14	-71	-15	-13	-12	-74	-17	-15	-14	-73	-17	-15	-13	3	5	5	3	5250 N.M.I.
40,000	-56.5	-54	2	4	6	-54	2	5	6	-54	2	4	5	-54	2	4	5	-54	2	4	6	3	5	3	2	2
30,000	-44.5	-36	9	10	11	-35	10	11	12	-35	11	13	14	-34	10	12	13	-34	10	12	13	2	2	2	2	2
20,000	-21.2	-8	13	15	16	-8	14	15	16	-8	13	15	16	-7	14	16	16	-8	13	15	16	2	2	2	2	2
10,000	-4.6	7	12	13	14	8	13	14	15	9	13	15	15	9	13	15	16	8	13	14	15	2	2	2	2	2
ASUNCION TO SAN JUAN																										
55,000	-56.5	-77	-21	-18	-17	-76	-20	-18	-17	-71	-15	-12	-11	-74	-17	-16	-14	-73	-18	-15	-14	3	5	5	3	2667 N.M.I.
40,000	-56.5	-53	5	5	6	-52	4	6	8	-54	3	4	5	-54	3	4	5	-53	3	4	7	3	5	3	3	3
30,000	-44.5	-33	12	13	14	-31	13	15	16	-33	11	13	14	-31	13	15	16	-32	12	14	15	2	2	2	2	2
20,000	-21.2	-5	16	17	18	-5	16	17	18	-9	13	14	15	-6	15	16	17	-6	15	16	17	2	2	2	2	2
10,000	-4.6	9	14	15	16	9	14	15	16	8	12	13	14	9	14	15	16	9	14	15	16	2	2	2	2	2
ASUNCION TO SANTA MARIA																										
55,000	-56.5	-74	-18	-16	-14	-74	-17	-15	-14	-70	-14	-12	-11	-73	-17	-15	-14	-73	-16	-14	-12	3	5	5	3	4154 N.M.I.
40,000	-56.5	-55	2	4	5	-54	2	5	6	-53	3	4	5	-54	3	4	5	-54	3	4	5	3	5	3	2	2
30,000	-44.5	-35	9	11	12	-35	11	13	14	-35	11	13	14	-34	11	13	14	-34	11	13	14	2	2	2	2	2
20,000	-21.2	-8	13	15	16	-8	14	15	16	-8	13	14	15	-7	14	16	16	-8	13	15	16	2	2	2	2	2
10,000	-4.6	7	12	13	14	7	12	13	14	8	12	13	14	9	13	15	15	8	12	14	15	2	2	2	2	2
ASUNCION TO SANTIAGO																										
55,000	-56.5	-68	-11	-9	-7	-67	-11	-8	-7	-61	-5	-2	-0	-62	-6	-3	-1	-65	-8	-4	-3	4	4	4	4	847 N.M.I.
40,000	-56.5	-53	4	7	8	-55	2	5	6	-52	5	7	9	-54	5	7	9	-53	5	6	8	4	5	4	4	4
30,000	-44.5	-37	7	10	11	-37	7	9	10	-42	3	5	6	-37	8	10	11	-38	6	9	10	3	5	3	3	3
20,000	-21.2	-9	13	15	16	-11	10	12	13	-18	3	6	7	-10	11	13	14	-12	9	12	13	3	5	3	3	3
10,000	-4.6	8	13	14	15	5	9	11	12	-0	4	6	7	5	8	10	11	4	9	11	13	3	5	3	3	3
ATHENS TO BANGKOK																										
55,000	-56.5	-67	-10	-8	-6	-65	-8	-6	-4	-71	-14	-11	-10	-64	-11	-9	-7	-68	-11	-8	-6	4	4	4	4	4274 N.M.I.
40,000	-56.5	-55	1	4	6	-54	2	6	7	-48	8	11	12	-55	2	4	6	-55	3	7	9	4	5	4	4	4
30,000	-44.5	-42	5	7	8	-39	6	8	10	-28	16	19	20	-36	8	10	12	-36	8	12	14	4	4	4	4	4
20,000	-21.2	-17	5	7	8	-12	7	11	12	-4	17	19	20	-10	11	13	14	-11	10	14	15	4	4	4	4	4
10,000	-4.6	-1	4	6	8	5	9	11	13	12	17	18	19	6	10	12	14	5	10	13	15	4	5	2	3	3
ATHENS TO BASKA																										
55,000	-56.5	-62	-5	-2	-1	-60	-4	-1	-0	-68	-12	-10	-9	-64	-7	-5	-4	-63	-7	-4	-3	4	5	5	3	1267 N.M.I.
40,000	-56.5	-55	1	4	6	-56	1	4	6	-46	10	12	13	-56	1	3	4	-53	3	7	8	4	5	3	3	3
30,000	-44.5	-47	-2	-0	1	-43	1	3	4	-29	16	18	19	-40	5	7	8	-40	5	9	11	3	5	3	3	3
20,000	-21.2	-21	0	3	4	-17	4	6	8	-5	16	18	19	-13	8	10	11	-14	7	11	13	4	4	3	3	3
10,000	-4.6	-5	-1	2	3	0	5	8	9	11	16	17	18	5	9	11	12	5	7	11	12	4	4	2	3	3
ATHENS TO HEIRUT																										
55,000	-56.5	-60	-4	-1	0	-59	-2	0	1	-67	-10	-8	-7	-65	-6	-4	-3	-62	-5	-3	-1	4	5	3	3	621 N.M.I.
40,000	-56.5	-56	1	4	5	-56	0	3	5	-47	9	11	12	-56	0	2	3	-54	3	6	8	4	5	3	3	3
30,000	-44.5	-48	-5	-1	-0	-45	-0	2	3	-31	14	16	17	-41	4	6	7	-41	4	8	10	3	5	3	3	3
20,000	-21.2	-22	-1	2	3	-18	3	6	7	-7	14	16	17	-14	7	9	10	-15	6	9	11	4	4	3	3	3
10,000	-4.6	-6	-2	1	2	-1	4	6	8	9	13	15	16	5	8	10	11	1	6	9	11	4	4	2	3	3
ATHENS TO BELGRADE																										
55,000	-56.5	-57	0	3	5	-56	1	3	4	-58	-2	0	1	-60	-4	-1	-0	-58	-1	1	3	4	5	3	3	3
40,000	-56.5	-57	0	3	5	-57	-1	3	4	-49	8	10	11	-56	0	2	4	-55	2	5	7	4	5	3	3	3
30,000	-44.5	-50	-6	-4	-2	-46	-2	1	2	-36	8	10	12	-42	3	5	6	-44	1	5	7	3	5	3	3	3
20,000	-21.2	-25	-4	-1	1	-20																				

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
ATHENS TO BOMBAY																									
51,000	-56.5	-66	-10	-7	-6	-65	-9	-6	-5	-71	-15	-12	-11	-68	-12	-9	-8	-68	-11	-8	-7	4	5	3	4
40,000	-56.5	-55	2	5	6	-54	2	6	7	-47	10	12	13	-55	2	4	5	-53	4	7	9	4	5	3	4
30,000	-44.5	-42	2	5	6	-40	5	7	9	-27	17	19	20	-37	8	10	11	-37	8	12	14	4	4	5	5
20,000	-21.2	-17	4	6	8	-15	8	10	12	-6	17	19	20	-10	11	13	14	-11	10	13	15	3	3	5	5
10,000	-4.6	-1	4	6	7	-5	9	11	13	15	18	20	20	6	11	13	14	6	10	13	15	3	3	2	3
ATHENS TO CAIRO																									
51,000	-56.5	-62	-5	-3	-2	-60	-4	-2	-0	-68	-11	-9	-8	-64	-8	-5	-4	-64	-7	-4	-3	4	3	5	3
40,000	-56.5	-53	1	4	6	-56	0	3	5	-47	9	11	12	-56	1	3	4	-54	3	6	8	4	5	3	3
30,000	-44.5	-47	-2	-0	1	-43	1	3	4	-30	15	17	18	-40	5	7	8	-40	5	9	11	3	3	5	3
20,000	-21.2	-21	1	3	4	-17	4	7	8	-6	15	17	18	-13	8	10	11	-14	7	10	12	4	4	5	2
10,000	-4.6	-5	-0	2	4	-0	4	7	8	10	14	16	17	4	9	11	12	2	7	10	12	4	4	2	3
ATHENS TO CALCUTTA																									
51,000	-56.5	-64	-7	-4	-3	-62	-5	-3	-2	-69	-12	-9	-8	-65	-9	-6	-5	-65	-8	-5	-4	4	4	4	4
40,000	-56.5	-55	1	4	6	-55	2	5	7	-47	9	12	14	-55	2	4	6	-53	4	7	9	5	4	4	4
30,000	-44.5	-44	0	3	4	-41	3	6	8	-28	16	19	20	-38	7	9	11	-38	7	11	13	4	4	4	4
20,000	-21.2	-19	2	4	6	-14	7	9	11	-4	17	19	20	-12	9	12	13	-12	9	13	15	4	4	5	3
10,000	-4.6	-5	1	4	5	5	8	10	11	12	17	19	20	5	10	12	13	4	9	12	14	4	4	5	3
ATHENS TO COLOMBO																									
51,000	-56.5	-71	-14	-12	-11	-70	-15	-11	-9	-75	-17	-14	-13	-72	-16	-14	-12	-71	-15	-12	-11	3	3	5	3
40,000	-56.5	-55	2	4	6	-53	3	6	8	-48	8	10	12	-54	2	4	5	-53	4	7	8	4	4	5	3
30,000	-44.5	-39	6	8	9	-37	6	10	11	-28	17	19	20	-35	10	11	12	-35	10	13	15	3	3	5	3
20,000	-21.2	-15	8	10	11	-11	11	12	13	-4	17	19	20	-9	12	14	15	-9	12	15	16	3	3	5	2
10,000	-4.6	2	7	9	10	6	11	13	14	15	17	19	19	7	12	13	14	7	12	14	16	3	3	2	2
ATHENS TO LAMASCUS																									
51,000	-56.5	-60	-4	-1	0	-59	-2	-0	1	-67	-10	-8	-7	-61	-6	-4	-3	-62	-6	-3	-1	4	3	5	3
40,000	-56.5	-56	1	4	5	-50	0	4	5	-47	10	11	13	-56	0	2	3	-54	3	6	8	4	5	3	3
30,000	-44.5	-48	-3	-1	-0	-44	0	2	3	-30	14	16	17	-41	4	6	7	-41	4	8	10	3	3	5	3
20,000	-21.2	-22	-1	2	3	-14	3	6	7	-7	15	16	17	-14	7	9	10	-15	6	10	11	4	4	5	1
10,000	-4.6	-6	-2	1	2	-1	4	6	8	9	14	15	16	4	8	10	11	1	6	9	11	4	4	2	3
ATHENS TO DHAKKA																									
51,000	-56.5	-64	-7	-5	-5	-62	-6	-4	-2	-70	-15	-11	-10	-68	-9	-7	-6	-65	-9	-6	-5	4	3	5	3
40,000	-56.5	-55	2	4	6	-55	1	5	6	-47	10	12	13	-55	1	3	4	-53	4	7	8	4	5	3	3
30,000	-44.5	-45	-1	1	3	-42	1	5	6	-28	17	19	20	-38	6	8	9	-38	6	10	12	3	3	5	3
20,000	-21.2	-19	2	4	5	-16	5	8	9	-4	17	19	20	-12	9	11	12	-13	8	12	14	3	3	5	2
10,000	-4.6	-5	1	4	5	2	6	9	10	12	17	19	19	5	10	12	13	4	9	12	14	4	4	2	3
ATHENS TO DUSSELDORF																									
51,000	-56.5	-56	0	3	5	-55	1	4	5	-55	1	4	5	-59	-1	-0	1	-56	0	3	4	3	4	5	4
40,000	-56.5	-56	-1	2	4	-57	-0	3	5	-50	6	9	10	-54	0	1	4	-55	1	5	7	3	3	4	4
30,000	-44.5	-50	-6	-3	-2	-47	-2	0	1	-36	6	9	10	-43	2	4	6	-45	-0	4	6	4	4	4	4
20,000	-21.2	-26	-5	-1	0	-21	0	3	4	-12	9	11	12	-17	5	7	9	-19	2	6	8	3	4	5	4
10,000	-4.6	-10	-5	-2	-0	-5	-0	3	4	4	9	11	12	-1	4	6	8	-3	2	5	7	3	4	5	4
ATHENS TO FRANKFURT																									
51,000	-56.5	-56	0	3	5	-55	1	4	5	-56	1	3	4	-59	-5	-1	1	-57	-0	3	4	3	4	5	4
40,000	-56.5	-57	-1	2	4	-57	-1	3	5	-50	6	9	10	-56	0	3	4	-55	1	5	7	3	3	4	4
30,000	-44.5	-50	-6	-1	-2	-47	-2	0	2	-34	7	9	10	-42	2	5	6	-44	0	4	6	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-21	0	3	4	-12	10	12	13	-16	5	7	9	-19	3	6	8	3	4	5	4
10,000	-4.6	-10	-5	-2	-0	-5	-0	3	4	4	9	11	12	-1	4	6	8	-1	2	5	7	3	4	5	4
ATHENS TO GENOVA																									
51,000	-56.5	-57	-0	3	5	-56	1	3	4	-57	-1	1	2	-60	-4	-1	0	-58	-1	2	3	3	4	5	3
40,000	-56.5	-57	-1	3	4	-58	-1	2	4	-51	6	8	10	-56	0	3	4	-56	1	4	6	3	3	4	4
30,000	-44.5	-50	-5	-3	-1	-46	-2	1	2	-37	7	10	11	-42	3	5	6	-44	1	4	6	4	4	5	4
20,000	-21.2	-25	-4	-1	1	-20	1	4	5	-11	10	12	13	-16	5	8	9	-18	3	7	8	3	4	5	3
10,000	-4.6	-8	-4	-1	1	-4	1	4	5	5	10	12	13	-0	5	7	8	-2	3	6	8	4	4	5	4
ATHENS TO ISTANBUL																									
51,000	-56.5	-57	-1	2	4	-57	-0	2	3	-61	-5	-3	-1	-61	-4	-2	-1	-59	-2	0	2	4	3	5	3
40,000	-56.5	-56	0	3	5	-57	-0	3	5	-48	9	11	12	-56	0	2	3	-54	2	6	8	3	3	5	3
30,000	-44.5	-50	-5	-3	-2	-46	-1	1	2	-34	10	12	14	-41	3	5	6	-43	2	6	8	3	3	5	3
20,000	-21.2	-24	-3	-0	1	-20	2	4	6	-9	12	14	15	-15	6	8	9	-17	4	8	9	4	4	5	3
10,000	-4.6	-9	-4	-1	0	-5	2	5	6	6	11	13	14	1	6	8	9	-1	4	7	9	4	4	5	3
ATHENS TO KANU																									
51,000	-56.5	-69	-15	-11	-10	-67	-11	-9	-8	-72	-16	-14	-13	-71	-14	-12	-11	-70	-15	-11	-10	3	3	5	3
40,000	-56.5	-54	2	5	6	-54	2	5	7	-50	6	8	9	-54	2	4	5	-53	3	5	7	3	4	2	2
30,000	-44.5	-42	2	4	5	-57	7	9	10	-50	14	16	17	-56	9	10	11	-56	8	11	12	2	2	2	2
20,000	-21.2	-15	6	8	9	-12	9	11	12	-5	16	17	18	-10	12	13	13	-10	11	13	14	3	3	2	2
10,000	-4.6	2	6	8	9	5	10	12	13	12	17	18	19	7	12	13	14	7	11	14	15	3	3	2	2
ATHENS TO KANAKHI																									
51,000	-56.5	-64	-7	-5	-5	-65	-6	-4	-3	-70	-15	-11	-10	-68	-10	-7	-6	-66	-9	-6	-5	4	3	5	4
40,000	-56.5	-55	2	5	6	-55	2	5	7	-47	10	12	13	-55	1	4	5	-53	4	7	9	4	5	3	3
30,000	-44.5	-44	0	3	4	-41	3	6	8	-28	17	19	20	-38	7	9	10	-38	7	11	13	4	4	5	3
20,000	-21.2	-19	2	4	6	-15	7	9	10	-4	17	19	20	-12	10	11	12	-12	9	13	15	4	3	5	3
10,000	-4.6	-5	1	4	5	5	8	10	11	15	18	19	20	6	10	12	13	5	9	13	14	4	4	2	3
ATHENS TO KHARTOUM																									
51,000	-56.5	-64	-12	-10	-9	-67	-10	-8	-7	-72	-15	-14	-13	-70	-14	-12	-11	-69	-13	-10	-9	3	3	5	3
40,000	-56.5	-54	2	5	6	-55	2	5	6	-49	8	9	10	-54	2	4	5	-53	4	6	7	3	4	2	3
30,000	-44.5	-43	2	4	5	-53	7	8	9	-29	16	18	18	-36	8	10	11	-36	8	11	13	3	2	5	2
20,000	-21.2	-15	6	8	9	-15	9	11	12	-5	16	18	19	-10	11	13	13	-11	11	13	15	3	3	2	2
10,000	-4.6	1	6	8	9	4	9	11	12	12	17	18	19	7	12	13	14	6	11	13	15	3	3	2	2
ATHENS TO LISBON																									
51,000	-56.5	-59	-2	1	3	-58	-1	2	3	-61	-5	-2	-1	-61	-5	-3	-1	-60	-3	-0	2	3	4	3	3
40,000	-56.5	-57	-1	3	5	-58	-1	2	4	-51	6	8	9	-56	0										

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION								
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL								
		50	050	D75	D85	50	050	D75	D85	50	050	D75	D85	50	050	D75	D85	50	050	D75	D85	JAN	APR	JUL	OCT	
ATHENS TO LONDON																										
55,000	-56.5	-57	-0	3	5	-55	1	4	5	-55	2	4	5	-59	-3	-0	1	-56	0	3	4	5	4	3	4	1304 N.M.I.
40,000	-56.5	-58	-1	2	4	-57	-1	3	5	-51	6	9	10	-56	0	3	4	-55	1	5	7	5	4	3	4	
30,000	-44.5	-50	-6	-3	-2	-47	-2	0	2	-38	6	9	10	-43	2	4	6	-44	0	4	6	4	4	4	4	
20,000	-21.2	-26	-4	-1	1	-21	0	3	5	-12	9	11	12	-17	5	7	9	-19	2	6	8	4	4	3	4	
10,000	-4.6	-9	-5	-1	0	-5	-0	3	4	4	8	11	12	-1	4	6	8	-3	2	5	7	5	4	3	4	
ATHENS TO MADRID																										
55,000	-56.5	-58	-2	2	3	-57	-1	2	3	-61	-4	-2	-1	-61	-5	-2	-1	-59	-3	0	2	5	4	3	3	1274 N.M.I.
40,000	-56.5	-57	-1	3	5	-58	-1	2	4	-51	6	8	10	-56	0	2	4	-55	1	4	6	5	5	4	4	
30,000	-44.5	-44	-4	-1	-0	-46	-1	1	3	-36	8	10	12	-41	3	6	7	-43	2	5	7	3	4	3	4	
20,000	-21.2	-23	-2	1	3	-19	2	5	6	-10	11	13	14	-15	6	8	10	-17	5	8	9	4	4	3	3	
10,000	-4.6	-6	-1	2	3	-2	3	6	7	8	12	14	15	1	6	8	9	0	5	8	10	4	4	3	3	
ATHENS TO MILAN																										
55,000	-56.5	-57	-0	3	5	-55	1	3	4	-58	-1	1	2	-60	-4	-1	-0	-58	-1	2	3	5	4	3	3	815 N.M.I.
40,000	-56.5	-57	-1	3	5	-58	-1	2	4	-50	6	9	10	-56	0	2	4	-55	1	5	7	5	5	4	4	
30,000	-44.5	-50	-5	-3	-2	-46	-2	1	2	-37	7	10	11	-42	3	5	6	-44	1	4	6	4	4	3	4	
20,000	-21.2	-25	-4	-1	1	-20	1	4	5	-11	10	12	13	-16	6	8	9	-18	3	7	9	5	4	3	3	
10,000	-4.6	-8	-4	-1	1	-4	1	4	5	5	10	12	13	0	5	7	8	-2	3	6	8	4	4	3	4	
ATHENS TO MUNICH																										
55,000	-56.5	-56	0	3	5	-56	1	3	5	-56	0	2	3	-60	-3	-1	0	-57	-1	2	4	5	4	3	3	808 N.M.I.
40,000	-56.5	-57	-1	3	5	-57	-1	3	5	-50	7	9	10	-56	0	3	4	-55	1	5	7	5	5	4	4	
30,000	-44.5	-50	-6	-3	-2	-47	-2	0	2	-37	7	9	11	-42	2	5	6	-44	0	4	6	4	4	4	4	
20,000	-21.2	-25	-4	-1	1	-21	1	3	5	-11	10	12	13	-16	5	7	9	-18	3	6	8	5	4	3	3	
10,000	-4.6	-10	-5	-2	-0	-4	0	3	5	5	9	11	12	-0	4	7	8	-2	2	6	8	5	4	3	3	
ATHENS TO NAIROBI																										
55,000	-56.5	-72	-16	-14	-13	-71	-15	-13	-12	-74	-17	-15	-14	-73	-17	-15	-14	-73	-16	-14	-13	3	3	3	3	2464 N.M.I.
40,000	-56.5	-54	3	4	5	-53	3	5	7	-50	6	8	10	-53	3	5	5	-53	4	6	7	3	4	2	2	
30,000	-44.5	-34	6	8	9	-35	10	11	12	-30	15	16	17	-34	11	12	13	-34	11	13	14	2	2	2	2	
20,000	-21.2	-11	10	12	13	-9	12	14	15	-5	16	18	19	-8	13	14	15	-8	13	15	16	2	2	2	2	
10,000	-4.6	5	10	11	12	7	11	13	14	11	16	17	18	8	13	14	15	8	12	14	15	3	2	2	2	
ATHENS TO NEW DELHI																										
55,000	-56.5	-62	-5	-2	-1	-60	-4	-1	-0	-67	-11	-8	-7	-63	-7	-4	-3	-63	-7	-4	-2	4	4	4	4	2700 N.M.I.
40,000	-56.5	-55	1	4	6	-55	2	5	7	-47	10	12	14	-55	1	4	5	-53	3	7	9	5	5	4	4	
30,000	-44.5	-46	-2	1	2	-42	2	5	6	-29	16	18	20	-39	5	8	9	-39	5	10	12	4	4	4	4	
20,000	-21.2	-21	-0	3	4	-16	6	8	10	-4	17	19	20	-13	8	10	12	-14	8	12	14	4	4	3	3	
10,000	-4.6	-5	-1	2	4	2	6	9	10	12	17	19	20	4	9	11	12	3	8	12	13	4	4	3	3	
ATHENS TO NICOSIA																										
55,000	-56.5	-59	-3	-0	1	-58	-2	1	2	-66	-9	-7	-6	-62	-6	-3	-2	-61	-5	-2	-1	4	3	3	3	488 N.M.I.
40,000	-56.5	-56	1	4	5	-57	-0	3	5	-47	9	11	12	-56	0	2	3	-54	2	6	8	4	5	3	3	
30,000	-44.5	-44	-4	-2	-0	-45	-0	2	3	-31	13	15	16	-41	4	6	7	-41	3	7	9	3	3	3	3	
20,000	-21.2	-22	-1	1	3	-19	3	5	7	-7	16	18	19	-14	7	9	10	-16	6	9	11	4	4	3	3	
10,000	-4.6	-7	-7	0	2	-1	3	6	7	8	13	14	15	3	8	10	11	1	5	9	10	4	4	3	3	
ATHENS TO PARIS																										
55,000	-56.5	-56	0	3	5	-56	1	4	5	-56	0	3	4	-60	-3	-1	1	-57	-0	2	4	5	4	3	3	1154 N.M.I.
40,000	-56.5	-56	-1	2	4	-57	-1	3	5	-51	6	8	10	-56	0	3	4	-56	1	5	7	5	5	4	4	
30,000	-44.5	-50	-5	-3	-2	-47	-2	0	2	-38	7	9	10	-42	2	5	6	-44	0	4	6	4	4	3	4	
20,000	-21.2	-25	-4	-1	1	-21	1	3	5	-11	10	12	13	-16	5	7	9	-18	3	6	8	5	4	3	4	
10,000	-4.6	-9	-4	-1	1	-4	0	3	5	4	9	11	12	-0	4	7	8	-2	2	6	8	5	4	3	4	
ATHENS TO PRAGUE																										
55,000	-56.5	-56	0	3	5	-55	1	4	5	-55	1	3	4	-59	-3	-0	1	-57	-0	3	4	5	4	3	3	856 N.M.I.
40,000	-56.5	-57	-1	2	4	-57	-0	3	5	-50	7	9	11	-56	0	3	4	-55	1	5	7	5	5	4	4	
30,000	-44.5	-51	-6	-4	-2	-47	-2	0	1	-38	7	9	10	-42	2	4	6	-44	0	4	6	4	4	4	4	
20,000	-21.2	-26	-5	-1	0	-21	0	3	5	-12	10	12	13	-16	5	7	9	-19	2	6	8	5	4	3	4	
10,000	-4.6	-11	-6	-3	-1	-5	-0	3	4	4	9	11	12	-1	4	6	8	-3	2	5	7	5	4	3	4	
ATHENS TO ROME																										
55,000	-56.5	-57	-1	2	4	-57	-0	2	4	-60	-4	-2	-0	-61	-4	-2	-1	-59	-2	1	2	4	4	3	3	563 N.M.I.
40,000	-56.5	-57	-0	3	5	-58	-1	2	4	-49	7	10	11	-56	0	2	4	-55	1	5	7	5	5	3	3	
30,000	-44.5	-49	-5	-3	-1	-46	-1	1	2	-36	8	11	12	-41	3	5	7	-43	1	5	7	3	3	3	3	
20,000	-21.2	-24	-3	0	2	-19	2	4	5	-10	11	13	14	-15	6	8	9	-17	4	7	9	4	4	3	3	
10,000	-4.6	-8	-3	-0	1	-3	2	4	5	6	11	13	14	1	5	8	9	-1	4	7	9	4	4	3	3	
ATHENS TO TEHRAN																										
55,000	-56.5	-59	-3	0	2	-58	-2	1	2	-65	-9	-7	-6	-62	-5	-3	-1	-61	-5	-2	-0	4	3	3	3	1327 N.M.I.
40,000	-56.5	-56	1	4	5	-56	1	4	6	-47	10	12	13	-56	0	3	4	-54	3	6	8	4	5	3	3	
30,000	-44.5	-44	-4	-2	-0	-44	0	2	4	-30	14	17	18	-41	4	6	7	-41	4	8	10	3	3	3	3	
20,000	-21.2	-23	-2	1	2	-18	3	6	7	-6	15	17	18	-14	7	9	10	-15	6	10	12	4	4	3	3	
10,000	-4.6	-7	-5	0	2	-1	4	7	8	10	14	16	17	3	8	10	11	1	6	9	11	4	4	3	3	
ATHENS TO TEL AVIV-JAFFA																										
55,000	-56.5	-61	-4	-2	-1	-59	-3	-1	0	-67	-11	-9	-8	-63	-7	-5	-3	-63	-6	-3	-2	4	3	3	3	653 N.M.I.
40,000	-56.5	-55	1	4	6	-56	0	3	5	-47	9	11	12	-56	0	2	4	-54	3	6	8	4	5	3	3	
30,000	-44.5	-47	-3	-1	0	-46	1	3	4	-30	15	17	18	-40	4	6	7	-40	4	8	10	3	3	3	3	
20,000	-21.2	-21	-0	2	4	-18	4	6	7	-6	15	17	18	-14	8	9	10	-15	6	10	12	4	4	3	3	
10,000	-4.6	-6	-1	1	3	-1	4	7	8	9	14	16	16	4	9	10	11	2	6	10	11	4	4	2	3	
ATHENS TO TRIPOLI																										
55,000	-56.5	-60	-4	-1	-0	-59	-2	-0	1	-65	-9	-7	-6	-63	-6	-4	-3	-62	-5	-3	-1	4	3	3	3	605 N.M.I.
40,000	-56.5	-56	1	4	6	-57	-1	3	5	-48	8	10	11	-56	0	2	4	-54	2	5	7	5	5	3	3	
30,000	-44.5	-47	-3	-1	0	-44	0	3	4	-33	11	13	14	-40	4	6	7	-41	3	7	9	3	3	3	3	
20,000	-21.2	-21	-0	2	4	-17	4	6	8	-8	13	15	16	-14	8	9	10	-15	6	9	11	4	3	2	2	
10,000	-4.6	-5	-1	2	3	-0	4	7	8	9	13	15	16	3	8	10	11	2	6	9	11	4	4	3	3	
ATHENS TO TUNIS																										
55,000	-56.5	-59	-2	1	2	-58	-1	1	2	-63	-6	-4	-3</													

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY				APRIL				JULY				OCTOBER			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
ATHENS TO VIENNA																	
55,000	-56.5	-56	0	5	5	-55	1	5	5	-56	0	2	5	-60	-5	-1	0
40,000	-56.5	-57	-1	5	4	-57	-1	5	5	-49	7	10	11	-56	0	5	4
30,000	-56.5	-57	-1	5	4	-57	-1	5	5	-57	7	10	11	-42	2	5	6
20,000	-56.5	-57	-1	5	4	-57	-1	5	5	-57	7	10	11	-42	2	5	6
10,000	-56.5	-57	-1	5	4	-57	-1	5	5	-57	7	10	11	-42	2	5	6
ATHENS TO ZURICH																	
55,000	-56.5	-56	0	5	5	-56	1	5	5	-57	0	2	5	-60	-5	-1	0
40,000	-56.5	-57	-1	5	4	-57	-1	5	4	-50	6	9	10	-56	0	5	4
30,000	-56.5	-57	-1	5	4	-57	-1	5	4	-57	7	10	11	-42	2	5	6
20,000	-56.5	-57	-1	5	4	-57	-1	5	4	-57	7	10	11	-42	2	5	6
10,000	-56.5	-57	-1	5	4	-57	-1	5	4	-57	7	10	11	-42	2	5	6
ATLANTA TO MEXICO CITY																	
55,000	-56.5	-72	-16	-14	-15	-70	-14	-11	-10	-71	-15	-15	-15	-75	-18	-16	-15
40,000	-56.5	-57	-0	2	5	-55	0	2	5	-56	1	2	5	-55	2	5	4
30,000	-56.5	-57	0	2	5	-55	0	2	5	-55	12	15	15	-55	10	12	12
20,000	-56.5	-57	0	2	5	-55	0	2	5	-55	12	15	15	-55	10	12	12
10,000	-56.5	-57	0	2	5	-55	0	2	5	-55	12	15	15	-55	10	12	12
ATLANTA TO MONTREAL																	
55,000	-56.5	-62	-5	-5	-1	-60	-5	-0	1	-65	-6	-4	-3	-64	-8	-5	-1
40,000	-56.5	-57	-0	5	5	-57	-0	5	5	-54	2	4	5	-55	1	4	6
30,000	-56.5	-57	-0	5	5	-57	-0	5	5	-54	2	4	5	-55	1	4	6
20,000	-56.5	-57	-0	5	5	-57	-0	5	5	-54	2	4	5	-55	1	4	6
10,000	-56.5	-57	-0	5	5	-57	-0	5	5	-54	2	4	5	-55	1	4	6
ATLANTA TO SAN JUAN																	
55,000	-56.5	-75	-16	-14	-15	-71	-14	-12	-11	-70	-15	-12	-11	-74	-18	-15	-14
40,000	-56.5	-56	1	5	4	-56	0	2	1	-56	0	1	2	-55	2	5	4
30,000	-56.5	-56	1	5	4	-56	0	2	1	-56	0	1	2	-55	2	5	4
20,000	-56.5	-56	1	5	4	-56	0	2	1	-56	0	1	2	-55	2	5	4
10,000	-56.5	-56	1	5	4	-56	0	2	1	-56	0	1	2	-55	2	5	4
AUCKLAND TO BANGKOK																	
55,000	-56.5	-77	-21	-19	-17	-75	-19	-17	-15	-75	-16	-14	-15	-74	-17	-15	-14
40,000	-56.5	-54	2	4	5	-55	4	5	6	-54	2	4	5	-54	2	4	5
30,000	-56.5	-55	11	15	14	-54	10	12	15	-56	9	11	12	-55	10	12	15
20,000	-56.5	-55	11	15	14	-54	10	12	15	-56	9	11	12	-55	10	12	15
10,000	-56.5	-55	11	15	14	-54	10	12	15	-56	9	11	12	-55	10	12	15
AUCKLAND TO CHRISTCHURCH																	
55,000	-56.5	-61	-4	-1	0	-57	-5	-0	1	-56	0	5	4	-55	2	4	5
40,000	-56.5	-56	1	4	6	-55	1	4	6	-55	2	5	7	-55	4	7	9
30,000	-56.5	-56	1	4	6	-55	1	4	6	-55	2	5	7	-55	4	7	9
20,000	-56.5	-56	1	4	6	-55	1	4	6	-55	2	5	7	-55	4	7	9
10,000	-56.5	-56	1	4	6	-55	1	4	6	-55	2	5	7	-55	4	7	9
AUCKLAND TO CHUNG KING																	
55,000	-56.5	-76	-20	-18	-17	-75	-19	-17	-15	-75	-17	-15	-15	-75	-17	-15	-14
40,000	-56.5	-55	5	5	6	-55	4	6	7	-54	5	5	6	-54	5	5	6
30,000	-56.5	-55	12	15	14	-54	11	15	14	-54	11	15	14	-54	11	15	14
20,000	-56.5	-55	12	15	14	-54	11	15	14	-54	11	15	14	-54	11	15	14
10,000	-56.5	-55	12	15	14	-54	11	15	14	-54	11	15	14	-54	11	15	14
AUCKLAND TO OAHU																	
55,000	-56.5	-75	-16	-14	-15	-71	-15	-12	-11	-68	-11	-9	-8	-70	-15	-11	-9
40,000	-56.5	-54	5	5	6	-54	5	5	6	-54	5	5	6	-54	5	5	6
30,000	-56.5	-55	10	12	15	-57	7	9	10	-40	5	7	8	-59	6	8	9
20,000	-56.5	-55	10	12	15	-57	7	9	10	-40	5	7	8	-59	6	8	9
10,000	-56.5	-55	10	12	15	-57	7	9	10	-40	5	7	8	-59	6	8	9
AUCKLAND TO DJAKARTA																	
55,000	-56.5	-74	-17	-15	-14	-71	-15	-13	-11	-69	-12	-10	-9	-69	-12	-10	-9
40,000	-56.5	-54	5	5	6	-54	5	5	6	-54	5	5	6	-54	5	5	6
30,000	-56.5	-55	10	12	15	-57	7	9	10	-59	5	8	9	-54	6	8	9
20,000	-56.5	-55	10	12	15	-57	7	9	10	-59	5	8	9	-54	6	8	9
10,000	-56.5	-55	10	12	15	-57	7	9	10	-59	5	8	9	-54	6	8	9
AUCKLAND TO GUAM																	
55,000	-56.5	-77	-20	-18	-17	-76	-19	-17	-16	-75	-17	-15	-14	-74	-17	-15	-14
40,000	-56.5	-55	5	5	6	-54	5	5	6	-54	5	5	6	-54	5	5	6
30,000	-56.5	-55	12	15	14	-54	10	12	15	-55	9	11	12	-55	10	12	15
20,000	-56.5	-55	12	15	14	-54	10	12	15	-55	9	11	12	-55	10	12	15
10,000	-56.5	-55	12	15	14	-54	10	12	15	-55	9	11	12	-55	10	12	15
AUCKLAND TO HONG KONG																	
55,000	-56.5	-77	-21	-19	-18	-76	-20	-17	-16	-74	-17	-15	-14	-74	-17	-15	-14
40,000	-56.5	-54	5	4	5	-54	4	6	7	-54	2	4	5	-54	2	4	5
30,000	-56.5	-55	12	14	14	-55	11	15	14	-55	10	12	15	-54	10	12	15
20,000	-56.5	-55	12	14	14	-55	11	15	14	-55	10	12	15	-54	10	12	15
10,000	-56.5	-55	12	14	14	-55	11	15	14	-55	10	12	15	-54	10	12	15
AUCKLAND TO HONOLULU																	
55,000	-56.5	-76	-20	-18	-17	-75	-19	-17	-15	-75	-16	-14	-15	-74	-18	-15	-14
40,000	-56.5	-54	5	5	6	-54	5	5	6	-54	2	4	5	-54	2	4	5
30,000	-56.5	-55	11	12	15	-54	10	12	15	-55	9	11	12	-55	10	12	15
20,000	-56.5	-55	11	12	15	-54	10	12	15	-55	9	11	12	-55	10	12	15
10,000	-56.5	-55	11	12	15	-54	10	12	15	-55	9	11	12	-55	10	12	15
AUCKLAND TO MANILA																	
55,000	-56.5	-77	-21	-19	-18	-76	-20	-17	-16	-75	-17	-15	-14	-74	-17	-15	-14
40,000	-56.5	-54	5	4	5	-54	4	6	7	-54	2	4	5	-54	2	4	5
30,000	-56.5	-55	12	15	14	-55	11	15	14	-55	10	12	15	-54	10	12	15
20,000	-56.5	-55	12	15	14	-55	11	15	14	-55	10	12	15	-54	10	12	15
10,000	-56.5	-55	12	15	14	-55	11	15	14	-55	10	12	15	-54	10	12	15

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
AUCKLAND TO MELBOURNE																											
55,000	-56.5	-62	-6	-5	-2	-61	-4	-2	-0	-57	-0	2	3	-56	0	2	3	-55	-5	0	1	1415 N.M.I.					
40,000	-56.5	-56	0	3	5	-56	1	4	5	-54	2	6	7	-53	4	7	9	-52	2	6	8	4	4	4	5		
30,000	-56.5	-40	4	6	8	-45	-0	2	3	-49	-5	-2	-1	-46	-1	1	2	-45	-1	3	4	3	4	4	5		
20,000	-21.2	-14	8	10	11	-18	3	5	6	-24	3	-0	1	-20	1	4	5	-19	2	5	7	3	4	4	4		
10,000	-4.6	5	8	10	11	-2	5	5	6	-6	-2	1	2	-3	2	4	5	-2	3	6	8	3	3	3	4		
AUCKLAND TO MURKIN																											
55,000	-56.5	-73	-17	-14	-13	-73	-16	-13	-12	-71	-15	-12	-11	-71	-15	-12	-11	-72	-16	-13	-12	5482 N.M.I.					
40,000	-56.5	-52	4	6	7	-53	5	6	7	-53	4	6	7	-53	3	5	6	-53	4	6	7	3	4	4	4		
30,000	-56.5	-34	10	12	13	-35	10	12	13	-33	10	12	13	-34	10	12	13	-34	11	13	14	3	3	3	3		
20,000	-21.2	-9	12	13	14	-9	12	13	14	-8	13	14	15	-9	12	14	15	-9	12	14	15	3	3	2	2		
10,000	-4.6	5	10	11	12	6	11	12	13	8	12	13	14	6	11	13	14	6	11	13	13	2	3	2	2		
AUCKLAND TO NANOI																											
55,000	-56.5	-70	-14	-12	-10	-70	-13	-11	-9	-65	-9	-7	-5	-65	-8	-6	-5	-68	-11	-8	-7	1152 N.M.I.					
40,000	-56.5	-54	2	5	6	-54	2	5	6	-54	3	5	6	-54	2	5	6	-54	2	5	6	3	4	4	5		
30,000	-56.5	-36	8	10	11	-37	7	10	11	-41	4	7	8	-40	4	6	8	-39	6	8	10	3	4	4	4		
20,000	-21.2	-10	12	13	14	-12	9	11	12	-16	6	8	9	-14	7	9	10	-13	8	11	12	3	3	3	3		
10,000	-4.6	7	11	13	14	5	10	11	12	0	5	7	8	2	7	9	10	4	8	10	12	2	3	3	3		
AUCKLAND TO NANKING																											
55,000	-56.5	-76	-19	-17	-16	-75	-18	-16	-15	-73	-16	-14	-13	-73	-17	-14	-13	-74	-18	-15	-14	5185 N.M.I.					
40,000	-56.5	-53	5	5	6	-53	4	6	7	-53	3	5	6	-54	3	5	6	-53	3	5	7	3	4	3	3		
30,000	-56.5	-33	12	14	14	-34	11	12	13	-34	11	13	14	-34	11	12	13	-33	11	13	14	2	3	3	3		
20,000	-21.2	-7	14	16	16	-8	13	15	16	-8	13	14	15	-9	13	14	15	-8	13	15	16	2	2	2	2		
10,000	-4.6	7	12	13	14	7	12	13	14	7	12	13	14	7	12	13	14	7	12	13	14	2	2	2	2		
AUCKLAND TO NOUMEA																											
55,000	-56.5	-69	-12	-10</																							

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ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
BAGHDAD TO BAHREIN																	
55,000	-56.5	-66	-10	-8	-6	-65	-9	-7	-5	-72	-15	-13	-12	-69	-12	-9	-7
40,000	-56.5	-54	2	5	6	-54	3	6	8	-46	10	12	13	-54	2	5	6
30,000	-44.5	-43	2	5	6	-39	5	8	9	-26	19	20	21	-36	8	10	11
20,000	-21.2	-17	4	6	8	-13	8	10	11	-2	19	21	22	-10	11	13	14
10,000	-4.6	-1	4	6	7	5	9	11	12	16	20	22	23	7	12	14	14
BAGHDAD TO BANGKOK																	
55,000	-56.5	-71	-14	-12	-11	-69	-12	-10	-8	-74	-17	-15	-13	-71	-15	-12	-10
40,000	-56.5	-55	2	4	6	-53	5	6	8	-49	8	11	12	-54	2	5	6
30,000	-44.5	-38	6	9	10	-36	8	11	13	-27	18	20	21	-34	11	13	14
20,000	-21.2	-13	4	10	11	-10	12	14	15	-3	19	20	21	-8	13	15	16
10,000	-4.6	3	7	10	11	8	12	14	15	14	18	20	20	8	12	14	15
BAGHDAD TO BASHA																	
55,000	-56.5	-64	-8	-5	-4	-63	-7	-4	-3	-71	-15	-12	-11	-66	-10	-7	-5
40,000	-56.5	-54	2	5	6	-54	2	5	7	-46	11	13	14	-55	2	5	6
30,000	-44.5	-44	0	3	4	-41	4	6	7	-26	14	20	21	-38	7	9	10
20,000	-21.2	-19	2	5	6	-15	6	8	9	-2	19	21	22	-11	10	12	13
10,000	-4.6	-5	2	4	6	3	6	10	11	15	20	21	22	6	11	13	14
BAGHDAD TO BEIRUT																	
55,000	-56.5	-62	-6	-3	-2	-61	-4	-2	-1	-70	-14	-12	-11	-64	-8	-6	-4
40,000	-56.5	-55	2	4	6	-55	1	5	7	-46	11	12	13	-56	1	5	7
30,000	-44.5	-46	-2	0	1	-43	2	4	5	-27	17	19	20	-39	5	7	8
20,000	-21.2	-20	1	3	5	-17	5	7	8	-4	18	20	21	-13	9	10	11
10,000	-4.6	0	3	4	6	1	6	8	10	13	17	19	20	5	10	12	13
BAGHDAD TO BOMBAY																	
55,000	-56.5	-70	-15	-11	-9	-69	-12	-10	-8	-75	-17	-14	-13	-72	-15	-13	-11
40,000	-56.5	-54	2	5	7	-53	4	7	8	-47	10	12	13	-54	2	5	6
30,000	-44.5	-39	5	8	10	-37	8	10	12	-26	14	20	21	-34	10	12	13
20,000	-21.2	-15	7	9	10	-8	11	13	14	-3	19	21	22	-8	13	15	16
10,000	-4.6	2	7	9	10	10	12	14	15	15	20	21	22	3	12	14	15
BAGHDAD TO CAIRO																	
55,000	-56.5	-64	-8	-5	-4	-63	-6	-4	-3	-71	-15	-13	-11	-66	-10	-7	-5
40,000	-56.5	-54	2	5	6	-53	2	5	6	-46	10	12	13	-55	1	5	6
30,000	-44.5	-45	-1	1	2	-41	3	5	6	-26	14	20	21	-34	6	8	9
20,000	-21.2	-19	2	5	6	-15	6	8	9	-3	18	20	21	-12	9	11	12
10,000	-4.6	-5	2	4	5	2	6	9	10	14	18	20	20	6	11	13	14
BAGHDAD TO LULUMBUR																	
55,000	-56.5	-74	-17	-15	-14	-73	-16	-14	-12	-75	-19	-16	-15	-75	-19	-17	-15
40,000	-56.5	-55	2	4	6	-52	4	7	8	-48	8	10	11	-54	5	5	6
30,000	-44.5	-36	8	11	12	-34	10	13	14	-27	17	19	20	-33	11	13	14
20,000	-21.2	-11	10	12	13	-6	13	15	16	-3	18	20	21	-7	14	16	17
10,000	-4.6	5	10	11	12	9	13	15	16	14	18	19	20	4	13	15	16
BAGHDAD TO DAMASCUS																	
55,000	-56.5	-65	-6	-4	-2	-61	-5	-2	-1	-70	-14	-12	-11	-65	-8	-6	-4
40,000	-56.5	-55	2	4	6	-55	2	5	7	-46	11	12	13	-56	1	5	6
30,000	-44.5	-46	-2	0	1	-43	2	4	5	-27	17	19	20	-39	5	7	8
20,000	-21.2	-20	1	3	5	-16	5	7	8	-3	18	20	21	-13	9	10	11
10,000	-4.6	0	3	4	6	1	6	8	10	13	17	19	20	5	10	12	13
BAGHDAD TO DHAKA																	
55,000	-56.5	-66	-10	-8	-6	-65	-9	-7	-5	-72	-15	-13	-12	-69	-12	-9	-7
40,000	-56.5	-54	2	5	6	-54	3	6	8	-46	10	12	13	-54	2	5	6
30,000	-44.5	-43	2	5	6	-39	5	8	9	-26	19	20	21	-36	8	10	11
20,000	-21.2	-17	4	6	8	-13	8	10	11	-2	19	21	22	-10	11	13	14
10,000	-4.6	-1	4	6	7	5	9	11	12	16	20	22	23	7	12	14	14
BAGHDAD TO ISTANBUL																	
55,000	-56.5	-59	-5	0	2	-58	-2	1	2	-65	-9	-7	-6	-62	-5	-3	-2
40,000	-56.5	-56	1	4	5	-56	1	4	6	-47	10	12	13	-56	0	3	4
30,000	-44.5	-49	-4	-2	-1	-45	-0	2	3	-30	14	16	17	-41	4	6	7
20,000	-21.2	-23	-2	1	2	-18	3	6	7	-8	15	17	18	-14	7	9	10
10,000	-4.6	-7	-5	0	2	-1	4	7	8	10	14	16	17	3	8	10	11
BAGHDAD TO JIDDA																	
55,000	-56.5	-68	-12	-10	-8	-67	-11	-9	-7	-73	-16	-14	-13	-71	-14	-12	-11
40,000	-56.5	-54	3	5	6	-54	3	5	7	-47	9	11	12	-54	2	4	5
30,000	-44.5	-42	3	5	6	-38	7	9	10	-26	18	20	21	-36	9	11	12
20,000	-21.2	-15	6	8	9	-12	9	11	12	-3	18	20	21	-9	12	13	14
10,000	-4.6	1	6	8	9	5	10	12	13	16	20	22	23	8	12	14	15
BAGHDAD TO KANACHI																	
55,000	-56.5	-67	-11	-8	-7	-66	-10	-7	-6	-72	-16	-13	-12	-69	-13	-10	-9
40,000	-56.5	-54	2	5	7	-53	5	6	8	-47	10	12	13	-54	2	5	6
30,000	-44.5	-41	3	6	8	-37	6	9	10	-26	19	21	22	-36	9	11	12
20,000	-21.2	-16	5	7	8	-12	9	12	13	-2	19	21	22	-10	12	13	14
10,000	-4.6	-0	4	7	8	6	11	13	14	16	21	22	23	7	12	14	15
BAGHDAD TO LONDON																	
55,000	-56.5	-57	-1	2	4	-56	1	3	4	-57	-0	2	3	-60	-3	-1	1
40,000	-56.5	-57	-1	3	4	-56	1	4	6	-49	8	10	12	-56	0	3	4
30,000	-44.5	-50	-6	-3	-2	-46	-2	1	2	-36	9	11	12	-42	2	5	6
20,000	-21.2	-25	-4	-1	1	-21	1	4	5	-10	11	13	14	-16	5	7	8
10,000	-4.6	-10	-5	-2	-0	-4	1	4	5	5	10	12	13	-0	4	7	8
BAGHDAD TO NEW DELHI																	
55,000	-56.5	-65	-9	-6	-5	-64	-7	-5	-3	-71	-14	-11	-10	-67	-10	-7	-6
40,000	-56.5	-54	2	5	7	-54	2	6	8	-47	10	13	14	-54	2	5	6
30,000	-44.5	-43	2	5	6	-39	5	7	9	-26	18	20	22	-37	8	10	12
20,000	-21.2	-18	3	5	7	-13	8	11	12	-2	19	21	22	-11	10	12	14
10,000	-4.6	-2	4	5	7	5	10	12	13	15	20	22	23	6	11	13	14

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
BAGHDAD TO TEHERAN																	
55,000	-56.5	-62	-5	-5	-1	-61	-4	-2	-1	-69	-13	-11	-9	-64	-7	-4	-3
40,000	-56.5	-55	2	4	6	-55	2	5	7	-46	11	15	14	-55	1	3	4
30,000	-44.5	-46	-2	1	2	-42	7	5	6	-27	18	20	21	-40	5	7	8
20,000	-21.2	-21	0	5	4	-16	5	7	8	-2	19	21	22	-13	8	10	11
10,000	-4.6	-5	-0	5	4	1	6	9	10	14	19	20	21	5	10	12	13
BAGHDAD TO VIENNA																	
55,000	-56.5	-57	-1	2	4	-56	0	2	4	-60	-3	-1	0	-60	-4	-1	0
40,000	-56.5	-57	-0	5	5	-56	1	4	6	-48	9	11	12	-56	0	3	4
30,000	-44.5	-50	-6	-5	-2	-46	-1	1	2	-34	11	15	14	-42	3	5	6
20,000	-21.2	-25	-4	-1	1	-20	1	4	6	-9	12	14	15	-16	6	8	9
10,000	-4.6	-10	-5	-2	-0	-5	2	5	6	7	11	15	14	1	5	8	9
BAGHDAD TO BELMUT																	
55,000	-56.5	-66	-9	-7	-6	-65	-8	-6	-5	-72	-15	-15	-12	-68	-12	-9	-8
40,000	-56.5	-54	2	5	6	-54	2	5	7	-46	10	12	13	-55	2	4	5
30,000	-44.5	-45	1	5	5	-40	5	7	8	-26	18	20	21	-37	8	10	11
20,000	-21.2	-17	4	6	7	-14	7	9	10	-3	19	20	22	-11	11	12	13
10,000	-4.6	-1	5	6	7	4	8	11	12	15	20	21	22	7	11	15	14
BAGHDAD TO CALCUTTA																	
55,000	-56.5	-71	-15	-12	-11	-70	-13	-10	-9	-74	-18	-15	-13	-73	-17	-14	-13
40,000	-56.5	-54	2	5	7	-55	4	7	9	-48	9	12	13	-54	3	6	7
30,000	-44.5	-50	7	10	11	-45	7	12	13	-26	18	20	22	-35	12	14	15
20,000	-21.2	-15	9	11	12	-9	12	15	16	-2	19	21	22	-7	14	16	17
10,000	-4.6	4	8	10	11	9	14	16	17	15	19	21	22	8	13	14	15
BAGHDAD TO COLOMBO																	
55,000	-56.5	-77	-20	-14	-17	-76	-19	-17	-16	-76	-20	-17	-16	-76	-22	-19	-18
40,000	-56.5	-55	2	4	5	-52	5	7	8	-49	7	9	10	-54	5	5	6
30,000	-44.5	-54	11	13	14	-52	12	14	16	-28	17	18	19	-32	12	14	15
20,000	-21.2	-4	13	14	15	-7	15	16	17	-4	17	19	20	-6	15	16	17
10,000	-4.6	7	12	13	14	10	15	16	17	15	17	19	19	9	13	15	15
BAGHDAD TO JIODA																	
55,000	-56.5	-71	-15	-13	-12	-71	-14	-12	-11	-74	-18	-16	-15	-74	-18	-15	-14
40,000	-56.5	-54	5	5	6	-55	4	6	7	-48	8	10	11	-55	5	5	6
30,000	-44.5	-59	5	8	9	-45	9	11	12	-26	18	20	20	-35	11	13	14
20,000	-21.2	-12	9	10	11	-10	12	15	14	-5	18	19	20	-7	14	15	16
10,000	-4.6	4	9	11	11	8	12	14	15	13	21	22	23	9	15	15	16
BAGHDAD TO ANKARA																	
55,000	-56.5	-70	-14	-12	-10	-70	-14	-11	-10	-74	-17	-15	-13	-73	-17	-14	-13
40,000	-56.5	-54	5	5	7	-52	4	7	9	-47	9	12	13	-54	5	5	7
30,000	-44.5	-50	6	9	11	-56	9	11	13	-26	19	21	22	-34	11	13	14
20,000	-21.2	-15	8	10	11	-9	13	15	16	-5	19	20	21	-8	14	15	16
10,000	-4.6	5	8	10	11	7	14	16	17	16	21	22	23	8	15	14	15
BAGHDAD TO LONDON																	
55,000	-56.5	-59	-5	0	2	-56	-1	1	2	-60	-4	-2	-0	-62	-5	-3	-1
40,000	-56.5	-56	0	5	5	-55	1	5	6	-48	8	11	12	-56	1	3	4
30,000	-44.5	-49	-4	-2	-0	-45	-0	2	3	-44	11	15	14	-41	2	4	5
20,000	-21.2	-25	-2	1	2	-19	2	5	6	-9	12	15	16	-15	6	9	10
10,000	-4.6	-8	-5	-0	1	-2	2	5	7	7	12	14	15	1	6	9	10
BAGHDAD TO NEW DELHI																	
55,000	-56.5	-67	-12	-10	-8	-64	-11	-9	-7	-75	-16	-15	-12	-71	-14	-12	-10
40,000	-56.5	-54	5	6	7	-55	5	7	8	-47	9	12	14	-54	5	5	7
30,000	-44.5	-40	5	8	10	-57	7	10	12	-26	18	21	22	-34	10	13	14
20,000	-21.2	-15	6	8	10	-10	11	15	15	-2	19	21	22	-9	13	15	16
10,000	-4.6	1	6	8	9	4	13	15	16	16	21	22	23	7	12	14	15
BAGHDAD TO NICOSIA																	
55,000	-56.5	-65	-9	-6	-5	-64	-7	-5	-4	-71	-15	-13	-12	-68	-11	-9	-7
40,000	-56.5	-54	2	5	6	-54	2	5	7	-46	10	12	13	-55	2	4	5
30,000	-44.5	-44	0	5	4	-40	4	6	7	-26	18	20	21	-37	7	9	10
20,000	-21.2	-18	5	5	7	-15	7	9	10	-5	18	20	21	-11	10	12	13
10,000	-4.6	-2	5	5	6	5	8	10	11	14	19	20	21	7	11	13	14
BALTIMORE TO SAN JUAN																	
55,000	-56.5	-71	-14	-12	-11	-64	-12	-10	-9	-64	-12	-10	-9	-72	-15	-13	-12
40,000	-56.5	-56	0	5	4	-57	-0	2	3	-56	0	2	2	-55	2	3	4
30,000	-44.5	-40	5	7	8	-59	6	8	8	-34	10	12	12	-35	9	11	12
20,000	-21.2	-15	9	11	12	-12	10	12	13	-7	14	15	16	-8	13	14	15
10,000	-4.6	2	7	9	10	5	8	10	11	4	12	13	14	6	11	13	13
BANGALORE TO BANGKOK																	
55,000	-56.5	-80	-25	-22	-20	-76	-20	-18	-16	-78	-21	-19	-18	-80	-24	-22	-21
40,000	-56.5	-56	0	5	4	-52	5	7	8	-55	4	6	7	-54	2	4	5
30,000	-44.5	-52	13	14	15	-50	14	16	17	-29	15	17	17	-31	13	15	16
20,000	-21.2	-6	16	17	18	-5	16	18	14	-4	17	18	18	-6	16	17	18
10,000	-4.6	9	14	15	16	10	15	16	17	10	15	16	16	9	14	15	15
BANGALORE TO HYDERABAD																	
55,000	-56.5	-79	-22	-20	-19	-76	-19	-17	-15	-77	-21	-18	-17	-80	-25	-21	-20
40,000	-56.5	-56	0	5	5	-52	4	7	8	-50	6	9	10	-54	3	5	7
30,000	-44.5	-55	12	14	15	-51	13	15	17	-28	16	18	19	-32	13	15	16
20,000	-21.2	-7	15	16	17	-6	15	17	18	-4	17	19	19	-6	16	17	18
10,000	-4.6	8	13	14	15	10	15	16	17	11	15	16	17	9	13	15	15
BANGALORE TO LEOPOLDVILLE																	
55,000	-56.5	-79	-22	-21	-20	-78	-21	-19	-18	-76	-22	-18	-17	-78	-21	-19	-18
40,000	-56.5	-54	2	4	5	-52	5	7	8	-52	4	5	6	-53	4	6	7
30,000	-44.5	-51	14	15	16	-50	15	16	17	-31	14	15	16	-30	14	15	16
20,000	-21.2	-5	17	18	18	-5	16	18	18	-5	16	17	18	-5	16	17	18
10,000	-4.6	10	14	15	16	10	15	16	16	10	14	15	16	10	14	15	16

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ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
BANGALORE TO MADRAS																									
55,000	-56.5	-80	-25	-21	-20	-76	-20	-17	-16	-78	-21	-19	-17	-80	-24	-22	-21	-19	-22	-19	-18	3	4	4	5
40,000	-56.5	-56	0	5	6	-52	5	7	8	-51	5	7	8	-54	5	5	6	-55	5	6	7	4	5	5	5
30,000	-44.5	-52	15	16	15	-51	16	16	17	-29	16	17	18	-52	15	16	15	-51	16	17	18	3	5	5	2
20,000	-21.2	-6	15	17	18	-6	15	17	18	-4	17	18	19	-6	16	17	18	-5	16	17	18	2	2	2	2
10,000	-4.6	9	15	15	15	10	15	16	17	10	15	16	16	9	14	15	15	10	14	15	16	2	2	2	2
BANGKOK TO BAKHA																									
55,000	-56.5	-72	-16	-16	-12	-70	-16	-11	-10	-75	-18	-15	-14	-74	-17	-15	-15	-75	-16	-15	-12	4	4	4	4
40,000	-56.5	-55	2	4	6	-55	6	7	8	-69	8	10	12	-54	2	5	7	-55	6	7	9	4	4	4	4
30,000	-44.5	-57	7	10	11	-55	10	12	16	-27	18	20	21	-56	11	16	15	-55	12	15	16	4	4	5	5
20,000	-21.2	-12	10	12	13	-9	15	15	16	-5	18	20	21	-7	16	16	17	-8	16	16	18	5	5	2	5
10,000	-4.6	6	9	11	12	9	15	15	16	16	18	20	20	8	15	16	15	9	15	16	17	5	5	2	5
BANGKOK TO BEIRUT																									
55,000	-56.5	-70	-15	-11	-10	-68	-11	-9	-7	-73	-17	-16	-15	-71	-15	-12	-11	-71	-16	-11	-9	4	4	4	4
40,000	-56.5	-55	2	4	6	-55	5	6	8	-68	8	11	12	-54	2	5	6	-55	6	7	9	4	4	4	4
30,000	-44.5	-59	5	8	9	-57	8	10	12	-27	18	20	21	-55	10	12	13	-56	10	16	15	4	4	5	5
20,000	-21.2	-14	7	9	11	-10	11	15	16	-5	18	20	21	-9	15	16	15	-9	12	15	17	5	5	5	5
10,000	-4.6	2	7	9	10	7	11	15	15	16	18	20	20	7	12	16	15	7	12	15	16	5	5	2	5
BANGKOK TO BENGHAZI																									
55,000	-56.5	-69	-15	-10	-9	-67	-11	-8	-7	-73	-17	-16	-15	-71	-16	-12	-10	-70	-15	-10	-9	4	4	4	4
40,000	-56.5	-52	2	4	6	-54	5	6	7	-64	8	11	12	-55	2	4	6	-55	6	7	9	4	4	4	4
30,000	-44.5	-50	4	7	8	-57	7	10	11	-27	17	19	20	-55	9	12	13	-55	10	15	15	4	4	5	5
20,000	-21.2	-14	7	9	10	-11	10	12	13	-5	18	20	21	-9	12	16	15	-9	12	15	16	5	5	5	5
10,000	-4.6	1	5	8	9	8	11	15	16	15	18	19	20	7	12	15	16	7	12	16	16	5	5	2	5
BANGKOK TO BOMBAY																									
55,000	-56.5	-78	-22	-20	-18	-75	-19	-16	-15	-77	-21	-18	-17	-79	-22	-20	-19	-77	-21	-18	-16	5	4	4	5
40,000	-56.5	-56	0	5	6	-52	4	7	8	-51	5	8	9	-54	2	5	6	-55	5	6	7	5	4	4	4
30,000	-44.5	-55	11	15	16	-51	15	15	17	-28	16	18	19	-51	15	15	16	-51	15	16	17	5	5	2	5
20,000	-21.2	-7	14	16	17	-6	16	17	18	-4	17	18	19	-6	16	17	18	-5	16	17	18	2	5	2	2
10,000	-4.6	8	15	16	15	10	15	16	17	11	16	17	17	9	15	15	15	9	16	15	16	2	2	1	2
BANGKOK TO CAIRO																									
55,000	-56.5	-71	-15	-15	-11	-69	-15	-10	-9	-74	-18	-15	-14	-75	-16	-16	-15	-72	-15	-12	-11	5	4	4	4
40,000	-56.5	-55	2	4	6	-55	5	6	8	-68	8	11	12	-54	2	5	6	-55	6	7	9	4	4	4	4
30,000	-44.5	-58	6	9	10	-56	9	11	13	-27	18	20	21	-54	11	15	16	-54	11	16	16	4	4	5	5
20,000	-21.2	-15	9	11	12	-10	12	16	15	-5	18	20	21	-8	15	15	16	-8	15	16	17	5	5	2	2
10,000	-4.6	5	8	10	11	8	12	16	15	16	19	20	21	8	12	16	15	8	15	15	17	5	5	2	2
BANGKOK TO CALCUTTA																									
55,000	-56.5	-77	-21	-19	-17	-74	-18	-15	-16	-77	-21	-18	-17	-77	-20	-18	-17	-76	-20	-17	-15	5	4	4	5
40,000	-56.5	-56	1	5	6	-52	5	7	8	-52	5	7	8	-54	2	4	6	-55	5	5	7	5	5	5	5
30,000	-44.5	-54	11	15	16	-51	15	15	16	-28	17	18	19	-51	15	15	16	-51	15	16	17	5	5	2	5
20,000	-21.2	-7	14	16	17	-6	16	17	18	-4	17	18	19	-6	16	17	18	-6	16	17	18	5	2	2	2
10,000	-4.6	8	12	14	15	10	14	16	16	11	16	17	17	9	15	16	15	9	16	15	16	2	2	1	2
BANGKOK TO COLOMBO																									
55,000	-56.5	-81	-24	-22	-21	-77	-21	-18	-17	-78	-22	-19	-18	-80	-24	-22	-21	-79	-24	-20	-19	5	5	5	5
40,000	-56.5	-56	1	5	6	-52	5	6	7	-54	5	6	5	-54	2	4	5	-54	5	5	6	5	2	2	2
30,000	-44.5	-51	15	15	15	-50	15	16	17	-50	15	16	16	-51	15	16	15	-51	16	16	17	2	2	2	2
20,000	-21.2	-5	16	17	18	-5	16	18	18	-4	17	18	18	-5	16	17	17	-5	16	17	18	2	2	1	2
10,000	-4.6	10	16	15	16	10	15	16	17	10	16	15	16	9	14	15	15	10	16	15	16	2	2	1	2
BANGKOK TO DAMASCUS																									
55,000	-56.5	-70	-16	-11	-10	-68	-11	-9	-8	-74	-17	-16	-15	-71	-15	-12	-11	-71	-16	-11	-10	4	4	4	4
40,000	-56.5	-55	2	4	6	-55	5	6	8	-68	8	11	12	-54	2	5	6	-55	6	7	9	4	4	4	4
30,000	-44.5	-59	5	8	9	-57	8	10	12	-27	18	20	21	-55	10	12	14	-54	10	16	16	4	4	5	5
20,000	-21.2	-14	7	10	11	-10	11	15	16	-5	18	20	21	-8	15	15	16	-9	12	15	17	5	5	5	5
10,000	-4.6	2	7	9	10	7	12	16	15	16	18	20	20	7	12	16	15	8	12	15	16	5	5	2	5
BANGKOK TO DAWUN																									
55,000	-56.5	-82	-26	-24	-23	-80	-24	-22	-21	-78	-22	-20	-19	-80	-24	-22	-21	-80	-24	-21	-20	5	5	5	5
40,000	-56.5	-55	2	5	6	-52	5	6	7	-54	2	5	6	-54	2	5	6	-54	5	5	6	2	2	2	2
30,000	-44.5	-51	14	15	15	-51	14	15	16	-51	14	15	15	-51	15	16	15	-51	15	15	15	2	2	2	2
20,000	-21.2	-5	16	17	18	-5	16	17	18	-5	16	17	17	-6	16	17	17	-5	16	17	17	1	1	1	1
10,000	-4.6	10	16	15	15	10	15	16	16	9	14	15	15	10	14	15	15	10	14	15	16	1	1	1	1
BANGKOK TO DHAMRAN																									
55,000	-56.5	-74	-16	-16	-16	-75	-16	-15	-12	-76	-19	-16	-15	-76	-19	-17	-16	-75	-18	-15	-14	5	4	4	4
40,000	-56.5	-55	1	4	5	-52	4	7	8	-69	7	10	11	-54	5	5	7	-55	4	7	9	4	4	4	4
30,000	-44.5	-56	9	11	13	-54	11	14	15	-27	17	19	20	-52	12	14	15	-52	12	15	17	4	4	5	5
20,000	-21.2	-10	11	15	16	-7	14	16	17	-5	18	19	20	-6	15	16	17	-7	15	17	18	5	5	2	2
10,000	-4.6	6	10	12	13	10	14	16	17	15	18	19	20	8	15	16	15	9	16	16	17	5	5	2	2
BANGKOK TO DJARAHIA																									
55,000	-56.5	-82	-26	-24	-23	-79	-24	-21	-20	-78	-22	-20	-19	-80	-24	-22	-21	-80	-24	-21	-20	5	5	5	5
40,000	-56.5	-55	2	5	6	-52	5	6	7	-54	2	5	6	-54	2	5	6	-54	5	5	6	2	2	2	2
30,000	-44.5	-51	14	15	15	-50	14	16	16	-51	14	15	15	-52	15	16	15	-51	14	15	16	2	2	2	2
20,000	-21.2	-5	16	17	18	-5	17	18	18	-5	16	17	17	-6	16	17	17	-5	16	17	18	2	1	1	1
10,000	-4.6	9	14	15	15	10	15	16	16	9	14	15	15	9	14	15	15	10	14	15	16	1	1	1	1
BANGKOK TO HONG KONG																									
55,000	-56.5	-77	-21	-19	-17	-77	-20	-18	-16	-76	-20	-17	-16	-75	-19	-17	-15	-76	-20	-17	-16	5	5	4	5
40,000	-56.5	-55	2	4	5	-52	5	6	7	-53	4	6	6	-54	5	4	5	-54	5	5	6	2	2	2	5
30,000	-44.5	-52	15	16	17	-50	14	16	17	-29	15	17	17	-30	14	16	16	-30	14	15	16	2	2	2	2
20,000	-21.2	-7	14	16	17	-5	17	18	19	-4	17	18	19	-6	16	17	18	-5	16	17	18	2	2	1	2
10,000	-4.6	7	11	13	14	10	15	16	16	11															

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION												
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN APR JUL OCT				
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	
BANGKOK TO KUALA LUMPUR																										
55,000	-56.5	-82	-25	-23	-22	-79	-22	-21	-20	-78	-22	-20	-18	-80	-24	-22	-21	-80	-23	-21	-20	3	3	3	3	650 N.M.I.
40,000	-56.5	-55	1	3	4	-52	5	6	7	-54	2	3	4	-54	2	3	4	-54	3	4	5	2	2	2	2	
30,000	-44.5	-31	15	14	15	-30	15	16	17	-30	14	15	16	-31	13	14	15	-31	14	15	16	2	2	1	2	
20,000	-21.2	-5	16	18	18	-4	17	18	19	-5	17	17	17	-6	16	17	17	-5	16	18	18	2	2	1	2	
10,000	-4.6	9	14	15	15	10	15	16	16	10	14	15	15	9	14	15	15	10	14	15	16	2	1	1	1	
BANGKOK TO LISBON																										
55,000	-56.5	-65	-6	-5	-2	-61	-4	-2	-0	-64	-7	-5	-3	-64	-8	-5	-4	-63	-6	-3	-2	4	4	4	4	5762 N.M.I.
40,000	-56.5	-56	0	3	5	-55	2	5	7	-49	7	10	11	-55	1	4	5	-54	3	6	8	5	5	4	4	
30,000	-44.5	-45	-1	2	3	-42	5	6	7	-32	15	15	16	-39	6	8	10	-39	5	9	11	4	4	3	4	
20,000	-21.2	-20	1	4	5	-15	6	9	10	-7	14	16	17	-13	8	11	12	-14	7	11	13	4	4	3	5	
10,000	-4.6	-4	0	5	5	1	6	8	10	9	14	16	17	5	7	10	11	2	7	10	12	4	4	3	4	
BANGKOK TO MADRID																										
55,000	-56.5	-65	-6	-5	-2	-61	-5	-2	-1	-64	-7	-5	-3	-64	-8	-5	-4	-63	-6	-4	-2	4	4	4	4	5485 N.M.I.
40,000	-56.5	-56	0	3	5	-55	2	5	7	-49	7	10	11	-55	1	4	5	-54	3	6	8	5	5	4	4	
30,000	-44.5	-45	-1	2	3	-42	5	6	7	-32	15	15	16	-39	6	8	10	-39	5	9	11	4	4	3	4	
20,000	-21.2	-20	1	4	5	-15	6	9	10	-7	14	16	17	-13	8	11	12	-14	7	11	13	4	4	3	5	
10,000	-4.6	-4	0	5	5	1	6	8	10	9	14	16	17	5	7	10	11	2	7	10	12	4	4	3	4	
BANGKOK TO MANILA																										
55,000	-56.5	-80	-25	-21	-20	-79	-25	-20	-19	-78	-21	-19	-18	-78	-22	-20	-19	-79	-22	-20	-18	3	3	4	3	1188 N.M.I.
40,000	-56.5	-55	2	3	4	-52	5	6	7	-54	2	3	4	-54	2	3	4	-54	3	5	5	2	2	2	2	
30,000	-44.5	-31	15	15	15	-30	15	16	17	-30	14	15	16	-31	14	15	16	-30	14	15	16	2	2	1	2	
20,000	-21.2	-5	16	17	18	-4	17	18	19	-4	17	18	18	-5	16	17	17	-5	16	18	18	2	2	1	2	
10,000	-4.6	9	14	15	15	10	15	16	17	11	15	16	16	10	14	15	16	10	14	15	16	2	2	1	1	
BANGKOK TO MILAN																										
55,000	-56.5	-65	-6	-5	-2	-61	-4	-2	-0	-63	-6	-4	-2	-64	-7	-5	-4	-62	-6	-3	-2	4	4	4	4	4084 N.M.I.
40,000	-56.5	-56	0	3	5	-54	2	5	7	-49	8	10	12	-55	2	4	6	-54	3	7	9	4	5	4	4	
30,000	-44.5	-45	-1	2	3	-42	5	6	7	-32	15	15	17	-39	6	8	10	-39	5	9	11	4	4	3	4	
20,000	-21.2	-20	1	4	5	-15	6	9	10	-7	14	16	17	-13	8	11	12	-14	7	11	13	4	4	3	4	
10,000	-4.6	-4	0	5	5	1	6	8	10	9	15	15	16	2	7	10	11	2	6	10	11	4	4	3	4	
BANGKOK TO NEW DELHI																										
55,000	-56.5	-75	-16	-16	-15	-71	-15	-12	-11	-76	-19	-16	-15	-75	-18	-16	-14	-74	-18	-14	-13	3	4	4	4	1576 N.M.I.
40,000	-56.5	-55	1	4	5	-52	4	7	8	-50	6	9	10	-54	2	5	7	-53	3	7	8	4	4	4	4	
30,000	-44.5	-36	11	13	15	-35	11	14	15	-27	17	19	20	-32	12	15	16	-32	12	15	16	4	4	2	3	
20,000	-21.2	-10	12	13	15	-4	14	16	17	-5	14	16	17	-6	15	17	18	-7	15	17	18	3	3	2	3	
10,000	-4.6	6	10	12	13	9	13	15	16	12	16	17	18	8	15	14	15	9	15	15	16	3	3	2	2	
BANGKOK TO OKINAWA																										
55,000	-56.5	-75	-16	-16	-15	-75	-19	-16	-15	-75	-19	-16	-15	-75	-17	-14	-13	-75	-18	-15	-14	4	4	4	4	1694 N.M.I.
40,000	-56.5	-55	1	4	5	-52	4	6	7	-52	5	7	8	-53	3	5	6	-53	4	6	7	4	3	3	3	
30,000	-44.5	-32	13	14	15	-31	15	15	16	-29	15	17	18	-30	14	16	17	-31	14	16	17	2	2	2	2	
20,000	-21.2	-8	15	15	16	-6	16	17	18	-4	17	18	19	-6	15	17	18	-6	15	17	18	2	2	2	2	
10,000	-4.6	6	10	12	13	9	13	15	16	11	16	17	17	9	15	15	15	9	15	15	15	2	2	1	2	
BANGKOK TO HANOI																										
55,000	-56.5	-79	-25	-21	-20	-77	-20	-18	-17	-78	-21	-19	-17	-79	-22	-20	-19	-79	-22	-19	-18	3	3	4	3	515 N.M.I.
40,000	-56.5	-56	1	2	3	-52	5	6	7	-53	1	5	6	-54	2	4	5	-54	3	5	6	3	2	3	3	
30,000	-44.5	-32	12	14	15	-30	15	16	17	-29	15	16	17	-31	15	16	17	-31	14	15	16	2	2	1	2	
20,000	-21.2	-6	15	17	18	-4	17	18	19	-4	17	18	18	-6	16	17	18	-5	16	18	18	2	2	1	2	
10,000	-4.6	4	15	16	15	10	15	16	17	11	15	16	16	9	14	15	15	9	14	15	16	2	2	1	2	
BANGKOK TO ROME																										
55,000	-56.5	-64	-4	-5	-5	-62	-6	-5	-7	-66	-10	-7	-6	-65	-9	-6	-5	-64	-8	-5	-3	4	4	4	4	4759 N.M.I.
40,000	-56.5	-56	1	4	5	-54	2	5	7	-48	8	11	12	-55	2	4	6	-53	3	7	9	4	5	4	4	
30,000	-44.5	-44	0	3	4	-40	4	7	8	-30	14	17	18	-38	7	9	10	-38	6	10	12	4	4	3	4	
20,000	-21.2	-19	2	5	6	-14	7	10	11	-6	16	18	19	-12	9	11	13	-13	9	12	14	4	4	3	3	
10,000	-4.6	-3	1	4	5	2	7	10	11	10	15	17	17	4	9	11	12	5	8	11	13	4	4	3	3	
BANGKOK TO SEOUL																										
55,000	-56.5	-69	-15	-10	-6	-70	-15	-10	-9	-71	-14	-11	-9	-69	-15	-10	-8	-70	-15	-10	-8	4	4	4	4	1992 N.M.I.
40,000	-56.5	-55	4	6	7	-52	4	6	8	-50	7	9	10	-53	4	6	7	-52	5	7	9	3	3	3	3	
30,000	-44.5	-37	10	10	11	-34	10	12	13	-24	17	19	20	-32	12	14	16	-33	12	15	16	3	3	3	3	
20,000	-21.2	-14	7	10	11	-9	12	14	15	-4	17	19	19	-9	12	15	16	-9	12	15	16	3	3	2	3	
10,000	-4.6	-1	4	6	8	4	9	11	12	11	16	17	17	6	10	12	13	5	10	12	13	3	3	2	3	
BANGKOK TO SINGAPORE																										
55,000	-56.5	-82	-25	-23	-22	-79	-25	-21	-20	-78	-22	-20	-19	-80	-24	-22	-21	-80	-25	-21	-20	3	3	3	3	778 N.M.I.
40,000	-56.5	-55	1	3	4	-52	5	6	7	-54	2	3	4	-54	2	3	4	-54	3	4	5	2	2	2	2	
30,000	-44.5	-31	15	15	15	-30	15	16	17	-30	14	15	16	-31	15	16	17	-31	14	15	16	2	2	1	2	
20,000	-21.2	-5	16	18	18	-4	17	18	19	-5	16	17	17	-6	16	17	17	-5	16	18	18	2	2	1	2	
10,000	-4.6	9	14	15	15	10	15	16	16	10	14	15	15	9	14	15	15	10	14	15	16	1	1	1	1	
BANGKOK TO TAIPEI																										
55,000	-56.5	-76	-20	-17	-16	-76	-19	-17	-16	-75	-19	-16	-15	-74	-19	-15	-14	-75	-19	-16	-15	4	4	4	4	1558 N.M.I.
40,000	-56.5	-54	3	4	5	-52	5	6	7	-53	3	5	6	-53	4	5	6	-53	4	6	6	3	2	3	3	
30,000	-44.5	-32	12	14	15	-31	14	15	16	-29	16	17	17	-30	14	16	17	-30	14	16	16	2	2	2	2	
20,000	-21.2	-8	14	15	16	-5	16	17	18	-4	17	18	19	-6	15	17	18	-6	16	17	18	2	2	1	2	
10,000	-4.6	6	11	12	13	9	14	15	16	11	16	16	17	9	13	15	15	9	13	15	15	3	2	1	2	
BANGKOK TO TEL AVIV-JAFFA																										
55,000	-56.5	-71	-14	-12	-11	-69	-12	-10	-9	-74	-17	-15	-13	-72	-16	-13	-12	-71	-15	-12	-10	4	4	4	4	5753 N.M.I.
40,000	-56.5	-55	2	4	6	-53	3	6	8	-48	8	11	12	-54	2	5	6	-53	4	7	9	4	4	4	4	
30,000	-44.5	-39	6	8	10	-36	8	11	12	-27	18	20	21	-34	10	13	14	-34	11	14	16	4	4	3	3	
20,000	-21.2	-13	8																							

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
BANGKOK TO TRIPOLI																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
55,000	-56.5	-68	-12	-9	-8	-66	-9	-7	-6	-72	-16	-13	-12	-69	-13	-10	-9	-8	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN Feet	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
BARBADOS TO POINT A PITRE																											
55,000	-56.5	-77	-21	-19	-18	-78	-21	-20	-19	-73	-16	-15	-14	-77	-21	-19	-18	-76	-20	-18	-16	5	3	2	2	5	
40,000	-56.5	-54	5	5	6	-54	5	4	5	-55	1	2	3	-54	5	4	4	-54	2	4	4	3	2	2	2	5	
30,000	-44.5	-34	11	12	13	-32	12	13	14	-34	11	12	12	-32	13	14	14	-33	12	13	14	2	2	2	2	2	
20,000	-21.2	-7	15	16	17	-7	15	16	17	-7	16	15	16	-6	16	17	17	-7	15	16	16	2	2	1	1	1	
10,000	-4.6	8	15	16	15	9	15	16	15	9	16	15	15	9	16	15	15	9	15	16	15	2	2	1	1	1	
BARBADOS TO PORT OF SPAIN																											
55,000	-56.5	-78	-21	-20	-19	-78	-22	-20	-19	-73	-17	-15	-14	-77	-21	-19	-18	-77	-20	-18	-17	5	3	2	2	5	
40,000	-56.5	-54	5	5	5	-55	5	5	6	-55	1	5	5	-54	5	4	5	-54	5	4	5	3	3	2	2	5	
30,000	-44.5	-34	11	12	13	-31	15	16	15	-33	11	12	13	-33	13	14	15	-32	12	13	14	2	2	2	2	2	
20,000	-21.2	-7	15	16	17	-6	15	16	17	-7	16	15	16	-6	16	17	17	-6	15	16	17	2	2	1	1	1	
10,000	-4.6	8	15	16	15	9	16	15	16	9	16	15	15	10	16	15	16	9	14	15	15	2	2	1	1	2	
BARBADOS TO SAN JUAN																											
55,000	-56.5	-77	-20	-19	-18	-77	-21	-19	-18	-73	-16	-15	-14	-77	-20	-19	-18	-76	-19	-17	-16	5	3	2	2	5	
40,000	-56.5	-54	1	5	6	-54	5	4	5	-56	1	2	3	-54	5	4	4	-54	2	4	4	3	2	2	2	5	
30,000	-44.5	-34	10	12	12	-33	12	13	13	-34	11	12	12	-32	13	14	14	-33	11	13	13	2	2	1	1	2	
20,000	-21.2	-7	16	16	16	-7	16	16	16	-7	16	15	16	-6	16	16	17	-7	15	16	16	2	2	1	1	1	
10,000	-4.6	8	12	16	16	6	15	16	15	9	16	16	15	9	16	15	15	9	15	16	15	2	2	5	1	1	
BARBADOS TO ST. LUCIA																											
55,000	-56.5	-78	-21	-19	-16	-78	-22	-20	-19	-73	-16	-15	-14	-77	-21	-19	-18	-76	-20	-18	-17	5	3	2	2	5	
40,000	-56.5	-54	5	5	6	-54	5	5	6	-55	1	5	5	-54	5	4	5	-54	2	4	5	5	3	2	2	5	
30,000	-44.5	-34	11	12	13	-32	12	13	14	-34	11	12	13	-32	13	14	15	-33	12	13	14	2	2	2	2	2	
20,000	-21.2	-7	16	16	17	-6	15	16	17	-7	16	15	16	-6	16	17	17	-6	15	16	17	2	2	1	1	1	
10,000	-4.6	8	11	16	15	9	15	15	15	9	16	15	15	9	16	15	15	9	15	15	15	2	2	1	1	1	
BARBADOS TO ST. VINCENT																											
55,000	-56.5	-78	-21	-19	-18	-78	-22	-20	-19	-73	-16	-15	-14	-77	-21	-19	-18	-76	-20	-18	-17	5	3	2	2	5	
40,000	-56.5	-54	5	5	6	-55	5	5	6	-55	1	5	5	-54	5	4	5	-54	2	4	5	5	3	2	2	5	
30,000	-44.5	-34	11	12	13	-32	13	14	14	-31	11	12	13	-32	13	14	15	-33	12	13	14	2	2	2	2	2	
20,000	-21.2	-7	16	16	16	-6	15	16	17	-7	16	15	16	-6	16	17	17	-6	15	16	17	2	2	1	1	1	
10,000	-4.6	8	11	16	15	9	15	15	15	9	16	15	15	9	16	15	15	9	15	15	15	2	2	1	1	1	
BARBADOS TO TAMPA																											
55,000	-56.5	-75	-19	-17	-16	-74	-16	-16	-15	-72	-15	-14	-13	-76	-20	-17	-16	-74	-16	-14	-13	5	3	2	2	5	
40,000	-56.5	-55	2	4	5	-55	2	5	4	-56	0	2	2	-54	2	4	4	-54	2	4	5	5	2	2	2	5	
30,000	-44.5	-36	8	10	11	-35	10	11	12	-34	10	12	12	-33	12	13	14	-33	10	12	13	2	2	1	2	2	
20,000	-21.2	-9	15	16	15	-8	15	15	15	-7	16	15	16	-6	15	16	17	-7	16	15	16	2	2	1	2	2	
10,000	-4.6	7	11	15	15	7	12	15	16	9	15	16	16	9	15	16	15	8	12	15	14	2	2	1	2	2	
BARBADOS TO TORONTO																											
55,000	-56.5	-70	-15	-11	-10	-68	-12	-10	-9	-68	-11	-10	-9	-71	-15	-12	-11	-69	-15	-11	-10	5	3	2	3	5	
40,000	-56.5	-56	1	5	5	-56	0	5	4	-56	1	2	3	-55	2	4	5	-56	1	5	4	4	4	2	3	5	
30,000	-44.5	-40	4	6	7	-39	4	7	8	-35	10	11	12	-36	9	11	12	-37	7	9	10	5	3	2	3	5	
20,000	-21.2	-13	6	10	11	-12	9	11	12	-8	14	15	15	-9	12	14	15	-11	11	13	14	5	3	2	3	5	
10,000	-4.6	1	6	8	9	5	7	9	10	7	12	15	16	6	11	12	13	4	9	11	12	5	3	2	3	5	
BARBADOS TO TRINIDAD																											
55,000	-56.5	-78	-21	-20	-19	-78	-22	-20	-19	-73	-17	-15	-14	-77	-21	-19	-18	-77	-2	-18	-17	5	3	2	2	5	
40,000	-56.5	-54	5	5	5	-51	5	5	6	-55	1	5	4	-54	5	4	5	-54	5	4	5	5	3	2	2	5	
30,000	-44.5	-33	11	12	13	-31	13	14	15	-31	11	12	13	-31	13	14	15	-32	12	13	14	2	2	2	2	5	
20,000	-21.2	-7	15	16	17	-6	15	16	17	-7	16	15	16	-6	16	17	17	-6	15	16	17	2	2	1	1	5	
10,000	-4.6	8	13	16	15	9	16	15	16	9	16	15	16	10	16	15	16	9	14	15	15	2	2	1	2	5	
BARCELONA TO DASHA																											
55,000	-56.5	-59	-5	-0	1	-58	-2	0	2	-64	-8	-6	-4	-62	-6	-4	-2	-61	-5	-2	-0	4	5	5	5	5	
40,000	-56.5	-56	0	4	5	-56	0	5	5	-64	8	11	12	-56	0	5	4	-54	2	6	8	4	5	5	5	1	
30,000	-44.5	-48	-5	-1	0	-45	-0	2	1	-52	12	14	15	-41	4	6	7	-41	5	7	9	5	5	5	5	5	
20,000	-21.2	-22	-1	2	3	-18	5	5	7	-7	16	16	17	-14	7	9	10	-15	6	9	11	4	4	5	5	5	
10,000	-4.6	-6	-1	1	5	-1	4	6	8	9	16	16	17	5	7	9	11	1	6	9	11	4	4	5	5	5	
BARCELONA TO BELHOF																											
55,000	-56.5	-59	-2	1	2	-58	-1	1	5	-65	-6	-4	-3	-62	-5	-1	-2	-60	-4	-1	1	4	4	5	5	5	
40,000	-56.5	-56	0	5	5	-57	-1	1	5	-69	8	10	11	-56	0	2	4	-55	2	5	7	5	5	5	5	5	
30,000	-44.5	-48	-4	-1	-0	-45	-1	2	5	-54	10	13	14	-41	5	6	7	-42	2	6	8	5	5	5	5	5	
20,000	-21.2	-23	-2	1	5	-19	2	5	6	-9	12	14	15	-15	7	9	10	-16	5	8	10	4	4	5	5	5	
10,000	-4.6	-6	-2	1	2	-2	5	6	7	8	12	14	15	2	6	9	10	0	5	8	10	4	4	5	5	5	
BARCELONA TO BRUSSELS																											
55,000	-56.5	-58	-1	2	4	-55	1	4	5	-54	2	5	6	-50	-5	-0	1	-57	-0	3	4	5	4	4	5	4	
40,000	-56.5	-58	-2	2	4	-57	-1	1	5	-55	4	7	8	-56	0	5	5	-56	0	4	6	6	6	5	4	4	
30,000	-44.5	-49	-5	-2	-1	-47	-2	0	2	-59	6	8	9	-45	2	5	6	-44	0	4	5	4	4	5	4	4	
20,000	-21.2	-25	-5	0	2	-21	0	5	5	-12	9	11	12	-17	5	7	9	-19	5	6	8	5	4	5	4	4	
10,000	-4.6	-8	-5	0	2	-4	0	5	5	4	9	11	12	-1	4	6	8	-2	2	6	8	5	4	5	4	4	
BARCELONA TO BUDAPEST																											
55,000	-56.5	-57	-0	5	5	-55	1	4	5	-55	2	4	5	-59	-5	-0	1	-57	-0	3	4	5	4	5	4	4	
40,000	-56.5	-58	-1	2	4	-57	-1	1	4	-52	4	7	9	-56	0	5	4	-56	0	4	6	5	5	5	4	4	
30,000	-44.5	-50	-5	-5	-1	-47	-2	0	2	-58	6	8	10	-42	2	5	6	-44	0	4	6	4	4	5	4	4	
20,000	-21.2	-25	-4	-1	1	-21	1	1	5	-12	9	11	12	-16	5	7	9	-19	5	6	8	5	4	5	4	4	
10,000	-4.6	-9	-4	-1	1	-4	0	5	4	4	9	11	12	-1	4	6	8	-2	2	6	8	5	4	5	4	4	
BARCELONA TO CAIRO																											
55,000	-56.5	-60	-4	-1	0	-59	-2	-0	1	-65	-8	-6	-5	-65	-6	-4	-3	-62	-5	-2	-1	4	5	5	5	3	
40,000	-56.5	-56	0	4	5	-57	-0	5	5	-69	8	10	11	-56	0	5	4	-55	2	5	7	5	5	5	5	3	
30,000	-44.5	-47	-5	-0	1	-44	0	5	4	-53	11	13	15	-40	4	6	8	-41	5	7	9	5	3	5	5	3	
20,000	-21.2	-21	-5	0	4	-17	4	6	7	-8	13	15	16	-14	7	9	10	-1									

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85
BARCELONA TO CUNANA																	
55,000	-56.5	-68	-11	-9	-8	-67	-10	-8	-7	-67	-10	-8	-7	-67	-11	-9	-8
40,000	-56.5	-57	-0	3	4	-57	-0	2	4	-56	2	4	5	-55	1	3	4
30,000	-44.5	-41	5	5	6	-39	6	7	8	-35	9	11	12	-36	8	10	11
20,000	-21.2	-14	7	9	10	-13	9	11	12	-8	13	14	15	-9	12	13	14
10,000	-4.6	2	7	9	10	3	8	10	11	8	13	14	15	6	10	12	13
BARCELONA TO DARAN																	
55,000	-56.5	-67	-11	-8	-7	-66	-9	-7	-6	-69	-12	-10	-9	-68	-11	-9	-7
40,000	-56.5	-56	0	3	5	-55	1	4	6	-52	4	6	7	-55	2	4	5
30,000	-44.5	-42	2	4	5	-39	6	7	8	-34	10	12	13	-37	8	9	10
20,000	-21.2	-16	6	8	9	-13	8	10	11	-8	13	14	15	-10	11	13	14
10,000	-4.6	2	6	8	9	4	8	10	11	11	16	17	18	6	10	12	13
BARCELONA TO DUSSELDORF																	
55,000	-56.5	-57	-1	3	4	-55	1	4	5	-56	2	5	6	-57	-3	-0	1
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	4	7	9	-56	0	3	5
30,000	-44.5	-49	-5	-2	-1	-47	-2	0	2	-39	5	8	9	-43	2	4	6
20,000	-21.2	-25	-4	-0	2	-21	0	3	5	-12	9	11	12	-17	5	7	9
10,000	-4.6	-8	-4	-0	2	-4	0	3	4	4	8	11	12	-1	4	6	8
BARCELONA TO FRANKFURT																	
55,000	-56.5	-57	-1	3	4	-55	1	4	5	-56	2	5	6	-57	-3	-0	1
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	4	7	9	-56	0	3	5
30,000	-44.5	-49	-5	-2	-1	-47	-2	0	2	-39	5	8	9	-43	2	4	6
20,000	-21.2	-25	-4	-0	2	-21	1	3	5	-12	9	11	12	-16	5	7	9
10,000	-4.6	-8	-5	0	2	-4	0	3	5	4	9	11	12	-1	4	6	8
BARCELONA TO GENEVA																	
55,000	-56.5	-58	-1	2	4	-56	0	3	4	-56	0	3	4	-57	-1	2	4
40,000	-56.5	-58	-2	2	4	-56	-1	2	4	-55	1	3	5	-56	0	3	4
30,000	-44.5	-49	-4	-2	-0	-46	-2	1	2	-44	6	9	10	-42	2	5	7
20,000	-21.2	-24	-3	1	2	-20	1	4	5	-12	10	12	13	-16	5	8	9
10,000	-4.6	-7	-2	1	3	-5	1	4	5	5	10	12	13	-0	4	7	8
BARCELONA TO GLASGOW																	
55,000	-56.5	-58	-1	2	4	-55	2	5	6	-55	4	6	8	-56	-2	1	2
40,000	-56.5	-58	-2	3	5	-56	0	3	5	-52	5	8	10	-56	0	4	5
30,000	-44.5	-49	-5	-2	-1	-47	-2	0	2	-40	5	7	8	-43	1	4	5
20,000	-21.2	-25	-5	0	2	-21	-0	3	4	-15	8	10	11	-17	4	7	8
10,000	-4.6	-8	-5	0	2	-5	-0	2	4	5	7	9	11	-2	3	5	7
BARCELONA TO HAMBURG																	
55,000	-56.5	-57	-1	3	5	-55	2	4	6	-55	3	6	7	-56	-2	0	2
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-52	4	7	9	-56	0	3	5
30,000	-44.5	-50	-5	-3	-1	-47	-3	-0	1	-39	5	7	9	-43	1	4	6
20,000	-21.2	-26	-4	-1	1	-21	-0	3	4	-15	8	10	12	-17	4	7	9
10,000	-4.6	-9	-4	-1	1	-5	-0	2	4	5	8	10	11	-2	3	6	7
BARCELONA TO HELSINKI																	
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-51	6	8	9	-56	-1	1	3
40,000	-56.5	-59	-2	2	4	-56	1	3	5	-51	5	8	10	-56	0	4	5
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-40	4	7	8	-44	0	3	5
20,000	-21.2	-28	-6	-3	-1	-25	-2	1	3	-16	7	10	11	-19	3	6	8
10,000	-4.6	-12	-7	-3	-1	-7	-2	1	2	2	6	9	10	-4	1	4	6
BARCELONA TO ISTANBUL																	
55,000	-56.5	-57	-0	3	5	-56	0	3	4	-58	-2	1	2	-60	-4	-1	-0
40,000	-56.5	-57	-1	3	5	-57	-1	3	4	-50	6	9	10	-56	0	3	4
30,000	-44.5	-49	-5	-3	-1	-46	-2	1	2	-37	8	10	11	-42	3	5	7
20,000	-21.2	-24	-5	-0	1	-20	1	4	5	-11	11	12	13	-16	6	8	9
10,000	-4.6	-8	-5	-0	1	-5	1	4	6	6	10	13	14	0	5	7	8
BARCELONA TO KANO																	
55,000	-56.5	-68	-12	-9	-8	-67	-10	-8	-7	-70	-14	-12	-11	-70	-15	-11	-10
40,000	-56.5	-55	1	4	6	-54	2	5	7	-51	5	7	7	-54	2	4	5
30,000	-44.5	-42	2	4	5	-38	6	8	9	-35	12	13	14	-36	8	10	11
20,000	-21.2	-15	6	8	9	-12	9	10	11	-7	15	16	17	-10	11	13	14
10,000	-4.6	2	6	8	9	5	10	11	12	15	17	19	19	6	11	12	13
BARCELONA TO LISBON																	
55,000	-56.5	-59	-3	1	2	-58	-1	2	3	-60	-5	-1	0	-60	-5	0	2
40,000	-56.5	-58	-2	2	3	-58	-1	2	4	-55	3	6	7	-56	0	3	4
30,000	-44.5	-47	-2	-0	1	-45	-0	2	3	-37	8	10	11	-41	4	6	8
20,000	-21.2	-21	0	3	5	-18	3	5	6	-10	11	13	14	-14	7	9	10
10,000	-4.6	-4	1	4	5	-1	4	6	7	8	13	15	16	1	6	8	9
BARCELONA TO LONDON																	
55,000	-56.5	-58	-1	2	4	-55	1	4	5	-54	2	5	6	-59	-3	-0	1
40,000	-56.5	-58	-2	2	3	-57	-1	3	5	-53	4	7	9	-56	0	3	5
30,000	-44.5	-49	-4	-2	-0	-47	-2	1	2	-39	5	8	9	-43	2	5	6
20,000	-21.2	-24	-3	1	2	-21	1	3	5	-15	9	11	12	-17	5	7	9
10,000	-4.6	-7	-3	1	3	-4	1	3	5	4	8	11	12	-1	4	6	8
BARCELONA TO MADRID																	
55,000	-56.5	-57	-3	1	3	-57	-1	2	4	-59	-5	-0	1	-61	-4	-2	-1
40,000	-56.5	-58	-2	2	3	-58	-1	2	4	-55	3	6	8	-57	-0	3	4
30,000	-44.5	-47	-3	-0	1	-45	-1	2	3	-37	7	10	11	-41	3	6	7
20,000	-21.2	-22	-0	3	4	-19	3	5	6	-11	11	12	13	-15	6	9	10
10,000	-4.6	-5	-0	3	5	-1	3	6	7	8	12	14	15	1	6	8	9
BARCELONA TO MOSCOW																	
55,000	-56.5	-56	0	4	5	-54	2	5	6	-51	6	8	9	-58	-1	1	3
40,000	-56.5	-58	-2	2	3	-56	0	4	6	-51	5	8	10	-56	1	4	5
30,000	-44.5	-51	-7	-4	-3	-48	-3	-0	1	-40	5	7	9	-44	1	4	5
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	4	-15	8	10	11	-18	3	6	8
10,000	-4.6	-12	-7	-4	-2	-6	-2	1	3	2	7	9	10	-3	1	5	6

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
BARCELONA TO MUKDEN																	
55,000	-56.5	-54	2	6	8	-51	6	8	10	-48	9	11	12	-54	2	5	6
40,000	-56.5	-54	-1	2	4	-52	4	8	10	-49	7	11	13	-53	3	6	8
30,000	-56.5	-54	-9	-7	-5	-54	-4	-1	1	-57	7	10	12	-56	-2	3	6
20,000	-21.2	-32	-11	-7	-5	-25	-4	-0	2	-13	8	11	12	-22	-1	3	5
10,000	-4.6	-14	-13	-9	-7	-10	-6	-2	0	2	7	9	11	-7	-3	1	3
BARCELONA TO NAIAT																	
55,000	-56.5	-72	-15	-13	-12	-71	-14	-12	-11	-71	-14	-12	-11	-72	-14	-14	-13
40,000	-56.5	-55	1	4	5	-55	2	4	6	-53	3	5	6	-54	3	4	5
30,000	-56.5	-59	6	7	8	-55	9	11	11	-54	11	12	13	-54	10	12	13
20,000	-21.2	-12	9	11	12	-10	11	13	14	-7	14	15	16	-8	13	14	15
10,000	-4.6	5	9	11	12	6	10	12	13	10	15	16	16	8	12	14	14
BARCELONA TO NICOSIA																	
55,000	-56.5	-54	-2	1	3	-57	-1	2	3	-62	-5	-3	-2	-61	-5	-3	-1
40,000	-56.5	-57	-0	3	5	-57	-1	3	5	-59	7	10	11	-56	0	2	4
30,000	-56.5	-54	-6	-2	-0	-55	-1	1	5	-55	10	12	13	-51	3	6	7
20,000	-21.2	-23	-2	1	2	-19	2	5	6	-9	12	14	15	-15	4	8	9
10,000	-4.6	-7	-2	1	2	-2	3	5	6	7	12	14	15	2	6	8	9
BARCELONA TO OSLO																	
55,000	-56.5	-57	-1	2	4	-54	2	5	7	-51	5	8	9	-58	-1	1	3
40,000	-56.5	-54	-2	2	4	-56	1	5	7	-51	5	9	10	-56	0	4	5
30,000	-56.5	-50	-6	-3	-2	-48	-5	-1	1	-40	4	7	8	-44	1	3	5
20,000	-21.2	-27	-6	-2	0	-23	-1	2	1	-14	7	9	11	-18	3	6	8
10,000	-4.6	-10	-6	-2	-0	-6	-2	1	1	2	7	9	10	-3	2	5	6
BARCELONA TO PARIS																	
55,000	-56.5	-58	-1	2	4	-56	1	4	5	-55	1	4	5	-59	-3	-0	1
40,000	-56.5	-54	-2	2	4	-58	-1	3	5	-53	3	6	8	-56	0	3	5
30,000	-56.5	-49	-6	-2	-0	-46	-2	1	2	-39	6	8	9	-42	2	5	6
20,000	-21.2	-24	-3	1	2	-20	1	4	5	-12	9	11	12	-16	5	8	9
10,000	-4.6	-7	-2	1	1	-4	1	4	5	4	9	11	12	-1	4	7	8
BARCELONA TO ROME																	
55,000	-56.5	-58	-1	2	4	-57	-0	3	4	-58	-2	1	2	-60	-4	-2	-0
40,000	-56.5	-54	-1	3	5	-58	-1	2	4	-52	5	7	9	-56	0	3	4
30,000	-56.5	-44	-6	-1	0	-46	-1	1	3	-37	7	9	11	-42	3	6	7
20,000	-21.2	-23	-2	1	1	-19	2	4	6	-11	10	12	13	-15	6	8	9
10,000	-4.6	-6	-2	2	5	-2	2	5	6	7	11	13	15	0	5	7	8
BARCELONA TO SANTA MARIA																	
55,000	-56.5	-60	-4	-0	1	-54	-2	1	3	-63	-4	-1	0	-62	-5	-3	-2
40,000	-56.5	-58	-2	2	4	-58	-2	2	4	-54	3	6	7	-56	0	3	4
30,000	-56.5	-46	-2	0	2	-44	0	3	4	-37	8	10	11	-40	4	6	8
20,000	-21.2	-20	1	4	5	-14	3	6	7	-10	11	13	14	-14	8	10	11
10,000	-4.6	-3	1	4	6	-1	4	6	7	7	12	14	15	2	7	9	10
BARCELONA TO VIENNA																	
55,000	-56.5	-57	-0	3	5	-55	1	4	5	-55	2	4	5	-59	-3	-0	1
40,000	-56.5	-54	-2	2	4	-58	-1	3	4	-53	4	7	8	-56	0	3	4
30,000	-56.5	-50	-5	-2	-1	-47	-2	0	2	-39	6	8	10	-42	2	5	6
20,000	-21.2	-25	-4	-1	1	-21	1	3	5	-12	9	11	12	-16	5	7	9
10,000	-4.6	-4	-4	-0	1	-4	0	3	4	4	9	11	12	-1	4	6	8
BARCELONA TO ZURICH																	
55,000	-56.5	-57	-1	3	4	-58	1	3	5	-55	1	3	5	-60	-3	-1	1
40,000	-56.5	-54	-2	2	4	-54	-1	2	4	-53	3	6	8	-56	0	3	4
30,000	-56.5	-49	-6	-2	0	-46	-2	1	2	-38	6	8	10	-42	2	5	6
20,000	-21.2	-24	-5	0	2	-20	1	3	5	-12	9	11	12	-16	5	8	9
10,000	-4.6	-7	-5	1	2	-4	1	3	5	5	9	12	13	-0	4	7	8
BARBANQUILLA TO BERMUDA																	
55,000	-56.5	-74	-14	-16	-15	-73	-17	-15	-14	-71	-14	-13	-12	-75	-19	-17	-15
40,000	-56.5	-55	2	4	5	-55	1	3	4	-56	2	3	4	-54	2	3	4
30,000	-56.5	-37	4	9	10	-35	9	11	11	-34	11	12	13	-35	11	13	15
20,000	-21.2	-9	12	15	16	-8	13	14	15	-7	14	15	16	-8	13	15	16
10,000	-4.6	6	11	12	13	6	11	12	13	8	13	14	14	8	13	14	15
BARBANQUILLA TO BOGOTA																	
55,000	-56.5	-78	-21	-20	-19	-77	-21	-19	-18	-74	-17	-15	-15	-78	-21	-20	-19
40,000	-56.5	-54	3	4	5	-52	5	6	7	-55	1	3	4	-54	3	4	5
30,000	-56.5	-33	12	13	14	-31	14	15	16	-32	12	13	14	-31	14	15	15
20,000	-21.2	-5	16	17	18	-4	17	18	19	-7	16	17	18	-6	16	17	17
10,000	-4.6	9	14	15	16	10	14	16	16	9	14	15	16	10	15	16	16
BARBANQUILLA TO BRASLIA																	
55,000	-56.5	-74	-21	-19	-18	-77	-20	-19	-17	-72	-16	-15	-12	-75	-19	-17	-16
40,000	-56.5	-54	3	4	5	-52	5	6	7	-54	3	4	5	-54	3	4	5
30,000	-56.5	-32	12	14	16	-30	14	16	17	-32	12	14	15	-31	13	15	16
20,000	-21.2	-5	17	18	19	-4	17	18	19	-8	15	16	15	-6	16	17	17
10,000	-4.6	10	14	16	16	10	15	16	17	8	13	14	15	10	15	16	17
BARBANQUILLA TO CARACAS																	
55,000	-56.5	-74	-21	-20	-19	-74	-21	-19	-18	-73	-17	-15	-14	-74	-21	-19	-18
40,000	-56.5	-54	3	4	5	-52	4	6	7	-55	1	3	3	-54	3	4	4
30,000	-56.5	-33	11	13	15	-31	14	15	15	-33	12	13	13	-31	13	14	15
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17
10,000	-4.6	9	13	15	15	9	14	15	16	9	14	15	15	10	14	15	16
BARBANQUILLA TO CANTAGNA																	
55,000	-56.5	-74	-21	-19	-18	-77	-21	-19	-18	-73	-17	-15	-15	-74	-21	-19	-18
40,000	-56.5	-54	3	4	5	-52	5	6	7	-55	1	3	3	-54	3	4	4
30,000	-56.5	-33	11	12	13	-31	13	15	15	-33	12	13	13	-31	13	14	15
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17
10,000	-4.6	9	13	15	15	9	14	15	16	9	14	15	15	10	15	16	16

+0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																									
HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050				
MANAGUILLA TO GUATEMALA CITY																									
51,000	-56.5	-77	-21	-19	-18	-77	-20	-18	-18	-74	-17	-16	-15	-78	-22	-20	-19	-76	-20	-18	-17	3	3	2	3
40,000	-56.5	-54	5	4	5	-55	4	5	6	-56	1	2	3	-54	5	4	4	-54	5	4	5	2	2	2	2
30,000	-44.5	-34	11	12	12	-32	12	14	14	-33	12	13	13	-32	13	14	15	-33	12	13	14	2	2	2	1
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	15	15	16	-6	16	17	17	-6	15	17	17	2	2	1	1
10,000	-4.6	8	15	16	15	9	16	15	16	9	16	15	15	10	15	16	16	9	16	15	15	2	2	1	1
MANAGUILLA TO HAVANA																									
51,000	-56.5	-77	-20	-18	-18	-76	-19	-17	-17	-73	-16	-15	-14	-77	-21	-19	-18	-76	-19	-17	-16	3	3	2	3
40,000	-56.5	-54	2	4	5	-55	3	5	5	-56	1	2	2	-54	5	4	4	-54	2	4	4	2	2	2	2
30,000	-44.5	-34	10	11	12	-33	11	12	13	-33	12	12	13	-32	13	14	14	-33	11	13	13	2	2	1	2
20,000	-21.2	-7	16	15	16	-6	15	16	17	-7	15	15	16	-6	15	16	17	-7	15	16	16	2	2	1	1
10,000	-4.6	8	12	14	14	8	13	14	15	9	14	14	15	9	14	15	15	9	13	14	15	2	2	1	1
MANAGUILLA TO KINGSTON																									
51,000	-56.5	-77	-21	-19	-18	-77	-20	-19	-18	-75	-16	-15	-14	-77	-21	-19	-18	-76	-20	-18	-16	3	3	2	3
40,000	-56.5	-54	5	4	5	-55	4	5	6	-56	1	2	3	-54	5	4	4	-54	2	4	4	2	2	2	2
30,000	-44.5	-34	10	12	12	-32	12	13	14	-33	11	12	13	-32	13	14	14	-33	12	13	14	2	2	1	1
20,000	-21.2	-7	16	16	16	-6	15	17	17	-7	14	15	16	-6	16	16	17	-6	15	16	17	2	2	1	1
10,000	-4.6	8	13	14	15	9	13	15	15	9	14	15	15	10	14	15	16	9	13	15	15	2	2	1	1
MANAGUILLA TO LIMA																									
51,000	-56.5	-76	-21	-20	-19	-77	-21	-19	-18	-75	-17	-15	-14	-76	-20	-18	-17	-76	-20	-17	-16	3	3	3	3
40,000	-56.5	-54	5	5	6	-52	5	7	8	-54	2	4	5	-54	2	4	4	-53	5	5	6	3	3	2	2
30,000	-44.5	-32	12	14	14	-30	14	15	16	-32	12	14	14	-31	14	15	15	-31	13	15	15	2	2	2	2
20,000	-21.2	-5	17	18	19	-4	17	18	19	-7	14	15	15	-6	16	17	17	-6	16	17	18	2	2	1	1
10,000	-4.6	10	14	15	16	10	14	15	16	9	13	15	15	10	15	16	16	9	14	15	16	2	2	2	2
MANAGUILLA TO MARACAIBO																									
51,000	-56.5	-78	-21	-19	-19	-77	-21	-19	-18	-75	-17	-15	-14	-76	-21	-19	-18	-76	-20	-18	-17	3	3	2	3
40,000	-56.5	-54	5	4	5	-52	5	6	7	-53	1	3	3	-54	5	4	4	-54	3	4	5	2	2	2	2
30,000	-44.5	-33	11	13	13	-31	13	15	15	-33	12	13	13	-31	13	14	15	-32	12	14	15	2	2	2	1
20,000	-21.2	-6	15	16	17	-5	16	17	17	-7	14	15	16	-6	16	17	17	-6	15	17	17	2	2	1	1
10,000	-4.5	9	13	15	15	9	14	15	16	9	14	15	15	10	14	15	16	9	14	15	16	2	2	1	1
MANAGUILLA TO MEXICO CITY																									
51,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-74	-17	-16	-15	-76	-22	-20	-19	-76	-20	-18	-17	3	3	2	3
40,000	-56.5	-54	2	4	5	-54	3	4	5	-56	1	2	2	-54	5	4	4	-54	2	4	4	2	2	2	2
30,000	-44.5	-34	10	11	12	-33	11	12	13	-33	12	13	13	-32	13	14	14	-33	11	13	13	2	2	1	2
20,000	-21.2	-7	16	15	16	-6	15	17	17	-7	15	15	16	-6	15	16	17	-6	15	16	17	2	2	1	1
10,000	-4.6	8	13	14	15	9	14	15	16	9	14	15	15	10	15	16	16	9	14	15	16	2	2	1	1
MANAGUILLA TO MIAMI																									
51,000	-56.5	-76	-20	-18	-17	-75	-19	-17	-16	-72	-16	-14	-14	-77	-20	-18	-17	-75	-19	-17	-16	3	3	2	3
40,000	-56.5	-54	2	4	4	-54	3	4	5	-56	0	2	2	-54	2	4	4	-55	2	3	4	2	2	2	2
30,000	-44.5	-35	9	10	11	-34	11	12	13	-35	11	12	13	-32	12	13	14	-34	11	12	13	2	2	1	2
20,000	-21.2	-8	15	15	16	-7	14	16	16	-7	14	15	16	-5	15	16	17	-7	14	16	16	2	2	1	1
10,000	-4.6	7	12	13	14	8	12	14	15	9	14	14	15	9	14	15	15	8	13	14	15	2	2	1	1
MANAGUILLA TO NEW ORLEANS																									
51,000	-56.5	-75	-19	-17	-16	-74	-17	-15	-15	-72	-16	-14	-14	-77	-20	-18	-17	-74	-18	-16	-15	3	3	2	3
40,000	-56.5	-55	1	3	4	-56	2	4	5	-56	0	2	2	-54	2	3	4	-55	2	3	4	2	2	2	2
30,000	-44.5	-36	6	10	10	-35	10	11	12	-35	12	13	13	-33	12	13	14	-34	10	12	13	2	2	1	2
20,000	-21.2	-9	15	14	15	-4	14	15	16	-7	15	15	16	-6	15	16	17	-7	14	15	16	2	2	1	2
10,000	-4.6	7	11	13	14	8	12	14	15	9	14	14	15	9	14	15	15	8	13	14	15	2	2	1	2
MANAGUILLA TO NEW YORK																									
51,000	-56.5	-72	-15	-13	-12	-70	-14	-12	-11	-69	-13	-11	-10	-73	-17	-14	-13	-71	-15	-13	-12	3	3	2	3
40,000	-56.5	-56	1	3	4	-56	1	3	4	-56	1	2	2	-55	2	4	4	-56	1	3	4	3	3	2	2
30,000	-44.5	-39	6	8	8	-37	7	9	10	-34	11	12	13	-34	10	12	12	-35	8	10	11	3	2	2	2
20,000	-21.2	-11	10	12	13	-10	11	13	14	-7	14	15	16	-5	15	15	16	-9	12	13	14	3	3	2	2
10,000	-4.6	5	9	10	11	6	9	11	12	8	13	14	14	7	12	13	14	6	10	12	13	3	3	1	2
MANAGUILLA TO PANAMA CITY																									
51,000	-56.5	-78	-21	-19	-19	-77	-21	-19	-18	-74	-17	-16	-15	-74	-21	-19	-18	-77	-20	-18	-17	3	3	2	3
40,000	-56.5	-54	5	4	5	-52	5	6	7	-55	1	3	3	-54	5	4	4	-54	5	5	6	2	2	2	2
30,000	-44.5	-33	11	13	13	-31	13	15	15	-33	12	13	13	-31	13	14	15	-32	12	14	15	2	2	2	1
20,000	-21.2	-6	15	17	17	-5	16	17	18	-7	16	15	16	-6	16	17	17	-6	15	17	17	2	2	1	1
10,000	-4.6	9	13	15	15	9	14	15	16	9	14	15	16	10	15	16	16	9	14	15	16	2	2	1	1
MANAGUILLA TO QUITO																									
51,000	-56.5	-78	-22	-20	-19	-77	-21	-19	-18	-74	-17	-16	-15	-78	-21	-19	-18	-77	-20	-18	-17	3	3	3	3
40,000	-56.5	-54	5	4	5	-52	5	6	7	-55	2	3	4	-54	2	4	4	-54	5	5	6	2	2	2	2
30,000	-44.5	-32	12	13	14	-30	14	15	16	-32	12	13	14	-31	14	15	15	-31	13	14	15	2	2	2	2
20,000	-21.2	-5	16	17	18	-4	17	18	19	-7	16	15	16	-6	16	17	17	-5	16	17	18	2	2	1	1
10,000	-4.6	9	14	15	16	10	14	16	16	9	14	15	16	10	15	16	16	10	14	15	16	2	2	2	1
MANAGUILLA TO SAN JUAN																									
51,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-75	-16	-15	-14	-77	-21	-19	-18	-76	-20	-17	-16	3	3	2	3
40,000	-56.5	-54	5	4	5	-53	5	5	5	-56	1	2	3	-54	5	4	4	-54	2	4	4	3	2	2	2
30,000	-44.5	-34	10	12	12	-32	12	13	14	-33	11	12	13	-32	13	14	14	-33	12	13	14	2	2	1	1
20,000	-21.2	-7	16	16	16	-6	15	16	17	-7	16	15	16	-6	16	16	17	-6	15	16	16	2	2	1	1
10,000	-4.6	8	13	14	15	9	13	14	15	9	14	15	15	9	14	15	15	9	13	14	15	2	2	1	1
MANAGUILLA TO SANTA MARIA																									
51,000	-56.5	-78	-21	-19	-18	-77	-21	-19	-18	-75	-17	-15	-14	-78	-21	-19	-18	-76	-20	-18	-17	3	3	2	3
40,000	-56.5	-54	5	4	5	-52	5	6	7	-55	1	2	3	-54	5	4	4	-54	5	4	5	2	2	2	2
30,000	-44.5	-33	11	12	13	-31	13	15	15	-33	12	13	13	-31	13	14	15	-32	12	14	14	2	2	2	1
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17	-6	15	17	17	2	2	1	1
10,000	-4.6</																								

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
BASEL TO UUSSELUHRI																	
55,000	-56.5	-56	0	5	5	-54	2	5	6	-51	5	8	9	-58	-2	1	2
40,000	-56.5	-56	-2	2	4	-56	0	4	6	-52	5	8	10	-56	0	3	5
30,000	-44.5	-50	-6	-1	-2	-44	-5	-1	1	-40	4	7	8	-44	1	4	5
20,000	-21.2	-27	-5	-2	1	-22	-1	2	4	-14	8	10	11	-14	3	7	8
10,000	-4.6	-10	-6	-2	-0	-6	-1	2	5	2	7	9	10	-2	2	5	7
BASEL TO FRANKFURT																	
55,000	-56.5	-56	0	4	5	-54	2	5	6	-52	5	7	9	-58	-2	1	2
40,000	-56.5	-56	-2	2	4	-57	-0	4	6	-52	5	8	9	-56	0	3	5
30,000	-44.5	-50	-6	-3	-2	-44	-5	-0	1	-40	5	7	8	-45	1	4	5
20,000	-21.2	-26	-5	-2	0	-22	-1	2	4	-15	8	10	11	-14	4	7	8
10,000	-4.6	-10	-6	-2	-0	-6	-1	2	5	2	7	9	10	-2	2	5	7
BASEL TO GENEVA																	
55,000	-56.5	-57	-0	1	5	-55	2	4	6	-54	3	6	7	-59	-2	0	2
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-55	4	7	8	-56	0	3	5
30,000	-44.5	-50	-5	-1	-1	-47	-3	0	2	-49	5	8	9	-45	1	4	5
20,000	-21.2	-26	-5	-1	1	-21	-0	3	4	-15	8	11	12	-17	4	7	9
10,000	-4.6	-9	-4	-1	1	-5	-1	2	4	3	8	10	11	-1	3	6	8
BASEL TO GEASGOW																	
55,000	-56.5	-57	-1	1	5	-54	3	6	7	-50	6	9	10	-58	-1	2	3
40,000	-56.5	-58	-2	2	4	-55	1	6	7	-51	6	9	11	-56	0	4	6
30,000	-44.5	-50	-6	-3	-2	-48	-5	-0	1	-41	4	6	8	-44	0	3	5
20,000	-21.2	-26	-5	-1	1	-25	-2	2	3	-15	7	9	10	-19	3	6	8
10,000	-4.6	-10	-5	-2	0	-7	-2	1	3	1	6	8	9	-3	2	5	7
BASEL TO HAMBURG																	
55,000	-56.5	-56	0	5	5	-54	3	5	7	-50	6	8	10	-54	-1	1	3
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	8	10	-56	0	3	5
30,000	-44.5	-51	-6	-4	-2	-44	-4	-1	1	-40	4	7	8	-44	1	3	5
20,000	-21.2	-27	-6	-2	-0	-25	-1	2	3	-14	7	9	11	-14	3	6	8
10,000	-4.6	-11	-7	-5	-1	-7	-2	1	3	2	6	8	10	-3	1	5	6
BASEL TO LISBON																	
55,000	-56.5	-58	-2	1	5	-56	0	3	4	-57	-0	2	4	-60	-4	-1	0
40,000	-56.5	-58	-2	2	4	-54	-1	2	4	-53	1	6	7	-56	0	3	4
30,000	-44.5	-54	-4	-1	0	-46	-1	1	3	-38	7	9	10	-42	3	5	7
20,000	-21.2	-25	-2	2	3	-20	2	4	6	-12	10	12	13	-15	6	8	10
10,000	-4.6	-6	-1	2	4	-5	2	4	6	6	10	12	13	0	5	7	9
BASEL TO LONDON																	
55,000	-56.5	-57	-0	1	5	-54	2	5	6	-51	5	8	9	-58	-2	1	3
40,000	-56.5	-58	-2	2	4	-56	0	3	5	-52	5	8	10	-56	0	3	5
30,000	-44.5	-50	-6	-1	-1	-47	-5	-0	1	-40	4	7	8	-44	1	4	5
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	7	10	11	-14	3	7	8
10,000	-4.6	-9	-5	-1	1	-6	-1	2	5	2	7	9	10	-2	3	6	7
BASEL TO MADRID																	
55,000	-56.5	-58	-1	2	4	-56	0	3	5	-56	1	5	8	-60	-3	-1	0
40,000	-56.5	-58	-2	2	4	-58	-1	2	4	-58	0	3	4	-56	0	3	4
30,000	-44.5	-54	-4	-1	-0	-46	-2	1	2	-38	6	9	10	-42	2	5	7
20,000	-21.2	-24	-2	1	3	-20	1	4	5	-12	9	12	13	-16	5	8	9
10,000	-4.6	-7	-2	1	3	-5	1	4	5	5	10	12	13	-0	4	7	8
BASEL TO MUNICH																	
55,000	-56.5	-56	0	4	6	-54	2	5	6	-52	4	7	8	-58	-2	1	2
40,000	-56.5	-58	-2	2	4	-57	-0	3	5	-52	4	7	9	-56	0	3	5
30,000	-44.5	-50	-6	-1	-2	-47	-5	-0	1	-40	5	7	9	-45	1	4	5
20,000	-21.2	-27	-5	-2	0	-22	-1	2	4	-15	8	10	11	-17	4	7	8
10,000	-4.6	-10	-6	-2	0	-6	-1	2	5	3	7	10	11	-2	3	6	7
BASEL TO OSLO																	
55,000	-56.5	-57	-1	3	4	-54	3	6	7	-49	8	10	11	-57	-1	2	3
40,000	-56.5	-59	-2	2	4	-55	2	6	8	-50	6	10	12	-56	0	4	6
30,000	-44.5	-51	-7	-4	-1	-49	-4	-2	-0	-41	3	6	7	-45	-0	2	4
20,000	-21.2	-29	-7	-5	-1	-24	-5	1	2	-15	6	9	10	-19	2	5	7
10,000	-4.6	-12	-8	-4	-2	-4	-5	-0	2	1	5	7	9	-5	0	3	5
BASEL TO PARIS																	
55,000	-56.5	-57	-0	3	5	-55	2	5	6	-52	4	7	8	-58	-2	1	2
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-52	4	7	9	-56	0	3	5
30,000	-44.5	-50	-5	-1	-1	-47	-5	-0	1	-40	5	7	9	-45	1	4	5
20,000	-21.2	-26	-4	-1	1	-22	-0	3	4	-15	8	10	11	-17	4	7	8
10,000	-4.6	-9	-5	-1	1	-5	-1	2	4	3	7	9	11	-2	1	6	7
BASEL TO PRAGUE																	
55,000	-56.5	-56	1	4	6	-54	2	5	6	-51	5	7	9	-58	-2	1	2
40,000	-56.5	-58	-2	2	4	-55	0	4	6	-52	5	8	9	-56	0	3	5
30,000	-44.5	-51	-6	-4	-2	-46	-5	-1	1	-40	5	7	8	-45	1	4	5
20,000	-21.2	-27	-6	-2	0	-22	-1	2	4	-15	8	10	11	-14	4	7	8
10,000	-4.6	-11	-6	-5	-1	-6	-2	1	3	2	7	9	10	-2	2	5	7
BASEL TO ROME																	
55,000	-56.5	-56	0	4	5	-55	1	4	5	-55	2	4	5	-59	-3	-0	1
40,000	-56.5	-58	-1	2	4	-58	-1	2	4	-52	4	7	8	-56	0	3	4
30,000	-44.5	-50	-5	-3	-1	-47	-2	0	2	-39	6	8	10	-42	2	5	6
20,000	-21.2	-26	-4	-1	1	-21	1	3	5	-12	9	11	12	-16	5	7	9
10,000	-4.6	-8	-4	-0	1	-5	-0	3	4	4	9	11	12	-1	4	6	8
BASEL TO SHANNON																	
55,000	-56.5	-57	-1	3	4	-54	2	5	7	-51	5	8	9	-58	-1	1	3
40,000	-56.5	-58	-2	3	5	-56	1	5	8	-51	5	9	10	-56	0	4	6
30,000	-44.5	-50	-5	-1	-1	-47	-5	-0	1	-40	4	7	8	-44	1	3	5
20,000	-21.2	-25	-4	-0	2	-22	-1	2	4	-14	7	9	11	-14	3	6	8
10,000	-4.6	-9	-4	-1	1	-6	-1	2	5	2	6	8	10	-2	3	5	7

*D--DIFFERENCE BETWEEN INDICATED PER CLMT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
BASLE TO STOCKHOLM																									
55,000	-56.5	-57	-0	3	5	-53	3	6	7	-49	8	10	11	-57	-0	2	4	-54	3	6	8	5	4	811 N.M.I.	
40,000	-56.5	-59	-2	2	4	-55	2	6	8	-51	6	9	11	-56	0	4	6	-55	2	6	8	5	4	5	4
30,000	-44.5	-52	-7	-5	-3	-49	-4	-2	-0	-41	3	6	7	-45	-0	2	4	-47	-2	1	3	4	4	4	4
20,000	-21.2	-29	-8	-4	-1	-24	-3	0	2	-15	6	9	10	-19	2	5	7	-22	-1	3	5	6	5	3	5
10,000	-4.6	-13	-9	-5	-2	-8	-3	0	1	1	5	7	9	-5	-0	3	5	-6	-2	2	4	6	5	3	5
BASLE TO VIENNA																									
55,000	-56.5	-56	1	4	6	-54	2	5	6	-52	5	7	8	-58	-2	1	2	-55	1	4	6	5	4	565 N.M.I.	
40,000	-56.5	-58	-2	2	4	-57	-0	3	5	-52	5	8	9	-56	0	3	5	-56	1	5	7	5	4	5	4
30,000	-44.5	-51	-6	-4	-2	-48	-3	-0	1	-40	5	7	9	-45	1	4	5	-45	-1	3	5	4	4	4	4
20,000	-21.2	-27	-6	-2	0	-22	-1	2	4	-13	8	10	11	-17	4	7	8	-20	1	5	7	5	4	3	4
10,000	-4.6	-11	-6	-3	-1	-6	-1	2	3	3	7	9	11	-2	3	6	7	-4	1	4	6	5	4	3	4
BASLE TO ZURICH																									
55,000	-56.5	-56	0	4	5	-55	2	5	6	-51	4	6	8	-59	-2	1	2	-55	1	4	6	5	4	42 N.M.I.	
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	4	7	9	-56	0	3	5	-56	0	4	6	6	6	5	4
30,000	-44.5	-50	-6	-3	-1	-47	-3	-0	1	-40	5	7	9	-45	1	4	5	-45	-1	3	5	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-21	-0	2	4	-13	8	10	11	-17	4	7	9	-19	2	5	7	5	4	3	4
10,000	-4.6	-10	-5	-1	1	-5	-1	2	3	3	8	10	11	-2	3	6	8	-5	1	5	7	5	4	3	4
BASLE TO BELGIUM																									
55,000	-56.5	-64	-7	-5	-4	-62	-6	-4	-3	-71	-14	-12	-11	-66	-10	-7	-6	-66	-9	-6	-5	4	5	654 N.M.I.	
40,000	-56.5	-64	2	5	6	-55	2	5	7	-66	10	12	13	-55	1	5	4	-55	4	7	8	4	5	5	4
30,000	-44.5	-45	-1	2	3	-42	3	5	6	-27	18	20	21	-34	6	8	9	-34	7	11	13	5	5	5	5
20,000	-21.2	-19	2	4	6	-16	6	8	9	-5	18	20	21	-12	9	11	12	-12	9	13	15	5	5	5	5
10,000	-4.6	-5	1	4	5	2	7	9	10	14	19	20	21	6	11	13	14	5	9	13	15	4	4	2	3
BASLE TO BERNHART																									
55,000	-56.5	-64	-4	-3	-4	-62	-6	-4	-3	-70	-14	-12	-11	-66	-10	-7	-6	-66	-9	-7	-5	5	5	1409 N.M.I.	
40,000	-56.5	-64	2	5	6	-55	1	4	6	-67	10	12	13	-55	1	5	4	-55	4	7	8	4	5	5	5
30,000	-44.5	-45	-1	1	3	-41	3	5	6	-27	17	19	20	-34	6	8	9	-34	6	10	13	5	5	5	5
20,000	-21.2	-19	2	5	6	-15	6	8	9	-5	17	19	20	-12	9	11	12	-12	9	12	14	5	5	5	5
10,000	-4.6	-5	2	4	5	2	6	8	9	14	17	19	20	7	11	13	14	6	10	14	15	5	5	2	3
BASLE TO BERNHART																									
55,000	-56.5	-71	-14	-12	-11	-71	-14	-12	-10	-74	-17	-15	-14	-73	-17	-14	-13	-72	-16	-13	-11	4	4	1525 N.M.I.	
40,000	-56.5	-71	-14	-12	-11	-71	-14	-12	-10	-74	-17	-15	-14	-73	-17	-14	-13	-72	-16	-13	-11	4	4	4	4
30,000	-44.5	-54	2	5	7	-55	4	7	9	-67	10	12	13	-54	5	8	10	-52	5	8	10	4	4	5	5
20,000	-21.2	-15	6	10	11	-35	9	11	13	-26	18	20	21	-44	11	13	14	-35	11	14	16	5	5	5	5
10,000	-4.6	3	6	10	11	9	13	15	16	15	20	22	23	8	13	14	15	9	13	16	18	5	5	2	3
BASLE TO CAIRO																									
55,000	-56.5	-66	-9	-7	-6	-64	-8	-5	-4	-72	-15	-13	-12	-64	-11	-9	-8	-67	-11	-8	-7	5	5	644 N.M.I.	
40,000	-56.5	-64	2	5	6	-55	2	5	7	-66	10	12	13	-55	2	4	5	-52	4	7	9	4	4	5	5
30,000	-44.5	-44	0	3	4	-40	4	5	7	-26	19	20	21	-37	7	9	10	-37	8	12	14	5	5	5	5
20,000	-21.2	-14	4	6	7	-15	7	9	10	-2	19	21	22	-11	10	12	13	-11	10	13	15	5	5	5	5
10,000	-4.6	-2	3	5	6	5	7	9	10	15	19	21	22	7	11	13	14	6	10	14	15	5	5	2	3
BASLE TO CALCUTTA																									
55,000	-56.5	-69	-13	-10	-9	-67	-11	-8	-6	-75	-17	-14	-12	-71	-14	-12	-10	-70	-14	-10	-9	4	4	2220 N.M.I.	
40,000	-56.5	-64	2	5	7	-55	3	6	8	-68	9	12	13	-54	2	5	7	-52	4	8	10	5	5	4	4
30,000	-44.5	-59	5	8	10	-57	7	10	12	-26	18	21	22	-34	10	13	14	-34	10	14	16	5	4	5	4
20,000	-21.2	-15	7	9	10	-11	11	13	14	-2	19	21	22	-8	13	15	16	-9	12	16	17	5	4	5	5
10,000	-4.6	2	6	8	10	8	12	14	15	15	20	21	22	7	12	14	15	8	12	15	17	5	5	2	3
BASLE TO COLOMBO																									
55,000	-56.5	-75	-16	-16	-15	-74	-18	-15	-14	-76	-19	-17	-15	-77	-20	-18	-17	-75	-19	-16	-15	5	4	2299 N.M.I.	
40,000	-56.5	-65	2	4	6	-52	4	7	8	-67	8	10	11	-54	3	5	6	-52	4	7	8	4	4	5	5
30,000	-44.5	-55	10	12	13	-55	11	13	15	-27	17	19	20	-35	12	14	15	-32	12	15	17	5	5	5	5
20,000	-21.2	-10	11	13	14	-8	14	15	16	-4	18	19	20	-7	15	16	17	-7	14	17	18	2	2	2	2
10,000	-4.6	6	11	12	13	9	14	15	16	13	18	19	20	9	13	15	16	9	14	16	17	2	2	2	2
BASLE TO DAMASCUS																									
55,000	-56.5	-64	-8	-5	-4	-63	-6	-4	-3	-71	-14	-12	-11	-66	-10	-7	-6	-66	-9	-7	-5	4	5	615 N.M.I.	
40,000	-56.5	-64	2	5	6	-55	2	5	7	-66	11	12	13	-55	1	5	5	-55	4	7	9	4	5	5	4
30,000	-44.5	-45	-1	2	3	-41	3	5	6	-26	18	20	21	-34	6	8	9	-34	7	11	13	5	5	5	5
20,000	-21.2	-19	2	4	6	-15	6	8	9	-5	18	20	21	-12	10	11	12	-12	9	13	15	5	5	5	5
10,000	-4.6	-5	2	4	5	2	7	9	11	14	19	20	21	6	11	13	14	5	10	13	15	4	4	2	3
BASLE TO DHAKA																									
55,000	-56.5	-64	-11	-9	-8	-67	-11	-8	-7	-75	-16	-14	-13	-70	-14	-11	-10	-69	-13	-10	-9	4	5	286 N.M.I.	
40,000	-56.5	-64	3	5	7	-55	3	6	8	-67	10	12	13	-54	2	4	6	-52	5	8	9	4	5	5	5
30,000	-44.5	-41	3	6	7	-54	7	9	10	-26	19	21	22	-35	9	11	12	-35	9	13	15	4	5	5	5
20,000	-21.2	-16	6	8	9	-12	9	11	12	-2	19	21	22	-9	12	14	15	-10	11	15	17	5	5	5	5
10,000	-4.6	0	5	7	9	6	10	12	13	16	21	22	23	8	12	14	15	8	12	15	17	5	5	2	3
BASLE TO ISTANBUL																									
55,000	-56.5	-60	-4	-1	0	-59	-3	-1	1	-67	-10	-8	-7	-63	-7	-4	-3	-62	-6	-3	-2	4	5	1111 N.M.I.	
40,000	-56.5	-55	1	4	5	-55	1	5	6	-66	10	12	13	-56	1	5	4	-55	3	7	9	4	5	5	5
30,000	-44.5	-48	-1	-1	0	-44	1	5	6	-29	15	17	18	-40	4	7	8	-40	4	9	11	5	5	5	5
20,000	-21.2	-22	-1	2	3	-18	4	6	7	-5	16	18	19	-14	8	10	11	-15	7	10	13	4	5	5	5
10,000	-4.6	-6	-2	1	3	0	5	7	9	11	15	17	18	4	9	11	12	2	7	10	12	4	4	5	5
BASLE TO KACHHI																									
55,000	-56.5	-69	-12	-10	-8	-68	-11	-9	-7	-75	-16	-14	-12	-71	-14	-12	-10	-70	-14	-11	-9	4	4	1042 N.M.I.	
40,000	-56.5	-54	5	7	8	-55	4	7	8	-67	10	12	13	-54	2	5	6	-52	5	8	10	4	5	4	4
30,000	-44.5	-40	5	7	9	-57	7	10	11	-26	19	21	22	-35	10	12	13	-34	10	14	16	4	5	5	5
20,000	-21.2	-12	-0	2	4	-2	19	21	22	-2	19	21	22	-9	12	14	15	-9	12	15	17	5	5	5	5
10,000	-4.6	-5	-1	2	4	8	12	14	15	16	21	22	23	8	12	14	15	8	13	16	18	5	5	2	3
BASLE TO LISBON																									
55,000	-56.5	-60	-3	-1	1	-59	-2	0	1	-64	-8	-6	-5	-63	-6	-4	-3	-61	-5	-2	-0	4	4		

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL							
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
BASRA TO MADRID																									
53,000	-56.5	-60	-3	-0	1	-59	-2	0	2	-64	-8	-5	-4	-62	-6	-4	-2	-61	-5	-2	-0			2540 N.M.I.	
40,000	-56.5	-56	0	4	5	-57	-0	3	5	-64	8	10	11	-56	0	3	4	-54	2	5	7	4	4	3	3
30,000	-44.5	-48	-3	-1	0	-45	-0	2	4	-33	12	14	15	-41	4	6	8	-41	3	7	9	5	5	3	3
20,000	-21.2	-22	-1	2	3	-18	3	5	7	-8	14	15	16	-14	7	9	10	-15	6	9	11	4	4	3	3
10,000	-4.6	-6	-1	2	3	-1	4	6	8	9	14	16	17	3	7	9	11	1	6	9	11	4	4	3	3
BASRA TO MILAN																									
53,000	-56.5	-59	-2	1	2	-58	-1	1	2	-62	-6	-3	-2	-62	-5	-3	-1	-60	-3	-1	1	4	3	3	4
40,000	-56.5	-56	0	3	5	-56	0	4	6	-68	8	11	12	-56	0	3	4	-54	2	6	8	5	5	3	3
30,000	-44.5	-49	-4	-2	-1	-45	-1	2	3	-33	12	14	15	-41	3	6	7	-42	3	7	9	4	4	3	3
20,000	-21.2	-24	-2	0	2	-19	2	5	6	-8	13	15	16	-15	6	9	10	-16	5	9	11	4	4	3	3
10,000	-4.6	-8	-3	-0	1	-2	3	5	7	8	13	14	15	2	7	9	10	0	5	8	10	4	4	3	3
BASRA TO NEW DELHI																									
53,000	-56.5	-67	-10	-8	-6	-65	-9	-6	-5	-72	-15	-12	-11	-69	-12	-9	-8	-68	-12	-8	-7	4	4	4	4
40,000	-56.5	-54	3	6	7	-54	3	6	8	-47	10	12	14	-54	2	5	7	-52	4	8	10	5	5	3	3
30,000	-44.5	-41	3	6	8	-39	4	6	10	-26	18	21	22	-36	9	12	13	-35	9	13	15	5	4	3	3
20,000	-21.2	-17	4	7	8	-12	9	12	13	-2	19	21	22	-10	11	13	15	-10	11	15	17	4	4	3	3
10,000	-4.6	-1	4	6	8	6	11	13	14	16	20	22	23	7	12	13	15	7	12	15	17	4	3	2	3
BASRA TO ROME																									
53,000	-56.5	-60	-3	-0	1	-59	-2	0	1	-65	-8	-6	-5	-63	-6	-4	-2	-61	-5	-2	-1	4	3	3	4
40,000	-56.5	-56	1	4	5	-56	0	4	6	-47	9	11	12	-56	0	3	4	-54	3	6	8	5	5	3	3
30,000	-44.5	-48	-4	-1	-0	-44	0	2	4	-31	13	15	16	-40	4	6	7	-41	3	7	10	5	5	3	3
20,000	-21.2	-22	-1	1	3	-18	3	5	7	-7	14	16	17	-14	7	9	10	-15	6	9	11	4	4	3	3
10,000	-4.6	-7	-2	1	2	-1	4	6	8	9	14	16	17	3	8	10	11	1	6	9	11	4	4	3	3
BASRA TO TEHRAN																									
53,000	-56.5	-63	-7	-4	-3	-62	-6	-2	-2	-70	-14	-11	-10	-65	-9	-6	-5	-65	-9	-6	-4	4	3	3	4
40,000	-56.5	-55	2	5	6	-54	2	4	7	-46	11	13	14	-55	2	4	5	-52	4	8	9	4	5	3	3
30,000	-44.5	-45	-0	2	4	-41	4	6	7	-26	18	20	21	-36	6	8	9	-38	7	11	13	4	4	3	3
20,000	-21.2	-20	1	4	5	-15	6	8	9	-2	19	21	22	-12	9	11	12	-12	9	13	15	4	3	3	3
10,000	-4.6	-4	1	4	5	3	7	10	11	15	20	21	22	6	10	13	14	5	10	13	15	4	3	3	3
BASRA TO TEL AVIV-JAFFA																									
53,000	-56.5	-45	-8	-4	-5	-43	-7	-5	-4	-71	-15	-13	-12	-67	-10	-8	-7	-67	-10	-7	-6	4	3	3	4
40,000	-56.5	-54	2	5	6	-55	2	5	7	-46	10	12	13	-55	2	4	5	-52	4	7	9	4	5	3	3
30,000	-44.5	-45	-0	2	3	-41	4	6	7	-26	18	20	21	-36	7	9	10	-37	7	11	13	5	5	3	3
20,000	-21.2	-18	3	5	6	-15	6	8	9	-3	19	21	22	-11	10	12	12	-12	9	13	15	5	5	3	2
10,000	-4.6	-2	2	5	6	3	7	10	11	15	19	21	21	7	11	13	14	5	10	13	15	5	5	2	3
BASRA TO TRIPOLI																									
53,000	-56.5	-64	-7	-5	-4	-62	-5	-3	-2	-70	-13	-11	-10	-66	-9	-7	-6	-65	-9	-6	-4	5	5	3	3
40,000	-56.5	-55	2	5	6	-56	1	4	4	-47	10	11	12	-55	1	3	4	-53	3	6	8	4	5	3	3
30,000	-44.5	-46	-1	1	2	-42	3	5	4	-29	14	16	17	-39	4	8	9	-39	4	10	12	5	5	3	3
20,000	-21.2	-19	2	4	5	-16	5	8	9	-5	17	18	19	-12	9	11	12	-13	8	12	13	5	5	3	2
10,000	-4.6	-3	1	4	5	1	6	8	10	12	17	18	19	5	10	12	13	4	9	12	13	5	4	2	3
BASRA TO TUNIS																									
53,000	-56.5	-61	-5	-2	-1	-60	-3	-1	-0	-67	-11	-9	-8	-64	-7	-5	-4	-63	-7	-4	-2	4	3	3	3
40,000	-56.5	-55	1	4	6	-56	0	4	6	-47	9	11	12	-54	1	3	4	-54	3	6	8	4	5	3	3
30,000	-44.5	-47	-2	-0	1	-44	1	3	4	-30	14	16	17	-40	5	7	8	-40	4	8	11	5	5	3	3
20,000	-21.2	-21	0	3	4	-17	4	6	8	-6	15	17	18	-13	8	10	11	-14	7	10	12	4	5	3	3
10,000	-4.6	-5	-0	2	4	0	5	7	9	11	15	17	18	4	9	11	12	3	7	10	12	4	4	2	3
BEIRUT TO BENGHAZI																									
53,000	-56.5	-63	-6	-4	-3	-61	-4	-2	-1	-69	-13	-11	-10	-65	-8	-6	-5	-64	-8	-5	-4	5	5	3	3
40,000	-56.5	-55	2	4	6	-56	0	4	5	-47	9	11	12	-56	1	3	4	-54	3	6	8	4	5	3	3
30,000	-44.5	-46	-2	0	1	-43	2	4	5	-29	15	17	19	-39	5	7	8	-39	5	9	11	4	5	3	3
20,000	-21.2	-20	1	4	5	-16	5	7	8	-5	16	18	19	-13	8	10	11	-14	8	11	13	4	5	2	2
10,000	-4.6	-4	0	3	4	1	5	8	9	11	15	17	17	5	10	11	12	3	8	11	12	4	4	2	3
BEIRUT TO BOMBAY																									
53,000	-56.5	-69	-12	-10	-9	-68	-12	-9	-8	-73	-17	-14	-13	-71	-15	-12	-11	-70	-14	-11	-9	4	4	4	4
40,000	-56.5	-54	2	5	7	-53	3	6	8	-47	10	12	13	-54	2	5	6	-52	4	8	10	4	5	3	4
30,000	-44.5	-40	4	7	8	-38	7	9	11	-26	18	20	21	-35	9	12	13	-35	10	13	15	4	4	3	3
20,000	-21.2	-15	6	8	10	-11	10	12	13	-3	18	20	21	-9	12	14	15	-9	12	15	17	5	5	3	3
10,000	-4.6	1	6	8	9	7	11	13	14	15	20	21	22	7	12	14	15	8	12	15	17	5	3	2	3
BEIRUT TO BRUSSELS																									
53,000	-56.5	-57	-1	2	4	-56	1	3	4	-57	-1	1	2	-60	-3	-1	0	-58	-1	2	3	4	4	3	4
40,000	-56.5	-57	-1	3	4	-56	0	4	5	-49	7	10	11	-56	0	3	4	-55	2	5	7	5	5	4	4
30,000	-44.5	-50	-6	3	-2	-46	-2	0	2	-36	8	11	12	-42	2	5	6	-44	1	5	7	4	4	3	4
20,000	-21.2	-25	-4	-1	1	-21	1	3	5	-11	11	13	14	-16	5	8	9	-18	3	7	8	5	4	3	4
10,000	-4.6	-10	-5	-2	-0	-4	1	3	5	5	9	11	13	0	5	7	9	-2	2	6	8	5	4	3	4
BEIRUT TO CAIRO																									
53,000	-56.5	-64	-8	-5	-4	-62	-6	-4	-2	-71	-14	-12	-11	-66	-10	-7	-6	-66	-9	-6	-5	5	5	3	3
40,000	-56.5	-54	2	5	6	-55	1	4	6	-47	10	12	13	-55	1	3	4	-53	3	7	9	4	5	3	3
30,000	-44.5	-46	-1	1	2	-42	3	5	6	-27	17	19	20	-39	6	8	9	-38	6	10	13	5	5	3	3
20,000	-21.2	-19	2	4	6	-16	5	8	9	-4	17	19	20	-12	9	11	12	-13	9	12	14	5	5	3	2
10,000	-4.6	-3	1	4	5	1	6	8	10	12	17	18	19	4	10	12	13	4	9	12	13	5	4	2	3
BEIRUT TO CALCUTTA																									
53,000	-56.5	-67	-10	-8	-6	-65	-8	-6	-4	-72	-15	-12	-11	-68	-12	-9	-7	-68	-11	-8	-6	4	4	4	4
40,000	-56.5	-55	2	5	7	-54	3	6	8	-47	9	12	14	-55	2	5	6	-53	4	8	10	5	5	4	4
30,000	-44.5	-42	3	6	7	-39	5	8	10	-26	18	20	21	-36	9	11	12	-36	9	13	15	4	4	3	4
20,000	-21.2	-17	4	7	8	-13	9	11	12	-2	19	21	22	-10	11	13	14	-10	11	14	16	4	4	3	3
10,000	-4.6	-1	4	6	8	5	10	12	13	14	19	21	21	7	11	13	14	6	11	14	16	4	3	2	3
BEIRUT TO COLOMBO																									
53,000	-56.5	-73	-17	-14	-13	-72	-16	-13	-12	-75	-18	-16	-15	-75	-18	-16	-15	-74	-17	-15	-13	5	4	5	5
40,000	-56.5	-57	2	4	6	-53	4	7	8	-48	8	10	11	-54											

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
BEIRUT TO COPENHAGEN																	
55,000	-56.5	-57	-0	3	4	-55	1	4	5	-56	1	3	4	-59	-5	-0	1
40,000	-56.5	-57	-1	2	4	-56	1	4	6	-49	8	10	12	-56	0	3	4
30,000	-44.5	-51	-6	-4	-3	-47	-2	-0	1	-57	8	10	12	-44	2	4	5
20,000	-21.2	-26	-5	-2	0	-21	-6	3	5	-11	10	12	15	-17	4	7	8
10,000	-4.6	-11	-7	-3	-1	-5	-0	3	4	4	9	11	12	-1	5	6	8
BEIRUT TO DAMASCUS																	
55,000	-56.5	-62	-6	-3	-2	-61	-4	-2	-1	-70	-15	-11	-10	-64	-8	-6	-4
40,000	-56.5	-55	2	4	6	-56	1	4	6	-60	10	12	15	-56	1	3	4
30,000	-44.5	-47	-2	-0	1	-43	1	3	5	-28	17	19	20	-40	5	7	8
20,000	-21.2	-20	1	3	4	-17	4	7	8	-4	17	19	20	-13	8	10	11
10,000	-4.6	-5	0	2	4	1	5	8	9	12	16	18	19	5	10	12	15
BEIRUT TO DHAMRAN																	
55,000	-56.5	-66	-9	-7	-6	-65	-8	-6	-5	-72	-15	-13	-12	-68	-12	-9	-8
40,000	-56.5	-54	2	5	6	-54	2	5	7	-52	2	4	5	-52	2	4	5
30,000	-44.5	-43	1	3	5	-40	5	7	8	-26	18	20	21	-37	8	10	11
20,000	-21.2	-17	4	6	7	-14	7	9	10	-3	19	20	21	-11	11	12	13
10,000	-4.6	-1	3	6	7	4	8	10	12	15	20	21	22	7	11	13	14
BEIRUT TO DJAKARTA																	
55,000	-56.5	-76	-19	-17	-16	-74	-17	-15	-14	-76	-19	-17	-16	-76	-20	-17	-16
40,000	-56.5	-55	2	4	5	-52	4	6	8	-50	6	8	9	-54	2	4	5
30,000	-44.5	-35	9	11	12	-34	11	13	14	-28	16	18	19	-33	11	13	14
20,000	-21.2	-10	12	13	14	-9	13	15	16	-4	17	19	20	-7	14	16	17
10,000	-4.6	6	10	12	13	9	13	15	16	12	17	19	20	7	13	15	16
BEIRUT TO DUSSELDORF																	
55,000	-56.5	-57	-1	2	4	-56	1	3	4	-57	-1	1	3	-60	-3	-1	0
40,000	-56.5	-57	-1	3	4	-56	0	4	6	-49	7	10	11	-56	0	3	4
30,000	-44.5	-50	-6	-3	-2	-46	-2	0	2	-36	8	11	12	-42	2	5	6
20,000	-21.2	-25	-4	-1	1	-21	1	3	5	-11	11	13	14	-16	5	7	9
10,000	-4.6	-10	-5	-2	-0	-4	0	3	5	5	9	11	12	-0	5	7	9
BEIRUT TO FRANKFURT																	
55,000	-56.5	-57	-1	2	4	-56	1	3	4	-58	-1	1	2	-60	-4	-1	0
40,000	-56.5	-57	-0	3	4	-56	0	4	5	-49	8	10	11	-56	0	3	4
30,000	-44.5	-50	-6	-3	-2	-46	-2	1	2	-36	9	11	12	-42	2	5	6
20,000	-21.2	-25	-4	-1	1	-20	1	4	5	-10	11	13	14	-16	5	8	9
10,000	-4.6	-10	-5	-2	-0	-4	1	4	5	5	10	12	13	0	5	7	9
BEIRUT TO GENEVA																	
55,000	-56.5	-57	-1	2	4	-57	-0	2	4	-60	-3	-1	-0	-61	-4	-2	-1
40,000	-56.5	-57	-0	3	5	-57	-1	3	5	-49	7	10	11	-56	0	2	4
30,000	-44.5	-49	-5	-3	-1	-46	-1	1	2	-35	9	12	13	-42	3	5	6
20,000	-21.2	-24	-3	-0	1	-20	1	4	6	-10	12	15	15	-15	6	8	9
10,000	-4.6	-8	-4	-1	1	-5	1	4	6	6	11	13	14	1	6	8	9
BEIRUT TO HAMBURG																	
55,000	-56.5	-57	-0	3	4	-55	1	3	5	-56	0	2	4	-59	-3	-0	1
40,000	-56.5	-57	-1	3	4	-56	1	4	6	-49	8	10	12	-56	0	3	4
30,000	-44.5	-51	-6	-4	-2	-47	-2	0	1	-36	8	10	12	-43	2	4	6
20,000	-21.2	-26	-5	-1	0	-21	0	3	5	-11	10	12	13	-17	5	7	9
10,000	-4.6	-11	-6	-3	-1	-5	0	3	5	4	9	11	12	-1	4	7	8
BEIRUT TO HELSINKI																	
55,000	-56.5	-57	-0	3	4	-55	2	4	5	-54	3	5	6	-58	-2	1	2
40,000	-56.5	-58	-1	2	4	-55	1	5	7	-48	8	11	12	-56	1	4	5
30,000	-44.5	-52	-7	-5	-3	-47	-3	0	2	-37	8	10	12	-43	1	4	5
20,000	-21.2	-27	-6	-2	-1	-22	-6	3	5	-12	10	12	13	-18	3	6	8
10,000	-4.6	-12	-8	-4	-2	-5	-1	3	5	3	8	10	11	-2	2	5	7
BEIRUT TO ISTANBUL																	
55,000	-56.5	-59	-2	0	2	-58	-1	1	2	-65	-8	-6	-5	-62	-5	-3	-2
40,000	-56.5	-56	1	4	5	-56	0	4	6	-47	10	12	13	-54	0	2	4
30,000	-44.5	-49	-4	-2	-1	-45	-0	2	3	-31	13	15	17	-41	4	6	7
20,000	-21.2	-23	-2	1	2	-19	2	5	7	-7	14	16	17	-14	7	9	10
10,000	-4.6	-8	-3	-0	1	-2	3	6	7	8	13	15	15	5	7	10	11
BEIRUT TO JIBRA																	
55,000	-56.5	-68	-11	-9	-8	-67	-10	-8	-7	-75	-16	-14	-13	-70	-14	-12	-10
40,000	-56.5	-54	3	5	6	-54	2	5	6	-47	9	11	12	-54	2	4	5
30,000	-44.5	-43	2	4	5	-38	6	8	9	-27	18	20	20	-36	9	10	11
20,000	-21.2	-16	6	7	8	-13	8	10	11	-3	18	20	20	-10	12	13	14
10,000	-4.6	1	5	7	8	4	9	11	12	15	19	21	21	7	12	14	14
BEIRUT TO KARACHI																	
55,000	-56.5	-66	-10	-7	-6	-65	-9	-6	-5	-72	-15	-13	-12	-69	-12	-10	-8
40,000	-56.5	-54	2	5	7	-54	3	6	8	-46	10	12	14	-55	2	4	6
30,000	-44.5	-42	2	5	6	-37	5	8	9	-26	18	20	21	-36	8	10	12
20,000	-21.2	-17	4	6	7	-13	8	11	12	-2	19	21	22	-10	11	13	14
10,000	-4.6	-1	4	6	7	5	10	12	13	15	20	21	22	7	11	13	14
BEIRUT TO KHARTOUM																	
55,000	-56.5	-70	-14	-12	-11	-69	-12	-11	-9	-74	-17	-15	-14	-72	-16	-14	-13
40,000	-56.5	-54	3	5	6	-54	3	5	7	-48	8	10	10	-54	3	4	5
30,000	-44.5	-41	3	5	6	-36	6	10	11	-27	17	19	20	-35	10	11	12
20,000	-21.2	-14	8	9	10	-11	10	12	13	-4	17	19	20	-9	12	14	14
10,000	-4.6	5	7	9	10	6	10	12	13	14	18	20	20	8	13	14	15
BEIRUT TO KUWAIT																	
55,000	-56.5	-65	-8	-6	-4	-63	-7	-4	-3	-71	-15	-13	-11	-67	-10	-8	-6
40,000	-56.5	-54	2	5	6	-55	2	5	7	-46	10	12	13	-55	2	4	5
30,000	-44.5	-45	-0	2	3	-41	5	7	8	-26	18	20	21	-38	7	9	10
20,000	-21.2	-17	3	5	6	-15	6	8	9	-3	18	20	21	-11	10	11	12
10,000	-4.6	-5	2	4	6	5	7	10	11	14	19	20	21	6	11	13	14

*DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																				STANDARD DEVIATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		JANUARY					APRIL					JULY					OCTOBER					ANNUAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		50	D50	D75	D85	OBS	50	D50	D75	D85	OBS	50	D50	D75	D85	OBS	50	D50	D75	D85	OBS	50	D50	D75	D85	OBS	JAN	APR	JUL	OCT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
BEIRUT TO LISBON																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
HEIKU1 TO STOCKHOLM																	
55,000	-56.5	-57	-0	5	4	-55	2	4	5	-54	2	4	6	-58	-2	1	2
40,000	-56.5	-58	-1	2	4	-55	1	5	7	-49	8	11	12	-56	1	5	5
30,000	-44.5	-51	-7	-5	-5	-47	-3	-0	1	-57	7	10	11	-43	1	4	5
20,000	-21.2	-27	-6	-2	-1	-22	-1	5	4	-12	10	12	15	-18	4	6	8
10,000	-4.6	-12	-7	-4	-2	-5	-1	2	4	5	8	10	11	-2	2	5	7
HEIKU1 TO TEHERAN																	
55,000	-56.5	-61	-5	-2	-1	-60	-3	-1	0	-69	-15	-11	-9	-65	-7	-4	-2
40,000	-56.5	-55	1	4	6	-55	1	5	7	-66	11	15	14	-56	1	5	4
30,000	-44.5	-47	-2	-0	1	-45	1	4	5	-27	17	19	20	-40	4	7	8
20,000	-21.2	-21	-0	2	4	-17	4	7	8	-5	18	20	21	-15	8	10	11
10,000	-4.6	-5	-1	2	4	1	5	8	9	15	17	19	20	5	9	12	15
HEIKU1 TO TEL AVIV-JAFFA																	
55,000	-56.5	-65	-7	-4	-5	-61	-5	-5	-2	-70	-14	-12	-11	-65	-9	-6	-5
40,000	-56.5	-55	2	5	6	-55	1	4	6	-66	10	12	15	-56	1	5	4
30,000	-44.5	-46	-2	0	2	-42	2	4	5	-27	17	19	20	-39	5	7	8
20,000	-21.2	-20	1	4	5	-16	5	7	8	-4	17	19	20	-12	9	10	11
10,000	-4.6	-4	1	5	4	1	6	8	9	12	17	18	19	5	10	12	15
HEIKU1 TO TRIPOLI																	
55,000	-56.5	-62	-6	-5	-2	-60	-4	-2	-1	-68	-12	-10	-9	-64	-8	-5	-4
40,000	-56.5	-55	1	4	6	-56	0	5	5	-66	9	11	12	-56	1	5	4
30,000	-44.5	-46	-2	0	1	-45	1	5	5	-50	15	16	17	-40	5	7	8
20,000	-21.2	-20	1	5	5	-17	5	7	8	-6	16	17	18	-15	8	10	11
10,000	-4.6	-4	0	5	4	0	5	8	9	10	15	16	17	4	9	11	12
HEIKU1 TO TUNIS																	
55,000	-56.5	-60	-4	-1	0	-59	-2	-0	1	-66	-9	-7	-6	-65	-6	-4	-3
40,000	-56.5	-56	1	4	5	-57	-0	5	5	-68	9	11	12	-56	0	2	4
30,000	-44.5	-47	-3	-1	0	-46	0	2	5	-52	12	15	16	-41	4	6	7
20,000	-21.2	-22	-0	2	5	-18	5	6	7	-7	14	16	16	-14	7	9	10
10,000	-4.6	-6	-1	1	5	-1	4	7	8	9	14	15	16	5	9	10	11
HEIKU1 TO VIENNA																	
55,000	-56.5	-57	-1	2	4	-56	0	5	4	-59	-5	-1	1	-60	-4	-1	-0
40,000	-56.5	-57	-0	5	5	-56	0	4	5	-68	8	11	12	-56	0	2	4
30,000	-44.5	-50	-6	-5	-2	-46	-2	1	2	-55	10	12	15	-42	5	5	6
20,000	-21.2	-25	-4	-1	1	-20	1	4	5	-10	11	15	14	-16	6	8	9
10,000	-4.6	-10	-5	-2	-6	-5	1	4	6	6	10	12	15	1	5	8	9
HEIKU1 TO WARSZAWA																	
55,000	-56.5	-57	-0	2	4	-56	1	5	4	-57	-1	1	5	-60	-5	-1	1
40,000	-56.5	-57	-0	5	4	-56	1	4	6	-68	8	11	12	-56	0	5	4
30,000	-44.5	-51	-6	-4	-5	-46	-2	1	2	-56	9	11	15	-42	2	5	6
20,000	-21.2	-25	-4	-1	0	-21	1	4	5	-10	11	15	14	-16	5	7	8
10,000	-4.6	-11	-6	-5	-1	-4	1	4	5	5	9	11	12	-0	4	7	8
HEIKU1 TO ZURICH																	
55,000	-56.5	-57	-1	2	4	-56	0	2	4	-59	-5	-1	1	-60	-4	-2	-0
40,000	-56.5	-57	-0	5	5	-57	-0	5	5	-68	8	10	11	-56	0	2	4
30,000	-44.5	-50	-5	-5	-2	-46	-2	1	2	-55	9	12	15	-42	5	5	6
20,000	-21.2	-25	-5	-0	1	-20	1	4	5	-10	11	15	14	-16	6	8	9
10,000	-4.6	-9	-4	-1	0	-5	1	4	6	6	10	12	15	1	5	8	9
HEIKU1 TO BERLIN																	
55,000	-56.5	-62	-11	-9	-7	-67	-10	-8	-7	-65	-9	-7	-6	-69	-12	-10	-9
40,000	-56.5	-57	-0	5	4	-56	1	4	5	-55	5	5	6	-55	2	4	5
30,000	-44.5	-41	5	5	6	-49	6	7	8	-56	9	11	12	-57	8	10	11
20,000	-21.2	-15	6	8	10	-15	8	10	11	-9	12	14	14	-10	11	15	14
10,000	-4.6	1	6	8	9	5	7	9	10	7	12	15	14	5	10	11	12
HEIKU1 TO BAHIA																	
55,000	-56.5	-76	-19	-17	-16	-75	-19	-17	-16	-71	-15	-15	-12	-76	-19	-17	-16
40,000	-56.5	-55	2	4	5	-55	2	4	5	-55	1	5	5	-54	2	4	4
30,000	-44.5	-35	9	11	11	-34	11	12	15	-35	11	12	15	-32	12	14	14
20,000	-21.2	-8	15	14	15	-7	14	15	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	7	12	15	14	7	12	15	14	9	15	14	15	9	15	15	15
HEIKU1 TO BOGOTA																	
55,000	-56.5	-79	-22	-20	-19	-78	-21	-19	-14	-75	-16	-14	-15	-77	-20	-19	-18
40,000	-56.5	-54	5	4	5	-52	5	7	8	-54	2	4	5	-54	5	4	5
30,000	-44.5	-32	12	14	14	-30	15	16	17	-32	15	16	16	-30	15	16	16
20,000	-21.2	-4	17	14	14	-4	17	16	17	-7	14	15	15	-5	16	17	17
10,000	-4.6	10	15	16	16	10	15	16	17	9	14	15	15	10	15	16	17
HEIKU1 TO BRAZILIA																	
55,000	-56.5	-77	-21	-18	-17	-77	-20	-18	-17	-71	-14	-12	-11	-74	-17	-15	-14
40,000	-56.5	-54	5	5	6	-52	5	7	8	-55	4	6	6	-55	5	5	6
30,000	-44.5	-32	15	14	15	-30	14	16	17	-32	15	16	17	-30	14	16	17
20,000	-21.2	-5	17	18	19	-4	17	18	19	-8	15	15	15	-6	15	17	17
10,000	-4.6	10	15	16	16	10	15	16	17	7	12	15	14	10	15	16	17
HEIKU1 TO BRUSSELS																	
55,000	-56.5	-69	-12	-10	-8	-67	-11	-9	-8	-66	-10	-8	-7	-70	-15	-11	-10
40,000	-56.5	-56	0	5	4	-56	0	5	5	-54	5	5	6	-55	2	4	5
30,000	-44.5	-41	4	6	7	-36	6	8	9	-35	9	11	12	-36	8	10	11
20,000	-21.2	-14	7	9	10	-12	9	11	12	-9	12	14	15	-10	11	15	14
10,000	-4.6	2	7	9	10	5	8	10	11	7	12	15	14	6	10	11	15
HEIKU1 TO BUENOS AIRES																	
55,000	-56.5	-74	-17	-15	-15	-75	-16	-14	-15	-67	-10	-8	-6	-69	-12	-10	-9
40,000	-56.5	-53	4	6	7	-55	4	6	8	-52	4	6	7	-54	5	5	6
30,000	-44.5	-34	11	15	14	-35	11	15	14	-36	9	11	12	-35	11	15	14
20,000	-21.2	-6	15	17	18	-12	9	11	12	-12	9	11	12	-8	15	15	16
10,000	-4.6	9	14	15	16	8	15	14	15	4	9	11	11	8	12	14	15

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	JAN	APR	JUL	OCT
BELEM TO CAIRO																	
55,000	-56.5	-75	-17	-15	-14	-72	-16	-14	-13	-74	-17	-15	-14	-73	-17	-15	-14
40,000	-56.5	-54	2	5	6	-54	3	5	7	-52	4	6	6	-53	3	5	6
30,000	-44.5	-34	6	8	8	-34	10	12	13	-31	13	14	15	-34	11	12	13
20,000	-21.2	-11	10	12	12	-9	12	14	14	-6	16	17	17	-7	16	15	15
10,000	-4.6	5	10	11	12	7	12	13	14	12	17	18	18	9	13	14	15
BELEM TO CARACAS																	
55,000	-56.5	-78	-22	-20	-19	-78	-21	-20	-19	-75	-16	-14	-13	-77	-21	-19	-18
40,000	-56.5	-54	3	4	5	-52	5	6	7	-54	2	4	4	-54	3	4	5
30,000	-44.5	-33	12	13	14	-30	14	16	17	-32	12	14	14	-30	14	15	16
20,000	-21.2	-5	16	18	18	-5	17	18	18	-7	14	15	16	-6	16	17	17
10,000	-4.4	10	14	16	16	10	14	16	16	9	14	15	15	10	14	16	16
BELEM TO COPENHAGEN																	
55,000	-56.5	-67	-11	-8	-7	-66	-9	-7	-6	-64	-8	-6	-5	-68	-12	-10	-8
40,000	-56.5	-57	-0	3	4	-56	1	4	6	-53	3	5	7	-55	1	4	5
30,000	-44.5	-42	5	5	6	-39	5	7	8	-36	9	10	11	-37	8	9	10
20,000	-21.2	-15	6	8	9	-14	6	10	11	-9	12	13	14	-11	10	12	13
10,000	-4.6	1	6	8	9	2	7	9	10	7	11	13	13	5	9	11	12
BELEM TO DAKAR																	
55,000	-56.5	-78	-21	-20	-19	-78	-21	-19	-19	-74	-18	-16	-15	-78	-21	-20	-19
40,000	-56.5	-54	2	4	5	-55	3	5	7	-54	2	4	4	-53	4	5	6
30,000	-44.5	-33	11	12	13	-31	14	15	16	-32	12	13	14	-31	14	15	16
20,000	-21.2	-7	14	15	16	-6	15	16	17	-6	15	16	17	-6	15	16	17
10,000	-4.6	9	14	15	15	9	14	15	15	9	14	15	15	10	15	16	16
BELEM TO FORTALEZA																	
55,000	-56.5	-78	-21	-19	-18	-78	-21	-20	-19	-72	-15	-13	-12	-76	-19	-16	-15
40,000	-56.5	-54	2	4	5	-52	4	7	8	-53	3	5	6	-53	3	6	7
30,000	-44.5	-32	12	14	14	-30	15	16	17	-32	13	14	15	-30	15	16	17
20,000	-21.2	-5	17	18	19	-4	17	18	19	-7	14	15	16	-6	16	17	18
10,000	-4.6	10	15	16	16	10	15	16	16	9	14	15	15	10	14	16	16
BELEM TO HAVANA																	
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-73	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	2	4	5	-55	4	5	6	-55	3	5	5	-54	3	4	5
30,000	-44.5	-34	11	12	13	-32	13	14	15	-33	12	13	14	-31	13	14	15
20,000	-21.2	-6	15	16	17	-6	16	17	17	-7	14	15	16	-6	15	16	17
10,000	-4.6	9	15	14	15	9	14	15	16	9	14	15	15	10	14	15	16
BELEM TO HOUSTON																	
55,000	-56.5	-76	-20	-18	-17	-75	-17	-17	-16	-72	-16	-14	-13	-75	-19	-17	-15
40,000	-56.5	-55	7	8	8	-54	5	5	6	-55	1	7	5	-54	2	4	4
30,000	-44.5	-35	10	11	12	-33	11	13	13	-33	12	13	13	-32	13	14	15
20,000	-21.2	-7	14	15	16	-7	14	16	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	8	12	14	14	8	11	14	15	9	14	15	15	9	14	15	15
BELEM TO KINGSTON																	
55,000	-56.5	-78	-21	-20	-19	-78	-21	-19	-18	-73	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	3	4	5	-57	4	6	7	-55	2	3	4	-54	3	4	5
30,000	-44.5	-33	11	13	13	-31	14	15	16	-32	12	13	14	-31	14	15	15
20,000	-21.2	-6	16	17	17	-5	16	17	18	-7	14	15	16	-6	15	17	17
10,000	-4.6	9	14	15	16	9	14	15	16	9	14	15	15	10	15	16	16
BELEM TO LA PAZ																	
55,000	-56.5	-77	-21	-18	-17	-77	-20	-18	-17	-71	-14	-12	-11	-74	-17	-15	-14
40,000	-56.5	-53	5	5	6	-52	5	7	8	-55	4	5	6	-54	3	4	5
30,000	-44.5	-32	13	14	15	-30	14	16	17	-32	12	14	15	-31	14	15	16
20,000	-21.2	-5	17	18	19	-4	17	18	19	-9	13	14	15	-6	15	17	18
10,000	-4.5	10	15	16	16	10	14	16	16	7	12	13	14	10	14	16	16
BELEM TO LIMA																	
55,000	-56.5	-77	-21	-19	-18	-77	-20	-18	-17	-72	-15	-13	-12	-74	-18	-16	-15
40,000	-56.5	-54	5	5	6	-52	5	7	8	-55	3	5	6	-54	3	4	5
30,000	-44.5	-32	13	14	15	-30	14	16	17	-32	12	14	15	-30	14	16	16
20,000	-21.2	-4	17	18	19	-4	17	18	19	-8	13	14	15	-6	15	17	17
10,000	-4.6	10	15	16	16	10	14	16	16	8	13	14	15	10	14	16	16
BELEM TO LISBON																	
55,000	-56.5	-72	-16	-13	-12	-71	-15	-13	-12	-71	-14	-12	-11	-73	-17	-15	-14
40,000	-56.5	-50	1	3	3	-55	1	4	5	-55	3	4	5	-54	2	4	5
30,000	-44.5	-38	6	8	9	-35	9	11	11	-34	11	12	13	-35	9	11	12
20,000	-21.2	-11	10	12	13	-10	11	13	14	-7	14	15	16	-8	14	15	15
10,000	-4.6	5	10	12	12	6	10	12	13	9	14	15	15	8	12	14	14
BELEM TO LONDON																	
55,000	-56.5	-69	-12	-10	-9	-68	-11	-9	-8	-66	-10	-8	-7	-69	-13	-11	-10
40,000	-56.5	-56	0	3	4	-56	0	3	5	-54	3	5	6	-55	2	4	5
30,000	-44.5	-40	4	6	7	-38	6	8	9	-35	9	11	12	-36	9	10	11
20,000	-21.2	-14	7	9	11	-12	9	11	12	-15	12	14	15	-10	11	13	14
10,000	-4.6	2	7	9	10	5	6	10	11	7	12	13	14	6	10	12	13
BELEM TO MADRID																	
55,000	-56.5	-71	-15	-13	-11	-71	-14	-12	-11	-70	-14	-12	-11	-71	-15	-12	-11
40,000	-56.5	-56	1	3	5	-55	1	4	5	-53	3	5	5	-54	2	4	5
30,000	-44.5	-39	6	8	8	-36	9	10	11	-34	10	12	13	-34	10	12	13
20,000	-21.2	-12	10	11	12	-10	11	13	13	-8	14	15	15	-9	12	13	14
10,000	-4.6	5	9	11	12	5	10	12	12	9	14	15	16	7	11	13	14
BELEM TO MANAOIS																	
55,000	-56.5	-78	-22	-20	-18	-77	-21	-19	-18	-72	-16	-13	-12	-76	-19	-16	-15
40,000	-56.5	-54	2	4	5	-52	5	7	8	-54	3	4	5	-53	3	4	5
30,000	-44.5	-32	13	14	14	-30	15	17	17	-32	13	14	15	-30	15	16	17
20,000	-21.2	-4	17	18	19	-4	17	18	19	-7	14	15	15	-5	16	17	17
10,000	-4.6	10	15	16	17	10	15	16	17	9	13	14	15	10	15	16	17

*D-DIFFERENCE BETWEEN IND

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
BELEM TO MEXICO CITY																									
55,000	-56.5	-78	-21	-19	-18	-77	-20	-19	-18	-75	-17	-15	-14	-78	-21	-19	-18	-76	-20	-18	-16	5250 N.M.I.			
40,000	-56.5	-54	2	4	5	-53	4	6	6	-55	1	3	3	-54	3	4	5	-54	3	4	5	3	3	2	3
30,000	-44.5	-34	11	12	13	-31	13	14	15	-32	12	13	14	-31	14	15	15	-32	12	14	14	2	2	2	2
20,000	-21.2	-6	15	17	17	-5	16	17	18	-7	14	15	16	-6	16	17	17	-6	15	17	17	2	2	1	1
10,000	-4.6	9	14	15	16	10	14	16	16	9	14	15	15	10	15	16	16	10	14	15	16	2	2	1	1
BELEM TO MIAMI																									
55,000	-56.5	-77	-21	-19	-18	-77	-20	-18	-17	-72	-16	-14	-13	-77	-20	-18	-17	-76	-19	-17	-16	2462 N.M.I.			
40,000	-56.5	-54	2	4	5	-53	3	5	6	-55	1	3	3	-54	3	4	5	-54	2	4	5	3	3	2	3
30,000	-44.5	-34	10	12	12	-32	12	14	14	-33	12	13	13	-31	13	14	15	-33	12	13	14	2	2	2	2
20,000	-21.2	-7	14	16	16	-6	15	16	17	-7	14	15	16	-6	16	17	17	-6	15	16	17	2	2	1	1
10,000	-4.6	8	13	14	15	9	13	15	15	9	14	14	15	9	14	15	16	9	13	15	15	2	2	1	2
BELEM TO MUNICH																									
55,000	-56.5	-69	-12	-10	-8	-68	-11	-9	-8	-67	-11	-8	-7	-70	-13	-11	-10	-68	-12	-9	-8	4502 N.M.I.			
40,000	-56.5	-56	0	3	4	-56	1	3	5	-55	3	5	6	-55	2	4	5	-55	1	4	5	4	3	3	3
30,000	-44.5	-41	4	6	7	-38	6	8	9	-35	10	11	12	-36	9	10	11	-37	7	9	10	3	3	2	3
20,000	-21.2	-14	7	9	10	-12	9	11	12	-8	13	14	15	-10	12	13	14	-11	10	12	13	3	3	2	3
10,000	-4.6	2	7	9	10	4	8	10	11	9	13	14	15	6	10	12	13	5	10	12	13	3	3	2	2
BELEM TO NAIJAL																									
55,000	-56.5	-78	-21	-19	-13	-78	-21	-20	-19	-72	-15	-13	-12	-76	-19	-17	-16	-76	-19	-16	-15	857 N.M.I.			
40,000	-56.5	-54	2	4	5	-52	4	7	8	-53	3	5	6	-53	3	5	5	-53	3	6	7	3	3	3	3
30,000	-44.5	-32	13	14	14	-30	13	14	17	-32	13	14	15	-30	13	14	17	-31	14	15	16	2	2	2	2
20,000	-21.2	-5	17	18	19	-4	17	18	19	-7	14	15	16	-6	16	17	18	-5	16	17	18	2	2	2	2
10,000	-4.6	10	15	16	16	10	15	16	16	8	13	14	15	10	15	16	17	10	14	16	16	2	2	2	2
BELEM TO NEW ORLEANS																									
55,000	-56.5	-76	-20	-18	-17	-76	-19	-17	-16	-72	-16	-14	-13	-77	-20	-18	-17	-75	-19	-16	-15	5026 N.M.I.			
40,000	-56.5	-55	2	4	5	-54	3	5	6	-55	1	2	3	-54	2	4	4	-54	2	4	5	3	3	2	3
30,000	-44.5	-35	10	11	12	-33	11	13	13	-33	12	13	13	-32	13	14	15	-33	11	13	14	2	2	2	2
20,000	-21.2	-7	14	15	16	-7	14	16	16	-7	14	15	16	-6	15	16	17	-7	14	16	16	2	2	1	2
10,000	-4.6	8	12	14	14	8	13	14	15	9	14	14	15	9	14	15	16	9	13	14	15	2	2	1	2
BELEM TO NEW YORK																									
55,000	-56.5	-73	-17	-15	-14	-72	-16	-14	-13	-70	-15	-12	-11	-74	-17	-15	-14	-72	-16	-14	-12	2876 N.M.I.			
40,000	-56.5	-55	1	4	5	-55	1	4	5	-55	1	3	3	-54	2	4	5	-55	1	3	4	3	3	2	3
30,000	-44.5	-37	7	9	10	-35	9	11	11	-34	11	12	13	-35	11	13	13	-35	10	11	12	2	2	2	2
20,000	-21.2	-10	11	13	14	-9	12	14	15	-7	14	15	16	-7	14	15	16	-6	15	16	15	2	2	2	2
10,000	-4.6	5	10	11	12	6	10	12	13	8	13	14	14	8	12	14	14	7	11	13	13	3	2	2	2
BELEM TO PANAMA																									
55,000	-56.5	-78	-22	-20	-19	-78	-21	-19	-18	-73	-16	-15	-14	-77	-21	-19	-18	-77	-20	-17	-16	1452 N.M.I.			
40,000	-56.5	-54	3	4	5	-52	5	7	8	-55	2	3	4	-54	3	4	5	-53	3	5	6	2	3	2	2
30,000	-44.5	-32	12	13	14	-30	13	14	17	-32	13	14	15	-30	13	15	16	-31	13	15	16	2	2	2	2
20,000	-21.2	-5	17	18	19	-4	17	18	19	-7	14	15	16	-5	16	17	17	-5	16	17	18	2	2	1	1
10,000	-4.6	10	14	16	16	10	15	16	17	9	14	15	15	10	15	16	17	10	14	16	16	2	2	2	2
BELEM TO QUITO																									
55,000	-56.5	-79	-23	-21	-20	-77	-21	-19	-18	-73	-16	-14	-13	-76	-20	-18	-17	-76	-20	-17	-16	1802 N.M.I.			
40,000	-56.5	-54	3	4	5	-52	5	7	8	-54	2	4	5	-54	3	4	5	-53	3	5	7	3	3	3	3
30,000	-44.5	-32	13	14	14	-30	13	14	17	-32	13	14	15	-30	13	14	17	-31	14	15	16	2	2	2	2
20,000	-21.2	-4	17	18	19	-4	17	18	19	-7	14	15	16	-6	16	17	17	-5	16	17	18	2	2	2	2
10,000	-4.6	10	15	16	17	10	15	16	17	9	13	15	15	10	15	16	17	10	15	16	16	2	2	2	2
BELEM TO RECIFE																									
55,000	-56.5	-78	-21	-19	-18	-78	-21	-19	-18	-71	-15	-13	-12	-75	-19	-17	-16	-76	-19	-16	-14	905 N.M.I.			
40,000	-56.5	-54	2	4	5	-52	4	7	8	-53	3	5	6	-53	3	5	5	-53	3	6	7	4	3	3	3
30,000	-44.5	-32	13	14	15	-30	13	14	17	-31	13	14	15	-30	14	16	17	-31	14	15	16	2	2	2	2
20,000	-21.2	-5	17	18	19	-4	17	18	19	-7	14	15	16	-6	16	17	18	-5	16	17	18	2	2	2	2
10,000	-4.6	10	15	16	16	10	15	16	17	8	13	14	15	10	15	16	17	10	14	16	16	2	2	2	2
BELEM TO RIO DE JANEIRO																									
55,000	-56.5	-77	-20	-18	-16	-76	-20	-17	-16	-70	-15	-11	-9	-72	-16	-14	-13	-74	-17	-14	-12	1521 N.M.I.			
40,000	-56.5	-53	3	6	7	-52	5	7	8	-52	4	6	7	-53	3	5	6	-53	4	6	8	3	3	3	3
30,000	-44.5	-32	13	14	15	-31	13	14	16	-33	12	13	14	-31	13	15	16	-32	13	15	16	2	3	2	3
20,000	-21.2	-5	16	17	18	-5	16	17	18	-9	13	14	15	-7	15	16	17	-6	15	17	18	2	2	2	2
10,000	-4.6	10	14	16	16	10	14	16	17	7	11	13	13	10	14	16	16	9	14	15	16	2	2	2	2
BELEM TO SAN JUAN																									
55,000	-56.5	-78	-21	-20	-19	-78	-21	-20	-19	-73	-16	-14	-14	-77	-21	-19	-18	-76	-20	-17	-16	1576 N.M.I.			
40,000	-56.5	-54	3	4	5	-53	4	6	7	-55	2	3	4	-54	3	4	5	-54	3	5	6	3	3	2	2
30,000	-44.5	-33	11	13	13	-31	14	15	15	-33	12	13	14	-31	14	15	15	-32	13	14	15	2	2	2	2
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17	-6	15	17	17	2	2	1	1
10,000	-4.6	9	14	15	15	9	14	15	16	9	14	15	15	10	14	15	16	9	14	15	16	2	2	2	2
BELEM TO SANTA MARIA																									
55,000	-56.5	-73	-17	-15	-14	-73	-16	-14	-13	-71	-14	-13	-12	-74	-18	-16	-15	-73	-16	-14	-13	2641 N.M.I.			
40,000	-56.5	-56	1	3	5	-55	1	4	5	-54	3	4	5	-54	2	4	5	-55	2	3	4	3	3	3	3
30,000	-44.5	-37	7	9	10	-35	10	11	12	-34	11	12	13	-33	11	13	14	-35	10	12	12	2	2	2	2
20,000	-21.2	-10	11	13	13	-9	12	14	15	-7	14	15	16	-7	14	15	16	-8	13	14	15	2	2	2	2
10,000	-4.6	6	11	12	13	6	11	12	13	9	13	14	15	8	13	14	15	7	12	13	14	2	2	2	2
BELEM TO SANTIAGO																									
55,000	-56.5	-74	-17	-15	-13	-73	-17	-14	-13	-67	-11	-8	-7	-69	-12	-10	-9	-71	-14	-11	-9	2297 N.M.I.			
40,000	-56.5	-53	4	6	7	-53	4	6	8	-52	4	6	7	-54	3	5	6	-53	4	6	7	4	3	4	3
30,000	-44.5	-33	11	13	14	-33	11	13	14	-36	9	11	12	-33	11	13	14	-34	11	13	14	3	3	3	3
20,000	-21.2	-6	15	17	18	-7	14	16	17	-12	9	11	12	-8	14	15	16	-8	13	15	16	2	2	2	2
10,000	-4.6	9	14	15	16	8	13	14	15	4	9	11	11	8	12	14	14	7	12	14	15	2	2	2	2
BELEM TO SAO PAULO																									
55,000	-56.5	-77	-20	-18</																					

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL							
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
BELFAST TO BRUSSELS																									
55,000	-56.5	-57	-1	2	4	-53	5	6	7	-49	7	10	11	-57	-1	2	4	-54	2	6	7	5	4	466 N.M.I.	4
40,000	-56.5	-58	-1	3	5	-55	2	6	9	-50	6	10	12	-56	0	4	6	-55	2	6	9	6	7	6	5
30,000	-44.5	-50	-6	-3	-2	-47	-5	-0	1	-41	5	6	7	-44	0	3	4	-46	-1	2	4	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-23	-2	2	3	-15	6	9	10	-19	2	6	7	-21	0	4	6	6	5	3	5
10,000	-4.6	-10	-5	-2	0	-7	-2	1	2	-1	5	7	9	-3	2	5	6	-5	-0	3	5	5	4	3	5
BELFAST TO COLOGNE																									
55,000	-56.5	-57	-1	2	4	-53	5	6	7	-49	7	10	11	-57	-1	2	4	-54	2	6	7	5	4	4	4
40,000	-56.5	-58	-2	3	5	-55	2	6	9	-50	6	10	12	-56	0	4	6	-55	2	6	9	6	7	6	5
30,000	-44.5	-50	-6	-3	-2	-48	-5	-1	1	-41	5	6	7	-44	0	3	4	-46	-1	2	4	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-23	-2	1	3	-15	6	9	10	-19	2	6	7	-21	0	4	6	6	5	3	5
10,000	-4.6	-10	-5	-2	0	-7	-2	1	2	-1	5	7	9	-3	2	5	6	-5	-0	3	5	5	4	3	5
BELFAST TO COPENHAGEN																									
55,000	-56.5	-58	-1	2	4	-55	4	6	8	-48	9	11	12	-57	-0	3	4	-54	3	6	8	5	4	3	4
40,000	-56.5	-58	-2	2	5	-54	5	7	10	-50	7	11	13	-56	1	4	6	-54	2	7	10	6	7	6	6
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-42	5	5	7	-45	-1	2	4	-47	-2	1	3	4	4	4	4
20,000	-21.2	-28	-7	-5	-0	-24	-5	0	2	-16	6	8	9	-20	1	5	7	-22	-1	3	5	6	5	3	5
10,000	-4.6	-11	-7	-3	-1	-8	-5	-0	1	-0	4	6	8	-5	-0	3	5	-6	-2	2	4	5	5	3	5
BELFAST TO DUSSELDORF																									
55,000	-56.5	-57	-1	2	4	-53	5	6	7	-49	7	10	11	-57	-1	2	4	-54	2	6	8	5	4	4	4
40,000	-56.5	-58	-2	3	5	-55	2	7	9	-50	6	10	12	-56	0	4	6	-55	2	6	9	6	7	6	5
30,000	-44.5	-50	-6	-3	-2	-48	-5	-1	1	-41	5	6	7	-44	0	3	4	-46	-1	2	4	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-23	-2	1	3	-15	6	9	10	-19	2	6	7	-21	0	4	6	6	5	3	5
10,000	-4.6	-10	-5	-2	0	-7	-2	1	2	-1	5	7	9	-3	2	5	6	-5	-0	3	5	5	4	3	5
BELFAST TO FRANKFURT																									
55,000	-56.5	-57	-1	3	4	-53	5	6	7	-49	7	9	11	-57	-1	2	3	-54	2	6	7	5	4	4	4
40,000	-56.5	-58	-2	3	5	-55	2	6	9	-51	6	10	12	-56	0	4	6	-55	2	6	9	6	7	6	5
30,000	-44.5	-50	-6	-3	-2	-48	-5	-1	1	-41	5	6	7	-44	0	3	4	-46	-1	2	4	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-23	-2	2	3	-15	6	9	10	-19	2	6	8	-21	0	4	6	6	5	3	5
10,000	-4.6	-10	-5	-2	-0	-7	-2	1	2	-1	5	8	9	-3	2	5	6	-5	-0	3	5	5	4	3	5
BELFAST TO GENEVA																									
55,000	-56.5	-57	-1	3	4	-54	5	5	7	-51	6	8	9	-58	-1	1	3	-55	1	5	7	5	4	4	4
40,000	-56.5	-58	-2	3	5	-56	1	5	8	-51	5	9	11	-56	0	4	6	-55	1	6	8	6	7	5	5
30,000	-44.5	-50	-5	-3	-1	-47	-5	-0	1	-40	4	7	8	-44	1	3	5	-45	-1	3	4	4	4	4	4
20,000	-21.2	-26	-4	-1	1	-22	-1	2	4	-14	7	9	11	-14	5	6	8	-20	1	5	7	6	5	3	5
10,000	-4.6	-9	-4	-1	1	-6	-1	2	3	-2	6	8	10	-2	2	5	7	-4	1	4	6	5	4	3	5
BELFAST TO GLASGOW																									
55,000	-56.5	-58	-1	2	4	-52	4	7	8	-48	8	11	12	-57	-0	3	5	-54	3	6	8	5	4	4	4
40,000	-56.5	-58	-1	4	6	-53	5	8	10	-50	7	11	13	-56	1	5	7	-54	2	7	10	7	7	6	6
30,000	-44.5	-50	-6	-3	-2	-47	-5	-0	1	-42	5	5	7	-45	-0	3	4	-46	-2	2	4	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-24	-5	1	3	-16	5	8	9	-20	1	5	7	-21	0	3	5	6	5	3	5
10,000	-4.6	-10	-5	-2	-0	-8	-5	-0	1	-1	4	6	7	-4	1	4	6	-6	-1	2	4	5	4	3	5
BELFAST TO HAMBURG																									
55,000	-56.5	-57	-1	2	4	-53	4	6	8	-48	8	10	12	-57	-0	2	4	-54	3	6	8	5	4	3	4
40,000	-56.5	-58	-2	3	5	-54	2	7	10	-50	7	10	13	-56	0	4	6	-55	2	7	9	6	7	6	6
30,000	-44.5	-51	-6	-4	-2	-48	-5	-1	0	-42	5	5	7	-45	-0	3	4	-46	-2	2	4	4	4	4	4
20,000	-21.2	-27	-6	-2	0	-24	-5	1	3	-15	6	8	9	-19	2	5	7	-21	-0	3	5	6	5	3	5
10,000	-4.6	-11	-6	-3	-1	-8	-5	0	2	-0	5	7	8	-4	0	4	5	-6	-1	2	4	5	4	3	5
BELFAST TO HELSINKI																									
55,000	-56.5	-58	-1	2	4	-52	4	7	8	-47	10	12	13	-56	1	5	5	-55	3	7	8	5	4	3	4
40,000	-56.5	-59	-2	2	4	-53	5	8	10	-49	7	11	13	-55	1	5	7	-54	2	7	10	6	7	6	6
30,000	-44.5	-52	-8	-5	-4	-49	-5	-2	-1	-42	2	5	6	-46	-2	1	3	-47	-3	1	3	4	4	4	4
20,000	-21.2	-30	-8	-4	-2	-25	-4	-1	1	-16	5	7	9	-21	0	4	6	-23	-2	2	4	6	5	3	5
10,000	-4.6	-14	-9	-5	-3	-10	-5	-2	0	-1	4	6	7	-6	-1	2	4	-7	-3	1	3	6	5	3	5
BELFAST TO ISTANBUL																									
55,000	-56.5	-56	0	3	5	-54	2	5	6	-52	5	7	8	-58	-2	1	2	-55	1	4	6	5	4	3	4
40,000	-56.5	-58	-1	2	4	-56	1	5	7	-50	6	9	11	-56	0	3	5	-55	2	6	8	5	6	5	4
30,000	-44.5	-51	-6	-4	-2	-47	-5	-0	1	-40	5	7	9	-45	1	4	5	-45	-1	3	5	4	4	4	4
20,000	-21.2	-27	-5	-2	0	-22	-1	2	4	-15	8	10	11	-18	3	6	8	-20	1	5	7	5	5	3	4
10,000	-4.6	-11	-7	-3	-1	-6	-1	2	3	-2	7	9	10	-2	2	5	7	-4	0	4	6	5	4	3	4
BELFAST TO REFLAVIK																									
55,000	-56.5	-57	-1	3	5	-51	6	9	10	-47	10	12	13	-55	2	4	6	-52	4	8	9	5	4	3	4
40,000	-56.5	-56	0	3	5	-51	6	10	13	-48	8	12	14	-54	3	7	9	-52	4	9	11	7	7	6	6
30,000	-44.5	-51	-7	-4	-3	-48	-5	-1	1	-43	1	4	5												
20,000	-21.7	-28	-7	-5	-1	-26	-5	-1	0	-18	3	6	7	-22	-1	5	5	-24	-2	1	3	6	5	3	6
10,000	-4.6	-12	-8	-5	-3	-10	-6	-3	-1	-2	2	4	6	-6	-2	2	3	-8	-3	0	2	5	5	3	5
BELFAST TO LISBON																									
55,000	-56.5	-58	-2	1	3	-56	1	4	5	-54	2	5	6	-59	-3	-0	1	-57	-0	3	4	5	4	4	4
40,000	-56.5	-58	-2	3	5	-57	-0	4	6	-55	4	7	9	-56	0	4	5	-56	1	5	7	6	6	5	5
30,000	-44.5	-58	-4	-1	0	-46	-1	1	1	-59	6	8	9	-43	2	5	6	-44	1	4	6	4	4	4	4
20,000	-21.2	-25	-2	2	4	-21	1	4	5	-15	8	11	12	-17	5	8	9	-18	3	6	8	5	4	3	4
10,000	-4.6	-6	-2	1	3	-4	1	4	5	-4	8	10	11	-1	4	6	8	-2	3	6	8	5	4	3	4
BELFAST TO LONDON																									
55,000	-56.5	-58	-1	2	4	-53	5	6	7	-49	7	10	11	-57	-1	2	4	-54	2	6	8	5	4	4	4
40,000	-56.5	-58	-1	3	5	-55	2	7	9	-50	6	10	12	-56	1	4	6	-55	2	7	9	7	7	6	6
30,000	-44.5	-56	-5	-3	-2	-47	-5	-0	1	-41	5	6	7	-44	0	3	4	-46	-1	2	4	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-25	-2	2	3	-15	6	9	10	-19	2	6	7	-21	1	4	6	6	5	3	5
10,000	-4.6	-9	-5	-1	1	-7	-2	1	2	-0	5	7	8	-3	2	5	6	-5	-0	3	5	5	4	3	4
BELFAST TO MAORIO																									
55,000	-56.5	-58	-2	2	3	-55	1	4	6	-54	3	5	7	-59	-2	0	2	-56	0	3	5	5	4	4	4
40,000	-56.5	-58	-2	3	5	-57	-0	4	6	-52	4	7	9	-56	0	4	5	-56	1	5	7	6	6	5	5
30,000	-44.5	-59	-4	-2	-0	-46	-2	1	2	-59	5	8	9	-45	2	4	6	-44	0	4	5	4	4	4	4
20,000	-21.2	-24	-2	1	3	-21	0	3	5	-15	8	10	12	-17											

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
BELFAST TO MONTREAL																	
55,000	-56.5	-56	0	3	5	-52	5	7	9	-50	6	9	10	-55	2	4	6
40,000	-56.5	-53	3	7	10	-52	4	9	11	-51	6	9	11	-53	4	8	10
30,000	-44.5	-50	-6	-3	-1	-48	-3	-1	1	-42	3	5	7	-45	-1	2	4
20,000	-21.2	-30	-8	-4	-1	-26	-5	-1	1	-15	6	9	10	-21	0	4	6
10,000	-4.6	-16	-11	-7	-4	-10	-6	-2	0	-1	4	6	7	-6	-2	2	4
BELFAST TO MOSCOW																	
55,000	-56.5	-57	-1	3	4	-52	4	7	8	-47	9	12	13	-56	1	3	5
40,000	-56.5	-59	-2	1	3	-54	3	7	9	-49	7	11	13	-55	1	5	7
30,000	-44.5	-52	-8	-5	-4	-49	-4	-2	0	-42	3	6	7	-46	-1	2	3
20,000	-21.2	-30	-8	-4	-2	-25	-4	0	2	-16	6	8	9	-21	1	4	6
10,000	-4.6	-14	-9	-6	-3	-9	-4	-1	1	-0	4	6	7	-6	-1	2	4
BELFAST TO MUNICH																	
55,000	-56.5	-57	-0	1	5	-54	3	5	7	-50	6	9	10	-58	-1	2	3
40,000	-56.5	-58	-2	2	5	-55	1	6	8	-51	6	9	11	-56	0	4	6
30,000	-44.5	-50	-6	-3	-2	-48	-3	-1	1	-41	4	6	7	-44	0	3	5
20,000	-21.2	-26	-5	-1	1	-23	-2	2	3	-14	7	9	10	-19	1	4	6
10,000	-4.6	-10	-6	-2	0	-7	-2	1	3	1	6	8	9	-3	2	5	7
BELFAST TO OSLO																	
55,000	-56.5	-58	-2	2	4	-52	4	7	8	-47	9	11	13	-56	0	3	5
40,000	-56.5	-58	-2	2	5	-53	3	8	11	-49	8	12	14	-56	1	5	7
30,000	-44.5	-51	-7	-4	-5	-48	-4	-1	0	-42	2	5	6	-46	-1	2	3
20,000	-21.2	-28	-7	-3	-1	-25	-4	0	1	-16	5	7	9	-21	0	4	6
10,000	-4.6	-12	-7	-4	-2	-9	-4	-1	0	-1	4	6	7	-5	-0	3	5
BELFAST TO PARIS																	
55,000	-56.5	-57	-1	2	4	-54	3	5	7	-50	6	9	10	-58	-1	2	3
40,000	-56.5	-58	-1	3	5	-55	1	6	9	-51	6	9	11	-56	0	4	6
30,000	-44.5	-50	-5	-3	-1	-47	-3	-0	1	-41	4	6	7	-44	0	3	5
20,000	-21.2	-26	-4	-1	2	-23	-1	2	4	-15	7	9	10	-19	1	4	6
10,000	-4.6	-9	-5	-1	1	-5	-2	1	3	1	6	8	9	-3	2	5	7
BELFAST TO PRAGUE																	
55,000	-56.5	-57	-0	1	5	-54	3	5	7	-49	7	10	11	-57	-1	2	3
40,000	-56.5	-58	-2	2	5	-55	2	6	8	-50	6	10	12	-56	0	4	6
30,000	-44.5	-51	-6	-4	-2	-48	-5	-1	1	-41	3	5	7	-44	0	3	5
20,000	-21.2	-27	-6	-2	0	-23	-2	1	3	-15	6	9	10	-19	2	6	7
10,000	-4.6	-11	-6	-3	-1	-7	-2	1	2	1	5	8	9	-5	1	4	6
BELFAST TO ROME																	
55,000	-56.5	-57	-0	1	5	-54	2	5	6	-52	4	7	8	-58	-2	1	2
40,000	-56.5	-58	-2	2	5	-56	0	4	7	-52	5	8	10	-56	0	3	5
30,000	-44.5	-50	-5	-3	-1	-47	-3	0	1	-43	3	7	7	-45	1	4	5
20,000	-21.2	-26	-4	-1	1	-22	-0	3	4	-13	8	10	11	-17	4	7	8
10,000	-4.6	-9	-4	-1	1	-5	-1	2	3	3	7	9	11	-2	3	6	7
BELFAST TO SHANNON																	
55,000	-56.5	-58	-1	2	4	-53	4	6	8	-49	7	10	11	-57	-0	3	4
40,000	-56.5	-57	-1	4	6	-54	2	7	10	-50	6	10	12	-56	1	5	7
30,000	-44.5	-50	-5	-3	-1	-47	-2	0	1	-41	3	6	7	-44	0	3	5
20,000	-21.2	-25	-4	-0	2	-23	-2	1	3	-15	6	8	10	-19	2	5	7
10,000	-4.6	-9	-5	-1	0	-7	-2	1	2	0	5	7	8	-5	1	4	6
BELFAST TO STOCKHOLM																	
55,000	-56.5	-58	-1	2	4	-52	4	7	8	-47	9	11	13	-56	0	3	5
40,000	-56.5	-59	-2	2	4	-53	3	8	10	-49	7	11	13	-56	1	5	7
30,000	-44.5	-52	-7	-5	-3	-49	-4	-2	0	-42	2	5	6	-46	-1	2	3
20,000	-21.2	-24	-8	-4	-2	-25	-4	0	1	-16	5	7	9	-21	0	4	6
10,000	-4.6	-13	-8	-4	-3	-9	-4	-1	0	-1	4	6	7	-5	-1	2	4
BELFAST TO VIENNA																	
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-50	7	9	10	-57	-1	2	3
40,000	-56.5	-58	-2	2	4	-55	1	6	8	-51	6	9	11	-56	0	4	6
30,000	-44.5	-51	-6	-4	-2	-48	-3	-1	1	-41	4	6	7	-44	0	3	5
20,000	-21.2	-27	-6	-2	0	-23	-2	1	3	-14	7	9	10	-19	1	4	6
10,000	-4.6	-11	-6	-3	-1	-7	-2	1	2	1	6	8	9	-3	1	5	6
BELFAST TO WANSAN																	
55,000	-56.5	-57	-1	3	5	-54	4	6	7	-48	8	10	12	-57	-0	2	4
40,000	-56.5	-58	-2	2	4	-55	2	7	9	-50	6	10	12	-56	0	4	6
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-41	3	6	7	-45	-0	2	4
20,000	-21.2	-28	-7	-3	-1	-24	-3	1	2	-15	6	8	10	-19	2	5	7
10,000	-4.6	-12	-7	-4	-2	-8	-5	-0	2	0	5	7	8	-5	-0	3	5
BELFAST TO ZURICH																	
55,000	-56.5	-57	-1	3	5	-54	3	5	7	-50	6	9	10	-58	-1	2	3
40,000	-56.5	-58	-2	2	4	-55	1	6	8	-51	5	9	11	-56	0	4	6
30,000	-44.5	-50	-6	-3	-2	-47	-5	-0	1	-41	4	6	7	-44	1	3	5
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	7	9	10	-18	3	6	8
10,000	-4.6	-10	-5	-1	0	-6	-2	1	3	1	6	8	9	-3	2	5	7
BELGRADE TO LJUBLJANA																	
55,000	-56.5	-56	1	4	6	-53	2	4	6	-53	3	6	7	-59	-2	0	1
40,000	-56.5	-58	-1	2	4	-57	-0	3	5	-51	6	8	10	-56	0	3	5
30,000	-44.5	-51	-6	-4	-2	-47	-3	-0	1	-39	6	8	10	-43	2	4	6
20,000	-21.2	-27	-5	-2	0	-21	-0	3	4	-12	9	11	12	-17	4	7	8
10,000	-4.6	-11	-7	-3	-2	-6	-1	2	4	3	8	10	11	-2	3	6	7
BELGRADE TO LONDON																	
55,000	-56.5	-56	0	4	5	-52	2	5	6	-52	5	7	8	-58	-2	1	2
40,000	-56.5	-58	-2	2	4	-56	0	4	6	-51	5	8	10	-56	0	3	5
30,000	-44.5	-51	-6	-4	-2	-48	-3	-0	1	-40	5	7	9	-43	1	4	5
20,000	-21.2	-27	-5	-2	0	-22	-1	2	4	-13	8	10	11	-18	4	7	8
10,000	-4.6	-11	-6	-3	-1	-6	-1	2	3	2	7	9	10	-2	3	6	7

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURE AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																											
HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
BELGRADE TO PRAGUE																											
55,000	-56.5	-56	1	4	6	-54	2	5	6	-52	5	7	8	-50	-2	1	2	-55	1	4	6	5	4	3	4	402 N.M.I.	
40,000	-56.5	-58	-1	2	4	-56	0	4	5	-51	6	9	10	-56	0	3	4	-55	1	5	7	5	5	4	4		
30,000	-44.5	-51	-7	-4	-3	-48	-3	-1	1	-39	5	8	9	-43	1	4	5	-45	-1	3	5	4	4	4	4		
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	4	-15	8	10	11	-17	4	7	8	-20	1	5	7	5	4	3	4		
10,000	-4.6	-12	-8	-4	-2	-6	-2	1	3	2	7	9	10	-2	2	5	7	-5	0	4	6	5	5	3	4		
BELGRADE TO SARAJEVO																											
55,000	-56.5	-56	1	4	6	-55	1	4	5	-54	2	5	6	-59	-3	-0	1	-56	0	3	5	5	4	3	4	107 N.M.I.	
40,000	-56.5	-57	-1	2	4	-57	-0	3	5	-50	7	9	11	-56	0	3	4	-55	1	5	7	5	5	4	4		
30,000	-44.5	-51	-6	-4	-3	-47	-3	-0	1	-38	6	9	10	-43	2	4	6	-45	-0	4	6	4	4	4	4		
20,000	-21.2	-26	-5	-2	0	-21	0	3	4	-12	9	11	12	-17	5	7	8	-19	2	6	7	5	4	3	4		
10,000	-4.6	-11	-7	-3	-2	-5	-1	2	4	4	8	10	11	-1	3	6	7	-4	1	5	7	5	4	3	4		
BELGRADE TO SKOPJE																											
55,000	-56.5	-56	1	4	5	-55	1	4	5	-55	1	3	4	-59	-3	-1	1	-57	-0	3	5	5	4	3	4	176 N.M.I.	
40,000	-56.5	-57	-1	3	4	-57	-0	3	5	-49	7	10	11	-56	0	3	4	-55	2	5	7	5	5	4	4		
30,000	-44.5	-51	-6	-4	-3	-47	-2	0	1	-38	7	9	11	-42	2	5	6	-44	0	4	6	4	4	4	4		
20,000	-21.2	-26	-5	-2	0	-21	0	3	5	-12	10	12	13	-16	5	7	9	-19	3	6	8	5	4	3	4		
10,000	-4.6	-11	-6	-3	-2	-5	-0	3	4	4	9	11	12	-1	4	6	8	-3	1	5	7	5	4	3	4		
BELGRADE TO SOFIA																											
55,000	-56.5	-56	1	4	5	-55	1	4	5	-55	2	4	5	-59	-3	-0	1	-56	0	3	4	5	4	3	4	182 N.M.I.	
40,000	-56.5	-57	-1	2	4	-57	-0	3	5	-49	7	10	11	-56	0	3	4	-55	2	5	7	5	5	4	4		
30,000	-44.5	-51	-7	-4	-3	-47	-2	0	1	-38	7	9	11	-42	2	4	6	-45	-0	4	6	4	4	4	4		
20,000	-21.2	-26	-5	-2	0	-21	0	3	5	-12	10	11	12	-16	5	7	8	-19	2	6	8	5	4	3	4		
10,000	-4.6	-11	-7	-3	-2	-5	-0	3	4	4	8	11	12	-1	4	6	8	-3	1	5	7	5	4	3	4		
BELGRADE TO ZURICH																											
55,000	-56.5	-56	1	4	6	-55	2	4	6	-53	4	6	7	-59	-2	0	2	-56	1	4	5	5	4	3	4	517 N.M.I.	
40,000	-56.5	-58	-1	2	4	-57	-0	3	5	-51	5	8	9	-56	0	3	4	-56	1	5	7	5	5	4	4		
30,000	-44.5	-51	-6	-4	-2	-47	-3	-0	1	-39	5	8	9	-43	2	4	6	-45	-0	3	5	4	4	4	4		
20,000	-21.2	-27	-5	-2	0	-22	-0	3	4	-15	9	11	12	-17	4	7	8	-19	2	5	7	5	4	3	4		
10,000	-4.6	-11	-6	-3	-1	-6	-1	2	3	3	8	10	11	-2	3	6	7	-4	1	4	6	5	4	3	4		
BELIZE TO GUATEMALA																											
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-74	-17	-16	-15	-78	-22	-20	-19	-76	-20	-18	-17	3	3	2	3	220 N.M.I.	
40,000	-56.5	-54	2	4	4	-54	2	4	4	-56	1	2	2	-54	3	4	4	-55	2	3	4	2	2	2	2		
30,000	-44.5	-35	9	11	11	-34	11	12	13	-33	12	13	13	-32	13	14	14	-33	11	13	13	2	2	1	2		
20,000	-21.2	-7	14	15	16	-6	15	17	17	-6	15	15	16	-6	16	16	17	-6	15	16	17	2	2	1	1		
10,000	-4.6	8	13	14	15	10	14	16	16	9	14	15	15	10	15	16	16	9	14	15	16	2	2	1	1		
BELIZE TO KINGSTON																											
55,000	-56.5	-77	-20	-19	-18	-76	-19	-17	-16	-73	-16	-15	-14	-78	-21	-19	-18	-76	-19	-17	-16	3	3	2	3	659 N.M.I.	
40,000	-56.5	-54	2	4	4	-54	3	4	5	-56	1	1	2	-54	3	4	4	-55	2	3	4	2	2	1	2		
30,000	-44.5	-35	9	10	11	-34	11	12	12	-33	12	13	13	-32	12	14	14	-33	11	12	13	2	2	1	2		
20,000	-21.2	-7	14	15	16	-6	15	16	17	-7	15	15	16	-6	15	16	17	-7	15	16	16	2	2	1	1		
10,000	-4.6	8	12	14	14	8	13	15	15	9	14	15	15	10	14	15	16	9	13	14	15	2	2	1	1		
BELIZE TO MEXICO CITY																											
55,000	-56.5	-77	-20	-18	-17	-75	-19	-17	-16	-74	-17	-16	-15	-78	-22	-20	-19	-76	-19	-18	-17	3	3	2	3	624 N.M.I.	
40,000	-56.5	-55	1	1	4	-55	2	3	4	-56	1	2	2	-54	2	4	4	-55	1	3	4	2	2	2	2		
30,000	-44.5	-36	8	10	10	-35	10	11	11	-33	12	13	13	-32	12	13	14	-34	11	12	13	2	2	1	2		
20,000	-21.2	-8	13	15	16	-6	15	16	17	-6	15	16	16	-6	15	15	17	-7	15	16	16	2	2	1	1		
10,000	-4.6	8	13	14	15	10	14	16	17	10	14	15	15	10	15	16	16	9	14	15	16	2	2	1	1		
BELIZE TO MIAMI																											
55,000	-56.5	-76	-19	-17	-16	-74	-17	-15	-14	-72	-16	-14	-14	-77	-20	-18	-17	-75	-18	-16	-15	3	3	2	3	667 N.M.I.	
40,000	-56.5	-55	1	3	3	-55	2	3	4	-56	0	1	2	-54	2	3	4	-55	1	3	4	2	2	1	2		
30,000	-44.5	-37	8	9	10	-35	9	10	11	-33	12	13	13	-33	12	13	14	-34	10	12	13	2	2	1	2		
20,000	-21.2	-9	13	14	15	-8	13	15	16	-7	13	15	16	-6	15	16	17	-7	14	15	16	2	2	1	2		
10,000	-4.6	7	12	13	14	4	12	14	15	9	14	14	15	9	14	15	15	8	13	14	15	2	2	1	1		
BELIZE TO NEW ORLEANS																											
55,000	-56.5	-74	-18	-16	-15	-72	-16	-14	-13	-72	-16	-14	-14	-77	-20	-18	-17	-74	-17	-16	-15	3	3	2	3	744 N.M.I.	
40,000	-56.5	-56	0	2	3	-55	1	3	4	-56	0	1	2	-55	2	3	4	-56	1	2	3	2	2	1	2		
30,000	-44.5	-38	7	8	9	-36	8	9	10	-33	12	13	13	-33	11	12	13	-35	9	11	12	2	2	1	2		
20,000	-21.2	-10	12	13	14	-9	12	14	15	-6	15	16	16	-7	15	16	16	-8	13	15	15	2	2	1	2		
10,000	-4.6	6	11	12	13	8	12	14	15	9	14	15	15	9	14	15	15	8	13	14	14	2	2	1	2		
BELIZE TO PUERTO RICO																											
55,000	-56.5	-77	-20	-19	-18	-76	-19	-18	-17	-74	-17	-16	-15	-78	-22	-20	-19	-76	-20	-18	-17	3	3	2	3	109 N.M.I.	
40,000	-56.5	-54	2	4	4	-54	2	4	4	-56	1	2	2	-54	3	4	4	-55	2	3	4	2	2	2	2		
30,000	-44.5	-35	9	10	11	-34	11	12	12	-33	12	13	13	-32	13	14	14	-33	11	13	13	2	2	1	2		
20,000	-21.2	-7	14	15	16	-6	15	17	17	-6	15	15	16	-6	16	16	17	-6	15	16	17	2	2	1	1		
10,000	-4.6	8	13	14	15	9	14	15	16	9	14	15	15	10	15	16	16	9	14	15	15	2	2	1	1		
BELIZE TO SAN PEDRO SULA																											
55,000	-56.5	-77	-21	-19	-18	-76	-19	-18	-17	-74	-17	-16	-15	-78	-22	-20	-19	-76	-20	-18	-17	3	3	2	3	127 N.M.I.	
40,000	-56.5	-54	2	4	4	-54	3	4	4	-56	1	2	2	-54	3	4	4	-55	2	3	4	2	2	2	2		
30,000	-44.5	-35	9	11	11	-34	11	12	13	-33	12	13	13	-32	13	14	14	-33	11	13	13	2	2	1	2		
20,000	-21.2	-7	14	15	16	-6	15	17	17	-6	15	15	16	-6	16	16	17	-6	15	16	17	2	2	1	1		
10,000	-4.6	8	13	14	15	9	14	15	16	9	14	15	15	10	15	15	16	9	14	15	15	2	2	1	1		
BELIZE TO TEGUCIGALPA																											
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-74	-17	-16	-15	-78	-22	-20	-19	-76	-20	-18	-17	3	3	2	3	218 N.M.I.	
40,000	-56.5	-54	2	4	5	-54	3	4	5	-56	1	2	2	-54	3	4	4	-54	2	3	4	2	2	2	2		
30,000	-44.5	-35	10	11	11	-33	11	12	13	-33	12	13	13	-32	13	14	14	-33	11	13	13	2	2	1	2		
20,000	-21.2	-7	14	16	16	-6	15	17	17	-7	15	15	16	-6	16	16	17	-6	15	16							

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	07	085	50	050	075	085	50	050	075	085	50	050	075	085						
BENGASI TO BOMBAY																											
51,000	-56.5	-69	-12	-10	-9	-68	-11	-9	-8	-75	-16	-14	-13	-71	-15	-12	-11	-70	-14	-11	-9	3	3	3	4	2922 N.M.I.	
40,000	-56.5	-54	2	5	6	-54	3	6	7	-47	9	12	15	-54	2	4	6	-52	4	7	9	4	4	3	3		
30,000	-44.5	-41	4	6	7	-38	7	9	10	-27	18	20	21	-35	9	11	12	-35	9	13	15	4	3	3	3		
20,000	-21.2	-15	6	8	9	-11	10	12	13	-3	18	20	21	-9	12	14	14	-10	12	15	16	3	3	3	2		
10,000	-4.6	1	6	8	9	6	10	12	14	14	19	20	21	7	12	14	14	7	12	15	16	3	3	2	2		
BENGASI TO CAIRO																											
51,000	-56.5	-65	-8	-6	-5	-62	-6	-4	-3	-70	-14	-12	-11	-67	-10	-8	-7	-66	-10	-7	-5	3	3	3	3	584 N.M.I.	
40,000	-56.5	-54	2	5	6	-56	1	4	5	-47	9	11	12	-55	1	3	4	-53	3	6	8	4	5	2	3		
30,000	-44.5	-45	-1	1	2	-41	3	5	6	-28	16	18	19	-39	6	8	9	-38	6	10	12	3	3	3	3		
20,000	-21.2	-18	3	5	6	-15	6	8	9	-4	17	18	19	-12	9	11	12	-12	9	12	14	3	3	2	2		
10,000	-4.6	-2	2	4	6	2	6	8	10	12	16	18	18	6	10	12	13	4	9	12	13	3	3	2	2		
BENGASI TO CALCUTTA																											
51,000	-56.5	-66	-10	-7	-6	-64	-8	-5	-4	-71	-15	-12	-11	-68	-11	-9	-7	-67	-11	-8	-6	4	4	4	4	3619 N.M.I.	
40,000	-56.5	-55	2	5	7	-54	2	5	7	-47	9	12	13	-55	2	4	6	-53	4	7	9	4	5	4	4		
30,000	-44.5	-43	2	5	6	-40	5	7	9	-27	18	20	21	-37	8	10	12	-36	8	12	14	4	4	3	3		
20,000	-21.2	-17	4	6	8	-13	8	10	12	-3	18	20	21	-10	11	13	14	-11	10	14	16	4	4	3	3		
10,000	-4.6	-1	5	6	7	5	9	11	11	14	18	20	21	6	11	11	14	6	10	14	15	4	3	2	3		
BENGASI TO COLOMBO																											
51,000	-56.5	-73	-16	-14	-13	-72	-15	-13	-12	-75	-18	-16	-15	-75	-18	-16	-15	-74	-17	-14	-11	3	4	3	3	3645 N.M.I.	
40,000	-56.5	-55	2	4	6	-53	4	6	7	-49	8	10	11	-54	3	5	6	-53	4	7	8	4	4	3	3		
30,000	-44.5	-47	7	9	10	-35	10	12	11	-28	17	19	20	-34	11	12	13	-33	11	14	15	3	3	2	3		
20,000	-21.2	-11	10	12	12	-9	12	14	15	-4	17	19	20	-8	14	15	16	-8	13	16	17	2	3	2	2		
10,000	-4.6	5	9	11	12	7	12	14	14	13	18	19	20	8	13	14	15	8	13	15	16	2	2	2	2		
BENGASI TO DAMASCUS																											
51,000	-56.5	-63	-6	-4	-3	-61	-4	-2	-1	-69	-11	-11	-10	-65	-8	-6	-5	-64	-8	-5	-4	3	3	3	3	809 N.M.I.	
40,000	-56.5	-55	2	4	6	-56	0	4	5	-47	9	11	12	-56	1	3	4	-53	3	6	8	4	5	3	3		
30,000	-44.5	-46	-2	0	1	-43	2	4	5	-29	16	18	19	-39	5	7	8	-39	5	9	11	3	3	3	3		
20,000	-21.2	-20	1	4	5	-16	5	7	8	-5	16	18	19	-13	9	10	11	-13	8	11	13	3	3	2	2		
10,000	-4.6	-4	1	5	4	1	5	8	9	11	15	17	18	5	10	11	12	1	8	11	12	4	4	2	3		
BENGASI TO DHAKRAH																											
51,000	-56.5	-66	-10	-8	-6	-65	-8	-6	-5	-72	-15	-13	-12	-68	-12	-10	-8	-68	-11	-9	-7	3	3	3	1	1599 N.M.I.	
40,000	-56.5	-54	2	5	6	-55	2	5	6	-47	10	11	12	-55	2	4	5	-51	4	7	8	4	4	3	3		
30,000	-44.5	-44	1	4	5	-40	5	7	8	-27	14	16	17	-37	7	9	10	-37	8	11	13	3	3	3	3		
20,000	-21.2	-17	4	6	7	-14	7	9	10	-3	18	20	21	-11	11	12	13	-11	10	13	15	3	3	3	2		
10,000	-4.6	-1	4	6	7	1	8	10	11	14	19	20	21	7	11	13	14	6	10	13	15	3	3	2	2		
BENGASI TO KANACHI																											
51,000	-56.5	-66	-10	-8	-6	-65	-8	-6	-5	-72	-15	-13	-12	-69	-12	-10	-8	-68	-11	-9	-7	4	3	3	4	2490 N.M.I.	
40,000	-56.5	-54	2	5	7	-54	2	5	7	-47	10	12	13	-55	2	4	5	-52	4	7	9	4	5	3	3		
30,000	-44.5	-43	2	4	5	-49	5	7	8	-27	18	20	21	-37	8	10	11	-36	8	12	14	4	3	3	3		
20,000	-21.2	-17	4	6	8	-13	8	10	11	-3	18	20	21	-10	11	13	13	-11	10	14	16	3	3	3	2		
10,000	-4.6	-1	4	6	7	4	9	11	12	14	19	20	21	7	11	13	14	6	11	14	16	3	3	2	3		
BENGASI TO LISBON																											
51,000	-56.5	-61	-4	-1	0	-59	-3	-0	1	-64	-7	-5	-4	-63	-6	-4	-3	-62	-5	-2	-1	4	4	3	3	1485 N.M.I.	
40,000	-56.5	-57	-0	3	5	-57	-0	3	5	-50	6	8	9	-56	0	3	4	-55	1	5	6	5	5	3	3		
30,000	-44.5	-46	-2	0	1	-44	1	3	4	-35	10	12	13	-40	4	6	8	-41	3	6	8	3	3	3	3		
20,000	-21.2	-20	1	4	5	-17	4	6	8	-9	11	14	15	-13	8	10	11	-15	6	9	11	4	3	2	3		
10,000	-4.6	-4	1	4	5	0	5	7	9	10	14	16	17	3	7	9	10	2	7	10	12	4	3	3	3		
BENGASI TO MADRID																											
51,000	-56.5	-60	-4	-1	1	-59	-2	0	1	-63	-7	-5	-4	-62	-6	-4	-3	-61	-5	-2	-0	4	4	3	3	1252 N.M.I.	
40,000	-56.5	-57	-0	1	5	-57	-0	3	5	-50	6	8	10	-56	0	1	4	-55	1	5	6	5	5	3	3		
30,000	-44.5	-47	-2	0	1	-44	0	1	4	-35	10	12	13	-40	4	6	8	-42	3	6	8	3	3	3	3		
20,000	-21.2	-21	0	3	5	-17	4	6	7	-9	12	14	15	-14	7	9	10	-15	6	9	11	4	3	2	3		
10,000	-4.6	-4	0	1	4	0	5	7	8	9	14	16	17	7	9	10	12	2	6	10	12	4	3	3	3		
BENGASI TO MILAN																											
51,000	-56.5	-59	-2	1	2	-58	-1	1	1	-61	-5	-3	-2	-61	-5	-3	-2	-60	-3	-0	1	4	4	3	3	975 N.M.I.	
40,000	-56.5	-57	-0	3	5	-57	-1	3	4	-50	7	9	10	-56	0	3	4	-55	1	5	7	5	5	3	3		
30,000	-44.5	-48	-4	-1	0	-45	-1	2	3	-36	9	11	12	-41	3	6	7	-43	2	6	7	3	4	3	3		
20,000	-21.2	-23	-2	1	3	-19	3	5	6	-9	12	14	15	-15	7	9	10	-16	5	8	10	4	4	3	3		
10,000	-4.6	-6	-2	1	3	-2	3	5	7	7	12	14	15	1	6	8	9	0	5	8	10	4	4	3	3		
BENGASI TO NEW DELHI																											
51,000	-56.5	-64	-7	-5	-3	-62	-6	-3	-2	-70	-14	-11	-10	-66	-9	-7	-5	-65	-9	-6	-4	4	4	4	4	2918 N.M.I.	
40,000	-56.5	-55	2	5	7	-55	2	5	7	-47	10	12	13	-55	1	4	5	-51	4	7	9	4	5	4	4		
30,000	-44.5	-44	0	3	4	-41	1	6	7	-27	17	19	21	-38	6	9	10	-38	7	11	13	4	4	3	3		
20,000	-21.2	-19	2	4	6	-15	7	9	10	-3	18	20	21	-12	9	11	12	-12	9	13	15	4	4	3	3		
10,000	-4.6	-3	1	4	5	1	8	10	11	14	18	20	21	6	10	12	13	5	9	13	15	4	4	2	3		
BENGASI TO ROME																											
51,000	-56.5	-59	-1	-0	1	-58	-2	1	2	-63	-7	-5	-4	-62	-6	-4	-2	-61	-4	-2	-0	4	3	3	3	688 N.M.I.	
40,000	-56.5	-56	0	4	5	-57	-1	3	4	-49	8	10	11	-56	0	2	4	-55	2	5	7	5	5	3	3		
30,000	-44.5	-48	-1	0	1	-45	-0	2	1	-34	10	12	13	-41	4	6	7	-42	3	6	8	3	3	3	3		
20,000	-21.2	-22	-1	2	1	-18	3	6	7	-9	11	14	15	-14	7	9	10	-16	6	9	10	4	3	2	3		
10,000	-4.6	-6	-1	2	3	-1	4	6	8	8	11	13	14	2	7	9	10	1	6	9	11	4	4	3	3		
BENGASI TO TEL AVIV-JAFFA																											
51,000	-56.5	-64	-7	-5	-4	-62	-6	-3	-2	-70	-14	-11	-10	-66	-9	-7	-6	-65	-9	-6	-5	3	3	3	3	744 N.M.I.	
40,000	-56.5	-55	2	5	6	-56	1	4	5	-47	9	11	12	-56	1	3	4	-53	3	6	8	4	5	3	3		
30,000	-44.5	-46	-1	1	2	-42	3	5	6	-29	16	18	19	-39	5	7	8	-39	6	10	12	3	3	3	3		
20,000	-21.2	-19	2	4	6	-16	5	8	9	-5	16	18	19	-12	9	10	11	-13	8	11	13	3	3	2	2		
10,000	-4.6	-3	1	4	5	1	6	8	10	11	15																

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION								
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL								
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT	
BENGASI TO TUNIS																										572 N.M.I.
53,000	-56.5	-61	-5	-2	-1	-60	-3	-1	0	-66	-9	-7	-6	-63	-7	-5	-4	-63	-6	-3	-2	4	3	3	3	
40,000	-56.5	-56	1	4	6	-57	-0	3	5	-49	8	10	11	-56	0	3	4	-54	2	5	7	5	5	5	5	
30,000	-44.5	-46	-2	0	1	-44	1	3	4	-33	11	13	14	-40	4	6	8	-41	4	7	9	3	3	3	3	
20,000	-21.2	-21	1	3	5	-17	5	7	8	-7	14	15	16	-13	8	10	10	-14	7	10	11	4	3	2	2	
10,000	-4.6	-4	0	3	4	0	5	7	9	10	14	16	17	3	8	10	11	2	7	10	12	4	3	2	3	
BERGEN TO LONDON																										563 N.M.I.
53,000	-56.5	-58	-1	2	4	-53	4	6	8	-48	9	11	12	-57	-0	3	4	-54	3	6	8	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-54	3	8	10	-49	7	11	13	-56	1	5	7	-54	2	7	10	6	7	6	6	
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-42	3	5	6	-45	-1	2	4	-47	-2	1	3	4	4	4	4	
20,000	-21.2	-28	-7	-3	-1	-24	-3	0	2	-16	5	8	9	-20	1	5	6	-22	-1	3	5	4	5	4	5	
10,000	-4.6	-11	-7	-3	-1	-8	-4	-1	1	-0	4	6	8	-4	0	3	5	-6	-1	2	4	5	4	3	5	
BERLIN TO BRUSSELS																										345 N.M.I.
53,000	-56.5	-57	-0	3	5	-54	3	6	7	-50	7	9	10	-57	-1	2	3	-54	2	5	7	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-55	1	5	8	-51	6	9	11	-56	0	3	5	-55	1	6	8	6	6	5	5	
30,000	-44.5	-51	-7	-4	-2	-48	-4	-1	0	-41	4	6	8	-44	0	3	4	-46	-2	2	4	4	4	4	4	
20,000	-21.2	-28	-6	-2	0	-23	-2	1	3	-14	7	9	10	-19	3	6	8	-21	0	4	6	6	5	3	5	
10,000	-4.6	-12	-7	-1	-1	-7	-2	1	2	1	6	8	9	-4	1	4	6	-5	-1	3	5	6	4	3	5	
BERLIN TO BUDAPEST																										376 N.M.I.
53,000	-56.5	-56	1	4	6	-54	3	5	7	-50	6	9	10	-58	-1	1	3	-54	2	5	7	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-56	1	4	6	-51	6	9	10	-56	0	3	5	-55	1	5	7	5	5	5	4	
30,000	-44.5	-52	-7	-4	-3	-48	-4	-1	0	-40	4	7	8	-44	1	3	5	-46	-1	2	4	4	4	4	4	
20,000	-21.2	-28	-7	-3	-1	-23	-2	1	3	-14	7	10	11	-18	3	6	8	-21	1	4	6	6	5	3	5	
10,000	-4.6	-13	-8	-4	-2	-7	-2	1	2	2	6	8	9	-3	1	4	6	-5	-1	3	5	6	5	3	5	
BERLIN TO CAIRO																										1557 N.M.I.
53,000	-56.5	-58	-2	1	3	-57	-0	2	4	-59	-3	-0	1	-61	-4	-2	-1	-59	-2	1	2	4	3	3	3	
40,000	-56.5	-57	-0	1	5	-56	0	4	5	-56	0	10	11	-56	0	3	4	-54	2	6	7	5	5	4	4	
30,000	-44.5	-50	-5	-3	-1	-46	-1	1	2	-35	9	12	13	-42	3	5	6	-43	1	5	7	3	3	3	3	
20,000	-21.2	-24	-3	0	1	-20	1	4	5	-10	11	13	14	-16	4	8	9	-17	4	7	9	4	4	3	4	
10,000	-4.6	-9	-4	-1	0	-4	1	4	5	6	10	12	13	1	5	8	9	-2	3	6	8	4	4	3	4	
BERLIN TO COLOGNE																										252 N.M.I.
53,000	-56.5	-56	0	3	5	-54	3	6	7	-50	7	9	10	-57	-1	2	3	-54	2	5	7	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	6	9	11	-56	0	3	5	-55	1	5	8	6	6	5	5	
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-41	4	6	8	-44	0	3	4	-46	-2	2	4	4	4	4	4	
20,000	-21.2	-28	-7	-3	-0	-23	-2	1	3	-14	7	9	10	-19	3	6	8	-21	0	4	6	6	5	3	5	
10,000	-4.6	-12	-8	-4	-2	-7	-2	1	2	1	6	8	9	-4	1	4	6	-5	-1	3	5	6	5	3	5	
BERLIN TO COPENHAGEN																										191 N.M.I.
53,000	-56.5	-57	-0	1	5	-53	3	6	7	-48	8	10	12	-57	-0	2	4	-54	3	6	8	5	4	3	4	
40,000	-56.5	-59	-2	2	4	-54	2	6	8	-50	6	10	12	-56	0	4	5	-55	2	6	8	5	6	5	5	
30,000	-44.5	-52	-7	-5	-3	-49	-5	-2	-1	-41	1	6	7	-45	-0	2	4	-47	-2	1	3	4	4	4	4	
20,000	-21.2	-29	-8	-4	-2	-24	-3	0	2	-15	6	9	10	-20	2	5	7	-22	-1	3	5	6	5	3	5	
10,000	-4.6	-13	-9	-5	-3	-8	-4	-0	1	0	5	7	8	-6	-1	2	4	-7	-2	2	3	6	5	3	5	
BERLIN TO DUSSELDORF																										256 N.M.I.
53,000	-56.5	-56	0	3	5	-53	3	6	7	-50	7	9	10	-57	-1	2	3	-54	2	6	7	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-55	1	5	8	-51	6	9	11	-56	0	3	5	-55	1	6	8	6	6	5	5	
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-41	4	6	8	-44	0	3	4	-46	-2	2	4	4	4	4	4	
20,000	-21.2	-28	-7	-3	-1	-21	-2	1	3	-14	7	9	10	-19	3	6	8	-21	0	4	6	6	5	3	5	
10,000	-4.6	-12	-8	-4	-2	-7	-2	1	2	1	6	8	9	-4	1	4	6	-6	-1	3	5	6	5	3	5	
BERLIN TO FRANKFURT																										233 N.M.I.
53,000	-56.5	-56	0	4	5	-54	3	5	7	-50	7	9	10	-58	-1	2	3	-54	2	5	7	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	6	9	11	-56	0	3	5	-55	1	5	8	5	6	5	5	
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-41	4	6	8	-44	0	3	4	-46	-2	2	4	4	4	4	4	
20,000	-21.2	-28	-7	-3	-0	-23	-2	1	3	-14	7	9	10	-18	3	6	8	-21	0	4	6	6	4	3	5	
10,000	-4.6	-12	-8	-4	-2	-7	-2	1	2	1	6	8	9	-3	1	4	6	-5	-1	3	5	6	5	3	5	
BERLIN TO GENEVA																										470 N.M.I.
53,000	-56.5	-56	0	4	5	-54	2	5	6	-51	5	8	9	-58	-2	1	2	-55	2	5	6	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-56	0	4	6	-52	5	8	10	-56	0	3	5	-56	1	5	7	6	6	5	5	
30,000	-44.5	-51	-6	-3	-2	-48	-3	-1	1	-40	4	7	8	-44	1	4	5	-46	-1	2	4	4	4	4	4	
20,000	-21.2	-27	-6	-2	0	-22	-1	2	3	-14	8	10	11	-18	3	6	8	-20	1	5	7	6	4	3	5	
10,000	-4.6	-11	-6	-1	-1	-6	-2	1	1	2	7	9	10	-2	2	5	7	-4	0	4	6	6	4	3	5	
BERLIN TO GLASGOW																										651 N.M.I.
53,000	-56.5	-57	-1	2	4	-53	4	6	8	-48	8	10	12	-57	-0	2	4	-54	3	6	8	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-54	2	7	9	-50	7	10	12	-56	0	4	6	-55	2	7	9	6	7	6	5	
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-42	3	5	7	-45	-0	2	4	-46	-2	2	3	4	4	4	4	
20,000	-21.2	-28	-7	-3	-0	-24	-3	1	2	-15	6	8	9	-20	2	5	7	-22	0	3	5	6	5	3	5	
10,000	-4.6	-11	-7	-3	-1	-8	-3	-0	2	0	5	7	8	-5	0	3	5	-6	-1	2	4	5	5	3	5	
BERLIN TO HAMBURG																										142 N.M.I.
53,000	-56.5	-57	-0	3	5	-53	3	6	7	-49	8	10	11	-57	-1	2	3	-54	3	6	8	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-55	2	6	8	-51	6	9	11	-56	0	3	5	-55	2	6	8	6	6	5	5	
30,000	-44.5	-52	-7	-4	-3	-49	-4	-2	-0	-41	3	6	7	-45	-0	3	4	-47	-2	2	3	4	4	4	4	
20,000	-21.2	-29	-7	-3	-1	-24	-3	1	2	-15	7	9	10	-19	2	5	7	-22	-0	3	5	6	5	3	5	
10,000	-4.6	-13	-8	-4	-2	-8	-3	0	2	1	5	7	9	-5	-0	3	5	-6	-2	2	4	6	5	3	5	
BERLIN TO HELSINKI																										606 N.M.I.
53,000	-56.5	-57	-1	3	4	-53	4	6	8	-47	9	11	12	-56	0	3	4	-53	3	7	8	5	4	3	4	
40,000	-56.5	-59	-2	1	3	-54	3	7	9	-50	7	10	12	-56	1	4	6	-55	2	6	9	5	6	5	5	
30,000	-44.5	-53	-8	-6	-4	-50	-5	-3	-1	-42	3	6	7	-46	-1	2	3	-47	-3	1	3	4	4	4	4	
20,000	-21.2	-30	-9	-5	-3	-25	-4	-1	1	-15	6	8	9	-21	1	4	6	-23	-2	2	4	6	5	3	5	
10,000	-4.6	-15	-11	-6	-4	-10	-5	-2	0	-0	4	7	8	-6	-2	2	4	-8	-3	1	3	6	5	3	5	
BERLIN TO ISTANBUL																										933 N.M.I.
53,000	-56.5	-56	1	4	5	-54	2	5	6	-53	4	6	7	-58	-2	1	2	-55	1	4	6	5	4	3	4	
40,000	-56.5	-58	-1	2	4	-56	1	4	6	-50	7	10	11	-56	0	3	5	-55	2	5	7	5	5	4	4	
30,000	-44.5	-51	-7	-4	-3	-																				

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085				
BERLIN TO KEFLAVIK																	
53,000	-56.5	-58	-1	2	4	-51	5	8	9	-47	10	12	13	-56	1	4	5
40,000	-56.5	-58	-1	3	5	-52	5	9	12	-48	8	12	14	-55	2	6	8
30,000	-44.5	-52	-8	-5	-3	-49	-4	-1	0	-43	1	4	6	-46	-2	1	3
20,000	-21.2	-29	-8	-4	-2	-26	-5	-1	0	-17	4	6	8	-22	-1	3	5
10,000	-4.6	-13	-8	-5	-3	-10	-6	-2	-1	-2	3	5	6	-6	-2	1	3
BERLIN TO LISBON																	
53,000	-56.5	-58	-1	2	4	-56	1	4	5	-54	2	4	6	-59	-3	-0	1
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	4	7	8	-56	0	3	5
30,000	-44.5	-54	-4	-2	0	-47	-2	1	2	-39	6	8	9	-43	2	5	6
20,000	-21.2	-29	-4	0	2	-21	1	3	5	-12	9	11	12	-16	5	8	9
10,000	-4.6	-8	-3	0	2	-4	1	3	5	4	9	11	12	-1	4	6	8
BERLIN TO LONDON																	
53,000	-56.5	-57	-0	3	5	-54	3	6	7	-50	7	9	10	-57	-1	2	3
40,000	-56.5	-58	-2	2	4	-55	1	6	8	-51	6	9	11	-56	0	4	5
30,000	-44.5	-51	-6	-4	-2	-48	-4	-1	0	-41	4	6	7	-44	0	3	4
20,000	-21.2	-27	-6	-2	0	-23	-2	1	3	-14	7	9	10	-19	2	6	8
10,000	-4.6	-11	-7	-3	-1	-7	-2	1	2	1	6	8	9	-4	1	4	6
BERLIN TO MADRID																	
53,000	-56.5	-57	-1	2	4	-55	1	4	6	-54	3	5	6	-59	-2	0	1
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	4	7	8	-56	0	3	5
30,000	-44.5	-49	-5	-2	-1	-47	-2	0	2	-39	5	8	9	-43	2	4	6
20,000	-21.2	-25	-4	0	2	-21	0	3	4	-13	9	11	12	-17	4	7	9
10,000	-4.6	-8	-4	0	2	-4	0	3	4	4	9	10	12	-1	3	6	8
BERLIN TO MONTREAL																	
53,000	-56.5	-56	0	3	5	-52	5	7	9	-49	7	10	11	-55	2	4	6
40,000	-56.5	-54	2	6	9	-52	4	9	11	-50	6	10	12	-53	3	7	9
30,000	-44.5	-51	-6	-3	-2	-48	-4	-1	0	-42	2	5	7	-45	-1	2	4
20,000	-21.2	-30	-9	-4	-2	-26	-5	-1	1	-16	5	8	9	-21	-0	4	6
10,000	-4.6	-15	-11	-6	-4	-11	-6	-2	-1	-1	4	6	7	-6	-2	2	4
BERLIN TO MOSCOW																	
53,000	-56.5	-56	0	4	5	-53	4	6	8	-47	9	11	12	-56	1	3	4
40,000	-56.5	-59	-2	1	3	-54	2	6	8	-50	6	10	11	-55	1	4	6
30,000	-44.5	-53	-8	-6	-4	-49	-4	-1	0	-41	4	7	8	-45	-1	2	4
20,000	-21.2	-30	-9	-5	-2	-24	-3	1	3	-15	7	9	10	-20	1	5	7
10,000	-4.6	-15	-10	-6	-4	-8	-4	-0	2	0	5	7	8	-6	-1	2	4
BERLIN TO MUNICH																	
53,000	-56.5	-56	0	4	5	-54	3	5	7	-50	6	8	10	-58	-1	1	3
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	8	10	-56	0	3	5
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-40	4	7	8	-44	1	3	5
20,000	-21.2	-28	-6	-3	-0	-23	-2	1	3	-14	7	10	11	-18	3	6	8
10,000	-4.6	-12	-7	-4	-2	-7	-2	1	2	2	6	8	10	-3	1	5	6
BERLIN TO NEW YORK																	
53,000	-56.5	-57	-0	3	4	-53	4	6	8	-51	6	8	9	-56	0	3	5
40,000	-56.5	-55	2	6	8	-53	3	8	10	-51	6	9	11	-54	3	6	8
30,000	-44.5	-50	-5	-2	-1	-48	-3	-0	1	-41	3	6	8	-44	0	3	4
20,000	-21.2	-28	-7	-2	-0	-25	-3	0	2	-15	6	9	10	-20	1	5	7
10,000	-4.6	-14	-9	-5	-3	-9	-4	-1	1	0	5	7	8	-5	-0	3	5
BERLIN TO OSLO																	
53,000	-56.5	-57	-1	2	4	-54	4	6	8	-48	9	11	12	-57	-0	3	4
40,000	-56.5	-59	-2	1	3	-54	3	7	9	-50	7	10	12	-56	0	4	6
30,000	-44.5	-52	-8	-5	-4	-49	-5	-2	-1	-42	3	5	7	-46	-1	2	3
20,000	-21.2	-30	-9	-5	-2	-25	-4	-0	1	-16	6	8	9	-20	1	4	6
10,000	-4.6	-14	-9	-5	-3	-9	-4	-1	1	-0	4	7	8	-6	-2	2	4
BERLIN TO PARIS																	
53,000	-56.5	-57	-0	3	5	-54	3	5	7	-50	6	8	10	-58	-1	1	3
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	9	10	-56	0	3	5
30,000	-44.5	-51	-6	-4	-2	-48	-3	-1	1	-41	4	6	8	-44	1	3	5
20,000	-21.2	-27	-6	-2	0	-23	-1	2	3	-14	7	9	11	-18	3	6	8
10,000	-4.6	-11	-7	-3	-1	-6	-2	1	3	2	6	8	10	-3	2	5	6
BERLIN TO PRAGUE																	
53,000	-56.5	-56	0	4	5	-54	3	5	7	-50	7	9	10	-57	-1	2	3
40,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	6	9	11	-56	0	3	5
30,000	-44.5	-52	-7	-4	-3	-48	-4	-1	0	-41	4	6	8	-44	0	3	4
20,000	-21.2	-28	-7	-3	-1	-23	-2	1	3	-14	7	9	10	-19	3	6	8
10,000	-4.6	-13	-8	-4	-2	-7	-3	0	2	1	6	8	9	-4	1	4	6
BERLIN TO ROME																	
53,000	-56.5	-56	0	4	6	-55	2	4	6	-53	4	6	7	-59	-2	0	2
40,000	-56.5	-58	-2	2	4	-57	-0	3	5	-52	5	8	9	-56	0	3	4
30,000	-44.5	-51	-6	-3	-2	-47	-3	-0	1	-39	5	8	9	-43	1	4	5
20,000	-21.2	-27	-5	-2	0	-22	-0	2	4	-13	8	10	12	-17	4	7	8
10,000	-4.6	-11	-6	-2	-0	-6	-1	2	3	3	8	10	11	-2	3	6	7
BERLIN TO SANTA MARIA																	
53,000	-56.5	-59	-2	1	3	-56	1	3	5	-55	2	4	6	-60	-3	-1	1
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	4	7	9	-56	0	3	5
30,000	-44.5	-48	-4	-1	0	-46	-1	1	2	-39	6	8	9	-42	2	5	6
20,000	-21.2	-23	-2	2	3	-20	1	4	5	-12	9	11	12	-16	5	8	10
10,000	-4.6	-7	-2	1	3	-4	1	4	5	4	8	10	11	-0	4	7	8
BERLIN TO SHANNON																	
53,000	-56.5	-57	-1	3	4	-53	3	6	7	-49	7	10	11	-57	-1	2	4
40,000	-56.5	-58	-2	3	5	-55	2	6	9	-50	6	10	12	-56	0	4	6
30,000	-44.5	-51	-6	-3	-2	-48	-3	-1	1	-41	3	6	7	-44	0	3	4
20,000	-21.2	-27	-6	-2	1	-23	-2	1	3	-15	6	9	10	-19	2	6	7
10,000	-4.6	-11	-6	-2	-0	-7	-2	1	2	1	5	7	9	-4	1	4	6

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION									
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	05G	07S	08S	50	05G	07S	08S	50	05G	07S	08S	50	05G	07S	08S	50	05G	07S	08S						
BERLIN TO STOCKHOLM																											
55,000	-56.5	-57	-1	3	4	-53	4	6	8	-47	9	11	12	-56	0	3	4	-53	3	6	8	5	4	3	4	457 N.M.I.	
40,000	-56.5	-59	-2	1	3	-54	5	7	9	-50	7	10	12	-56	1	4	6	-55	2	6	8	5	5	6	5		
30,000	-56.5	-59	-2	1	3	-50	-5	-3	-1	-50	3	5	7	-46	-1	2	3	-47	-3	1	3	4	4	4	4		
20,000	-21.2	-30	-9	-5	-3	-25	-4	-0	1	-15	6	8	9	-20	1	4	6	-23	-2	2	4	6	5	3	5		
10,000	-4.6	-15	-10	-6	-4	-9	-5	-1	1	-0	4	7	8	-6	-2	2	4	-8	-3	1	3	6	5	3	5		
BERLIN TO TEHRAN																											
55,000	-56.5	-57	-0	3	5	-55	1	4	5	-59	1	4	5	-59	-2	1	2	-56	0	3	4	5	4	3	4	1888 N.M.I.	
40,000	-56.5	-57	-1	2	4	-55	1	5	6	-48	8	11	12	-56	1	3	5	-54	2	6	8	5	5	4	4		
30,000	-56.5	-57	-1	2	4	-46	-2	1	2	-36	9	11	13	-53	2	4	6	-44	1	5	7	4	4	4	4		
20,000	-21.2	-26	-5	-2	0	-20	1	4	6	-10	11	13	14	-17	4	7	9	-18	3	7	9	5	5	3	4		
10,000	-4.6	-11	-7	-3	-1	-4	1	4	5	5	10	12	13	-1	3	6	8	-3	2	5	7	6	5	3	4		
BERLIN TO TEL AVIV-JAFFA																											
55,000	-56.5	-57	-1	2	4	-56	0	3	4	-58	-2	1	2	-60	-4	-1	0	-58	-1	1	3	4	3	3	4	1543 N.M.I.	
40,000	-56.5	-57	-0	3	4	-56	0	4	6	-48	8	10	12	-56	0	3	4	-54	2	6	8	5	5	4	4		
30,000	-56.5	-50	-6	-3	-2	-46	-2	1	2	-35	9	11	13	-42	2	5	6	-43	1	5	7	3	4	3	3		
20,000	-21.2	-25	-4	-1	1	-20	1	4	5	-10	11	13	14	-16	5	8	9	-18	3	7	9	5	4	3	4		
10,000	-4.6	-10	-5	-2	-1	-4	1	4	5	5	10	12	13	0	5	7	9	-2	2	6	8	5	4	3	4		
BERLIN TO VIENNA																											
55,000	-56.5	-56	1	4	6	-54	3	5	7	-50	6	9	10	-5H	-1	1	3	-54	2	5	7	5	4	3	4	288 N.M.I.	
40,000	-56.5	-5H	-2	2	4	-56	1	5	6	-51	6	9	10	-56	0	3	5	-55	1	5	7	5	5	5	4		
30,000	-56.5	-51	-7	-4	-3	-46	-4	-1	0	-40	4	7	8	-44	1	3	5	-46	-2	2	4	4	4	4	4		
20,000	-21.2	-2H	-7	-3	-1	-23	-2	1	3	-14	7	9	11	-18	3	6	8	-21	0	4	6	6	5	3	5		
10,000	-4.6	-15	-H	-4	-2	-7	-2	1	2	2	6	8	9	-3	1	4	6	-5	-1	3	5	6	5	3	5		
BERLIN TO WARSZAWA																											
55,000	-56.5	-56	0	4	5	-55	3	6	7	-49	8	10	11	-57	-1	2	3	-54	3	6	8	5	4	3	4	278 N.M.I.	
40,000	-56.5	-56	-2	2	3	-55	2	5	7	-51	6	9	11	-56	0	3	5	-55	1	6	8	5	5	5	5		
30,000	-56.5	-52	-H	-5	-4	-44	-4	-2	-0	-41	4	6	8	-44	0	3	4	-47	-2	2	4	4	4	4	4		
20,000	-21.2	-29	-H	-4	-1	-24	-3	1	2	-14	7	9	10	-19	2	5	7	-21	-0	3	5	6	5	3	5		
10,000	-4.6	-14	-9	-5	-3	-8	-3	-0	2	1	5	8	9	-5	-0	3	5	-6	-2	2	4	6	5	3	5		
BERLIN TO ZURICH																											
55,000	-56.5	-56	0	4	5	-54	3	5	7	-51	6	8	9	-5H	-1	1	3	-55	2	5	7	5	4	3	4	354 N.M.I.	
40,000	-56.5	-57	-2	2	4	-56	1	4	6	-52	5	8	10	-56	0	3	5	-56	1	5	7	5	6	5	5		
30,000	-56.5	-51	-6	-4	-2	-46	-4	-1	1	-40	4	7	8	-44	1	3	5	-46	-1	2	4	4	4	4	4		
20,000	-21.2	-27	-6	-2	-0	-23	-1	2	3	-14	7	10	11	-1H	3	6	8	-20	1	4	6	6	4	3	5		
10,000	-4.6	-17	-7	-3	-1	-6	-2	1	3	2	6	9	10	-3	2	5	7	-5	-0	3	5	6	4	3	5		
BERMUDA TO BOGOTA																											
55,000	-56.5	-75	-19	-17	-16	-74	-18	-16	-15	-71	-15	-13	-13	-76	-19	-17	-16	-74	-18	-16	-14	3	3	2	3	1742 N.M.I.	
40,000	-56.5	-55	-7	4	5	-54	-2	4	5	-56	1	2	2	-54	-2	4	4	-55	2	3	4	3	2	2	2		
30,000	-56.5	-56	9	10	11	-54	10	12	12	-55	11	12	13	-53	12	13	14	-54	11	12	13	2	2	2	2		
20,000	-21.2	-8	15	14	15	-7	14	15	16	-7	14	15	16	-6	15	16	16	-7	14	15	16	2	2	1	2		
10,000	-4.6	7	11	13	14	7	12	13	14	9	13	14	15	9	13	14	15	8	12	14	14	2	2	1	2		
BERMUDA TO BOSTON																											
55,000	-56.5	-64	-7	-3	-4	-61	-3	-2	-1	-64	-7	-5	-4	-66	-9	-7	-5	-64	-7	-4	-3	3	3	3	4	672 N.M.I.	
40,000	-56.5	-57	-1	2	4	-5H	-1	2	4	-55	1	3	4	-55	1	4	5	-56	0	3	4	5	5	3	4		
30,000	-56.5	-44	-0	3	4	-45	1	3	5	-55	9	11	12	-59	6	8	10	-40	4	7	8	4	3	3	3		
20,000	-21.2	-18	3	6	7	-17	4	7	8	-9	12	14	15	-12	9	12	13	-14	7	10	11	4	4	2	4		
10,000	-4.6	-5	0	3	5	-2	3	5	7	6	11	12	13	3	8	10	11	1	5	8	9	5	4	2	4		
BERMUDA TO BRUSSELS																											
55,000	-56.5	-60	-3	-1	1	-57	-0	2	3	-56	0	3	4	-60	-4	-1	0	-5H	-2	1	3	4	4	4	4	5	3167 N.M.I.
40,000	-56.5	-57	-1	3	5	-57	0	4	6	-54	3	6	7	-55	1	4	6	-56	1	4	6	6	6	4	5		
30,000	-56.5	-47	-2	0	2	-45	-1	2	3	-58	6	8	10	-41	3	6	7	-43	1	5	7	4	4	4	4		
20,000	-21.2	-22	-1	3	5	-20	1	4	6	-12	9	11	13	-15	6	9	10	-17	4	7	9	5	5	3	4		
10,000	-4.6	-7	-2	2	4	-4	1	3	5	3	8	10	11	-0	4	7	9	-2	3	6	7	5	4	3	4		
BERMUDA TO CARACAS																											
55,000	-56.5	-74	-18	-16	-15	-73	-17	-15	-14	-71	-14	-13	-12	-75	-18	-16	-15	-73	-17	-15	-14	3	3	2	3	1310 N.M.I.	
40,000	-56.5	-55	-2	4	5	-55	1	3	4	-56	0	2	2	-54	-2	4	4	-55	1	3	4	3	3	2	2		
30,000	-56.5	-37	8	9	10	-55	9	11	11	-54	11	12	12	-53	11	13	14	-55	10	11	12	2	2	2	2		
20,000	-21.2	-9	12	13	14	-8	13	14	15	-7	14	15	16	-7	15	16	16	-8	13	15	16	2	2	2	2		
10,000	-4.6	6	11	12	13	6	11	12	13	8	13	14	14	8	13	14	14	7	12	13	14	2	2	1	2		
BERMUDA TO CHICAGO																											
55,000	-56.5	-64	-7	-5	-3	-61	-3	-2	-1	-64	-8	-6	-4	-66	-10	-7	-6	-64	-7	-4	-3	4	4	3	4	1246 N.M.I.	
40,000	-56.5	-57	-1	2	4	-58	-1	2	4	-55	2	3	4	-56	1	4	5	-56	0	2	3	5	5	2	4		
30,000	-56.5	-45	-0	2	3	-43	1	3	4	-35	9	11	12	-59	6	8	9	-41	4	7	8	3	3	3	3		
20,000	-21.2	-19	2	5	7	-17	5	7	9	-8	13	14	15	-12	9	12	13	-14	7	10	11	4	4	2	4		
10,000	-4.6	-5	-0	3	5	-2	3	6	7	7	11	13	14	3	8	10	12	1	5	8	10	5	4	2	4		
BERMUDA TO DAKAR																											
55,000	-56.5	-71	-15	-13	-12	-70	-14	-12	-11	-70	-14	-12	-11	-73	-17	-15	-14	-71	-15	-13	-12	3	3	3	3	2776 N.M.I.	
40,000	-56.5	-56	1	3	4	-57	-0	2	4	-55	2	3	4	-54	-2	4	5	-55	1	3	4	4	4	2	2		
30,000	-56.5	-39	6	7	8	-57	8	9	10	-55	10	11	12	-54	11	12	13	-56	8	10	11	3	2	2	2		
20,000	-21.2	-12	9	11	12	-11	11	12	13	-7	14	15	16	-8	14	15	16	-9	12	13	14	2	2	2	2		
10,000	-4.6	5	9	11	12	5	9	11	12	8	13	14	15	7	12	13	14	6	11	12	13	2	2	2	2		
BERMUDA TO GANDER																											
55,000	-56.5	-61	-4	-2	-1	-59	-2	0	2	-60	-4	-2	-1	-63	-6	-3	-2	-61	-4	-1	0	4	3	3	3	1095 N.M.I.	
40,000	-56.5	-57	-0	4	6	-56	0	4	6	-55	1	3	5	-55	2	5	6	-56	1	4	6	6	5	3	4		
30,000	-56.5	-46	-1	1	3	-45	-0	2	3	-37	8	10	11	-40	5	7	8	-42	3	6	8	4	4	3	4		
20,000	-21.2	-21	0	4	6	-19	2	5	6	-10	11	13	14	-14	7	10	12	-16	5	8	10	5	4	3	4		
10,000	-4.6	-7	-3	1	3	-4	1	4	5	5	10	11	12	1	6	8	10	-1	3	6	8	6	4	2	4		
BERMUDA TO GENEVA																											
55,0																											

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION												
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL								
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT					
BERMUDA TO GLASGOW																										
55,000	-56.5	-59	-5	0	2	-56	0	3	4	-55	1	4	5	-60	-3	-0	1	-53	-1	2	3	2844 N.M.I.				
40,000	-56.5	-56	0	4	7	-56	1	5	7	-53	3	6	8	-55	2	5	7	-55	1	5	7	4	4	5	4	
30,000	-44.5	-47	-5	0	2	-46	-1	1	3	-39	5	8	9	-42	3	5	7	-43	1	4	6	6	6	4	5	
20,000	-21.2	-23	-2	2	4	-21	0	4	5	-12	9	11	12	-16	5	8	10	-18	3	7	8	6	5	3	5	
10,000	-4.6	-8	-5	0	2	-5	-1	2	4	2	7	9	10	-1	3	6	8	-3	2	5	6	6	4	3	4	
BERMUDA TO HAVANA																										
55,000	-56.5	-72	-16	-14	-13	-70	-13	-11	-10	-69	-13	-11	-11	-73	-17	-15	-13	-71	-15	-13	-12	1093 N.M.I.	3	3	2	3
40,000	-56.5	-56	0	2	3	-57	-0	2	3	-57	-0	1	2	-55	2	3	4	-56	0	2	3	3	3	2	2	
30,000	-44.5	-39	5	7	8	-38	7	8	9	-34	11	12	12	-34	10	12	13	-36	8	10	11	3	2	2	2	
20,000	-21.2	-11	10	12	13	-11	11	12	13	-7	14	15	16	-8	14	15	16	-9	12	14	14	3	3	2	2	
10,000	-4.6	4	9	10	11	4	9	11	12	8	13	13	14	7	12	13	14	6	11	12	13	3	3	1	2	
BERMUDA TO HOUSTON																										
55,000	-56.5	-69	-13	-11	-9	-66	-10	-8	-7	-68	-12	-10	-9	-71	-15	-13	-11	-69	-12	-10	-8	1576 N.M.I.	3	3	2	4
40,000	-56.5	-58	-1	1	3	-58	-1	1	2	-56	1	2	3	-55	1	3	4	-57	-0	2	3	4	4	2	3	
30,000	-44.5	-41	4	5	6	-40	5	6	7	-34	11	12	13	-36	9	11	12	-38	7	9	10	3	3	2	3	
20,000	-21.2	-14	7	10	11	-13	9	11	12	-7	14	15	16	-9	12	14	15	-11	11	13	14	3	3	2	3	
10,000	-4.6	1	6	8	9	3	8	10	11	8	13	14	14	7	11	13	14	5	9	11	12	3	3	2	3	
BERMUDA TO KANO																										
55,000	-56.5	-70	-14	-12	-11	-69	-13	-11	-10	-71	-14	-12	-11	-72	-16	-14	-13	-71	-14	-12	-11	4169 N.M.I.	3	3	3	3
40,000	-56.5	-56	0	3	4	-56	1	3	5	-54	3	4	4	-54	2	4	5	-55	1	3	4	4	4	2	3	
30,000	-44.5	-40	4	6	7	-37	8	9	10	-34	11	12	13	-35	10	12	12	-36	8	10	11	3	2	2	2	
20,000	-21.2	-13	8	10	11	-11	10	12	13	-7	14	15	16	-8	13	14	15	-10	11	13	14	2	2	2	2	
10,000	-4.6	4	9	10	11	5	9	11	12	10	14	16	16	7	12	13	14	7	11	13	14	2	2	2	2	
BERMUDA TO KEFLAVIK																										
55,000	-56.5	-58	-2	1	4	-55	2	4	6	-54	3	5	6	-58	-1	1	3	-56	0	3	4	4	4	3	4	
40,000	-56.5	-55	2	4	8	-54	3	7	9	-52	4	7	9	-53	3	7	9	-55	3	6	8	6	6	4	5	
30,000	-44.5	-48	-4	-1	1	-46	-2	1	2	-40	5	7	8	-43	1	4	6	-44	0	3	5	6	6	4	5	
20,000	-21.2	-26	-5	-1	1	-23	-2	2	3	-14	8	10	11	-18	5	6	8	-20	1	5	7	6	5	4	5	
10,000	-4.6	-12	-7	-5	-1	-8	-5	-0	2	1	6	8	9	-4	1	4	6	-6	-1	3	4	6	5	3	5	
BERMUDA TO KINGSTON																										
55,000	-56.5	-73	-17	-15	-14	-71	-15	-13	-12	-70	-15	-12	-11	-74	-18	-16	-14	-72	-16	-14	-13	1084 N.M.I.	3	3	2	3
40,000	-56.5	-55	1	3	4	-56	0	2	3	-56	0	1	2	-55	2	3	4	-56	1	3	3	3	3	2	3	
30,000	-44.5	-58	6	8	9	-57	8	9	10	-34	11	12	12	-34	11	12	13	-36	9	11	12	3	3	2	2	
20,000	-21.2	-10	11	13	13	-9	12	13	14	-7	14	15	16	-8	14	15	16	-9	13	14	15	2	2	1	2	
10,000	-4.6	5	10	11	12	5	10	12	12	8	13	13	14	8	12	14	14	7	11	12	13	3	2	1	2	
BERMUDA TO LAJES																										
55,000	-56.5	-64	-8	-5	-4	-61	-5	-3	-3	-63	-6	-5	-4	-65	-9	-6	-5	-63	-7	-4	-3	1461 N.M.I.	4	3	3	4
40,000	-56.5	-58	-2	2	4	-58	-2	1	3	-56	1	3	4	-56	0	3	4	-57	-1	2	3	5	5	3	4	
30,000	-44.5	-44	0	3	4	-43	2	4	5	-36	8	10	11	-38	7	9	10	-40	4	7	8	3	3	3	3	
20,000	-21.2	-17	4	7	8	-16	5	8	9	-9	12	14	15	-11	10	12	13	-13	8	10	12	4	4	2	3	
10,000	-4.6	-1	3	6	8	-0	4	7	8	6	11	12	13	4	9	11	12	2	7	9	10	4	3	2	3	
BERMUDA TO LIMA																										
55,000	-56.5	-76	-20	-18	-17	-75	-19	-17	-16	-72	-15	-14	-13	-76	-19	-17	-15	-75	-18	-16	-15	2759 N.M.I.	3	3	2	3
40,000	-56.5	-54	2	4	5	-55	3	5	6	-55	1	3	3	-54	2	4	4	-54	2	4	5	3	3	2	2	
30,000	-44.5	-34	10	12	12	-35	12	13	14	-33	12	13	13	-32	13	14	15	-33	12	13	14	2	2	2	2	
20,000	-21.2	-7	14	16	16	-6	15	16	17	-7	14	15	15	-6	15	16	17	-7	15	16	16	2	2	1	2	
10,000	-4.6	8	12	14	15	8	13	14	15	9	14	15	15	9	14	15	15	8	13	14	15	2	2	2	2	
BERMUDA TO LISBON																										
55,000	-56.5	-63	-6	-4	-2	-60	-4	-1	0	-62	-5	-3	-2	-64	-8	-5	-4	-62	-6	-3	-1	2697 N.M.I.	4	4	3	4
40,000	-56.5	-58	-2	2	4	-58	-2	1	3	-55	1	4	5	-56	0	3	4	-57	-1	2	4	5	5	3	4	
30,000	-44.5	-45	-0	2	3	-43	1	3	3	-36	8	10	11	-39	6	8	9	-41	4	7	8	3	3	3	3	
20,000	-21.2	-18	5	6	7	-17	5	7	7	-9	12	13	14	-12	9	11	11	-14	7	10	11	4	4	2	3	
10,000	-4.6	-2	3	5	7	-1	4	6	8	6	11	12	13	4	8	10	11	2	6	9	10	4	4	2	3	
BERMUDA TO LONDON																										
55,000	-56.5	-60	-3	-1	1	-57	-0	2	3	-56	0	3	4	-60	-4	-1	0	-58	-2	1	2	2979 N.M.I.	4	4	4	4
40,000	-56.5	-57	-1	3	5	-57	-0	4	6	-54	3	5	7	-55	1	4	6	-56	1	4	6	6	6	4	5	
30,000	-44.5	-47	-2	0	2	-45	-1	2	3	-38	6	9	10	-41	3	6	7	-43	2	5	7	4	4	4	5	
20,000	-21.2	-22	-1	3	5	-20	1	3	6	-12	9	12	13	-15	6	9	11	-17	4	7	9	5	5	3	4	
10,000	-4.6	-7	-2	2	4	-4	1	4	5	3	8	10	11	-0	4	7	9	-2	3	6	7	5	4	3	4	
BERMUDA TO LOS ANGELES																										
55,000	-56.5	-65	-9	-6	-5	-63	-7	-4	-3	-67	-10	-9	-8	-68	-12	-9	-8	-66	-9	-6	-5	2669 N.M.I.	5	4	3	4
40,000	-56.5	-57	-1	3	5	-58	-2	1	3	-55	2	3	4	-56	1	3	4	-56	0	2	3	4	4	2	3	
30,000	-44.5	-44	0	2	4	-42	2	4	5	-34	11	12	13	-38	6	8	10	-40	5	7	9	3	3	2	3	
20,000	-21.2	-18	3	6	8	-15	6	9	10	-7	14	15	16	-11	10	12	14	-13	8	11	12	4	4	2	3	
10,000	-4.6	-2	2	4	7	2	6	9	11	10	14	16	16	5	10	12	14	4	8	11	12	5	4	2	4	
BERMUDA TO MADRID																										
55,000	-56.5	-62	-5	-3	-1	-59	-3	-0	1	-61	-4	-2	-1	-63	-7	-4	-3	-61	-5	-2	-0	2932 N.M.I.	4	4	3	4
40,000	-56.5	-58	-2	2	4	-58	-2	2	4	-55	1	4	5	-56	0	3	4	-57	-1	2	4	6	5	3	4	
30,000	-44.5	-45	-1	2	3	-44	1	3	4	-37	8	10	11	-39	5	8	9	-41	3	6	8	4	3	3	4	
20,000	-21.2	-19	2	5	7	-17	4	7	8	-10	11	13	14	-13	9	11	12	-15	7	9	11	4	4	3	3	
10,000	-4.6	-3	2	5	6	-1	3	6	7	6	10	12	13	3	7	10	11	1	6	8	10	4	4	2	3	
BERMUDA TO MEXICO CITY																										
55,000	-56.5	-73	-16	-14	-13	-70	-14	-12	-11	-70	-14	-12	-12	-75	-18	-16	-15	-72	-16	-13	-12	2001 N.M.I.	3	3	2	3
40,000	-56.5	-57	-0	2	3	-56	0	2	3	-56	0	1	2	-55	2	3	4	-56	0	2	3	3	3	2	2	
30,000	-44.5	-39	6	7	8	-38	7	8	9	-33	11	12	13	-34	10	12	13	-36	9	10	11	2	2	2	2	
20,000	-21.2	-11	10	12	13	-10	11	13	14	-7	14	15	16	-8	14	15	16	-9	12	14	15	3	3	1	2	
10,000	-4.6	5	9	11	12	6	10	12	13	9	13	14	14	8	13	14	15	7	11	13	13	3	3	1	2	
BERMUDA TO MIAMI																										
55,000	-56.5	-71	-15	-13	-12	-69	-12	-10	-9	-69	-12	-11	-10	-73	-16	-14	-13	-70	-14	-11	-10	906 N.M.I.				

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY				APRIL				JULY				OCTOBER			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
BERMUDA TO MILAN																	
55,000	-56.5	-60	-4	-1	0	-58	-1	1	3	-58	-1	1	3	-61	-5	-2	-1
40,000	-56.5	-58	-2	2	5	-58	-1	3	5	-55	2	5	6	-56	1	3	5
30,000	-44.5	-46	-2	1	2	-45	-0	2	3	-38	7	9	10	-41	4	6	8
20,000	-21.2	-21	0	4	5	-19	2	5	7	-11	10	12	13	-14	7	9	11
10,000	-4.6	-5	-1	3	4	-3	2	4	6	4	9	11	12	1	5	8	9
BERMUDA TO MONTREAL																	
55,000	-56.5	-62	-6	-3	-2	-60	-3	-1	0	-62	-6	-4	-2	-64	-8	-5	-4
40,000	-56.5	-57	-0	3	5	-57	-0	3	5	-55	1	3	4	-56	1	3	5
30,000	-44.5	-45	-1	2	3	-44	0	2	4	-36	9	11	12	-39	5	7	8
20,000	-21.2	-20	1	4	6	-18	3	5	7	-9	12	14	15	-13	8	11	12
10,000	-4.6	-7	-2	1	3	-4	1	4	5	6	10	12	13	2	7	9	11
BERMUDA TO NASSAU																	
55,000	-56.5	-71	-15	-13	-12	-69	-12	-10	-9	-69	-12	-11	-10	-73	-16	-14	-13
40,000	-56.5	-57	-0	2	3	-57	-1	2	3	-57	-0	1	2	-55	1	3	4
30,000	-44.5	-40	5	7	8	-38	6	8	9	-34	11	12	13	-35	10	12	13
20,000	-21.2	-12	10	11	12	-11	10	12	13	-7	14	15	16	-8	13	15	16
10,000	-4.6	3	8	10	11	4	9	10	11	8	12	13	14	7	12	13	14
BERMUDA TO NEW ORLEANS																	
55,000	-56.5	-69	-13	-11	-10	-67	-10	-8	-7	-68	-12	-10	-9	-71	-15	-13	-11
40,000	-56.5	-58	-1	1	3	-58	-1	1	2	-56	0	2	2	-55	1	3	4
30,000	-44.5	-41	4	6	7	-40	5	7	7	-34	11	12	13	-36	9	11	12
20,000	-21.2	-14	8	10	11	-13	9	11	12	-7	14	15	16	-9	12	14	15
10,000	-4.6	1	6	8	10	3	8	10	11	8	12	14	14	7	11	13	14
BERMUDA TO NEW YORK																	
55,000	-56.5	-65	-8	-6	-4	-62	-6	-3	-2	-64	-8	-6	-5	-67	-10	-7	-6
40,000	-56.5	-58	-1	2	4	-54	-1	2	3	-55	1	2	3	-55	1	4	5
30,000	-44.5	-44	1	3	4	-43	2	4	5	-35	9	11	12	-38	6	9	10
20,000	-21.2	-18	4	6	8	-16	5	8	9	-8	15	16	17	-11	10	12	13
10,000	-4.6	-4	1	4	6	-1	3	6	7	7	11	13	15	4	8	10	12
BERMUDA TO PANAMA																	
55,000	-56.5	-75	-18	-16	-15	-73	-17	-15	-14	-71	-15	-13	-12	-75	-19	-17	-16
40,000	-56.5	-55	2	4	5	-55	2	4	5	-56	0	2	2	-54	2	4	4
30,000	-44.5	-37	8	10	10	-35	10	11	12	-34	11	12	13	-33	12	13	14
20,000	-21.2	-9	12	14	15	-8	13	15	15	-7	14	15	16	-7	15	16	16
10,000	-4.6	6	11	12	13	7	11	13	13	8	13	14	14	8	13	14	15
BERMUDA TO PORT OF SPAIN																	
55,000	-56.5	-74	-18	-16	-15	-74	-17	-15	-14	-71	-14	-13	-12	-75	-18	-16	-15
40,000	-56.5	-55	2	4	5	-56	1	1	4	-54	1	2	2	-54	2	4	4
30,000	-44.5	-37	8	9	10	-35	9	11	11	-34	10	12	12	-33	11	13	14
20,000	-21.2	-9	12	13	14	-7	13	14	15	-7	14	15	16	-7	15	16	16
10,000	-4.6	6	11	12	13	6	11	12	13	8	13	14	14	8	13	14	14
BERMUDA TO RIO DE JANEIRO																	
55,000	-56.5	-76	-20	-17	-16	-75	-19	-17	-16	-71	-14	-12	-11	-74	-18	-16	-15
40,000	-56.5	-54	3	5	6	-53	3	5	6	-54	2	4	5	-54	3	5	6
30,000	-44.5	-34	10	12	13	-33	12	13	14	-33	11	13	13	-32	13	14	15
20,000	-21.2	-7	14	16	17	-7	15	16	17	-6	14	15	15	-6	15	16	17
10,000	-4.6	8	15	14	15	8	13	14	15	8	12	14	14	9	14	15	16
BERMUDA TO SAN JUAN																	
55,000	-56.5	-73	-16	-14	-13	-71	-15	-13	-12	-69	-13	-12	-11	-74	-17	-15	-14
40,000	-56.5	-55	1	3	5	-56	0	2	3	-56	0	1	2	-55	2	3	4
30,000	-44.5	-38	6	8	9	-37	8	9	10	-34	10	11	12	-34	11	12	13
20,000	-21.2	-10	11	12	13	-10	12	13	14	-7	14	15	16	-7	14	15	16
10,000	-4.6	5	9	11	12	5	10	11	12	8	13	13	14	8	12	13	14
BERMUDA TO SANTA MARIA																	
55,000	-56.5	-64	-8	-6	-4	-62	-5	-3	-2	-63	-7	-5	-4	-66	-9	-7	-5
40,000	-56.5	-54	-2	2	4	-54	-2	1	3	-56	1	3	4	-56	0	3	4
30,000	-44.5	-44	1	1	4	-42	2	4	5	-36	9	10	11	-38	7	9	10
20,000	-21.2	-17	4	7	8	-15	6	8	9	-9	12	14	15	-11	10	12	14
10,000	-4.6	-1	4	7	8	0	5	7	8	6	11	12	13	5	9	11	12
BERMUDA TO SANTIAGO																	
55,000	-56.5	-75	-18	-16	-15	-74	-18	-16	-15	-70	-15	-13	-12	-72	-16	-14	-13
40,000	-56.5	-54	1	3	6	-54	3	5	6	-54	2	4	5	-54	2	4	5
30,000	-44.5	-34	10	12	13	-33	11	13	14	-34	10	12	12	-33	12	13	14
20,000	-21.2	-7	14	16	16	-7	14	16	16	-10	12	13	14	-7	14	16	16
10,000	-4.6	8	13	14	15	8	12	14	14	7	11	12	13	8	13	14	15
BERMUDA TO SHANNON																	
55,000	-56.5	-60	-3	-1	1	-57	-1	2	3	-57	-0	2	3	-60	-4	-1	0
40,000	-56.5	-57	-1	4	6	-57	-0	4	6	-54	2	5	7	-55	1	5	6
30,000	-44.5	-46	-2	1	2	-45	-1	2	3	-38	6	9	10	-41	3	6	7
20,000	-21.2	-22	0	3	5	-20	1	5	6	-12	10	12	13	-15	6	9	11
10,000	-4.6	-7	-2	2	4	-4	0	3	5	3	8	10	11	-0	4	7	9
BERMUDA TO TORONTO																	
55,000	-56.5	-63	-7	-4	-3	-61	-4	-2	-1	-63	-7	-4	-3	-65	-9	-6	-5
40,000	-56.5	-57	-1	3	5	-57	-1	3	5	-55	1	3	4	-55	1	4	5
30,000	-44.5	-45	-1	2	3	-44	1	3	4	-35	9	11	12	-39	5	8	9
20,000	-21.2	-20	2	5	6	-18	4	6	8	-9	12	14	15	-13	9	11	13
10,000	-4.6	-6	-1	2	4	-3	2	5	6	6	11	12	13	3	7	10	11
BERMUDA TO TRINIDAD																	
55,000	-56.5	-74	-18	-16	-15	-74	-17	-15	-14	-71	-14	-13	-12	-75	-18	-16	-15
40,000	-56.5	-55	2	4	5	-56	1	3	4	-56	1	2	2	-54	2	4	4
30,000	-44.5	-37	8	9	10	-35	9	11	11	-34	10	12	12	-33	11	13	14
20,000	-21.2	-9	12	13	14	-9	13	14	15	-7	14	15	16	-7	15	16	16
10,000	-4.6	6	11	12	13	6	11	12	13	8	13	14	14	8	13	14	15

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 D50 D75 D85			50 D50 D75 D85			50 D50 D75 D85			50 D50 D75 D85			50 D50 D75 D85			
717 N.M.S.																	
HERMUDA TO WASHINGTON, D.C.																	
55,000	-56.5	-65	-V	-7	-5	-65	-6	-4	-3	-65	-8	-6	-5	-67	-11	-8	-7
40,000	-56.5	-58	-1	2	4	-58	-2	1	3	-58	1	3	5	-57	-0	2	4
30,000	-44.5	-43	1	3	5	-42	2	4	5	-35	10	11	12	-38	7	9	10
20,000	-21.2	-17	4	7	8	-15	6	8	10	-8	15	15	15	-13	8	13	12
10,000	-4.6	-3	2	5	6	-0	4	7	8	7	11	13	13	4	9	11	12
1301 N.M.S.																	
BIAK TO MANILA																	
55,000	-56.5	-82	-25	-23	-22	-80	-24	-22	-21	-78	-22	-20	-18	-80	-23	-21	-20
40,000	-56.5	-54	2	4	4	-52	5	6	7	-54	2	4	4	-54	3	5	6
30,000	-44.5	-31	14	15	16	-31	14	15	15	-31	14	15	15	-31	14	15	15
20,000	-21.2	-4	17	18	18	-5	16	17	17	-6	16	17	17	-5	16	17	18
10,000	-4.6	10	15	16	16	11	15	16	17	10	15	16	16	10	15	16	17
824 N.M.S.																	
BIAK TO PORT MORESBY																	
55,000	-56.5	-82	-26	-24	-23	-80	-24	-22	-21	-78	-22	-20	-19	-80	-24	-22	-20
40,000	-56.5	-55	3	4	5	-52	5	6	7	-54	2	3	4	-54	3	5	6
30,000	-44.5	-31	14	15	16	-31	14	15	15	-32	13	14	15	-31	13	14	15
20,000	-21.2	-4	17	18	19	-5	16	17	17	-6	16	17	17	-5	16	17	18
10,000	-4.6	10	15	16	16	10	15	16	17	9	14	15	15	10	14	15	16
53 N.M.S.																	
KIMINI TO FT. LAUDERDALE																	
55,000	-56.5	-74	-17	-15	-14	-71	-15	-13	-12	-71	-14	-13	-12	-75	-19	-16	-15
40,000	-56.5	-56	0	2	3	-55	1	3	4	-57	-0	1	1	-55	2	3	4
30,000	-44.5	-38	6	8	9	-37	8	9	10	-35	11	12	13	-34	11	12	13
20,000	-21.2	-10	11	13	14	-9	12	13	14	-7	14	15	16	-8	13	15	15
10,000	-4.6	5	10	12	12	6	10	12	13	9	13	14	14	8	13	14	15
54 N.M.S.																	
KIMINI TO MIAMI																	
55,000	-56.5	-74	-17	-15	-14	-71	-15	-13	-12	-71	-14	-13	-12	-75	-19	-17	-15
40,000	-56.5	-56	0	2	3	-55	1	3	4	-57	-0	1	1	-55	2	3	4
30,000	-44.5	-38	6	8	9	-37	8	9	10	-35	11	12	13	-34	11	12	13
20,000	-21.2	-10	11	13	14	-9	12	13	14	-7	14	15	16	-8	13	15	15
10,000	-4.6	6	10	12	12	6	11	12	13	9	13	14	14	8	13	14	15
106 N.M.S.																	
KIMINI TO NASSAU																	
55,000	-56.5	-74	-17	-16	-15	-71	-15	-13	-12	-71	-14	-13	-12	-75	-19	-17	-15
40,000	-56.5	-56	1	2	3	-55	1	3	4	-57	-0	1	1	-55	2	3	4
30,000	-44.5	-38	7	8	9	-36	8	9	10	-35	11	12	13	-35	9	11	11
20,000	-21.2	-10	11	13	14	-9	12	13	14	-7	14	15	16	-8	13	15	16
10,000	-4.6	6	10	12	13	6	11	12	13	9	13	14	14	8	13	14	15
291 N.M.S.																	
BLID TO DUBROVNIK																	
55,000	-56.5	-56	1	4	6	-55	1	4	5	-54	2	4	5	-59	-3	-0	1
40,000	-56.5	-58	-1	2	4	-57	-1	3	4	-51	6	8	10	-56	0	3	4
30,000	-44.5	-51	-6	-4	-2	-47	-2	0	1	-38	6	9	10	-42	2	5	6
20,000	-21.2	-26	-5	-2	0	-21	0	3	4	-12	9	11	12	-16	5	7	9
10,000	-4.6	-10	-6	-2	-1	-5	-0	2	4	4	8	11	12	-1	4	6	8
143 N.M.S.																	
BLID TO VIENNA																	
55,000	-56.5	-56	1	4	6	-54	2	5	6	-52	4	7	8	-58	-2	1	2
40,000	-56.5	-58	-2	2	4	-57	-0	3	5	-51	5	8	10	-56	0	3	4
30,000	-44.5	-51	-7	-4	-2	-48	-3	-0	1	-39	5	8	9	-45	1	4	5
20,000	-21.2	-27	-6	-2	0	-22	-1	2	4	-13	8	10	11	-17	4	7	8
10,000	-4.6	-11	-7	-3	-1	-6	-2	1	5	5	7	9	11	-2	5	6	7
485 N.M.S.																	
BLOEM FONTEIN TO CAPE TOWN																	
55,000	-56.5	-65	-8	-6	-4	-65	-8	-6	-4	-58	-2	1	2	-62	-5	-3	-1
40,000	-56.5	-55	3	6	8	-55	1	4	5	-52	4	7	8	-55	3	6	8
30,000	-44.5	-37	8	10	11	-38	6	8	9	-42	2	5	7	-39	6	8	10
20,000	-21.2	-10	12	13	14	-12	9	11	12	-17	4	6	8	-13	9	11	12
10,000	-4.6	8	12	14	15	5	10	12	13	-0	4	6	7	4	9	11	12
251 N.M.S.																	
BLOEM FONTEIN TO EAST LONDON																	
55,000	-56.5	-65	-9	-6	-5	-65	-9	-6	-5	-59	-2	1	2	-62	-6	-3	-2
40,000	-56.5	-55	3	6	8	-55	1	4	5	-52	4	7	8	-55	3	6	8
30,000	-44.5	-36	8	11	12	-38	6	8	10	-42	2	5	7	-39	6	8	10
20,000	-21.2	-9	12	14	15	-12	9	11	12	-16	5	7	8	-12	9	11	12
10,000	-4.6	8	13	15	16	5	10	12	13	0	5	7	8	5	9	12	13
209 N.M.S.																	
BLOEM FONTEIN TO JOHANNESBURG																	
55,000	-56.5	-69	-12	-10	-8	-68	-11	-9	-7	-61	-5	-2	-1	-65	-8	-6	-4
40,000	-56.5	-52	4	7	8	-54	3	5	6	-52	5	7	8	-55	4	6	8
30,000	-44.5	-34	11	13	14	-37	8	10	11	-39	6	8	9	-37	8	10	11
20,000	-21.2	-7	14	15	16	-10	11	13	14	-14	8	10	11	-10	11	13	14
10,000	-4.6	10	15	16	17	7	11	13	14	1	6	8	9	7	11	13	14
294 N.M.S.																	
BLOEM FONTEIN TO PORT ELIZABETH																	
55,000	-56.5	-65	-8	-6	-4	-65	-8	-6	-4	-58	-2	1	2	-62	-5	-3	-1
40,000	-56.5	-55	3	6	8	-55	1	4	5	-52	4	7	8	-55	3	6	8
30,000	-44.5	-36	8	10	12	-38	6	8	10	-42	2	5	7	-39	6	8	10
20,000	-21.2	-10	12	14	14	-12	9	11	12	-17	4	6	8	-13	8	11	12
10,000	-4.6	8	12	14	15	5	10	12	13	-0	4	6	7	4	9	11	13
1986 N.M.S.																	
BOGOTA TO BRASILIA																	
55,000	-56.5	-78	-21	-19	-18	-77	-20	-18	-17	-72	-15	-13	-12	-75	-18	-16	-15
40,000	-56.5	-55	3	5	6	-52	5	7	8	-53	3	4	5	-54	3	4	5
30,000	-44.5	-32	13	14	15	-30	14	16	17	-32	13	14	15	-31	14	15	16
20,000	-21.2	-4	17	18	19	-4	17	18	19	-8	15	17	17	-6	15	17	18
10,000	-4.6	10	15	16	16	10	15	16	17	8	13	14	15	10	15	16	17

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
BOGOTA TO CARACAS																	
55,000	-56.5	-78	-21	-20	-19	-78	-21	-19	-18	-75	-17	-15	-14	-78	-21	-19	-18
40,000	-56.5	-54	5	4	5	-52	5	6	7	-55	1	3	4	-54	5	4	5
30,000	-44.5	-33	12	13	14	-30	14	15	16	-32	12	13	14	-31	14	15	15
20,000	-21.2	-5	16	17	18	-5	17	18	18	-7	14	15	16	-6	16	17	18
10,000	-4.6	9	14	15	16	10	14	16	16	9	14	15	16	10	14	15	16
BOGOTA TO CHICAGO																	
55,000	-56.5	-73	-16	-14	-13	-71	-14	-12	-11	-70	-14	-12	-11	-74	-17	-15	-14
40,000	-56.5	-56	1	3	4	-55	2	4	5	-55	1	2	3	-55	2	3	4
30,000	-44.5	-38	6	8	9	-36	8	9	10	-35	11	12	13	-34	10	12	13
20,000	-21.2	-11	10	12	13	-10	12	13	14	-7	14	15	16	-8	14	15	16
10,000	-4.6	4	8	10	11	5	10	12	13	9	13	14	15	8	12	14	15
BOGOTA TO OAKAR																	
55,000	-56.5	-78	-21	-19	-18	-78	-21	-19	-18	-74	-17	-16	-15	-78	-21	-19	-18
40,000	-56.5	-54	5	4	5	-53	5	5	6	-54	2	3	4	-53	5	4	5
30,000	-44.5	-34	11	12	13	-31	13	14	15	-33	12	13	14	-31	13	14	15
20,000	-21.2	-7	14	15	16	-6	15	16	17	-7	14	15	16	-6	16	17	17
10,000	-4.6	9	13	14	15	9	14	15	15	9	14	15	15	10	14	15	16
BOGOTA TO GENEVA																	
55,000	-56.5	-68	-11	-9	-7	-66	-10	-8	-6	-65	-9	-7	-6	-69	-12	-10	-9
40,000	-56.5	-57	-0	3	4	-57	-0	3	4	-55	2	4	5	-55	1	3	4
30,000	-44.5	-41	5	5	6	-39	5	7	8	-36	9	10	11	-36	8	10	11
20,000	-21.2	-14	7	9	10	-13	8	10	11	-9	12	14	14	-10	11	13	14
10,000	-4.6	2	6	8	10	3	7	9	10	7	11	13	13	5	10	12	12
BOGOTA TO GUATEMALA CITY																	
55,000	-56.5	-78	-21	-19	-19	-77	-21	-19	-18	-74	-17	-16	-15	-78	-22	-20	-19
40,000	-56.5	-54	5	4	5	-52	4	6	6	-55	1	2	3	-54	5	4	5
30,000	-44.5	-33	11	12	13	-31	13	14	15	-33	12	13	14	-31	13	14	15
20,000	-21.2	-6	15	17	17	-5	16	18	18	-7	14	15	16	-6	16	17	17
10,000	-4.6	9	13	15	15	10	14	15	16	9	14	15	16	10	14	15	16
BOGOTA TO GUAYAQUIL																	
55,000	-56.5	-79	-23	-21	-20	-78	-21	-19	-18	-74	-17	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	5	4	5	-52	5	7	8	-55	2	3	4	-54	5	4	5
30,000	-44.5	-32	15	16	16	-30	16	16	16	-32	15	16	16	-31	16	16	16
20,000	-21.2	-4	17	18	19	-4	17	18	19	-7	14	15	16	-6	16	17	17
10,000	-4.6	10	14	15	16	10	14	16	16	9	14	15	15	10	14	15	16
BOGOTA TO HAVANA																	
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-73	-17	-15	-14	-78	-21	-19	-18
40,000	-56.5	-54	2	4	5	-53	4	5	6	-56	1	2	3	-54	5	4	5
30,000	-44.5	-35	10	11	12	-32	12	13	14	-33	12	13	14	-32	13	14	15
20,000	-21.2	-7	15	16	17	-6	16	17	17	-7	14	15	16	-6	16	17	17
10,000	-4.6	8	13	14	15	9	13	15	15	9	14	15	15	10	14	15	16
BOGOTA TO HOUSTON																	
55,000	-56.5	-76	-19	-18	-17	-75	-18	-16	-15	-73	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-55	2	3	4	-54	5	4	5	-56	1	2	2	-54	2	4	4
30,000	-44.5	-36	9	10	11	-34	11	12	12	-33	12	13	14	-32	12	13	14
20,000	-21.2	-8	15	15	16	-7	14	16	16	-7	15	15	16	-6	15	16	17
10,000	-4.6	7	12	13	14	8	13	15	15	9	14	15	15	10	14	15	16
BOGOTA TO KINGSTON																	
55,000	-56.5	-78	-21	-19	-18	-77	-21	-19	-18	-73	-17	-15	-14	-78	-21	-19	-18
40,000	-56.5	-54	5	4	5	-52	4	6	6	-55	1	2	3	-54	5	4	5
30,000	-44.5	-33	11	12	13	-31	13	14	15	-33	12	13	14	-31	13	14	15
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17
10,000	-4.6	9	13	14	15	9	14	15	16	9	14	15	15	10	14	15	16
BOGOTA TO LA PAZ																	
55,000	-56.5	-78	-21	-19	-18	-77	-20	-18	-17	-72	-16	-14	-12	-75	-18	-16	-15
40,000	-56.5	-53	5	5	6	-52	5	7	8	-54	5	4	5	-54	5	4	5
30,000	-44.5	-32	13	14	15	-31	14	16	16	-32	12	14	15	-31	13	15	16
20,000	-21.2	-5	17	18	19	-4	17	18	19	-8	15	16	16	-6	15	17	18
10,000	-4.6	10	14	16	16	10	14	15	16	8	15	16	15	10	14	15	16
BOGOTA TO LIMA																	
55,000	-56.5	-78	-22	-20	-18	-77	-21	-19	-18	-73	-17	-15	-13	-76	-19	-17	-16
40,000	-56.5	-54	5	5	6	-52	5	7	8	-54	2	4	5	-54	2	4	5
30,000	-44.5	-32	13	14	15	-30	14	16	16	-32	12	14	15	-31	13	15	16
20,000	-21.2	-4	17	18	19	-4	17	18	19	-8	15	16	16	-6	15	17	17
10,000	-4.6	10	14	16	16	10	14	15	16	9	15	16	15	10	14	16	16
BOGOTA TO LISBON																	
55,000	-56.5	-71	-14	-12	-11	-70	-13	-11	-10	-69	-12	-10	-9	-72	-15	-13	-12
40,000	-56.5	-56	0	3	4	-56	1	3	4	-54	2	4	4	-55	2	3	4
30,000	-44.5	-39	6	7	8	-37	8	9	10	-35	10	11	12	-35	10	11	12
20,000	-21.2	-12	9	11	12	-10	11	12	13	-8	13	14	15	-8	13	14	15
10,000	-4.6	4	9	11	12	5	9	11	12	8	13	14	15	7	12	13	14
BOGOTA TO LOS ANGELES																	
55,000	-56.5	-74	-17	-15	-14	-72	-16	-14	-13	-72	-16	-14	-14	-76	-19	-17	-16
40,000	-56.5	-55	1	3	5	-55	2	3	4	-55	1	3	4	-54	2	4	4
30,000	-44.5	-37	7	8	9	-36	8	10	10	-33	12	13	14	-34	11	12	13
20,000	-21.2	-10	11	13	14	-9	13	14	15	-7	14	15	16	-8	13	14	15
10,000	-4.6	6	10	12	13	8	13	15	16	10	15	16	16	9	14	15	16
BOGOTA TO MANAOS																	
55,000	-56.5	-79	-22	-21	-20	-77	-21	-19	-18	-73	-17	-15	-13	-77	-20	-18	-18
40,000	-56.5	-54	5	4	5	-52	5	7	8	-54	2	4	4	-54	5	4	5
30,000	-44.5	-32	13	14	15	-30	15	16	17	-32	13	14	15	-30	14	16	16
20,000	-21.2	-4	17	18	19	-4	17	19	19	-7	14	15	15	-5	16	17	18
10,000	-4.6	10	15	16	16	10	15	16	17	9	14	15	15	10	15	16	17

*D--DIFFERENCE BETWEEN INDICATED PER CLNT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
BOGOTA TO MEXICO CITY																											
53,000	-56.5	-77	-21	-19	-18	-77	-20	-18	-17	-74	-17	-16	-15	-78	-22	-20	-19	-77	-20	-18	-17	3	3	2	3		
40,000	-56.5	-54	2	4	5	-53	3	5	6	-56	1	2	3	-54	3	4	4	-54	2	4	5	2	2	2	2		
30,000	-44.5	-34	10	11	12	-32	12	13	14	-33	12	13	14	-32	13	14	15	-33	12	13	14	2	2	2	2		
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	15	15	16	-6	16	16	17	-6	15	17	17	2	2	1	1		
10,000	-4.6	9	13	14	15	10	14	16	16	9	14	15	16	10	15	16	16	9	14	15	16	2	2	1	1		
BOGOTA TO MIAMI																											
53,000	-56.5	-77	-20	-18	-18	-76	-19	-17	-17	-73	-16	-15	-14	-77	-21	-19	-18	-76	-19	-17	-16	3	3	2	3		
40,000	-56.5	-54	2	4	5	-53	3	5	6	-56	1	2	3	-54	2	4	4	-54	2	4	5	2	2	2	2		
30,000	-44.5	-35	10	11	12	-33	12	13	13	-33	12	13	13	-32	13	14	14	-33	11	13	14	2	2	1	2		
20,000	-21.2	-7	14	16	16	-6	15	16	17	-7	14	15	16	-6	15	16	17	-6	15	16	16	2	2	1	1		
10,000	-4.6	8	12	14	14	8	13	14	15	9	14	15	15	9	14	15	16	9	13	14	15	2	2	1	1		
BOGOTA TO NEW ORLEANS																											
53,000	-56.5	-76	-19	-18	-17	-75	-18	-16	-15	-73	-16	-15	-14	-77	-21	-19	-18	-75	-19	-17	-16	3	3	2	3		
40,000	-56.5	-55	2	4	5	-54	3	4	5	-56	1	2	2	-54	2	4	4	-55	2	4	4	2	2	2	2		
30,000	-44.5	-35	9	10	11	-34	11	12	13	-35	12	13	13	-32	12	13	14	-34	11	12	13	2	2	1	2		
20,000	-21.2	-8	13	15	16	-7	14	16	16	-7	15	15	16	-6	15	16	17	-7	14	16	16	2	2	1	2		
10,000	-4.6	7	12	13	14	8	13	14	15	9	14	15	15	9	14	15	16	9	13	14	15	2	2	1	2		
BOGOTA TO NEW YORK																											
53,000	-56.5	-75	-16	-14	-13	-71	-15	-13	-12	-74	-17	-15	-14	-77	-21	-19	-18	-72	-16	-14	-12	3	3	2	3		
40,000	-56.5	-55	1	3	4	-55	1	3	4	-56	1	2	3	-55	2	4	4	-55	1	3	4	3	3	2	2		
30,000	-44.5	-38	7	8	9	-36	8	10	11	-34	11	12	13	-34	11	12	13	-35	9	11	12	2	2	2	2		
20,000	-21.2	-10	11	13	13	-9	12	13	14	-7	14	15	16	-7	14	15	16	-9	13	14	15	3	2	2	2		
10,000	-4.6	4	9	11	12	5	10	12	13	8	13	14	14	8	12	14	14	6	11	12	13	3	3	1	2		
BOGOTA TO PANAMA																											
53,000	-56.5	-74	-21	-20	-19	-77	-21	-19	-18	-74	-17	-16	-15	-78	-22	-20	-19	-77	-20	-18	-17	3	3	3	3		
40,000	-56.5	-54	3	4	5	-52	3	6	7	-55	1	3	4	-54	2	4	4	-54	3	5	6	2	2	2	2		
30,000	-44.5	-33	12	13	14	-31	14	15	16	-32	12	13	14	-31	14	15	15	-32	13	14	15	2	2	2	2		
20,000	-21.2	-5	16	17	18	-4	17	18	19	-7	14	15	16	-5	16	17	17	-5	16	17	18	2	2	1	1		
10,000	-4.6	9	14	15	16	10	14	15	16	9	14	15	16	10	15	16	16	10	14	15	16	2	2	2	1		
BOGOTA TO QUITO																											
53,000	-56.5	-79	-22	-21	-20	-74	-21	-19	-18	-74	-17	-15	-14	-77	-21	-19	-18	-77	-20	-18	-17	3	3	3	3		
40,000	-56.5	-54	3	4	5	-52	3	7	8	-55	2	3	4	-54	2	4	4	-54	3	5	6	2	2	2	2		
30,000	-44.5	-32	12	14	14	-30	14	16	16	-32	13	14	15	-31	14	15	16	-31	13	15	16	2	2	2	2		
20,000	-21.2	-4	17	18	19	-4	17	18	19	-7	14	15	16	-6	16	17	17	-5	16	17	18	2	2	1	1		
10,000	-4.6	10	14	15	16	10	15	16	16	9	14	15	15	10	15	16	16	10	14	15	16	2	2	2	1		
BOGOTA TO RIO DE JANEIRO																											
53,000	-56.5	-77	-21	-19	-17	-76	-20	-17	-16	-71	-14	-12	-11	-73	-17	-15	-14	-74	-18	-15	-13	3	3	4	3		
40,000	-56.5	-53	3	5	6	-52	3	7	8	-53	3	5	6	-54	3	4	5	-53	4	6	7	3	3	3	2		
30,000	-44.5	-32	13	14	15	-31	14	15	16	-33	12	14	14	-31	13	15	16	-32	13	15	16	2	3	2	2		
20,000	-21.2	-5	17	18	19	-5	16	17	18	-9	12	14	14	-6	15	16	17	-6	15	17	18	2	2	2	2		
10,000	-4.6	10	14	16	16	10	14	16	16	7	12	13	14	10	14	16	16	9	14	15	16	2	2	2	2		
BOGOTA TO SAN JUAN																											
53,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-73	-17	-15	-14	-77	-21	-19	-18	-76	-20	-18	-16	3	3	2	3		
40,000	-56.5	-54	3	4	5	-53	4	5	6	-55	1	2	3	-54	3	4	4	-54	3	4	5	2	2	2	2		
30,000	-44.5	-33	11	12	13	-31	13	14	15	-33	12	13	13	-31	13	14	15	-32	12	13	14	2	2	2	1		
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17	-6	15	16	17	2	2	1	1		
10,000	-4.6	8	13	14	15	9	14	15	16	9	14	15	15	10	14	15	16	9	14	15	15	2	2	1	1		
BOMBAY TO CAIRO																											
53,000	-56.5	-70	-14	-11	-10	-70	-13	-11	-10	-74	-17	-15	-14	-73	-16	-14	-13	-72	-15	-12	-11	3	4	3	4		
40,000	-56.5	-54	2	5	7	-53	3	6	8	-47	9	12	13	-54	3	5	6	-52	4	8	9	4	4	3	3		
30,000	-44.5	-39	5	8	9	-36	8	10	12	-26	14	20	21	-34	10	12	13	-34	11	14	16	4	3	3	3		
20,000	-21.2	-13	8	10	11	-10	11	13	14	-3	14	20	21	-8	13	15	15	-9	13	15	17	3	3	3	2		
10,000	-4.6	3	7	9	10	7	12	14	15	15	20	21	22	8	13	14	15	8	13	16	17	3	3	2	2		
BOMBAY TO CALCUTTA																											
53,000	-56.5	-75	-18	-16	-15	-72	-16	-13	-11	-76	-20	-17	-15	-76	-19	-17	-16	-75	-18	-15	-13	3	4	4	4		
40,000	-56.5	-56	1	4	5	-53	4	7	9	-49	4	11	13	-54	3	6	8	-53	4	8	10	4	4	5	5		
30,000	-44.5	-35	9	12	13	-34	11	14	15	-27	14	20	21	-32	13	15	16	-32	12	15	17	4	4	3	3		
20,000	-21.2	-9	12	14	15	-8	13	16	17	-3	14	20	20	-6	15	17	18	-6	15	17	18	3	3	2	2		
10,000	-4.6	6	11	13	14	10	14	16	17	12	17	18	19	8	13	14	15	9	14	16	17	3	3	2	2		
BOMBAY TO CHICAGO																											
53,000	-56.5	-60	-3	0	2	-53	4	6	8	-51	5	8	9	-56	0	3	4	-55	1	4	6	5	4	3	4		
40,000	-56.5	-57	-0	3	5	-51	5	9	11	-48	9	12	14	-53	4	7	9	-52	5	8	11	5	5	5	5		
30,000	-44.5	-52	-8	-5	-4	-47	-3	0	2	-39	6	8	10	-46	-1	2	3	-46	-2	3	5	4	5	4	4		
20,000	-21.2	-31	-9	-6	-4	-25	-4	-1	1	-14	7	9	11	-22	-1	2	4	-23	-2	2	5	5	5	4	5		
10,000	-4.6	-16	-12	-8	-6	-10	-6	-2	-0	1	6	8	9	-7	-3	1	3	-8	-4	1	3	6	5	3	5		
BOMBAY TO COLOMBO																											
53,000	-56.5	-79	-23	-21	-20	-77	-20	-18	-16	-77	-21	-18	-17	-80	-23	-21	-20	-74	-22	-19	-18	3	4	4	3		
40,000	-56.5	-56	1	3	5	-52	3	7	8	-51	6	8	9	-54	3	5	6	-53	3	6	7	4	3	3	3		
30,000	-44.5	-32	13	14	15	-31	14	16	17	-29	16	17	18	-32	13	14	15	-31	14	16	17	3	3	3	2		
20,000	-21.2	-6	15	16	17	-6	15	17	18	-4	17	18	19	-6	16	17	18	-6	16	17	18	2	2	2	2		
10,000	-4.6	9	13	15	15	10	15	16	17	10	15	16	17	9	14	15	15	10	14	15	16	2	2	2	2		
BOMBAY TO DAMASCUS																											
53,000	-56.5	-69	-13	-10	-9	-68	-12	-9	-8	-73	-17	-14	-13	-71	-15	-12	-11	-70	-14	-11	-10	4	4	4	4		
40,000	-56.5	-54	2	5	7	-53	3	6	8	-47	10	12	13	-54	2	5	6	-52	4	8	10	4	4	3	4		
30,000	-44.5	-40	4	7	9	-37	7	10	11	-26	18	20	21	-35	10	12	13	-35	10	13	15	4	4	3	3		
20,000	-21.2	-15	7	9	10	-11	10	12	14	-3	18	20	21	-9	12	14	15	-9	12	15	17	3	3	3	3		
10,000	-4.6	2	6	8	9	7	11	13	15	15	20	21	22	8	12	14	15	8	12								

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL							
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
BOMBAY TO OJAKARIA																									
53,000	-56.5	-81	-25	-23	-22	-78	-21	-19	-18	-78	-21	-19	-18	-80	-24	-22	-21	-79	-23	-20	-19	3	3	3	3
40,000	-56.5	-55	1	3	4	-52	5	6	7	-53	3	5	6	-54	2	4	5	-54	3	5	6	3	3	2	3
30,000	-44.5	-31	13	14	15	-30	14	16	16	-30	15	16	17	-32	13	14	15	-31	14	15	16	2	2	2	2
20,000	-21.2	-5	16	17	18	-6	16	17	18	-5	17	18	18	-6	16	17	17	-5	16	17	18	2	2	1	2
10,000	-4.6	9	14	15	16	10	15	16	16	10	14	15	16	9	14	15	15	9	14	15	16	2	2	1	1
BOMBAY TO HONG KONG																									
53,000	-56.5	-75	-18	-16	-15	-73	-16	-13	-12	-76	-19	-16	-15	-74	-18	-15	-14	-74	-18	-15	-13	3	4	4	4
40,000	-56.5	-55	1	4	5	-52	4	7	8	-50	6	9	11	-54	3	5	7	-53	4	7	9	3	4	4	4
30,000	-44.5	-35	10	12	13	-33	12	14	15	-27	17	19	20	-31	13	15	16	-32	13	15	17	3	3	2	3
20,000	-21.2	-9	12	14	15	-7	14	16	17	-3	18	19	20	-6	15	17	18	-6	15	17	18	3	3	2	2
10,000	-4.6	6	10	12	13	9	14	15	16	12	16	17	18	8	13	14	15	9	13	15	16	3	2	2	2
BOMBAY TO HONOLULU																									
53,000	-56.5	-61	-5	-2	-0	-61	-4	-1	0	-64	-7	-4	-3	-64	-8	-5	-3	-62	-6	-3	-1	4	4	4	4
40,000	-56.5	-52	5	8	10	-54	2	6	8	-50	7	10	11	-53	4	6	8	-52	4	8	9	5	5	4	4
30,000	-44.5	-43	2	5	7	-40	4	7	9	-30	14	17	18	-36	8	11	13	-37	7	11	13	5	4	4	4
20,000	-21.2	-20	1	4	6	-15	6	9	11	-5	16	18	19	-12	10	12	14	-13	8	12	14	4	4	3	4
10,000	-4.6	-5	-1	2	4	0	5	7	9	9	14	15	16	3	7	10	11	2	6	9	11	4	4	2	4
BOMBAY TO JIJOA																									
53,000	-56.5	-74	-18	-15	-14	-75	-18	-16	-15	-75	-19	-17	-15	-76	-20	-18	-16	-75	-19	-16	-15	3	4	3	3
40,000	-56.5	-54	2	5	6	-52	4	7	8	-48	8	10	11	-53	3	5	7	-52	4	7	9	4	4	3	3
30,000	-44.5	-36	9	11	12	-33	11	13	14	-27	18	19	20	-32	12	14	15	-32	12	15	16	3	3	2	3
20,000	-21.2	-10	11	13	14	-7	14	16	17	-4	17	19	20	-6	15	16	17	-7	14	17	18	2	3	2	2
10,000	-4.6	7	11	13	14	10	14	16	17	15	20	21	22	9	13	15	15	10	15	17	18	2	2	2	2
BOMBAY TO JOHANNESBURG																									
53,000	-56.5	-78	-21	-19	-18	-76	-20	-17	-16	-73	-16	-14	-13	-76	-19	-17	-16	-76	-19	-16	-15	3	4	3	3
40,000	-56.5	-53	3	5	6	-52	5	7	8	-52	5	6	7	-53	4	5	6	-52	4	6	7	3	3	3	3
30,000	-44.5	-30	14	16	16	-31	13	15	16	-32	13	14	15	-32	12	14	14	-31	13	15	16	2	2	2	2
20,000	-21.2	-5	16	17	17	-6	15	16	17	-6	15	17	17	-6	15	16	17	-6	15	16	17	1	2	2	2
10,000	-4.6	9	14	15	15	10	14	15	16	8	13	14	15	9	14	15	15	9	14	15	15	1	2	2	2
BOMBAY TO KARACHI																									
53,000	-56.5	-74	-17	-15	-14	-73	-17	-14	-13	-75	-19	-16	-15	-76	-20	-17	-16	-75	-18	-15	-14	3	4	4	4
40,000	-56.5	-55	2	5	7	-53	4	7	9	-48	9	12	13	-54	3	6	8	-52	4	8	10	5	5	5	5
30,000	-44.5	-36	9	12	14	-34	10	13	15	-27	14	20	21	-32	12	15	16	-32	12	16	17	4	4	3	3
20,000	-21.2	-11	11	13	14	-7	14	16	18	-3	18	20	21	-6	15	17	17	-7	14	17	18	5	3	3	2
10,000	-4.6	6	10	12	13	10	15	17	17	14	19	20	21	8	13	15	15	10	14	16	18	2	3	2	2
BOMBAY TO LEOPOLVILLE																									
53,000	-56.5	-78	-22	-20	-19	-78	-21	-19	-18	-76	-20	-18	-17	-78	-22	-20	-19	-77	-21	-19	-18	3	3	3	3
40,000	-56.5	-54	2	4	5	-52	5	7	8	-52	5	6	7	-52	4	6	7	-52	4	6	7	3	3	2	2
30,000	-44.5	-32	13	14	15	-30	14	16	16	-30	14	16	16	-31	14	15	16	-31	14	15	16	2	2	2	2
20,000	-21.2	-5	16	17	18	-5	16	18	18	-5	17	18	18	-6	16	17	17	-5	16	17	18	2	2	2	2
10,000	-4.6	10	14	15	16	10	15	16	17	11	16	17	17	10	14	15	16	10	15	16	17	2	2	2	2
BOMBAY TO LISBON																									
53,000	-56.5	-63	-7	-4	-2	-62	-6	-3	-2	-67	-11	-8	-7	-66	-9	-7	-5	-65	-8	-5	-4	4	4	3	4
40,000	-56.5	-56	1	4	6	-55	1	5	6	-48	8	11	12	-55	1	4	5	-54	3	6	8	5	5	3	4
30,000	-44.5	-45	-0	2	4	-42	3	5	7	-31	14	16	17	-38	6	8	10	-39	6	9	11	4	4	3	3
20,000	-21.2	-19	2	5	6	-15	6	8	10	-6	15	17	18	-12	9	11	12	-13	8	11	13	4	3	3	3
10,000	-4.6	-3	2	4	6	2	7	9	11	11	16	18	19	4	9	11	12	4	8	12	13	4	3	3	3
BOMBAY TO LONDON																									
53,000	-56.5	-61	-5	-2	-0	-60	-3	-1	1	-61	-5	-2	-1	-63	-6	-4	-2	-61	-5	-2	-0	4	4	4	4
40,000	-56.5	-56	0	3	5	-55	2	5	7	-48	8	11	13	-55	1	4	5	-54	3	7	9	5	5	4	4
30,000	-44.5	-47	-2	1	2	-43	2	4	6	-33	12	14	15	-40	5	7	8	-41	4	8	10	4	4	4	4
20,000	-21.2	-22	-1	2	4	-17	4	7	9	-8	13	15	17	-14	7	10	11	-15	6	10	12	5	4	3	4
10,000	-4.6	-7	-2	1	3	-0	5	7	9	8	13	15	16	2	6	9	10	1	6	9	11	5	4	3	4
BOMBAY TO LOS ANGELES																									
53,000	-56.5	-59	-3	1	2	-52	4	7	8	-52	5	7	8	-56	0	3	4	-55	2	5	6	5	4	3	3
40,000	-56.5	-57	-0	3	5	-51	5	9	11	-48	8	11	13	-53	4	7	9	-52	4	8	10	5	5	5	5
30,000	-44.5	-52	-7	-5	-3	-48	-4	-1	1	-38	7	9	11	-46	-1	1	3	-46	-1	3	5	4	4	4	4
20,000	-21.2	-30	-9	-6	-4	-26	-5	-1	0	-13	8	10	12	-23	-2	1	3	-23	-2	2	5	5	3	3	5
10,000	-4.6	-16	-11	-8	-6	-11	-6	-3	-1	3	7	9	11	-8	-4	-0	1	-8	-3	1	3	5	5	3	5
BOMBAY TO MAORAS																									
53,000	-56.5	-78	-22	-20	-19	-76	-19	-17	-15	-77	-21	-18	-17	-79	-23	-21	-20	-78	-21	-18	-17	3	4	4	3
40,000	-56.5	-56	0	3	5	-52	4	7	8	-50	7	9	11	-54	3	5	7	-53	4	7	8	4	4	4	4
30,000	-44.5	-33	11	13	15	-32	13	15	16	-28	17	18	19	-32	13	15	16	-31	13	16	17	3	3	3	3
20,000	-21.2	-7	14	16	17	-6	15	17	18	-4	17	19	19	-6	16	17	18	-6	15	17	18	2	3	2	2
10,000	-4.6	8	12	14	15	10	15	16	17	11	16	17	17	9	13	15	15	9	14	16	16	2	2	2	2
BOMBAY TO MAORIO																									
53,000	-56.5	-63	-6	-4	-2	-62	-6	-3	-2	-67	-10	-8	-7	-66	-9	-7	-5	-64	-8	-5	-3	4	4	3	4
40,000	-56.5	-56	1	4	6	-55	1	5	6	-48	8	11	12	-55	1	4	5	-54	3	6	8	5	5	4	4
30,000	-44.5	-45	-0	2	4	-42	3	5	7	-31	14	16	17	-38	6	8	10	-39	6	9	11	4	4	3	3
20,000	-21.2	-19	2	4	6	-15	6	8	10	-6	15	17	18	-12	9	11	12	-13	8	11	13	4	3	3	3
10,000	-4.6	-3	1	4	6	2	7	9	11	11	16	18	18	4	9	11	12	4	8	12	13	4	4	3	3
BOMBAY TO MANGALORE																									
53,000	-56.5	-78	-22	-20	-18	-76	-20	-17	-16	-77	-20	-18	-16	-79	-23	-21	-19	-78	-21	-18	-17	3	4	4	3
40,000	-56.5	-56	1	3	5	-52	4	7	8	-49	7	10	11	-54	3	5	7	-53	4	7	9	4	4	3	3
30,000	-44.5	-33	12	14	15	-32	13	15	16	-28	17	18	19	-32	13	15	16	-31	13	16	17	3	3	3	3
20,000	-21.2	-7	14	15	16	-6	15	17	18	-4	17	19	19	-6	16	17	18	-6	15	17	18	2	3	2	2
10,000	-4.6	8	12	14	15	10	15	16	17	11	16	17	18	9	13	15	15	10	14	16	17	2	2	2	2
BOMBAY TO MELBOURNE																									
53,000	-56.5	-77	-21	-18	-17	-7																			

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 U75 U85			50 050 U75 U85			50 050 U75 U85			50 050 U75 U85			50 050 U75 U85			
BOMBAY TO MILAN																	
51,000	-56.5	-62	-6	-5	-2	-62	-5	-5	-1	-65	-9	-8	-5	-64	-7	-4	-3
40,000	-56.5	-56	1	4	6	-55	2	5	7	-48	9	11	13	-53	3	7	9
30,000	-44.5	-45	-1	2	3	-42	3	5	7	-31	14	16	17	-39	6	8	9
20,000	-21.2	-20	1	3	5	-15	6	8	10	-6	15	17	18	-13	9	11	12
10,000	-4.6	-5	-0	3	4	2	6	9	10	10	15	17	18	4	8	11	12
BOMBAY TO MOSCOW																	
51,000	-56.5	-62	-5	-2	-1	-60	-5	-1	0	-61	-5	-2	-1	-61	-5	-2	-0
40,000	-56.5	-56	0	4	5	-54	3	6	8	-48	9	12	13	-53	4	8	10
30,000	-44.5	-46	-2	1	3	-41	3	6	8	-31	13	16	18	-39	5	8	9
20,000	-21.2	-22	-1	2	4	-15	6	9	11	-7	14	17	18	-14	7	10	11
10,000	-4.6	-6	-2	1	3	1	5	8	10	10	15	17	18	2	6	9	10
BOMBAY TO NAGPUR																	
51,000	-56.5	-75	-19	-17	-15	-74	-17	-14	-13	-76	-20	-17	-15	-76	-19	-16	-14
40,000	-56.5	-56	1	4	6	-53	4	7	9	-48	8	11	13	-54	3	6	8
30,000	-44.5	-55	10	12	14	-54	11	14	15	-27	17	19	20	-32	13	15	16
20,000	-21.2	-9	12	14	15	-7	14	16	17	-3	18	20	20	-6	15	17	18
10,000	-4.6	7	11	13	14	10	15	16	17	12	17	18	19	8	13	15	15
BOMBAY TO NAIROBI																	
51,000	-56.5	-79	-22	-21	-19	-78	-22	-19	-18	-79	-22	-20	-19	-78	-21	-19	-18
40,000	-56.5	-54	2	4	5	-52	5	7	8	-52	5	7	7	-53	4	5	6
30,000	-44.5	-51	15	15	16	-50	14	16	17	-50	15	16	17	-51	14	15	16
20,000	-21.2	-5	16	17	18	-5	16	17	18	-5	16	17	18	-5	16	17	18
10,000	-4.6	9	14	15	16	10	15	16	17	11	16	17	17	9	14	15	16
BOMBAY TO NEW DELHI																	
51,000	-56.5	-73	-16	-14	-12	-71	-14	-11	-10	-75	-18	-15	-13	-73	-16	-13	-11
40,000	-56.5	-55	2	5	7	-55	3	7	8	-48	8	12	14	-54	3	6	8
30,000	-44.5	-57	8	11	13	-55	9	12	14	-27	18	20	21	-33	12	14	16
20,000	-21.2	-12	9	12	13	-9	12	15	16	-3	19	20	21	-7	14	16	17
10,000	-4.6	4	9	11	12	2	14	16	17	15	14	16	17	8	13	14	15
BOMBAY TO NEW YORK																	
51,000	-56.5	-59	-3	1	2	-55	2	5	6	-53	3	5	7	-56	0	3	5
40,000	-56.5	-56	1	4	6	-52	4	8	10	-49	6	11	13	-53	3	7	8
30,000	-44.5	-50	-5	-1	-1	-46	-1	2	3	-38	7	9	11	-44	1	4	5
20,000	-21.2	-28	-6	-3	-1	-22	-1	2	4	-15	9	11	12	-19	2	5	7
10,000	-4.6	-15	-8	-4	-2	-7	-2	1	3	5	8	10	11	-4	1	4	6
BOMBAY TO PERTH																	
51,000	-56.5	-79	-22	-20	-19	-75	-19	-17	-16	-75	-18	-16	-15	-76	-20	-17	-16
40,000	-56.5	-55	2	4	5	-55	4	6	6	-55	4	5	6	-54	3	5	6
30,000	-44.5	-52	13	14	15	-53	12	14	15	-52	12	14	15	-53	12	13	14
20,000	-21.2	-8	15	16	17	-7	14	15	16	-7	14	15	16	-8	13	15	16
10,000	-4.6	9	14	15	15	8	13	14	15	7	12	13	14	6	11	13	14
BOMBAY TO PHOENIX																	
51,000	-56.5	-77	-21	-18	-17	-76	-18	-15	-14	-77	-21	-19	-18	-76	-20	-17	-15
40,000	-56.5	-56	0	3	4	-52	4	7	8	-50	6	9	10	-54	2	5	7
30,000	-44.5	-54	11	13	14	-52	12	15	16	-52	13	15	16	-51	13	15	16
20,000	-21.2	-8	14	15	16	-6	15	17	18	-6	16	17	18	-6	15	17	18
10,000	-4.6	8	12	14	15	10	15	16	17	11	16	17	18	9	13	15	16
BOMBAY TO RIO DE JANEIRO																	
51,000	-56.5	-77	-21	-18	-17	-77	-20	-18	-17	-75	-17	-14	-13	-75	-19	-16	-15
40,000	-56.5	-55	5	5	6	-52	4	7	8	-52	5	6	7	-53	4	6	7
30,000	-44.5	-52	13	14	15	-51	13	15	16	-52	13	14	15	-52	13	14	15
20,000	-21.2	-5	16	17	18	-6	16	17	18	-6	15	16	17	-6	15	17	17
10,000	-4.6	9	14	15	16	10	14	15	16	8	13	14	15	9	14	15	16
BOMBAY TO ROME																	
51,000	-56.5	-64	-7	-4	-3	-65	-6	-4	-3	-64	-10	-7	-6	-65	-9	-6	-4
40,000	-56.5	-55	1	4	6	-55	2	5	7	-47	9	12	13	-55	1	4	5
30,000	-44.5	-44	0	3	4	-41	3	6	7	-29	15	17	18	-38	7	9	10
20,000	-21.2	-19	2	5	6	-15	7	9	10	-5	16	18	19	-12	10	11	12
10,000	-4.6	-5	2	4	5	3	7	10	11	12	16	18	19	5	9	11	13
BOMBAY TO SEATTLE																	
51,000	-56.5	-59	-3	1	2	-51	5	8	9	-50	6	8	9	-54	2	5	7
40,000	-56.5	-57	-0	3	5	-50	6	10	12	-48	9	12	14	-52	4	7	9
30,000	-44.5	-52	-8	-5	-4	-48	-4	-1	0	-38	7	9	11	-46	-2	1	2
20,000	-21.2	-32	-10	-7	-5	-27	-5	-2	-0	-14	8	10	11	-24	-3	0	2
10,000	-4.6	-17	-11	-9	-7	-12	-7	-4	-2	2	6	9	10	-9	-5	-2	-0
BOMBAY TO TANANARIVE																	
51,000	-56.5	-79	-22	-20	-19	-77	-21	-18	-17	-75	-18	-16	-15	-77	-21	-18	-17
40,000	-56.5	-54	5	5	6	-52	5	7	8	-52	6	8	9	-53	5	6	7
30,000	-44.5	-50	14	16	16	-51	14	15	16	-51	14	15	16	-51	13	15	16
20,000	-21.2	-5	16	17	17	-6	15	17	17	-5	16	17	18	-5	16	17	18
10,000	-4.6	9	14	14	15	10	15	16	16	9	14	15	15	9	14	15	16
BOMBAY TO TEHRAN																	
51,000	-56.5	-69	-12	-10	-8	-68	-12	-9	-7	-73	-16	-14	-12	-71	-14	-11	-9
40,000	-56.5	-54	2	5	7	-53	3	7	8	-47	9	12	14	-54	2	5	7
30,000	-44.5	-40	5	8	9	-37	7	10	12	-26	18	20	21	-35	10	12	13
20,000	-21.2	-15	6	8	10	-10	11	13	14	-2	19	21	22	-9	12	14	15
10,000	-4.6	1	6	8	9	7	12	14	15	15	20	21	22	7	12	14	15
BOMBAY TO TEL AVIV-JAFFA																	
51,000	-56.5	-70	-13	-11	-10	-69	-13	-10	-9	-73	-17	-15	-13	-72	-16	-13	-12
40,000	-56.5	-54	2	5	7	-53	3	6	8	-47	10	12	13	-54	2	5	6
30,000	-44.5	-40	5	8	9	-37	8	10	11	-26	18	20	21	-35	10	12	13
20,000	-21.2	-14	7	9	10	-10	11	13	14	-3	18	20	21	-8	13	14	15
10,000	-4.6	2	7	9	10	7	12	14	15	15	20	21	22	8	12	14	15

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION						
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN	APR	JUL	OCT
		50 050 075	075	085	50 050 075	075	085	50 150 075	075	085	50 050 075	075	085	50 050 075	075	085				
BOMBAY TO TOKYO																				
53,000	-56.5	-65	-8	-5	-4	-65	-8	-5	-4	-68	-12	-8	-7	-67	-10	-7	-6	3633 N.M.I.		
40,000	-56.5	-53	4	6	8	-53	3	7	8	-48	9	11	13	-53	4	7	8	5 5 5 5		
30,000	-44.5	-41	4	7	8	-38	6	9	11	-27	18	20	22	-34	10	13	14	4 5 4 4		
20,000	-21.2	-18	3	6	7	-13	8	11	12	-3	18	20	21	-10	11	14	15	4 5 4 4		
10,000	-4.6	-3	1	4	5	3	7	10	11	11	16	17	18	4	9	11	12	4 4 2 3		
BOMBAY TO IRAPOLI																				
53,000	-56.5	-68	-11	-9	-8	-67	-10	-8	-7	-72	-16	-13	-12	-70	-14	-11	-10	3283 N.M.I.		
40,000	-56.5	-54	2	5	6	-54	1	6	7	-47	9	11	12	-55	2	4	5	3 3 3 3		
30,000	-44.5	-41	3	5	7	-38	6	8	10	-27	17	19	20	-36	9	11	12	4 4 3 3		
20,000	-21.2	-16	6	8	9	-12	9	11	12	-4	18	19	20	-10	12	13	14	4 3 3 3		
10,000	-4.6	1	5	7	8	5	10	12	13	14	19	20	21	7	12	13	14	3 3 2 2		
BOMBAY TO LUNIS																				
53,000	-56.5	-66	-9	-7	-5	-65	-8	-6	-4	-70	-14	-12	-10	-68	-11	-9	-8	3424 N.M.I.		
40,000	-56.5	-55	2	5	6	-55	2	5	7	-47	9	12	13	-55	2	4	5	4 3 3 3		
30,000	-44.5	-45	2	4	5	-40	4	7	8	-28	16	18	19	-37	7	10	11	4 3 3 3		
20,000	-21.2	-17	4	6	7	-14	8	10	11	-4	17	19	20	-11	10	12	13	3 3 3 3		
10,000	-4.6	-1	3	6	7	4	9	11	12	13	17	19	20	6	10	12	13	3 3 2 3		
BOMBAY TO ZURICH																				
53,000	-56.5	-62	-6	-3	-1	-61	-5	-2	-1	-64	-8	-5	-4	-63	-6	-4	-2	3529 N.M.I.		
40,000	-56.5	-56	1	4	5	-55	2	5	7	-48	9	11	13	-55	1	4	5	4 4 4 4		
30,000	-44.5	-46	-1	2	3	-42	2	5	6	-31	13	16	17	-39	5	8	9	5 4 3 4		
20,000	-21.2	-21	0	3	5	-16	6	8	10	-6	15	17	18	-13	8	10	12	4 4 3 3		
10,000	-4.6	-5	-1	2	4	1	6	8	10	10	15	16	17	3	8	10	11	4 4 3 4		
BUNAJRE TO CURACAO																				
53,000	-56.5	-74	-21	-19	-18	-78	-21	-19	-19	-73	-17	-15	-14	-77	-21	-19	-18	40 N.M.I.		
40,000	-56.5	-54	3	4	5	-52	4	5	6	-55	1	2	3	-54	3	4	5	3 3 2 3		
30,000	-44.5	-33	11	12	13	-11	13	14	15	-33	11	13	13	-31	13	14	15	3 2 2 2		
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17	2 2 2 1		
10,000	-4.6	11	13	14	15	9	14	15	16	9	14	15	15	10	14	15	16	2 2 1 1		
BORDEAUX TO LONDON																				
53,000	-56.5	-58	-1	2	4	-55	2	4	6	-53	4	6	8	-59	-2	1	2	398 N.M.I.		
40,000	-56.5	-58	-2	2	5	-57	-0	4	6	-53	4	7	9	-56	0	3	5	4 4 4 4		
30,000	-44.5	-49	-5	-2	-1	-47	-2	0	2	-40	5	7	9	-43	1	4	6	6 6 5 5		
20,000	-21.2	-24	-3	0	2	-21	-0	3	5	-15	8	10	11	-17	4	7	9	4 4 4 4		
10,000	-4.6	-8	-3	0	2	-5	-0	3	5	3	7	9	11	-1	3	6	8	5 4 3 4		
BORDEAUX TO MADRID																				
53,000	-56.5	-59	-4	1	3	-57	-0	3	4	-57	-1	1	3	-60	-4	-1	-0	291 N.M.I.		
40,000	-56.5	-58	-2	2	5	-54	-2	2	4	-54	3	6	7	-57	-0	3	4	4 4 4 4		
30,000	-44.5	-48	-3	-1	1	-46	-1	2	3	-38	7	9	10	-42	3	6	7	6 6 4 4		
20,000	-21.2	-22	-1	2	4	-19	2	4	6	-11	10	12	13	-15	6	8	10	4 4 3 4		
10,000	-4.6	-5	-1	2	4	-2	3	5	6	6	11	13	14	0	5	7	9	5 4 3 4		
BOSTON TO GANDER																				
53,000	-56.5	-57	-0	2	4	-54	2	5	6	-56	0	3	4	-59	-2	1	3	792 N.M.I.		
40,000	-56.5	-54	2	6	8	-54	3	7	9	-54	3	6	7	-54	3	6	8	4 4 4 5		
30,000	-44.5	-49	-4	-1	0	-47	-3	-0	1	-38	6	9	10	-43	2	4	6	6 6 4 4		
20,000	-21.2	-26	-5	-1	1	-24	-3	1	3	-12	9	11	13	-17	4	7	9	6 4 4 4		
10,000	-4.6	-14	-10	-5	-2	-9	-4	-1	1	3	7	9	11	-3	2	5	7	6 5 3 5		
BOSTON TO REFLAVIK																				
53,000	-56.5	-56	0	1	5	-51	5	8	9	-50	7	9	10	-54	2	5	7	2090 N.M.I.		
40,000	-56.5	-53	3	7	10	-51	5	10	12	-50	6	10	11	-52	5	9	11	5 4 4 4		
30,000	-44.5	-51	-7	-4	-2	-49	-4	-1	0	-42	2	5	7	-46	-1	2	3	6 6 5 6		
20,000	-21.2	-31	-10	-6	-3	-27	-6	-2	-0	-16	5	8	9	-23	-1	3	5	4 4 4 4		
10,000	-4.6	-18	-13	-9	-6	-12	-8	-4	-2	-1	3	6	7	-8	-3	1	3	7 6 4 6		
BOSTON TO MEXICO CITY																				
53,000	-56.5	-69	-12	-10	-9	-66	-10	-7	-6	-68	-12	-10	-9	-71	-15	-12	-11	1978 N.M.I.		
40,000	-56.5	-57	-1	2	3	-57	-0	2	4	-55	1	3	3	-55	1	3	4	4 4 3 4		
30,000	-44.5	-41	3	5	6	-40	4	6	7	-34	11	13	13	-37	8	10	11	4 4 2 5		
20,000	-21.2	-15	6	9	10	-13	8	10	11	-7	14	15	16	-10	12	13	14	3 3 2 3		
10,000	-4.6	0	5	7	9	3	8	10	11	6	13	14	15	6	13	14	15	4 4 2 3		
BOSTON TO MONTREAL																				
53,000	-56.5	-58	-1	1	3	-56	1	3	5	-58	-2	1	2	-60	-4	-0	1	221 N.M.I.		
40,000	-56.5	-55	1	3	5	-54	2	4	6	-54	3	5	6	-54	2	5	6	4 4 4 5		
30,000	-44.5	-49	-4	-2	-0	-47	-3	-0	1	-37	7	9	11	-42	2	5	6	6 6 4 5		
20,000	-21.2	-26	-5	-1	1	-23	-2	1	3	-11	10	12	13	-16	5	8	10	4 4 3 4		
10,000	-4.6	-13	-9	-4	-2	-8	-4	-0	1	4	8	10	11	-1	3	7	9	7 5 3 5		
BOSTON TO SAN JUAN																				
53,000	-56.5	-69	-13	-10	-9	-67	-11	-9	-8	-67	-11	-9	-8	-71	-14	-12	-10	1458 N.M.I.		
40,000	-56.5	-56	0	3	4	-57	-0	2	3	-56	1	2	3	-55	2	4	5	3 3 2 3		
30,000	-44.5	-41	4	6	7	-40	5	7	8	-35	10	11	12	-36	9	11	12	4 4 2 3		
20,000	-21.2	-14	7	10	11	-13	8	11	12	-8	13	15	15	-9	12	14	15	3 3 2 3		
10,000	-4.6	1	5	8	9	2	7	9	10	7	12	13	14	6	10	12	13	4 3 2 3		
BOSTON TO SANTA MARIA																				
53,000	-56.5	-60	-4	-1	0	-58	-1	1	3	-60	-3	-1	0	-62	-5	-2	-1	2116 N.M.I.		
40,000	-56.5	-57	-1	3	5	-57	-1	3	5	-55	2	4	5	-56	1	4	5	4 4 4 4		
30,000	-44.5	-46	-2	1	2	-45	-0	2	3	-37	8	10	11	-40	4	7	8	6 4 3 4		
20,000	-21.2	-21	0	4	6	-19	2	5	7	-10	11	13	14	-14	8	10	12	5 4 3 4		
10,000	-4.6	-6	-2	2	4	-4	1	4	5	5	9	11	12	1	6	9	10	6 4 3 4		
BOSTON TO TORONTO																				
53,000	-56.5	-59	-2	0	2	-57	-0	2	4	-59	-3	-0	1	-61	-5	-1	0	587 N.M.I.		
40,000	-56.5	-56	1	5	7	-55	1	5	7	-54	3	5	6	-55	2	5	7	4 4 4 5		
30,000	-44.5	-48	-4	-1	0	-47	-2	0	2	-37	7	10	11	-42	2	5	7	6 6 3 5		
20,000	-21.2	-25	-4	-0	2	-22	-1	2	4	-11	10	13	14	-16	5	9	10	4 4 3 4		
10,000	-4.6	-12	-8	-3	-1	-7	-3	1	3	4	9	11	12	-0	4	8	10	5 5 3 5		

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION														
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085							
BOSTON TO VANCOUVER																												
55,000	-56.5	-57	-0	3	4	-55	2	4	6	-55	1	4	5	-58	-2	1	2	-56	0	3	5	2176 N.M.I.						
40,000	-56.5	-55	2	6	8	-55	2	6	8	-53	3	6	8	-55	2	5	7	-54	2	5	7	5	4	4	4	5		
30,000	-44.5	-51	-7	-4	-3	-48	-4	-2	-0	-39	6	8	9	-44	0	3	4	-46	-1	2	4	6	6	4	5	4		
20,000	-21.2	-30	-8	-4	-2	-24	-3	1	3	-13	9	11	12	-19	2	6	7	-21	-0	4	6	6	5	3	5	5		
10,000	-4.6	-16	-11	-7	-4	-8	-4	-0	2	4	8	11	12	-3	1	5	7	-6	-1	3	5	7	5	4	6	6		
BRASILIA TO BUENOS AIRES																												
55,000	-56.5	-71	-14	-12	-10	-70	-13	-11	-9	-64	-7	-4	-3	-65	-8	-6	-4	-67	-11	-7	-5	1274 N.M.I.						
40,000	-56.5	-52	4	7	8	-51	3	6	8	-52	5	7	8	-54	3	5	7	-53	4	6	8	4	4	4	3	4		
30,000	-44.5	-35	4	12	13	-36	4	11	12	-34	6	8	9	-36	9	11	12	-36	8	11	12	3	3	3	3	3		
20,000	-21.2	-7	14	16	17	-10	11	13	14	-14	7	9	10	-10	12	14	15	-10	11	13	15	3	3	3	3	3		
10,000	-4.6	9	13	15	16	7	11	13	14	2	7	8	9	6	10	12	13	6	10	13	14	3	3	2	3	3		
BRASILIA TO HAVANA																												
55,000	-56.5	-78	-21	-19	-18	-77	-20	-18	-17	-72	-16	-14	-13	-76	-19	-18	-17	-76	-19	-17	-15	3087 N.M.I.						
40,000	-56.5	-54	3	5	6	-52	4	6	7	-54	2	4	5	-54	3	4	5	-54	3	5	6	3	3	3	3	3		
30,000	-44.5	-33	12	13	14	-31	13	15	16	-32	12	13	14	-31	14	15	16	-32	13	14	15	2	2	2	2	2		
20,000	-21.2	-5	16	17	18	-5	16	17	18	-7	14	15	15	-6	16	17	17	-6	15	17	17	2	2	1	2	2		
10,000	-4.6	9	14	15	16	10	14	15	16	9	13	14	15	10	15	16	16	9	14	15	16	2	2	2	2	2		
BRASILIA TO KINGSTON																												
55,000	-56.5	-78	-21	-19	-18	-77	-21	-19	-18	-72	-16	-14	-13	-76	-19	-17	-16	-76	-19	-17	-15	2649 N.M.I.						
40,000	-56.5	-54	3	5	6	-52	3	7	8	-54	2	4	5	-54	3	4	5	-53	3	5	6	3	3	3	3	3		
30,000	-44.5	-32	12	13	14	-31	14	15	16	-32	12	14	14	-31	14	15	16	-31	13	15	16	2	2	2	2	2		
20,000	-21.2	-5	16	17	18	-5	16	17	18	-8	14	15	15	-6	16	17	17	-6	15	17	18	2	2	2	2	2		
10,000	-4.6	9	14	15	16	10	14	16	16	8	13	14	15	10	15	16	16	9	14	15	16	2	2	2	2	2		
BRASILIA TO LIMA																												
55,000	-56.5	-77	-20	-18	-16	-76	-19	-17	-16	-70	-14	-11	-10	-72	-15	-13	-12	-74	-17	-14	-12	1707 N.M.I.						
40,000	-56.5	-53	4	6	7	-52	3	7	8	-53	4	6	7	-54	3	5	6	-53	4	6	8	4	3	4	5	5		
30,000	-44.5	-32	13	14	15	-32	13	15	16	-33	12	13	14	-32	13	14	15	-32	12	14	15	2	3	3	3	3		
20,000	-21.2	-5	16	18	18	-5	16	17	18	-10	12	13	14	-7	15	16	17	-7	15	16	17	2	2	2	2	2		
10,000	-4.6	10	14	15	16	9	14	15	16	6	11	12	13	9	14	15	16	9	13	15	15	2	2	2	2	2		
BRASILIA TO MANAOS																												
55,000	-56.5	-77	-21	-18	-17	-76	-20	-18	-17	-71	-14	-12	-11	-73	-17	-15	-14	-75	-18	-15	-13	1043 N.M.I.						
40,000	-56.5	-53	3	5	6	-52	3	7	9	-53	4	5	6	-54	3	4	5	-53	4	6	8	3	4	3	3	3		
30,000	-44.5	-32	13	14	15	-30	14	16	17	-32	13	14	15	-31	14	16	16	-31	13	15	16	2	3	2	2	2		
20,000	-21.2	-5	17	18	19	-4	17	18	19	-8	15	16	15	-6	15	17	17	-6	15	17	18	2	2	2	2	2		
10,000	-4.6	10	14	16	16	10	15	16	17	7	12	13	14	10	15	16	17	9	14	15	16	2	2	2	2	2		
BRASILIA TO MONTEVIDEO																												
55,000	-56.5	-71	-14	-12	-10	-70	-13	-11	-9	-64	-7	-4	-3	-65	-8	-6	-4	-67	-11	-7	-5	1220 N.M.I.						
40,000	-56.5	-52	4	7	8	-51	3	6	8	-52	5	7	8	-54	3	5	7	-53	4	6	8	4	4	4	4	4		
30,000	-44.5	-35	10	12	13	-35	9	11	12	-34	6	8	9	-36	9	11	12	-36	8	11	12	3	3	3	3	3		
20,000	-21.2	-7	14	16	17	-10	11	13	14	-14	7	9	10	-10	12	13	15	-10	11	14	15	3	3	3	3	3		
10,000	-4.6	9	13	15	16	7	11	13	14	2	7	8	9	6	11	12	13	6	10	13	14	3	3	3	2	3		
BRASILIA TO NEW YORK																												
55,000	-56.5	-75	-18	-16	-15	-74	-17	-15	-14	-70	-14	-12	-11	-74	-17	-15	-14	-73	-17	-14	-13	3682 N.M.I.						
40,000	-56.5	-55	2	4	5	-54	2	5	6	-55	2	3	4	-54	2	4	5	-54	2	4	5	3	3	3	3	3		
30,000	-44.5	-36	9	10	11	-34	10	12	13	-35	11	13	13	-33	12	13	14	-34	11	12	13	2	2	2	2	2		
20,000	-21.2	-8	13	14	15	-8	13	15	16	-7	14	15	15	-7	14	16	16	-8	14	15	16	2	2	2	2	2		
10,000	-4.6	6	11	13	13	7	11	13	14	8	13	14	14	8	13	14	15	7	12	14	14	2	2	2	2	2		
BRASILIA TO PANAMA																												
55,000	-56.5	-78	-21	-19	-18	-77	-20	-18	-17	-72	-16	-13	-12	-75	-19	-17	-16	-76	-19	-16	-15	2394 N.M.I.						
40,000	-56.5	-53	3	5	6	-52	3	7	8	-54	3	4	5	-54	3	4	5	-53	3	6	7	3	3	3	3	3		
30,000	-44.5	-32	13	14	15	-30	14	16	17	-32	12	14	15	-31	14	15	16	-31	13	15	16	3	3	2	2	2		
20,000	-21.2	-5	17	18	19	-4	17	18	19	-8	13	14	15	-6	16	17	17	-6	16	17	18	2	2	2	2	2		
10,000	-4.6	10	14	16	16	10	15	16	17	8	13	14	15	10	15	16	17	10	14	15	16	2	2	2	2	2		
BRASILIA TO RIO DE JANEIRO																												
55,000	-56.5	-75	-19	-16	-15	-74	-18	-15	-14	-68	-11	-9	-7	-69	-13	-10	-9	-72	-15	-12	-10	495 N.M.I.						
40,000	-56.5	-52	4	7	8	-52	4	7	9	-52	5	7	8	-54	3	5	6	-52	4	6	7	4	4	4	4	5		
30,000	-44.5	-32	12	14	15	-33	11	13	14	-34	10	12	13	-35	11	13	14	-33	11	13	15	4	4	3	3	3		
20,000	-21.2	-5	16	18	19	-7	14	15	16	-10	11	13	14	-8	13	15	16	-8	13	16	17	3	3	3	3	3		
10,000	-4.6	9	14	15	16	9	13	15	16	5	10	11	12	8	13	15	15	8	12	14	15	2	2	2	2	2		
BRASILIA TO SAN JUAN																												
55,000	-56.5	-78	-21	-19	-18	-77	-21	-19	-18	-72	-16	-13	-12	-76	-19	-17	-16	-76	-19	-16	-15	2317 N.M.I.						
40,000	-56.5	-54	3	5	6	-52	4	6	7	-54	3	4	5	-54	3	4	5	-53	3	5	7	3	3	3	3	3		
30,000	-44.5	-33	12	13	14	-31	14	15	16	-32	12	14	14	-31	14	15	16	-32	13	14	15	2	2	2	2	2		
20,000	-21.2	-5	16	17	18	-5	16	18	18	-8	14	15	15	-6	16	17	17	-6	15	17	18	2	2	2	2	2		
10,000	-4.6	9	14	15	16	10	14	16	16	8	13	14	15	10	15	16	16	9	14	15	16	2	2	2	2	2		
BRASILIA TO SAO PAULO																												
55,000	-56.5	-75	-19	-16	-14	-74	-17	-15	-14	-68	-11	-8	-7	-69	-12	-10	-9	-71	-15	-11	-10	472 N.M.I.						
40,000	-56.5	-52	4	7	8	-52	4	7	9	-52	5	7	8	-54	3	5	6	-52	4	6	7	4	4	4	4	5		
30,000	-44.5	-32	12	14	15	-33	11	13	14	-35	10	12	13	-35	11	13	14	-33	11	13	14	4	4	3	3	3		
20,000	-21.2	-5	16	18	19	-8	14	15	16	-11	11	12	13	-8	13	15	16	-8	13	16	17	3	2	3	2	2		
10,000	-4.6	9	14	15	16	9	13	15	16	5	9	11	12	8	13	15	15	8	12	14	15	2	2	2	2	2		
BRISBANE TO DARWIN																												
55,000	-56.5	-78	-21	-19	-18	-76	-19	-17	-16	-74	-17	-15	-14	-74	-17	-15	-14	-75	-19	-16	-14	1538 N.M.I.						
40,000	-56.5	-52	4	6	7	-53	3	5	6	-54	2	4	5	-54	3	5	6	-53	3	5	6	3	4	3	3	4		
30,000	-44.5	-32	12	14	15	-34	11	12	13	-35	9	11	12	-35	10	12	13	-34	10	13	14	3	3	3	3	3		
20,000	-21.2	-7	15	16	17	-8	13	15	15	-10	11	13	13	-10	11	13	14	-9	13	14	15	2	2	2				

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
BRISBANE TO MOUNT ISA																	
55,000	-56.5	-75	-18	-16	-15	-75	-17	-16	-15	-70	-16	-12	-11	-72	-16	-15	-11
40,000	-56.5	-52	4	6	7	-54	3	5	6	-54	2	4	6	-54	3	5	7
30,000	-44.5	-31	11	13	14	-34	9	11	12	-37	7	10	11	-37	7	9	11
20,000	-21.2	-8	14	15	16	-10	11	13	14	-13	8	10	11	-12	9	11	12
10,000	-4.6	8	13	15	15	5	9	11	11	2	7	9	10	4	9	11	12
BRISBANE TO PORT MURSBY																	
55,000	-56.5	-74	-21	-19	-18	-74	-20	-17	-16	-74	-18	-16	-15	-74	-19	-17	-16
40,000	-56.5	-52	4	6	7	-54	3	5	6	-54	2	4	5	-54	3	5	6
30,000	-44.5	-32	11	13	15	-33	11	13	14	-35	10	12	13	-34	11	13	14
20,000	-21.2	-6	14	17	18	-8	13	15	16	-10	12	14	14	-9	12	14	14
10,000	-4.6	9	14	15	16	7	11	13	13	6	11	13	13	7	12	13	14
BRISBANE TO SYDNEY																	
55,000	-56.5	-69	-12	-10	-9	-64	-10	-7	-6	-63	-6	-4	-2	-62	-6	-4	-2
40,000	-56.5	-54	2	5	6	-55	2	4	6	-54	3	5	6	-54	3	5	7
30,000	-44.5	-37	8	10	11	-41	4	6	7	-43	1	4	5	-42	2	5	6
20,000	-21.2	-11	11	12	13	-15	6	8	10	-19	2	4	6	-16	5	7	8
10,000	-4.6	6	10	12	13	1	6	8	9	-5	2	4	5	0	5	7	8
BROWNSVILLE TO MEXICO CITY																	
55,000	-56.5	-75	-18	-16	-15	-75	-16	-14	-13	-75	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	0	2	3	-54	1	2	3	-54	2	3	4	-54	1	2	3
30,000	-44.5	-38	7	8	9	-37	8	9	9	-32	12	13	14	-35	11	12	13
20,000	-21.2	-10	11	11	14	-9	15	16	15	-6	15	16	16	-7	14	16	16
10,000	-4.6	7	11	13	14	9	14	16	17	10	15	16	16	10	14	15	16
BRUSSELS TO CAIRO																	
55,000	-56.5	-54	-2	1	3	-57	-0	2	3	-60	-3	-1	0	-61	-6	-2	-1
40,000	-56.5	-57	-0	3	5	-57	-0	3	5	-49	7	10	11	-54	0	3	4
30,000	-44.5	-49	-5	-2	-1	-46	-1	1	3	-35	9	12	13	-42	3	5	6
20,000	-21.2	-24	-3	0	2	-20	2	4	6	-10	11	13	14	-15	6	8	9
10,000	-4.6	-8	-5	-0	1	-5	1	4	6	4	11	13	14	1	6	8	9
BRUSSELS TO COLOGNE																	
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-50	6	9	10	-58	-1	1	3
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	9	11	-56	0	3	5
30,000	-44.5	-51	-6	-3	-2	-48	-3	-1	1	-41	4	6	8	-44	1	3	5
20,000	-21.2	-27	-5	-2	1	-23	-1	2	3	-14	7	9	10	-18	3	6	8
10,000	-4.6	-11	-6	-2	-0	-6	-2	1	3	2	6	8	10	-5	2	5	7
BRUSSELS TO COPENHAGEN																	
55,000	-56.5	-57	-0	3	5	-53	3	6	7	-49	8	10	11	-57	-1	2	3
40,000	-56.5	-54	-2	2	4	-55	2	6	8	-50	6	10	12	-56	0	4	5
30,000	-44.5	-51	-7	-4	-3	-49	-4	-1	-0	-41	3	6	7	-45	-0	3	4
20,000	-21.2	-24	-7	-3	-1	-24	-2	1	2	-15	6	9	10	-19	2	5	7
10,000	-4.6	-12	-8	-4	-2	-8	-5	0	2	1	5	7	9	-5	-0	3	5
BRUSSELS TO LARAR																	
55,000	-56.5	-65	-8	-5	-4	-63	-7	-4	-3	-65	-8	-6	-5	-66	-10	-8	-7
40,000	-56.5	-57	-0	3	5	-56	0	4	5	-53	4	6	7	-55	1	3	5
30,000	-44.5	-44	0	2	4	-41	4	5	6	-34	9	11	12	-38	4	6	8
20,000	-21.2	-14	4	6	7	-15	6	8	9	-9	12	14	14	-12	10	11	12
10,000	-4.6	-1	4	6	8	2	6	8	9	9	14	15	16	4	9	10	11
BRUSSELS TO OSSELDOOP																	
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-50	6	9	10	-58	-1	2	3
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	9	11	-56	0	3	5
30,000	-44.5	-51	-6	-3	-2	-48	-3	-1	1	-41	4	6	8	-44	0	3	5
20,000	-21.2	-27	-5	-2	1	-23	-1	2	3	-14	7	9	10	-18	3	6	8
10,000	-4.6	-11	-6	-2	-0	-6	-2	1	3	1	6	8	9	-5	2	5	7
BRUSSELS TO THAMMURI																	
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-51	6	8	10	-58	-1	1	3
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	9	10	-56	0	3	5
30,000	-44.5	-51	-6	-3	-2	-48	-3	-1	1	-40	4	6	7	-44	1	3	5
20,000	-21.2	-27	-5	-2	1	-22	-1	2	3	-14	7	9	10	-18	3	6	8
10,000	-4.6	-11	-6	-2	-0	-6	-2	1	3	2	6	8	9	-2	2	5	7
BRUSSELS TO GENOVA																	
55,000	-56.5	-57	-0	3	5	-54	3	5	6	-52	4	7	8	-58	-2	1	2
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-52	4	8	9	-56	0	3	5
30,000	-44.5	-50	-6	-3	-1	-47	-3	-0	1	-40	3	6	7	-45	1	4	5
20,000	-21.2	-26	-5	-1	1	-22	-0	2	3	-15	6	8	10	-17	4	7	8
10,000	-4.6	-9	-5	-1	1	-5	-1	2	3	5	7	9	11	-2	3	6	7
BRUSSELS TO GLASGOW																	
55,000	-56.5	-57	-1	2	4	-53	3	6	7	-49	7	10	11	-57	-1	2	4
40,000	-56.5	-58	-2	3	5	-55	2	7	9	-50	6	10	12	-56	0	4	6
30,000	-44.5	-50	-6	-4	-2	-48	-3	-1	1	-41	3	6	7	-45	-0	3	4
20,000	-21.2	-27	-5	-1	1	-23	-2	1	3	-15	6	8	10	-19	2	5	7
10,000	-4.6	-10	-5	-2	0	-7	-2	0	2	0	5	7	8	-5	1	4	6
BRUSSELS TO HAMBURG																	
55,000	-56.5	-57	-0	3	5	-53	3	6	7	-50	7	9	11	-57	-1	2	3
40,000	-56.5	-58	-2	2	4	-55	2	6	8	-51	6	9	11	-56	0	4	5
30,000	-44.5	-51	-6	-4	-2	-48	-4	-1	0	-41	4	6	7	-46	0	3	4
20,000	-21.2	-24	-6	-2	-0	-23	-2	1	3	-15	7	9	10	-19	2	6	8
10,000	-4.6	-12	-7	-3	-1	-7	-2	1	2	1	6	8	9	-4	1	4	6
BRUSSELS TO HELSINKI																	
55,000	-56.5	-57	-1	2	4	-53	4	6	8	-48	9	11	12	-56	0	3	4
40,000	-56.5	-59	-2	1	3	-54	3	7	9	-50	7	10	12	-56	1	4	6
30,000	-44.5	-52	-4	-5	-4	-49	-5	-2	-1	-42	5	6	7	-45	-1	2	3
20,000	-21.2	-30	-4	-6	-2	-25	-6	-0	2	-15	6	8	9	-20	1	4	6
10,000	-4.6	-14	-9	-5	-3	-9	-4	-1	1	-0	5	7	8	-6	-1	2	4

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
BRUSSELS TO ISTANBUL																					
55,000	-56.5	-56	0	4	5	-55	2	4	6	-53	3	6	7	-59	-2	0	2	5	4	5	1169 N.M.I.
40,000	-56.5	-56	-1	2	4	-56	0	4	6	-50	6	9	11	-56	0	3	4	5	5	4	5
30,000	-44.5	-51	-6	-4	-5	-47	-3	-0	1	-39	6	8	10	-43	2	4	5	4	4	4	5
20,000	-21.2	-26	-5	-2	0	-22	-0	3	4	-12	9	11	12	-17	4	7	8	5	4	3	4
10,000	-4.6	-11	-7	-3	-1	-5	-1	2	4	3	8	10	11	-2	3	6	7	5	4	3	4
BRUSSELS TO KANO																					
55,000	-56.5	-65	-9	-6	-5	-64	-7	-5	-4	-66	-10	-8	-7	-67	-10	-8	-7	4	3	3	2339 N.M.I.
40,000	-56.5	-56	1	4	5	-55	2	5	6	-52	5	7	8	-55	2	4	5	4	3	3	3
30,000	-44.5	-44	0	2	3	-40	4	6	7	-34	10	12	13	-38	6	8	9	3	3	3	3
20,000	-21.2	-18	3	6	7	-15	7	9	10	-8	13	15	16	-12	10	11	12	3	3	2	2
10,000	-4.6	-1	4	6	7	5	7	9	10	10	15	17	17	5	9	11	12	3	3	2	3
BRUSSELS TO KEFLAVIK																					
55,000	-56.5	-58	-1	2	4	-51	5	8	9	-47	9	12	13	-56	1	4	5	5	4	5	1159 N.M.I.
40,000	-56.5	-57	-1	4	6	-52	4	9	12	-49	8	12	14	-55	2	6	8	7	4	4	4
30,000	-44.5	-51	-7	-4	-5	-48	-3	-1	1	-43	2	4	6	-46	-1	2	3	4	4	6	5
20,000	-21.2	-28	-7	-3	-1	-25	-4	-1	1	-17	4	7	8	-21	-0	4	6	6	4	4	5
10,000	-4.6	-12	-7	-4	-2	-10	-5	-2	-0	-2	3	5	6	-5	-1	2	4	5	3	3	5
BRUSSELS TO KLOPOLOVITSE																					
55,000	-56.5	-69	-12	-10	-9	-68	-11	-9	-8	-69	-13	-11	-10	-70	-13	-11	-10	3	3	3	3565 N.M.I.
40,000	-56.5	-55	1	4	5	-54	3	5	7	-52	5	6	7	-54	3	4	5	4	4	3	3
30,000	-44.5	-41	4	5	6	-37	7	9	10	-35	11	13	14	-36	9	10	11	2	2	2	3
20,000	-21.2	-14	7	9	10	-12	10	11	12	-7	14	16	16	-10	11	13	13	3	3	2	2
10,000	-4.6	2	7	9	10	5	9	11	12	10	14	16	17	6	11	12	13	3	3	2	2
BRUSSELS TO LISBON																					
55,000	-56.5	-58	-2	1	3	-56	0	3	5	-55	1	4	5	-60	-3	-1	1	5	4	5	927 N.M.I.
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	3	6	8	-56	0	3	5	6	4	4	4
30,000	-44.5	-48	-4	-1	0	-46	-2	1	2	-38	6	8	10	-42	2	5	6	4	4	3	4
20,000	-21.2	-23	-2	1	3	-20	1	4	5	-12	9	11	12	-16	5	8	9	4	4	3	4
10,000	-4.6	-6	-2	2	3	-3	1	4	5	5	9	11	12	-0	4	7	8	5	4	3	4
BRUSSELS TO LONDON																					
55,000	-56.5	-57	-1	3	4	-54	3	5	7	-50	6	9	10	-58	-1	2	3	5	4	4	189 N.M.I.
40,000	-56.5	-58	-2	2	5	-55	1	6	8	-51	5	9	11	-56	0	4	5	6	4	5	5
30,000	-44.5	-50	-6	-3	-2	-48	-3	-0	1	-41	4	6	8	-46	1	3	5	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	7	9	10	-18	3	6	8	6	5	3	5
10,000	-4.6	-10	-5	-1	1	-6	-2	1	3	1	6	8	9	-2	2	5	7	5	4	3	4
BRUSSELS TO LOS ANGELES																					
55,000	-56.5	-58	-1	3	4	-52	4	7	8	-51	6	8	9	-56	0	3	4	5	4	4	4885 N.M.I.
40,000	-56.5	-55	1	6	8	-53	4	8	10	-50	6	10	11	-53	3	7	9	6	3	3	5
30,000	-44.5	-52	-8	-5	-4	-49	-4	-2	-0	-42	3	5	6	-46	-2	1	3	6	3	3	5
20,000	-21.2	-31	-10	-6	-4	-26	-5	-2	0	-16	5	8	9	-22	-1	3	5	4	4	4	4
10,000	-4.6	-16	-12	-8	-6	-11	-6	-3	-1	0	5	7	9	-7	-2	1	3	6	5	4	6
BUCHAREST TO BUDAPEST																					
55,000	-56.5	-56	1	4	6	-55	2	4	6	-53	4	6	7	-58	-2	1	2	5	4	5	335 N.M.I.
40,000	-56.5	-58	-1	2	4	-56	0	4	5	-50	7	9	11	-56	0	3	4	5	5	4	4
30,000	-44.5	-52	-7	-4	-3	-47	-3	-0	1	-39	6	8	10	-43	2	4	5	4	4	4	4
20,000	-21.2	-27	-6	-2	0	-22	-0	3	4	-12	9	11	12	-17	4	7	8	5	3	3	4
10,000	-4.6	-12	-8	-4	-2	-6	-1	2	4	5	7	9	11	-2	3	5	7	5	3	3	4
BUCHAREST TO CAIRO																					
55,000	-56.5	-60	-3	-0	1	-58	-2	0	2	-64	-7	-5	-4	-62	-6	-4	-2	4	3	3	898 N.M.I.
40,000	-56.5	-56	1	4	5	-56	0	4	5	-47	9	11	12	-56	0	3	4	4	3	3	3
30,000	-44.5	-48	-4	-2	-1	-45	-0	2	3	-32	13	15	16	-41	4	6	7	3	3	3	3
20,000	-21.2	-23	-1	1	3	-19	3	5	7	-8	13	15	16	-14	7	9	10	4	3	3	3
10,000	-4.6	-7	-3	0	1	-2	3	6	7	8	12	14	15	3	7	9	10	4	3	3	3
BUCHAREST TO COLOGNE																					
55,000	-56.5	-56	1	4	6	-54	2	5	6	-52	5	7	8	-54	-2	1	2	5	4	5	852 N.M.I.
40,000	-56.5	-58	-1	2	4	-56	0	4	5	-51	6	9	10	-56	0	3	4	5	5	4	4
30,000	-44.5	-51	-7	-4	-3	-48	-3	-1	1	-39	5	8	9	-43	1	4	5	4	4	4	4
20,000	-21.2	-27	-6	-2	0	-22	-1	2	4	-13	8	10	11	-18	4	7	8	5	4	3	4
10,000	-4.6	-12	-7	-4	-2	-6	-2	2	3	2	7	9	10	-2	2	5	7	5	3	3	4
BUCHAREST TO COPENHAGEN																					
55,000	-56.5	-56	1	4	5	-54	3	5	7	-50	6	9	10	-57	-1	2	3	5	4	5	841 N.M.I.
40,000	-56.5	-58	-2	2	4	-55	1	5	7	-50	5	9	11	-56	0	3	5	5	4	4	4
30,000	-44.5	-52	-7	-5	-4	-48	-4	-1	0	-40	4	7	8	-44	1	3	5	4	4	4	4
20,000	-21.2	-28	-7	-3	-1	-23	-2	1	3	-14	7	10	11	-18	3	6	8	4	3	3	5
10,000	-4.6	-13	-9	-5	-3	-7	-3	1	2	1	6	8	9	-4	1	4	6	6	3	3	5
BUCHAREST TO DHAKKA																					
55,000	-56.5	-61	-5	-2	-1	-60	-4	-1	-0	-66	-9	-7	-6	-64	-7	-5	-4	4	3	3	1596 N.M.I.
40,000	-56.5	-55	1	4	5	-55	2	5	7	-47	10	12	13	-56	1	3	4	4	3	3	3
30,000	-44.5	-47	-3	-0	1	-43	1	4	5	-30	15	17	18	-40	5	7	8	3	3	3	3
20,000	-21.2	-21	-0	2	4	-17	4	7	8	-6	16	18	19	-13	8	10	11	4	4	3	3
10,000	-4.6	-6	-1	2	3	0	5	8	9	11	15	17	18	4	8	11	12	4	4	3	3
BUCHAREST TO DUSSELDORF																					
55,000	-56.5	-56	1	4	6	-54	2	5	6	-51	5	7	8	-54	-2	1	2	5	4	5	874 N.M.I.
40,000	-56.5	-58	-1	2	4	-56	1	4	6	-51	6	9	10	-56	0	3	4	5	5	4	4
30,000	-44.5	-51	-7	-4	-3	-48	-3	-1	1	-40	5	7	9	-43	1	4	5	4	4	4	4
20,000	-21.2	-27	-6	-2	0	-22	-1	2	4	-13	8	10	11	-18	4	6	8	5	3	3	4
10,000	-4.6	-12	-7	-4	-2	-6	-2	1	3	2	7	9	10	-2	2	5	7	5	3	3	4
BUCHAREST TO FRANKFURT																					
55,000	-56.5	-56	1	4	6	-54	2	5	6	-52	5	7	8	-58	-2	1	2	5	4	5	784 N.M.I.
40,000	-56.5	-58	-1	2	4	-56	0	4	6	-51	6	9	10	-56	0	3	4	5	5	4	4
30,000	-44.5	-51	-7	-4	-3	-48	-3	-1	1	-39	5	8	9	-43	1	4	5	4	4	4	4
20,000	-21.2	-21	-0	2	4	-17	4	7	8	-6	16	18	19	-13	8	10	11	4	4	3	3
10,000	-4.6	-12	-7	-4	-2	-6	-1	2	3	2	7	9	10	-2	2	5	7	5	3	3	4

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	154 TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION									
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
BUCHAREST 10 GENOVA																											
55,000	-54.5	-56	1	4	6	-55	2	4	6	-53	5	6	7	-59	-2	0	2	-56	1	4	5	046 N.M.I.					
40,000	-56.5	-58	-1	2	4	-57	0	3	5	-51	5	6	10	-56	0	3	6	-56	1	5	7	5	4	3	4		
30,000	-64.5	-51	-6	-4	-2	-47	-3	-0	1	-39	6	0	10	-63	2	4	6	-65	-0	3	5	5	5	4	4		
20,000	-21.2	-26	-5	-2	0	-21	-0	3	4	-12	9	11	12	-17	4	7	8	-19	2	5	7	5	4	3	4		
10,000	-4.6	-11	-6	-3	-1	-5	-1	2	4	5	8	10	11	-2	5	6	7	-6	1	5	6	5	4	3	4		
BUCHAREST 10 GLASGOW																											
55,000	-56.5	-56	0	3	5	-54	3	5	7	-50	6	9	10	-54	-1	2	3	-54	2	5	7	1335 N.M.I.					
40,000	-56.5	-58	-2	2	4	-55	1	5	7	-50	6	10	11	-56	0	3	5	-55	2	6	8	5	4	3	4		
30,000	-64.5	-51	-7	-4	-3	-48	-3	-1	1	-40	6	7	8	-44	0	3	5	-46	-1	2	4	4	4	4	4		
20,000	-21.2	-27	-6	-2	-0	-23	-2	1	3	-14	7	9	10	-18	5	6	8	-21	0	4	6	6	5	3	5		
10,000	-4.6	-12	-7	-4	-2	-7	-2	1	2	1	6	8	9	-5	1	4	6	-5	-1	3	5	5	5	3	5		
BUCHAREST 10 HAMBURG																											
55,000	-56.5	-56	1	4	5	-54	3	5	6	-51	6	8	9	-50	-1	1	3	-55	2	5	7	834 N.M.I.					
40,000	-56.5	-58	-2	2	4	-55	1	4	6	-50	6	9	11	-56	0	3	5	-55	1	5	7	5	5	4	4		
30,000	-64.5	-52	-7	-5	-3	-48	-4	-1	0	-40	5	7	9	-44	1	3	5	-46	-1	2	4	5	5	4	4		
20,000	-21.2	-28	-6	-3	-1	-23	-1	2	3	-13	8	10	11	-18	5	6	8	-20	1	4	6	6	5	1	5		
10,000	-4.6	-13	-8	-4	-2	-7	-2	1	3	2	6	8	10	-5	1	4	6	-5	-1	3	5	6	5	3	5		
BUCHAREST 10 HELSINKI																											
55,000	-56.5	-56	0	4	5	-53	3	6	7	-49	8	10	11	-57	-0	2	4	-54	3	6	8	950 N.M.I.					
40,000	-56.5	-59	-2	1	3	-55	2	5	7	-50	7	10	11	-55	1	4	6	-55	2	6	8	5	5	4	4		
30,000	-64.5	-53	-8	-6	-4	-49	-4	-1	0	-40	6	7	8	-45	-0	3	4	-47	-2	2	4	4	4	4	4		
20,000	-21.2	-29	-8	-6	-2	-24	-2	1	3	-14	7	9	11	-19	2	5	7	-22	-0	3	6	6	5	3	5		
10,000	-4.6	-15	-10	-6	-4	-8	-3	0	2	1	5	7	9	-5	-0	3	5	-7	-2	2	4	6	5	1	5		
BUCHAREST 10 ISTANBUL																											
55,000	-56.5	-56	0	3	5	-55	1	3	5	-56	0	2	3	-59	-3	-1	1	-57	-0	2	4	246 N.M.I.					
40,000	-56.5	-57	-1	3	4	-56	0	4	5	-48	8	11	12	-56	0	3	6	-54	2	6	8	4	5	3	4		
30,000	-64.5	-51	-7	-4	-3	-46	-2	0	2	-36	8	11	12	-62	2	5	6	-64	0	4	6	5	5	4	4		
20,000	-21.2	-26	-5	-2	0	-21	1	4	5	-11	10	12	13	-16	5	7	9	-18	3	6	8	5	5	3	5		
10,000	-4.6	-11	-6	-3	-1	-4	1	4	5	4	9	11	12	-1	4	7	8	-3	2	5	7	5	5	3	4		
BUCHAREST 10 KARACHI																											
55,000	-56.5	-62	-5	-2	-1	-61	-6	-2	-0	-64	-9	-7	-5	-64	-7	-5	-3	-63	-6	-3	-2	2509 N.M.I.					
40,000	-56.5	-55	1	4	6	-55	2	5	7	-47	10	12	13	-55	1	4	5	-53	3	7	9	4	5	4	4		
30,000	-64.5	-46	-2	1	2	-62	2	5	6	-30	15	17	19	-39	5	8	9	-39	5	9	12	4	4	3	4		
20,000	-21.2	-21	-0	3	4	-16	6	8	10	-5	16	18	19	-15	8	10	12	-14	7	11	13	4	4	3	5		
10,000	-4.6	-6	-1	2	4	2	6	9	10	11	16	18	19	4	8	11	12	3	7	11	13	5	4	3	4		
BUCHAREST 10 LISBON																											
55,000	-56.5	-57	-1	2	4	-56	0	3	4	-57	-0	2	3	-60	-4	-1	0	-58	-1	2	3	1603 N.M.I.					
40,000	-56.5	-58	-1	2	4	-58	-1	2	4	-52	5	7	9	-56	0	3	4	-56	1	4	6	5	5	4	4		
30,000	-64.5	-49	-4	-2	-1	-46	-2	1	2	-38	7	9	10	-42	3	5	7	-46	1	4	6	4	4	3	4		
20,000	-21.2	-24	-3	1	2	-20	1	4	5	-11	10	12	13	-16	6	8	9	-16	4	7	9	4	4	3	4		
10,000	-4.6	-7	-3	0	2	-5	2	6	6	6	10	12	14	-0	5	7	8	-1	3	7	9	5	4	3	4		
BUCHAREST 10 LONDON																											
55,000	-56.5	-56	0	4	5	-54	2	5	6	-51	5	7	9	-50	-2	1	2	-55	2	5	6	1137 N.M.I.					
40,000	-56.5	-58	-2	2	4	-54	1	4	6	-51	6	9	10	-56	0	3	5	-55	1	5	7	5	5	4	4		
30,000	-64.5	-51	-6	-4	-2	-48	-3	-1	1	-40	5	7	9	-45	1	4	5	-45	-1	3	5	4	4	4	4		
20,000	-21.2	-27	-6	-2	0	-22	-1	2	4	-13	8	10	11	-18	4	7	8	-20	1	5	7	5	5	3	4		
10,000	-4.6	-11	-7	-3	-1	-6	-1	2	3	2	7	9	10	-2	2	5	7	-4	0	4	6	5	4	3	4		
BUCHAREST 10 MADRID																											
55,000	-56.5	-57	-0	3	5	-56	1	3	5	-56	0	3	4	-60	-3	-1	0	-57	-1	2	4	1527 N.M.I.					
40,000	-56.5	-58	-1	2	4	-57	-1	3	4	-52	5	8	9	-56	0	3	4	-56	1	4	6	5	5	4	4		
30,000	-64.5	-49	-5	-2	-1	-46	-2	1	2	-38	7	9	10	-42	2	5	6	-46	1	4	6	4	4	1	4		
20,000	-21.2	-25	-3	-0	2	-20	1	4	5	-11	10	12	13	-16	5	0	9	-18	3	7	8	5	4	3	4		
10,000	-4.6	-8	-6	-0	1	-4	1	4	5	5	10	12	13	-0	4	7	8	-2	5	6	8	5	4	3	4		
BUCHAREST 10 MOSCOW																											
55,000	-56.5	-56	1	4	6	-53	3	6	7	-49	7	9	11	-57	-0	2	4	-54	3	6	8	812 N.M.I.					
40,000	-56.5	-58	-2	1	3	-55	1	5	7	-49	7	10	11	-55	1	4	6	-54	2	6	8	5	5	4	4		
30,000	-64.5	-53	-8	-6	-4	-47	-3	-0	2	-39	5	8	9	-44	1	3	5	-46	-1	3	5	4	4	4	4		
20,000	-21.2	-28	-7	-3	-1	-22	-1	2	4	-13	8	10	11	-19	2	6	7	-21	0	4	6	6	5	3	5		
10,000	-4.6	-14	-9	-6	-4	-6	-2	2	4	1	6	8	9	-4	0	4	5	-6	-1	2	4	6	5	3	5		
BUCHAREST 10 MUNICH																											
55,000	-56.5	-56	1	4	6	-55	2	4	6	-52	4	6	8	-58	-2	1	2	-55	1	4	6	613 N.M.I.					
40,000	-56.5	-58	-1	2	4	-56	0	3	5	-51	5	8	10	-56	0	3	4	-55	1	5	7	5	4	3	4		
30,000	-64.5	-51	-7	-4	-3	-47	-3	-0	1	-39	6	9	10	-43	2	4	5	-45	-1	3	5	4	4	4	4		
20,000	-21.2	-27	-6	-2	0	-22	-1	2	4	-15	9	11	12	-17	4	7	8	-20	2	5	7	4	4	3	4		
10,000	-4.6	-12	-7	-4	-2	-6	-1	2	3	3	7	10	11	-2	3	5	7	-4	0	4	6	5	5	3	4		
BUCHAREST 10 OSLO																											
55,000	-56.5	-56	0	3	5	-53	3	6	7	-49	7	10	11	-57	-1	2	3	-54	3	6	7	1079 N.M.I.					
40,000	-56.5	-58	-2	2	4	-55	2	4	6	-50	7	10	12	-56	0	4	5	-55	2	6	8	5	4	3	4		
30,000	-64.5	-52	-8	-5	-4	-49	-4	-2	-0	-41	6	6	8	-45	-0	3	4	-47	-2	2	4	4	4	4	4		
20,000	-21.2	-29	-8	-6	-2	-24	-3	1	2	-14	7	9	10	-19	2	5	7	-22	-0	3	5	4	4	3	5		
10,000	-4.6	-14	-9	-5	-3	-8	-3	-0	2	1	5	8	9	-5	-0	3	5	-6	-2	2	4	6	5	3	5		
BUCHAREST 10 PARIS																											
55,000	-56.5	-56	0	4	5	-54	2	5	6	-52	4	7	8	-58	-2	1	2	-55	1	4	6	1004 N.M.I.					
40,000	-56.5	-58	-1	2	4	-56	0	3	5	-51	5	8	10	-56	0	3	4	-55	1	5	7	5	4	3	4		
30,000	-64.5	-51	-6	-4	-2	-47	-3	-0	1	-39	5	8	9	-43	1	4	5	-45	-1	3	5	4	4	4	4		
20,000	-21.2	-27	-5	-2	0	-22	-1	2	4	-13	8	10	11	-17	4	7	8	-20	2	5	7	4	4	3	4		
10,000	-4.6	-11	-6	-3	-1	-6	-1	2	3	3	7	9	11	-2	3	6	7	-4	1	4	6	5	4	3	4		
BUCHAREST 10 PRAGUE																											
55,000	-56.5	-56	1	4	6	-54	2	5	6	-52	5	7	8	-58	-2	1	2	-55	2	4	6	585 N.M.I.					
40,000	-56.5	-58	-1	2	4	-56	1	4	6	-50	6	9	11	-56	0	3	4	-55	1	5	7	5	5	4	4		
30,000	-64.5	-52	-7	-4	-3	-48	-3	-1	1	-39	5	8	9	-43	1	4	5	-45	-1	3	5	4	4	4	4		
20,000	-21.2	-27	-6	-2	0	-22	-1	2	4	-13	8	10	11	-18													

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50-050	075	085	50-050	075	085	50-050	075	085	50-050	075	085	50-050	075	085	
BUCHAREST TO ROME																	
51,000	-56.5	-56	0	4	5	-55	1	4	5	-56	1	5	4	-57	-0	3	4
40,000	-56.5	-57	-1	3	4	-57	-1	3	5	-50	7	9	11	-56	0	3	4
30,000	-44.5	-51	-6	-4	-2	-47	-2	0	2	-38	7	9	10	-42	2	5	4
20,000	-21.2	-26	-4	-1	0	-21	1	3	5	-11	10	12	15	-16	5	7	9
10,000	-4.6	-10	-5	-2	-1	-4	0	3	5	4	9	11	12	-1	4	6	8
BUCHAREST TO SHANNON																	
51,000	-56.5	-56	0	3	5	-54	3	5	6	-51	5	8	9	-58	-1	1	3
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	6	9	11	-56	0	3	5
30,000	-44.5	-51	-6	-4	-2	-48	-5	-0	1	-40	4	7	8	-44	1	4	5
20,000	-21.2	-27	-5	-2	0	-22	-1	2	4	-14	8	10	11	-18	3	6	8
10,000	-4.6	-11	-6	-3	-1	-6	-2	1	3	2	6	9	10	-2	2	5	7
BUCHAREST TO STOCKHOLM																	
51,000	-56.5	-56	0	4	5	-53	3	6	7	-49	7	10	11	-57	-0	2	3
40,000	-56.5	-58	-2	1	3	-55	2	5	7	-50	7	10	11	-56	1	4	5
30,000	-44.5	-53	-4	-5	-4	-49	-4	-2	-0	-40	4	7	8	-44	0	3	4
20,000	-21.2	-29	-6	-2	-4	-24	-2	1	3	-14	7	9	10	-19	2	5	7
10,000	-4.6	-14	-10	-6	-4	-8	-3	0	2	1	6	8	9	-5	-0	3	5
BUCHAREST TO TEMERAN																	
51,000	-56.5	-57	-1	2	3	-56	0	2	4	-60	-4	-2	-0	-60	-4	-1	0
40,000	-56.5	-58	0	3	5	-55	1	4	6	-47	9	12	13	-56	0	3	4
30,000	-44.5	-56	-5	-3	-2	-45	-0	2	3	-32	12	15	16	-42	3	5	6
20,000	-21.2	-25	-4	-1	1	-19	2	5	7	-8	14	16	17	-15	6	8	9
10,000	-4.6	-9	-5	-1	1	-2	3	6	7	8	12	14	15	1	6	9	10
BUCHAREST TO TEL AVIV-JAFFA																	
51,000	-56.5	-57	-2	1	2	-58	-1	1	2	-63	-7	-4	-3	-62	-5	-3	-2
40,000	-56.5	-58	0	1	3	-56	0	4	6	-47	9	11	12	-56	0	2	4
30,000	-44.5	-56	-5	-2	-1	-45	-1	2	3	-32	12	14	16	-41	3	6	7
20,000	-21.2	-25	-2	1	2	-19	2	5	6	-13	13	15	16	-15	7	9	10
10,000	-4.6	-8	-1	1	1	-2	3	5	7	7	12	14	15	2	7	9	10
BUCHAREST TO VIENNA																	
51,000	-56.5	-56	1	4	6	-54	2	4	6	-52	4	6	8	-56	-2	1	2
40,000	-56.5	-58	-1	2	4	-46	0	4	5	-50	7	9	11	-56	0	3	4
30,000	-44.5	-51	-7	-4	-3	-47	-5	-0	1	-39	6	8	10	-43	1	4	5
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	4	-13	9	11	12	-17	4	7	8
10,000	-4.6	-12	-8	-4	-2	-6	-1	2	4	3	7	9	11	-2	2	5	7
BUCHAREST TO WARSAW																	
51,000	-56.5	-56	1	4	6	-54	3	5	6	-51	6	8	9	-58	-1	1	3
40,000	-56.5	-58	-1	2	4	-56	1	4	6	-50	7	9	11	-56	0	3	4
30,000	-44.5	-52	-7	-5	-4	-48	-3	-1	1	-39	5	8	9	-43	1	4	5
20,000	-21.2	-28	-6	-3	-1	-22	-1	2	4	-13	8	10	11	-18	3	6	8
10,000	-4.6	-13	-8	-5	-3	-6	-2	1	3	2	7	9	10	-3	1	5	6
BUCHAREST TO ZURICH																	
51,000	-56.5	-56	1	4	6	-55	2	4	6	-53	4	6	7	-59	-2	0	2
40,000	-56.5	-58	-1	2	4	-57	-0	3	5	-51	6	9	10	-56	0	3	4
30,000	-44.5	-51	-7	-4	-3	-47	-3	-0	1	-39	6	8	9	-43	2	4	6
20,000	-21.2	-27	-5	-2	-0	-22	-0	1	4	-13	9	11	12	-17	4	7	8
10,000	-4.6	-11	-7	-3	-1	-6	-1	2	4	3	8	10	11	-2	3	6	7
BUDAPEST TO CAIRO																	
51,000	-56.5	-59	-2	0	2	-58	-1	1	2	-62	-5	-3	-2	-62	-5	-3	-2
40,000	-56.5	-56	0	1	3	-56	0	3	5	-48	8	11	12	-56	0	3	4
30,000	-44.5	-49	-4	-2	-1	-45	-1	2	3	-35	11	13	14	-41	3	6	7
20,000	-21.2	-25	-2	1	2	-19	2	5	6	-9	13	14	15	-15	6	8	10
10,000	-4.6	-8	-1	1	1	-2	2	5	6	7	11	13	14	2	6	9	10
BUDAPEST TO COLOGNE																	
51,000	-56.5	-56	1	4	6	-54	2	5	6	-51	6	8	9	-58	-1	1	3
40,000	-56.5	-58	-2	2	4	-56	1	4	6	-51	5	8	10	-56	0	3	5
30,000	-44.5	-51	-7	-4	-3	-48	-3	-1	1	-40	4	7	8	-44	1	4	5
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	3	-14	8	10	11	-18	3	6	8
10,000	-4.6	-12	-7	-4	-2	-6	-2	1	3	2	7	9	10	-3	2	5	7
BUDAPEST TO COPENHAGEN																	
51,000	-56.5	-56	0	4	5	-55	3	6	7	-49	7	9	11	-57	-1	2	3
40,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	6	9	11	-56	0	3	5
30,000	-44.5	-52	-7	-5	-3	-49	-4	-2	-0	-41	4	6	8	-44	0	3	4
20,000	-21.2	-28	-7	-5	-1	-23	-2	1	3	-14	7	9	10	-19	2	6	7
10,000	-4.6	-13	-9	-5	-3	-8	-1	0	2	1	6	8	9	-4	0	4	5
BUDAPEST TO OHANRRAN																	
51,000	-56.5	-60	-4	-1	1	-59	-3	-0	1	-64	-7	-5	-4	-63	-6	-4	-3
40,000	-56.5	-56	1	4	5	-55	1	5	6	-47	9	11	13	-56	1	3	4
30,000	-44.5	-48	-3	-1	0	-44	1	3	4	-31	13	15	16	-40	4	7	8
20,000	-21.2	-22	-1	2	3	-18	3	6	7	-7	14	16	17	-14	7	9	11
10,000	-4.6	-7	-2	1	2	-1	4	7	8	9	14	16	17	3	7	10	11
BUDAPEST TO DUSSELDORF																	
51,000	-56.5	-56	1	4	6	-54	3	5	6	-51	6	8	9	-58	-1	1	3
40,000	-56.5	-58	-2	2	4	-56	1	4	6	-51	5	8	10	-56	0	3	5
30,000	-44.5	-51	-7	-4	-3	-48	-3	-1	1	-40	4	7	8	-44	1	4	5
20,000	-21.2	-27	-6	-2	-0	-23	-1	2	3	-14	8	10	11	-18	3	6	8
10,000	-4.6	-12	-7	-4	-2	-7	-2	1	3	2	7	9	10	-3	2	5	7
BUDAPEST TO FRANKFURT																	
51,000	-56.5	-56	1	4	6	-54	2	5	6	-51	5	8	9	-58	-1	1	2
40,000	-56.5	-58	-2	2	4	-56	0	4	6	-51	5	8	10	-56	0	3	5
30,000	-44.5	-51	-7	-4	-3	-48	-3	-1	1	-40	4	7	8	-44	1	4	5
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	3	-13	8	10	11	-18	3	6	8
10,000	-4.6	-12	-7	-4	-2	-6	-2	1	3	2	7	9	10	-3	2	5	7

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES												STANDARD DEVIATION				
		JANUARY				APRIL				JULY				OCTOBER				
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	JAN	APR	JUL	OCT
BUDAPEST TO GENEVA																		
55,000	-56.5	-56	1	4	6	-55	2	4	6	-55	4	6	8	-56	-2	0	2	543 N.M.I.
40,000	-56.5	-56	2	2	4	-57	0	3	5	-52	5	7	9	-56	0	3	4	5
30,000	-56.5	-51	-6	-3	-2	-67	-3	0	1	-39	5	8	9	-66	1	4	6	5
20,000	-21.2	-27	-5	0	0	-22	0	-2	4	-15	8	11	12	-17	4	7	8	5
10,000	-4.6	-10	-6	-2	0	-6	-1	2	3	3	8	10	11	-2	5	6	7	5
BUDAPEST TO GLASGOW																		
55,000	-56.5	-57	-0	3	5	-53	3	6	7	-49	7	9	11	-57	-1	2	3	1003 N.M.I.
40,000	-56.5	-58	-2	2	4	-55	2	6	8	-50	6	10	11	-56	0	4	5	5
30,000	-56.5	-51	-7	-4	-3	-68	-8	-1	0	-41	4	6	8	-64	0	3	4	5
20,000	-21.2	-27	-6	-2	0	-23	-2	1	3	-15	7	9	10	-19	2	4	7	5
10,000	-4.6	-17	-7	-3	-1	-7	-3	0	2	1	6	8	9	-4	1	4	6	5
BUDAPEST TO HAMBURG																		
55,000	-56.5	-56	0	4	5	-54	3	5	7	-50	7	9	10	-58	-1	2	3	512 N.M.I.
40,000	-56.5	-56	-2	2	4	-55	1	5	7	-51	6	9	11	-56	0	3	5	5
30,000	-56.5	-52	-7	-4	-3	-68	-8	-1	0	-40	4	7	8	-64	1	3	5	5
20,000	-21.2	-28	-7	-3	-1	-23	-2	1	3	-14	7	9	11	-18	3	6	8	5
10,000	-4.6	-13	-8	-4	-2	-7	-3	1	2	1	6	8	9	-4	1	4	6	5
BUDAPEST TO HELSINKI																		
55,000	-56.5	-56	0	3	5	-53	3	6	7	-48	8	10	12	-56	0	3	4	798 N.M.I.
40,000	-56.5	-59	-2	1	3	-55	2	6	8	-50	6	10	11	-56	1	4	6	5
30,000	-56.5	-53	-8	-6	-4	-69	-5	-2	-1	-41	4	6	8	-65	-0	2	4	5
20,000	-21.2	-30	-10	-8	-2	-24	-5	0	2	-15	7	9	10	-20	1	5	7	5
10,000	-4.6	-15	-10	-8	-4	-9	-4	-1	1	0	5	7	8	-5	-1	3	5	5
BUDAPEST TO																		

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085			50 050 075 085			50 050 075 085			50 050 075 085			50 050 075 085			
BUDAPEST TO PRAGUE																	
55,000	-56.5	-56	1	4	6	-54	2	5	6	-51	6	8	9	-58	-1	1	2
40,000	-56.5	-58	-2	2	4	-56	1	4	6	-51	6	8	9	-58	0	3	4
30,000	-44.5	-51	-7	-4	-3	-48	-5	-1	0	-40	5	7	8	-43	1	4	5
20,000	-21.2	-27	-6	-2	-1	-23	-1	2	3	-13	8	10	11	-18	3	6	8
10,000	-4.6	-12	-8	-4	-2	-7	-2	1	3	-2	7	9	10	-5	2	5	7
BUDAPEST TO ROME																	
55,000	-56.5	-56	0	4	5	-55	1	4	5	-54	2	4	6	-59	-5	-0	1
40,000	-56.5	-58	-1	2	4	-57	-1	3	5	-51	6	8	10	-56	0	3	4
30,000	-44.5	-50	-6	-3	-2	-47	-3	0	1	-38	6	9	10	-43	2	5	6
20,000	-21.2	-26	-5	-1	0	-21	0	3	4	-12	9	11	12	-17	5	7	9
10,000	-4.6	-10	-6	-2	-0	-5	-0	2	4	4	9	11	12	-1	3	6	8
BUDAPEST TO SANTA MARIA																	
55,000	-56.5	-58	-2	1	3	-56	0	3	4	-60	-4	-1	0	-58	-1	2	3
40,000	-56.5	-58	-2	2	4	-58	-1	2	4	-56	0	3	4	-57	-0	4	5
30,000	-44.5	-48	-4	-1	0	-46	-1	1	3	-38	6	9	10	-42	3	5	7
20,000	-21.2	-23	-2	2	3	-20	2	4	6	-12	10	12	15	-15	6	8	10
10,000	-4.6	-6	-2	2	3	-5	1	4	6	5	9	11	12	0	5	7	9
BUDAPEST TO SHANNON																	
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-50	6	8	10	-58	-1	2	3
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	6	9	11	-56	0	4	5
30,000	-44.5	-51	-6	-3	-2	-48	-3	-1	1	-40	4	7	8	-44	1	3	5
20,000	-21.2	-26	-5	-1	1	-23	-1	2	4	-14	7	9	11	-18	3	6	8
10,000	-4.6	-11	-6	-2	-0	-6	-2	1	3	1	6	8	9	-5	2	5	7
BUDAPEST TO STOCKHOLM																	
55,000	-56.5	-56	0	5	5	-55	3	6	7	-48	8	10	11	-57	-0	2	4
40,000	-56.5	-58	-2	1	3	-55	2	6	8	-50	6	10	11	-56	1	4	5
30,000	-44.5	-52	-8	-5	-4	-49	-5	-2	-1	-41	4	6	8	-45	-0	2	4
20,000	-21.2	-27	-8	-4	-2	-24	-3	0	2	-15	7	9	10	-20	2	5	7
10,000	-4.6	-14	-10	-6	-4	-9	-4	-1	1	1	5	7	8	-5	-1	3	5
BUDAPEST TO THERMAN																	
55,000	-56.5	-57	-0	3	4	-56	1	3	4	-58	-1	1	2	-59	-5	-0	1
40,000	-56.5	-57	-0	3	4	-55	1	4	6	-48	9	11	12	-56	0	3	4
30,000	-44.5	-50	-6	-3	-2	-45	-1	2	3	-34	11	13	14	-42	2	5	6
20,000	-21.2	-25	-4	-1	1	-19	2	5	6	-9	12	14	15	-16	5	8	9
10,000	-4.6	-10	-6	-2	-0	-5	2	5	6	6	11	13	14	0	5	8	9
BUDAPEST TO TEL AVIV-JAFFA																	
55,000	-56.5	-58	-2	1	3	-57	-0	2	3	-61	-4	-2	-1	-59	-5	-0	1
40,000	-56.5	-58	-2	1	3	-56	0	4	5	-48	9	11	12	-56	0	2	4
30,000	-44.5	-49	-5	-3	-2	-46	-1	1	2	-34	11	13	14	-41	3	5	6
20,000	-21.2	-24	-3	-0	2	-20	2	4	6	-9	12	14	15	-15	6	8	9
10,000	-4.6	-9	-4	-1	0	-5	2	5	6	6	11	13	14	1	6	8	9
BUDAPEST TO VIENNA																	
55,000	-56.5	-56	1	4	6	-54	2	5	6	-51	5	7	9	-58	-2	1	2
40,000	-56.5	-58	-1	2	4	-56	0	4	5	-51	6	9	10	-56	0	3	4
30,000	-44.5	-51	-7	-4	-3	-48	-5	-1	1	-40	5	7	8	-43	1	4	5
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	4	-15	8	10	11	-18	3	6	8
10,000	-4.6	-12	-8	-4	-2	-6	-2	1	3	-2	7	9	10	-5	2	5	7
BUDAPEST TO WANSAN																	
55,000	-56.5	-56	1	4	6	-54	3	5	7	-50	7	9	10	-57	-1	2	3
40,000	-56.5	-58	-2	2	4	-55	1	4	6	-51	6	9	10	-56	0	3	4
30,000	-44.5	-52	-7	-5	-4	-48	-4	-1	0	-40	4	7	8	-44	1	3	5
20,000	-21.2	-28	-7	-5	-1	-23	-2	1	3	-14	8	10	11	-18	3	6	8
10,000	-4.6	-13	-9	-5	-3	-7	-3	0	2	-2	6	8	9	-4	1	4	6
BUDAPEST TO ZURICH																	
55,000	-56.5	-56	1	4	6	-54	2	5	6	-52	4	7	8	-58	-2	1	2
40,000	-56.5	-58	-2	2	4	-57	-0	3	5	-52	5	8	9	-56	0	3	4
30,000	-44.5	-51	-6	-4	-2	-48	-5	-0	1	-39	5	7	8	-43	1	4	5
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	4	-13	8	10	11	-17	4	7	8
10,000	-4.6	-11	-7	-3	-1	-6	-1	2	1	3	7	9	11	-2	5	6	7
BUENOS AIRES TO CANACAS																	
55,000	-56.5	-75	-18	-16	-15	-74	-18	-15	-14	-69	-12	-10	-9	-71	-14	-12	-11
40,000	-56.5	-53	3	6	7	-53	4	6	8	-53	4	5	6	-54	3	5	7
30,000	-44.5	-33	11	13	14	-32	12	14	15	-35	10	11	12	-33	12	14	14
20,000	-21.2	-6	15	17	18	-6	15	16	17	-11	10	12	13	-7	14	15	16
10,000	-4.6	9	14	15	16	8	13	15	15	6	10	12	12	8	13	14	15
BUENOS AIRES TO CHICAGO																	
55,000	-56.5	-73	-17	-15	-14	-72	-16	-14	-12	-69	-13	-11	-10	-72	-15	-13	-12
40,000	-56.5	-54	2	4	6	-54	3	5	6	-54	2	4	5	-54	2	4	5
30,000	-44.5	-36	9	10	11	-35	10	11	12	-34	10	12	12	-34	11	13	13
20,000	-21.2	-8	13	14	15	-8	13	15	16	-9	12	13	14	-8	13	14	15
10,000	-4.6	7	11	13	14	7	11	13	14	7	11	13	13	8	12	14	15
BUENOS AIRES TO COPENHAGEN																	
55,000	-56.5	-70	-11	-11	-9	-69	-12	-10	-8	-66	-9	-7	-6	-69	-12	-10	-9
40,000	-56.5	-55	1	4	5	-55	2	5	6	-53	4	6	7	-54	2	4	5
30,000	-44.5	-39	6	7	8	-37	7	9	10	-36	9	11	12	-36	9	11	12
20,000	-21.2	-12	9	11	12	-11	10	12	13	-10	11	13	14	-10	11	13	14
10,000	-4.6	4	8	10	11	4	8	10	11	6	10	12	13	5	10	12	13
BUENOS AIRES TO CORDOBA																	
55,000	-56.5	-64	-8	-5	-4	-64	-7	-5	-3	-58	-2	1	3	-59	-3	-0	1
40,000	-56.5	-54	3	6	8	-56	1	4	6	-52	5	8	9	-54	3	6	7
30,000	-44.5	-39	5	8	9	-39	5	8	9	-44	0	2	4	-38	6	9	10
20,000	-21.2	-12	10	12	13	-14	8	10	11	-20	1	3	5	-12	9	11	13
10,000	-4.6	7	12	14	15	3	8	10	11	-2	3	4	5	2	6	8	9

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION						
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN	APR	JUL	OCT
		50	D50	D75 D85	50	D50	D75 D85	50	D50	D75 D85	50	D50	D75 D85	50	D50	D75 D85				
BUENOS AIRES TO DAKAR																				
53,000	-56.5	-75	-18	-16	-15	-74	-18	-16	-15	-69	-13	-10	-9	-72	-15	-13	-12	5784 N.M.I.		
40,000	-56.5	-53	3	5	7	-53	3	5	7	-53	3	5	5	-53	3	5	4	3	3	3
30,000	-44.5	-34	11	12	13	-33	12	13	14	-33	12	13	14	-33	12	13	14	2	2	2
20,000	-21.2	-7	15	16	17	-7	15	16	17	-9	12	13	14	-7	14	15	16	2	2	2
10,000	-4.6	9	14	15	16	8	13	14	15	6	11	12	13	8	13	14	15	2	2	2
BUENOS AIRES TO HAVANA																				
53,000	-56.5	-75	-19	-17	-15	-74	-18	-16	-15	-70	-13	-11	-10	-72	-16	-14	-12	5724 N.M.I.		
40,000	-56.5	-53	3	5	6	-53	3	5	6	-54	3	5	5	-54	3	5	6	3	3	3
30,000	-44.5	-34	11	12	13	-33	12	13	14	-35	10	11	12	-33	12	13	14	3	3	2
20,000	-21.2	-6	15	16	17	-6	15	16	17	-10	11	12	13	-7	14	15	16	2	2	2
10,000	-4.6	9	13	14	15	8	13	14	15	6	11	12	13	8	13	14	15	2	2	2
BUENOS AIRES TO HONOLULU																				
53,000	-56.5	-76	-19	-17	-16	-75	-19	-16	-15	-71	-14	-12	-11	-71	-16	-14	-12	4561 N.M.I.		
40,000	-56.5	-54	3	5	6	-54	2	5	6	-54	3	5	5	-54	3	5	5	3	3	3
30,000	-44.5	-34	10	12	13	-35	10	12	12	-36	9	10	11	-34	10	12	13	3	3	3
20,000	-21.2	-8	14	15	16	-9	12	13	14	-11	11	12	13	-8	14	15	16	3	2	3
10,000	-4.6	8	13	14	15	8	12	13	14	6	11	12	13	7	12	13	14	2	2	2
BUENOS AIRES TO JOHANNESBURG																				
53,000	-56.5	-61	-5	-2	-1	-62	-5	-2	-1	-57	-0	3	4	-58	-2	1	3	4383 N.M.I.		
40,000	-56.5	-54	2	6	7	-54	1	4	5	-52	4	7	9	-54	3	6	8	4	4	5
30,000	-44.5	-40	5	7	9	-40	5	7	9	-45	1	2	4	-41	4	6	8	4	4	4
20,000	-21.2	-13	9	11	12	-15	6	9	10	-20	1	3	5	-15	6	9	10	4	4	4
10,000	-4.6	4	9	11	12	2	7	9	10	-3	1	4	5	1	6	8	9	3	3	4
BUENOS AIRES TO KINGSTON																				
53,000	-56.5	-75	-19	-16	-15	-74	-18	-16	-15	-70	-13	-11	-10	-72	-15	-13	-12	5529 N.M.I.		
40,000	-56.5	-53	3	5	7	-53	3	5	7	-53	3	5	5	-53	3	5	5	3	3	3
30,000	-44.5	-33	11	12	13	-33	12	13	14	-35	10	11	12	-33	12	13	14	2	2	2
20,000	-21.2	-6	15	16	17	-6	15	16	17	-10	11	12	13	-7	14	15	16	2	2	2
10,000	-4.6	9	14	15	16	8	13	14	15	6	11	12	13	8	13	14	15	2	2	2
BUENOS AIRES TO LA PAZ																				
53,000	-56.5	-70	-14	-11	-10	-70	-13	-11	-10	-64	-7	-5	-4	-64	-8	-5	-4	1212 N.M.I.		
40,000	-56.5	-53	4	7	8	-54	3	5	7	-52	5	7	8	-54	3	5	6	4	4	4
30,000	-44.5	-35	9	11	13	-36	9	11	12	-39	5	8	9	-35	9	11	12	4	4	4
20,000	-21.2	-8	14	15	16	-10	12	13	14	-15	6	8	9	-10	12	14	15	3	3	3
10,000	-4.6	9	13	14	15	6	11	13	14	2	6	8	9	5	10	11	12	2	3	3
BUENOS AIRES TO LIMA																				
53,000	-56.5	-71	-15	-12	-11	-71	-15	-12	-11	-65	-9	-6	-5	-66	-12	-9	-7	1690 N.M.I.		
40,000	-56.5	-53	4	6	8	-54	3	5	7	-52	4	7	8	-54	3	5	6	4	4	4
30,000	-44.5	-35	10	12	13	-35	9	11	12	-38	6	9	10	-35	10	12	13	4	4	3
20,000	-21.2	-7	14	15	16	-9	12	13	14	-14	7	9	10	-9	12	14	15	3	3	3
10,000	-4.6	9	13	14	15	6	11	13	14	3	7	9	10	6	10	12	13	2	3	2
BUENOS AIRES TO LISBON																				
53,000	-56.5	-75	-16	-14	-13	-72	-16	-15	-12	-69	-13	-10	-9	-71	-15	-13	-11	5199 N.M.I.		
40,000	-56.5	-54	2	4	6	-54	2	5	7	-53	4	5	6	-54	3	5	6	4	4	3
30,000	-44.5	-36	8	10	11	-34	10	12	13	-35	10	11	12	-34	11	12	13	3	2	3
20,000	-21.2	-9	12	14	15	-9	12	14	15	-9	12	13	14	-8	13	15	16	2	2	2
10,000	-4.6	7	12	13	14	7	11	13	14	7	12	13	14	8	12	14	15	2	2	2
BUENOS AIRES TO LONDON																				
53,000	-56.5	-71	-14	-12	-10	-70	-13	-11	-10	-67	-10	-8	-7	-69	-13	-10	-8	6011 N.M.I.		
40,000	-56.5	-55	1	4	6	-55	2	5	6	-53	4	6	7	-54	2	4	5	4	4	3
30,000	-44.5	-38	7	9	10	-36	8	10	11	-35	9	11	12	-34	9	11	12	3	3	3
20,000	-21.2	-11	10	12	13	-11	11	12	13	-10	12	13	14	-9	12	14	15	3	3	3
10,000	-4.6	5	10	11	12	5	10	12	12	6	11	12	13	7	11	13	14	3	3	2
BUENOS AIRES TO LOS ANGELES																				
53,000	-56.5	-74	-14	-10	-15	-73	-17	-15	-14	-71	-14	-12	-11	-73	-16	-14	-13	5516 N.M.I.		
40,000	-56.5	-54	2	5	6	-54	2	4	6	-54	3	4	5	-54	2	4	5	3	3	3
30,000	-44.5	-35	9	11	12	-35	10	11	12	-34	10	12	12	-34	11	13	13	2	2	2
20,000	-21.2	-8	13	15	16	-8	13	15	16	-9	12	13	14	-7	14	15	16	2	2	2
10,000	-4.6	8	12	14	15	8	13	14	15	7	11	13	13	8	13	14	15	2	2	2
BUENOS AIRES TO MADRID																				
53,000	-56.5	-72	-16	-14	-12	-72	-15	-13	-12	-69	-12	-10	-9	-71	-14	-12	-11	5444 N.M.I.		
40,000	-56.5	-54	2	4	6	-54	2	5	7	-53	4	6	7	-54	3	5	6	4	4	3
30,000	-44.5	-37	8	10	11	-35	10	11	12	-35	10	11	12	-34	10	12	13	3	2	3
20,000	-21.2	-9	12	13	14	-9	12	14	14	-9	12	14	14	-8	13	15	15	2	2	2
10,000	-4.6	7	11	13	14	7	11	13	14	7	12	13	14	8	12	14	14	2	2	2
BUENOS AIRES TO MELBOURNE																				
53,000	-56.5	-67	10	13	14	-55	2	4	6	-63	-7	-4	-3	-56	1	4	6	6255 N.M.I.		
40,000	-56.5	-49	8	11	13	-54	2	4	9	-62	-6	-2	-0	-57	-1	3	5	5	4	5
30,000	-44.5	-46	-2	1	3	-50	-5	-3	-2	-57	-12	-10	-9	-53	-8	-6	-5	4	3	3
20,000	-21.2	-23	-2	1	3	-28	-7	-4	-2	-32	-11	-8	-7	-29	-8	-5	-4	4	3	3
10,000	-4.6	-7	-5	0	2	-12	-7	-4	-3	-16	-12	-9	-7	-14	-9	-6	-5	4	4	4
BUENOS AIRES TO MEXICO CITY																				
53,000	-56.5	-75	-19	-17	-15	-75	-18	-16	-15	-70	-14	-11	-10	-72	-16	-14	-13	3908 N.M.I.		
40,000	-56.5	-53	3	5	6	-53	3	5	6	-54	3	5	5	-54	3	5	6	3	3	3
30,000	-44.5	-34	11	12	13	-33	11	13	14	-35	10	11	12	-33	12	13	14	2	2	2
20,000	-21.2	-6	15	16	17	-7	14	16	17	-10	11	12	13	-7	14	15	16	2	2	2
10,000	-4.6	9	13	14	15	8	13	14	15	6	11	12	13	8	13	14	15	2	2	2
BUENOS AIRES TO MIAMI																				
53,000	-56.5	-75	-19	-17	-15	-74	-18	-16	-15	-70	-13	-11	-10	-72	-16	-14	-12	3839 N.M.I.		
40,000	-56.5	-53	3	5	6	-53	3	5	6	-54	3	4	5	-54	3	5	6	3	3	3
30,000	-44.5	-34	11	12	13	-33	12	13	14	-35	10	11	12	-33	12	13	14	2	2	2
20,000	-21.2	-6	15	16	17	-7	14	16	17	-10	11	12	13	-7	14	15	16	2	2	2
10,000	-4.6	9	13	14	15	8	13	14	15	6	11	12	13	8	13	14	15	2	2	2

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE FLIGHT ROUTES												STANDARD DEVIATION																													
		ENROUTE TEMPERATURE																																									
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN				APR				JUL				OCT									
5000 D75 D85				50 D50 D75 D85				50 D50 D75 D85				50 D50 D75 D85				50 D50 D75 D85				50 D50 D75 D85				50 D50 D75 D85				50 D50 D75 D85				50 D50 D75 D85				50 D50 D75 D85				50 D50 D75 D85			
BUENOS AIRES TO MONTEVIDEO																																											
55,000	-56.5	-63	-6	-3	-2	-62	-6	-3	-2	-57	-0	3	4	-58	-2	1	3	-60	-3	0	2	4	4	4	4	4	4	4	4	4	4	4	4	4	128 N.M.I.								
40,000	-56.5	-54	2	6	7	-56	1	4	6	-52	5	8	9	-54	3	6	7	-54	3	6	8	5	5	5	5	5	5	5	5	5	5	5	5	5	5								
30,000	-44.5	-40	5	7	9	-40	5	7	8	-46	-1	1	3	-39	5	8	9	-41	3	6	8	4	4	4	4	4	4	4	4	4	4	4	4	4	4								
20,000	-21.2	-15	8	10	12	-15	7	9	10	-21	0	3	4	-14	7	10	11	-16	6	8	10	4	4	4	4	4	4	4	4	4	4	4	4	4	4								
10,000	-4.6	7	12	14	15	5	7	10	11	-3	2	4	5	1	6	8	9	2	7	10	11	3	3	3	3	3	3	3	3	3	3	3	3	3	3								
BUENOS AIRES TO NATAL																																											
55,000	-56.5	-73	-17	-14	-12	-72	-16	-13	-12	-66	-9	-7	-5	-68	-11	-9	-7	-70	-13	-10	-8	4	4	4	4	4	4	4	4	4	4	4	4	4	2163 N.M.I.								
40,000	-56.5	-53	4	6	9	-53	3	6	8	-52	5	7	8	-54	3	5	6	-53	4	6	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4								
30,000	-44.5	-34	11	13	14	-34	11	13	14	-36	8	10	11	-34	10	12	13	-35	10	12	13	3	3	3	3	3	3	3	3	3	3	3	3	3	3								
20,000	-21.2	-6	15	17	18	-8	13	15	15	-12	9	11	12	-9	13	14	15	-9	12	15	16	3	2	3	3	3	3	3	3	3	3	3	3	3	3								
10,000	-4.6	9	14	15	16	8	12	14	15	4	8	10	11	7	12	14	14	7	12	14	15	2	3	3	3	3	3	3	3	3	3	3	3	3	3								
BUENOS AIRES TO NEW ORLEANS																																											
55,000	-56.5	-75	-18	-16	-15	-74	-17	-15	-14	-70	-14	-12	-10	-73	-16	-14	-13	-73	-16	-14	-12	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4265 N.M.I.							
40,000	-56.5	-54	5	5	6	-53	5	5	7	-54	3	4	5	-54	2	4	5	-54	3	5	6	3	3	3	3	3	3	3	3	3	3	3	3	3	3								
30,000	-44.5	-34	10	12	13	-34	10	12	13	-34	10	12	12	-35	12	13	14	-34	11	13	14	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
20,000	-21.2	-7	14	16	17	-7	14	16	16	-10	12	13	13	-7	14	15	16	-8	14	15	16	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
10,000	-4.6	8	13	14	15	6	13	14	15	7	11	13	13	8	13	14	15	8	12	14	15	2	2	2	2	2	2	2	2	2	2	2	2	2	2								
BUENOS AIRES TO NEW YORK																																											
55,000	-56.5	-74	-17	-15	-14	-73	-16	-14	-13	-69	-12	-10	-9	-72	-15	-13	-12	-72	-15	-13	-11	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4603 N.M.I.							
40,000	-56.5	-54	2	5	6	-54	3	5	6	-54	2	4	5	-54	2	4	5	-54	2	5	6	3	3	3	3	3	3	3	3	3	3	3	3	3	3								
30,000	-44.5	-35	9	11	12	-34	10	12	13	-35	10	11	12	-33	11	13	14	-34	10	12	13	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
20,000	-21.2	-6	15	16	17	-8	13	15	16	-10	12	13	14	-8	14	15	16	-8	13	15	15	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
10,000	-4.6	7	12	13	14	7	11	13	14	7	11	12	13	8	12	14	14	7	12	13	14	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
BUENOS AIRES TO PANAMA																																											
55,000	-56.5	-75	-18	-16	-15	-74	-17	-15	-14	-69	-12	-10	-9	-71	-14	-12	-11	-72	-16	-13	-11	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2685 N.M.I.							
40,000	-56.5	-53	4	6	7	-53	4	6	7	-53	3	5	6	-54	3	4	5	-53	3	6	7	3	3	3	3	3	3	3	3	3	3	3	3	3	3								
30,000	-44.5	-33	11	13	14	-33	12	13	14	-35	9	11	12	-35	12	13	14	-34	11	13	14	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
20,000	-21.2	-6	15	17	18	-7	15	16	17	-11	10	12	12	-7	14	15	16	-6	13	15	16	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
10,000	-4.6	9	14	15	16	8	13	14	15	6	10	12	12	8	12	14	15	6	12	14	15	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
BUENOS AIRES TO PERTH																																											
55,000	-56.5	-66	10	14	15	-56	6	3	4	-65	-9	-6	-5	-60	-3	0	2	-57	-0	5	8	5	4	4	4	4	4	4	4	4	4	4	4	4	4	6784 N.M.I.							
40,000	-56.5	-48	8	12	13	-54	2	6	9	-64	-7	4	-2	-64	-4	-1	1	-57	-0	5	7	5	6	5	5	5	5	5	5	5	5	5	5	5	5								
30,000	-44.5	-47	-3	0	2	-50	-6	-4	-2	-57	-15	-11	-9	-54	-10	-7	-6	-52	-8	-4	-2	5	4	3	3	3	3	3	3	3	3	3	3	3	3	3							
20,000	-21.2	-24	-3	0	2	-31	-9	-6	-4	-34	-13	-10	-9	-31	-9	-6	-4	-30	-9	-4	-2	5	5	4	4	4	4	4	4	4	4	4	4	4	4								
10,000	-4.6	-9	-4	-1	0	-14	-10	-6	-4	-20	-15	-12	-10	-15	-11	-8	-6	-15	-10	-6	-4	4	5	5	5	5	5	5	5	5	5	5	5	5	5								
BUENOS AIRES TO QUITO																																											
55,000	-56.5	-74	-17	-15	-13	-73	-17	-14	-13	-68	-11	-9	-7	-69	-12	-10	-9	-71	-14	-11	-10	4	3	4	4	4	4	4	4	4	4	4	4	4	4	2359 N.M.I.							
40,000	-56.5	-53	4	6	7	-53	3	6	7	-53	4	6	7	-54	3	5	6	-53	3	6	7	3	4	4	4	4	4	4	4	4	4	4	4	4	4								
30,000	-44.5	-34	11	13	14	-34	11	13	14	-36	8	10	11	-34	11	13	14	-34	10	12	13	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
20,000	-21.2	-6	15	16	17	-7	14	15	16	-12	9	11	11	-8	13	15	16	-8	13	15	16	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
10,000	-4.6	9	14	15	16	8	12	14	15	5	9	11	11	7	12	13	14	7	12	13	14	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
BUENOS AIRES TO RIO DE JANEIRO																																											
55,000	-56.5	-64	-12	-9	-8	-67	-11	-8	-7	-61	-5	-2	-0	-62	-6	-3	-2	-65	-8	-5	-3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	1080 N.M.I.							
40,000	-56.5	-53	4	7	8	-54	2	5	7	-52	5	7	9	-54	3	5	7	-53	3	6	8	4	5	4	4	4	4	4	4	4	4	4	4	4	4								
30,000	-44.5	-37	8	10	11	-37	8	10	11	-41	3	6	7	-37	7	10	11	-38	7	9	10	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
20,000	-21.2	-8	13	15	16	-12	10	12	13	-16	5	7	8	-11	10	12	14	-12	9	12	14	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
10,000	-4.6	8	13	15	16	6	10	12	13	1	5	7	8	4	9	11	12	5	9	12	13	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
BUENOS AIRES TO ROME																																											
55,000	-56.5	-72	-15	-13	-12	-71	-15	-12	-11	-69	-12	-10	-9	-70	-14	-12	-11	-71	-14	-11	-10	4	3	4	4	4	4	4	4	4	4	4	4	4	4	6034 N.M.I.							
40,000	-56.5	-54	2	5	6	-54	3	5	7	-52	4	6	7	-54	3	5	6	-54	3	5	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4								
30,000	-44.5	-37	7	9	10	-35	9	11	12	-35	10	12	12	-35	10	12	13	-35	9	11	12	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
20,000	-21.2	-10	11	13	14	-10	12	13	14	-9	12	14	15	-8	13	14	15	-9	12	14	15	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
10,000	-4.6	6	11	12	13	7	11	13	14	8	13	14	15	7	12	13	14	7	12	13	14	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
BUENOS AIRES TO SAN JUAN																																											
55,000	-56.5	-75	-19	-17	-15	-75	-18	-16	-15	-69	-13	-11	-9	-72	-15	-13	-12	-73	-16	-13	-12	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3222 N.M.I.						
40,000	-56.5	-55	3	5	7	-55	4	6	7	-53	3	5	6	-54	3	4	5	-53	3	6	7	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
30,000	-44.5	-33	11	13	14	-32	12	14	15	-35	10	11	12	-32	12	14	15	-33	11	13	14	2	3	3	3	3	3	3	3	3	3	3	3										

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
BUEENOS AIRES TO USHUAIA																											
55,000	-56.5	-54	5	5	7	-57	-0	2	4	-57	-0	2	4	-55	2	5	7	-56	1	4	6	4	4	4	5	1267 N.M.I.	
40,000	-56.5	-52	4	8	10	-55	1	5	7	-55	1	5	7	-55	1	5	7	-54	2	6	8	5	5	5	5		
30,000	-44.5	-41	1	4	6	-44	1	5	4	-51	-6	-4	-2	-46	-1	1	5	-44	-1	2	6	4	4	4	4		
20,000	-21.2	-17	4	7	9	-20	1	4	6	-26	-5	-2	-1	-21	0	5	5	-21	0	4	6	4	4	4	4		
10,000	-4.6	0	5	7	9	-5	1	4	5	-9	-4	-2	-1	-6	-1	2	5	-4	0	4	6	4	4	3	4		
BUTTERNORTH TO GAN																											
55,000	-56.5	-32	-25	-24	-23	-78	-22	-20	-14	-78	-22	-20	-19	-80	-24	-22	-21	-80	-23	-21	-20	3	3	3	3	1647 N.M.I.	
40,000	-56.5	-55	2	5	4	-52	5	7	7	-54	2	5	4	-54	2	5	4	-54	3	5	6	3	2	2	2		
30,000	-44.5	-31	14	15	15	-30	15	16	17	-31	14	15	14	-32	13	14	14	-31	14	15	16	2	2	2	2		
20,000	-21.2	-5	16	17	18	-5	16	17	18	-5	16	17	18	-6	14	17	17	-5	16	17	18	2	2	1	1		
10,000	-4.6	10	14	15	16	10	14	15	16	9	14	15	15	9	14	15	15	10	14	15	16	1	1	1	1		
BUTTERNORTH TO KARACHI																											
55,000	-56.5	-78	-21	-19	-18	-75	-18	-16	-15	-77	-21	-18	-16	-78	-22	-20	-19	-77	-21	-18	-16	3	4	4	3	2207 N.M.I.	
40,000	-56.5	-56	1	5	5	-52	4	7	8	-51	5	8	9	-54	2	5	4	-51	3	4	6	4	5	4	4		
30,000	-44.5	-31	11	13	14	-32	13	15	16	-28	14	16	19	-32	13	15	16	-31	13	15	17	3	3	2	3		
20,000	-21.2	-7	14	15	16	-6	15	17	18	-4	17	19	19	-6	15	17	18	-6	15	17	18	2	3	2	2		
10,000	-4.6	8	12	14	15	10	15	16	17	11	14	17	18	9	13	15	15	10	14	16	14	2	2	2	2		
BUTTERNORTH TO NAIROBI																											
55,000	-56.5	-81	-24	-22	-21	-78	-22	-19	-18	-77	-21	-19	-18	-79	-23	-21	-20	-79	-22	-20	-19	3	3	3	3	3629 N.M.I.	
40,000	-56.5	-54	2	4	5	-52	5	7	8	-54	3	4	5	-53	3	4	5	-53	3	5	4	3	3	2	2		
30,000	-44.5	-30	14	15	16	-30	15	16	17	-31	14	15	16	-31	14	15	16	-31	14	15	16	2	2	2	2		
20,000	-21.2	-5	17	18	18	-5	16	17	18	-5	16	17	18	-4	14	17	17	-5	14	17	18	1	2	1	1		
10,000	-4.6	10	14	15	16	10	14	15	16	9	14	15	15	9	14	15	15	10	14	15	16	1	1	1	1		
BUTTERNORTH TO SINGAPORE																											
55,000	-56.5	-87	-26	-24	-23	-80	-23	-21	-20	-78	-22	-20	-19	-80	-24	-22	-21	-80	-24	-21	-20	1	3	3	3	574 N.M.I.	
40,000	-56.5	-55	2	5	4	-52	5	6	7	-54	2	5	4	-54	2	5	4	-54	3	4	5	2	2	2	2		
30,000	-44.5	-31	14	15	15	-30	15	16	16	-31	14	15	15	-32	13	14	14	-31	14	15	16	2	2	2	1		
20,000	-21.2	-5	17	18	18	-5	17	18	18	-5	16	17	17	-6	16	17	17	-5	16	17	18	1	1	1	1		
10,000	-4.6	9	14	15	15	10	15	16	16	9	14	15	15	9	14	15	15	10	14	15	16	1	1	1	1		
CAIRO TO CALCUTTA																											
55,000	-56.5	-68	-12	-9	-8	-66	-10	-7	-6	-73	-16	-14	-12	-70	-13	-11	-9	-69	-13	-10	-8	4	4	4	4	3068 N.M.I.	
40,000	-56.5	-54	2	5	7	-54	3	6	8	-67	9	12	13	-54	2	5	4	-57	4	8	10	4	5	4	4		
30,000	-44.5	-41	4	7	8	-38	6	9	11	-26	18	21	22	-35	10	12	13	-35	10	13	15	4	4	3	3		
20,000	-21.2	-16	4	8	9	-12	10	12	13	-2	19	21	22	-9	12	14	15	-10	12	15	17	3	3	3	3		
10,000	-4.6	1	5	8	9	6	11	13	14	15	20	21	22	7	12	14	15	7	12	15	17	3	3	3	3		
CAIRO TO COLOGNE																											
55,000	-56.5	-58	-2	1	3	-57	-0	2	3	-60	-3	-1	0	-61	-4	-2	-1	-59	-2	0	2	4	3	3	3	1650 N.M.I.	
40,000	-56.5	-57	-0	1	5	-57	-0	1	5	-49	7	10	11	-54	0	1	4	-55	2	5	7	5	5	4	4		
30,000	-44.5	-49	-5	-2	-1	-46	-1	1	2	-35	9	12	13	-42	3	5	4	-45	2	5	7	3	3	3	3		
20,000	-21.2	-24	-3	0	2	-20	2	4	6	-10	11	13	14	-15	4	8	9	-17	4	7	9	4	4	3	3		
10,000	-4.6	-8	-4	-1	1	-5	1	4	6	6	11	13	14	1	6	8	9	-1	3	7	9	4	4	3	3		
CAIRO TO COLOMBO																											
55,000	-56.5	-74	-18	-16	-15	-74	-17	-15	-13	-75	-19	-17	-15	-76	-20	-17	-16	-75	-18	-16	-14	3	3	3	3	5042 N.M.I.	
40,000	-56.5	-55	2	4	4	-52	4	6	8	-49	8	9	10	-54	3	5	6	-52	4	7	8	3	4	3	3		
30,000	-44.5	-36	9	11	12	-34	11	13	14	-27	17	19	20	-33	11	13	14	-32	12	15	16	3	3	2	3		
20,000	-21.2	-10	11	13	14	-8	13	15	16	-4	18	19	20	-7	14	16	16	-7	14	16	17	2	2	2	2		
10,000	-4.6	6	10	12	13	4	13	15	15	4	18	19	20	9	13	15	15	9	14	16	17	2	2	2	2		
CAIRO TO COPENHAGEN																											
55,000	-56.5	-58	-1	1	3	-56	0	3	4	-58	-1	1	2	-60	-4	-1	-0	-58	-1	1	3	4	3	3	3	1725 N.M.I.	
40,000	-56.5	-57	-0	3	5	-56	1	4	6	-49	8	10	12	-54	0	3	4	-54	2	4	6	5	5	4	4		
30,000	-44.5	-50	-5	-3	-2	-46	-2	1	2	-36	9	11	12	-42	2	5	6	-44	1	5	7	3	4	3	3		
20,000	-21.2	-25	-4	-1	1	-21	1	3	5	-10	11	13	14	-16	5	8	9	-18	3	7	8	3	4	3	3		
10,000	-4.6	-10	-5	-2	-0	-4	0	3	5	5	10	11	12	-0	4	7	8	-2	2	6	8	3	4	3	3		
CAIRO TO OAKHAM																											
55,000	-56.5	-71	-14	-12	-11	-69	-13	-11	-10	-73	-17	-15	-14	-72	-16	-14	-13	-71	-15	-13	-11	3	3	3	3	2840 N.M.I.	
40,000	-56.5	-54	3	5	6	-54	3	5	7	-51	6	7	8	-54	3	5	6	-53	3	5	6	4	4	2	2		
30,000	-44.5	-41	3	5	6	-36	8	10	11	-31	14	16	16	-35	9	11	11	-36	9	11	13	2	2	2	2		
20,000	-21.2	-14	7	9	10	-11	10	12	13	-5	16	17	18	-9	13	14	14	-10	12	14	15	2	2	2	2		
10,000	-4.6	1	8	9	10	6	10	12	13	4	19	20	20	8	12	14	14	8	12	15	16	2	2	2	2		
CAIRO TO DAMASCUS																											
55,000	-56.5	-64	-8	-5	-4	-62	-6	-4	-3	-71	-14	-12	-11	-66	-10	-7	-6	-66	-9	-7	-5	3	3	3	3	518 N.M.I.	
40,000	-56.5	-54	2	5	6	-55	1	4	6	-67	10	12	13	-55	1	3	4	-53	4	7	8	4	5	3	3		
30,000	-44.5	-45	-1	1	2	-42	3	5	6	-27	18	19	21	-39	6	8	9	-38	6	10	13	3	3	3	3		
20,000	-21.2	-19	2	5	6	-16	6	8	9	-4	14	16	20	-12	9	11	12	-12	9	12	14	3	3	3	2		
10,000	-4.6	-3	2	4	5	1	6	8	10	13	17	19	19	6	11	12	13	4	9	12	14	3	4	2	3		
CAIRO TO DHAMRAN																											
55,000	-56.5	-68	-11	-9	-8	-66	-10	-8	-7	-73	-14	-14	-13	-70	-14	-11	-10	-69	-13	-10	-9	3	3	3	3	1017 N.M.I.	
40,000	-56.5	-54	3	5	6	-54	2	5	7	-67	10	12	13	-54	2	4	5	-52	4	7	9	4	4	3	3		
30,000	-44.5	-47	2	4	5	-38	6	8	9	-26	18	20	21	-36	8	10	11	-36	9	12	14	3	3	3	3		
20,000	-21.2	-16	5	7	8	-13	8	10	11	-3	19	20	21	-10	12	13	14	-10	11	14	16	3	3	3	2		
10,000	-4.6	0	5	7	8	4	9	11	12	15	20	21	22	8	12	14	15	7	11	14	16	3	3	2	2		
CAIRO TO OJAKARTA																											
55,000	-56.5	-77	-20	-18	-17	-75	-18	-16	-15	-76	-20	-18	-16	-77	-21	-19	-18	-76	-20	-17	-16	3	3	3	3	4840 N.M.I.	
40,000	-56.5	-55	2	4	5	-52	4	6	8	-51	6	8	9	-54	2	4	5	-53	4	6	7	3	3	3	3		
30,000	-44.5	-35	10	12	13	-33	12	14	15	-28	16	18	18	-33	12	13	14	-32	12	15	16	3	3	2	3		
20,000	-21.2	-9	13	14	15	-7	14	15	16	-4	17	18	19	-7	15	16	16	-7	15	16	17	2	2	2	2		
10,000	-4.6	7	11	13	14	9	13	15	16	12	17	18	18	9	13	15	15	9</									

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
CAIRO TO ENTENBEE																											
53,000	-56.5	-75	-18	-16	-15	-74	-18	-16	-15	-75	-19	-17	-16	-76	-19	-17	-16	-75	-18	-16	-15	3	3	3	3	1806 N.MI.	
40,000	-56.5	-54	3	4	5	-53	4	6	7	-51	6	7	8	-53	4	5	6	-52	4	6	7	2	3	2	2		
30,000	-44.5	-36	8	10	10	-32	12	13	14	-29	15	17	17	-32	12	14	14	-33	12	14	15	2	2	2	2		
20,000	-21.2	-9	13	14	15	-7	14	15	16	-4	17	18	19	-7	14	15	16	-7	14	16	17	2	2	2	1		
10,000	-4.6	7	12	13	14	4	13	15	15	12	17	18	18	9	14	15	16	9	14	16	16	2	2	2	2		
CAIRO TO FRANKFURT																											
53,000	-56.5	-58	-2	1	3	-57	-1	2	3	-60	-4	-1	-0	-61	-5	-2	-1	-59	-3	0	2	4	3	3	3	1576 N.MI.	
40,000	-56.5	-57	-0	3	5	-57	-0	3	5	-49	7	10	11	-56	0	3	4	-55	2	5	7	5	5	3	3		
30,000	-44.5	-49	-5	-2	-1	-45	-1	1	3	-35	10	12	13	-41	3	5	7	-43	2	6	8	3	3	3	3		
20,000	-21.2	-24	-3	0	2	-19	2	4	6	-10	12	14	15	-15	6	8	9	-17	4	8	9	4	4	3	3		
10,000	-4.6	-8	-3	-1	1	-3	2	4	6	6	11	13	14	1	6	8	9	-1	4	7	9	4	4	3	3		
CAIRO TO GENEVA																											
53,000	-56.5	-59	-2	0	2	-58	-1	1	2	-62	-6	-3	-2	-62	-5	-3	-2	-60	-4	-1	1	4	3	3	3	1524 N.MI.	
40,000	-56.5	-56	0	3	5	-57	-1	3	5	-49	7	9	11	-56	0	3	4	-55	2	5	7	5	5	3	3		
30,000	-44.5	-48	-4	-2	-0	-45	-0	2	3	-34	10	13	14	-41	4	6	7	-42	2	6	8	3	3	3	3		
20,000	-21.2	-23	-2	1	3	-19	3	5	6	-9	12	14	15	-15	7	9	10	-16	5	8	10	4	4	3	3		
10,000	-4.6	-7	-2	1	2	-2	3	5	7	7	12	14	15	2	6	9	10	0	5	8	10	4	4	3	3		
CAIRO TO GLASGOW																											
53,000	-56.5	-58	-2	1	3	-56	1	3	4	-57	-1	2	3	-60	-4	-1	0	-58	-1	1	3	4	4	3	4	2155 N.MI.	
40,000	-56.5	-57	-1	3	5	-56	0	4	6	-49	7	10	11	-56	0	3	4	-55	2	6	8	5	6	4	4		
30,000	-44.5	-50	-5	-3	-1	-46	-2	1	2	-37	8	10	12	-42	2	5	6	-44	1	5	7	4	4	3	4		
20,000	-21.2	-25	-3	-0	1	-21	1	3	5	-11	10	12	13	-16	5	7	9	-18	3	7	8	5	4	3	4		
10,000	-4.6	-9	-4	-1	1	-4	0	3	5	5	9	11	12	-0	4	7	8	-2	3	6	8	5	4	3	4		
CAIRO TO HAMBURG																											
53,000	-56.5	-58	-2	1	3	-56	0	2	4	-58	-2	0	1	-61	-4	-2	-0	-58	-2	1	2	4	3	3	4	1609 N.MI.	
40,000	-56.5	-57	-0	3	5	-56	0	4	6	-49	8	10	11	-56	0	3	4	-55	2	6	7	5	5	4	4		
30,000	-44.5	-50	-5	-3	-1	-46	-1	1	2	-36	9	11	13	-42	3	5	6	-43	1	5	7	3	3	3	3		
20,000	-21.2	-25	-3	-0	1	-20	1	4	5	-10	11	13	14	-16	5	8	9	-18	4	7	9	5	4	3	3		
10,000	-4.6	-9	-5	-2	0	-4	1	4	5	5	10	12	13	0	5	7	9	-2	3	6	8	5	4	3	4		
CAIRO TO HELSINKI																											
53,000	-56.5	-58	-1	2	3	-56	1	3	4	-59	-3	-0	1	-59	-3	-0	1	-57	-1	2	3	4	3	3	4	1829 N.MI.	
40,000	-56.5	-57	-1	2	4	-55	1	5	6	-48	8	11	12	-56	1	3	5	-54	2	6	8	5	5	4	4		
30,000	-44.5	-51	-6	-4	-3	-47	-2	1	2	-36	8	11	12	-43	2	4	5	-44	0	4	7	4	4	4	3		
20,000	-21.2	-26	-5	-2	0	-21	0	3	5	-11	10	12	13	-17	4	7	8	-19	2	6	8	5	5	3	4		
10,000	-4.6	-11	-7	-3	-1	-5	-0	3	5	4	9	11	12	-1	3	6	8	-3	1	5	7	5	5	3	4		
CAIRO TO ISTANBUL																											
53,000	-56.5	-61	-4	-2	-0	-59	-3	-1	1	-66	-10	-8	-7	-63	-7	-4	-3	-62	-6	-3	-2	4	3	3	3	602 N.MI.	
40,000	-56.5	-55	1	4	6	-56	0	4	5	-47	9	11	12	-56	0	3	4	-54	3	6	8	4	5	3	3		
30,000	-44.5	-48	-3	-1	0	-44	1	3	4	-30	14	16	17	-40	4	6	7	-41	4	8	10	3	3	3	3		
20,000	-21.2	-22	-0	2	3	-18	3	6	7	-7	15	16	17	-14	8	9	10	-15	6	10	12	4	4	3	3		
10,000	-4.6	-6	-1	1	2	-1	4	6	8	9	14	15	16	4	8	10	11	1	6	9	11	4	4	2	3		
CAIRO TO JIQUA																											
53,000	-56.5	-69	-13	-11	-10	-68	-12	-10	-9	-73	-17	-15	-14	-72	-15	-13	-12	-71	-14	-12	-11	3	3	3	3	667 N.MI.	
40,000	-56.5	-54	3	5	6	-54	2	5	6	-49	9	10	11	-54	3	4	5	-52	4	7	8	3	4	2	2		
30,000	-44.5	-42	3	5	6	-47	8	9	10	-27	18	20	20	-35	9	11	12	-35	9	13	14	3	3	2	2		
20,000	-21.2	-14	7	9	10	-12	10	11	12	-3	18	19	20	-9	12	14	14	-10	12	14	16	3	3	2	2		
10,000	-4.6	2	7	9	10	5	10	12	13	15	19	21	21	8	13	14	15	8	12	15	16	3	3	2	2		
CAIRO TO JOHANNESBURG																											
53,000	-56.5	-75	-19	-17	-15	-74	-18	-16	-15	-73	-18	-16	-15	-74	-18	-16	-15	-74	-18	-16	-14	3	3	3	3	3381 N.MI.	
40,000	-56.5	-53	4	5	6	-52	6	6	7	-51	5	7	7	-52	4	6	6	-52	4	6	7	3	3	2	2		
30,000	-44.5	-34	11	12	13	-32	12	14	15	-31	13	15	16	-32	12	14	15	-32	12	14	15	2	2	2	2		
20,000	-21.2	-7	14	15	16	-7	14	16	16	-6	16	17	18	-7	14	15	16	-6	15	16	17	2	2	2	2		
10,000	-4.6	9	13	14	15	9	13	15	15	9	14	15	16	10	14	15	16	9	13	15	16	2	2	2	2		
CAIRO TO KANO																											
53,000	-56.5	-72	-16	-14	-13	-71	-14	-13	-12	-75	-18	-16	-15	-74	-17	-15	-14	-73	-16	-14	-13	3	3	3	3	1672 N.MI.	
40,000	-56.5	-54	3	5	6	-53	3	6	7	-50	6	7	8	-53	3	5	6	-53	4	6	7	3	4	2	2		
30,000	-44.5	-40	5	6	7	-35	10	11	12	-29	16	17	18	-34	10	12	13	-34	10	13	14	2	2	2	2		
20,000	-21.2	-12	9	10	11	-10	11	13	14	-4	17	18	19	-8	13	14	15	-9	13	15	16	2	2	2	1		
10,000	-4.6	5	9	11	12	7	12	14	14	13	18	19	19	9	13	15	15	8	13	15	16	2	2	2	2		
CAIRO TO KARACHI																											
53,000	-56.5	-68	-12	-9	-8	-67	-10	-8	-7	-73	-16	-14	-13	-70	-14	-11	-10	-70	-13	-10	-9	3	3	3	4	1920 N.MI.	
40,000	-56.5	-54	3	5	7	-53	3	6	8	-47	10	12	13	-54	2	5	6	-52	4	8	9	4	4	3	3		
30,000	-44.5	-41	3	6	7	-38	6	9	10	-26	19	21	22	-35	9	11	12	-35	9	13	15	4	3	3	3		
20,000	-21.2	-16	6	8	9	-12	9	11	12	-2	19	21	22	-9	12	14	14	-10	11	15	17	3	3	3	2		
10,000	-4.6	1	5	7	9	6	11	13	14	16	20	22	23	8	12	14	15	7	12	15	17	3	3	2	3		
CAIRO TO KHARTOUM																											
53,000	-56.5	-72	-15	-13	-12	-71	-14	-12	-11	-74	-18	-16	-15	-74	-17	-15	-14	-73	-16	-14	-13	3	3	3	3	874 N.MI.	
40,000	-56.5	-54	3	5	6	-54	3	5	7	-49	7	9	10	-53	3	5	5	-52	4	6	7	3	4	2	2		
30,000	-44.5	-40	4	6	7	-35	9	11	12	-28	17	18	19	-34	10	12	13	-34	10	13	15	2	2	2	2		
20,000	-21.2	-12	9	11	11	-10	11	13	14	-4	17	19	19	-8	13	14	15	-9	13	15	16	2	2	2	2		
10,000	-4.6	4	9	11	12	7	11	13	14	14	18	19	20	9	13	15	15	8	13	15	16	3	3	2	2		
CAIRO TO KUWAIT																											
53,000	-56.5	-66	-10	-8	-6	-65	-8	-6	-5	-72	-15	-13	-12	-69	-12	-10	-8	-68	-11	-9	-7	3	3	3	3	865 N.MI.	
40,000	-56.5	-54	3	5	7	-54	2	5	7	-46	10	12	13	-55	2	4	5	-52	4	7	9	4	4	3	3		
30,000	-44.5	-44	1	3	4	-40	5	7	8	-26	19	20	21	-37	8	9	10	-37	8	12	14	3	3	3	3		
20,000	-21.2	-17	4	6	7	-14	7	9	10	-2	19	21	22	-10	11	12	13	-11	10	14	16	3	3	3	2		
10,000	-4.6	-1	3	6	7	3</																					

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUE OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
CAIRO TO LISBON																	
53,000	-56.5	-61	-5	-2	-0	-59	-3	-1	1	-65	-8	-6	-5	-63	-7	-5	-3
40,000	-56.5	-56	0	4	5	-57	-0	3	5	-50	7	9	10	-56	0	3	4
30,000	-44.5	-46	-2	0	1	-44	1	3	4	-33	11	13	14	-40	4	7	8
20,000	-21.2	-20	1	3	5	-17	4	7	8	-8	15	15	16	-15	8	10	11
10,000	-4.6	-4	1	3	5	0	5	7	8	10	14	16	17	3	8	10	11
CAIRO TO LONDON																	
53,000	-56.5	-58	-7	1	3	-57	-0	2	3	-59	-5	-0	1	-61	-4	-2	-1
40,000	-56.5	-57	-0	3	5	-57	-0	3	5	-50	7	9	11	-56	0	3	4
30,000	-44.5	-49	-4	-2	-1	-46	-1	1	3	-36	9	11	12	-42	3	5	6
20,000	-21.2	-24	-3	0	2	-20	2	4	6	-10	11	13	14	-15	6	8	9
10,000	-4.6	-8	-3	-0	1	-5	1	4	6	6	10	12	13	1	5	8	9
CAIRO TO MADRID																	
53,000	-56.5	-61	-4	-1	0	-59	-3	-0	1	-65	-8	-6	-5	-63	-7	-5	-3
40,000	-56.5	-56	0	4	5	-57	-0	3	5	-50	7	9	10	-56	0	3	4
30,000	-44.5	-47	-2	0	1	-44	1	3	4	-33	11	13	14	-40	4	7	8
20,000	-21.2	-21	0	3	5	-17	4	7	8	-8	15	15	16	-15	8	10	11
10,000	-4.6	-4	0	3	5	-0	5	7	8	9	14	16	17	3	8	10	11
CAIRO TO MEAN																	
53,000	-56.5	-59	-3	0	2	-58	-1	1	2	-62	-6	-4	-3	-62	-6	-3	-2
40,000	-56.5	-56	0	3	5	-57	-1	1	3	-59	8	10	11	-56	0	3	4
30,000	-44.5	-48	-4	-2	-0	-45	-0	2	3	-36	11	13	14	-41	4	6	7
20,000	-21.2	-23	-2	1	3	-19	3	5	6	-9	15	16	17	-14	7	9	10
10,000	-4.6	-7	-2	1	2	-2	3	5	7	7	12	14	15	2	7	9	10
CAIRO TO MOSCOW																	
53,000	-56.5	-58	-1	2	3	-56	1	3	4	-57	-1	1	2	-60	-3	-1	1
40,000	-56.5	-57	-0	3	4	-55	1	4	6	-48	9	11	12	-56	1	3	5
30,000	-44.5	-50	-4	-4	-2	-46	-1	2	3	-36	10	13	14	-42	2	5	6
20,000	-21.2	-25	-4	-1	1	-20	1	4	6	-10	11	14	15	-16	5	7	9
10,000	-4.6	-10	-6	-2	-1	-3	1	4	6	5	10	12	13	-0	4	7	8
CAIRO TO MUNICH																	
53,000	-56.5	-59	-2	1	2	-57	-1	1	3	-61	-5	-3	-1	-62	-5	-3	-1
40,000	-56.5	-56	0	3	5	-57	-0	3	5	-49	8	10	11	-56	0	3	4
30,000	-44.5	-49	-4	-2	-1	-45	-1	2	3	-36	10	13	14	-41	3	6	7
20,000	-21.2	-23	-2	1	3	-19	2	5	6	-9	12	14	15	-15	4	8	10
10,000	-4.6	-8	-5	-0	1	-3	2	5	6	7	11	13	14	2	4	8	10
CAIRO TO NAIROBI																	
53,000	-56.5	-75	-18	-17	-16	-74	-18	-16	-15	-75	-19	-17	-16	-76	-19	-17	-15
40,000	-56.5	-54	3	4	5	-53	4	6	7	-51	5	7	8	-53	4	6	7
30,000	-44.5	-36	9	10	11	-32	12	13	14	-29	15	17	18	-32	12	14	15
20,000	-21.2	-8	11	14	15	-7	14	15	16	-6	17	18	19	-7	15	16	17
10,000	-4.6	7	12	14	14	9	13	15	15	12	17	18	19	9	14	15	16
CAIRO TO NATAL																	
53,000	-56.5	-74	-18	-16	-15	-74	-17	-15	-14	-74	-18	-16	-15	-75	-19	-17	-16
40,000	-56.5	-54	3	5	6	-53	4	6	7	-52	4	6	7	-53	4	6	7
30,000	-44.5	-37	7	9	9	-35	12	13	14	-31	14	15	16	-33	12	13	14
20,000	-21.2	-10	11	12	13	-8	13	14	15	-5	16	17	18	-7	14	15	16
10,000	-4.6	6	11	12	13	8	13	14	15	12	16	18	18	9	14	15	16
CAIRO TO NEW DELHI																	
53,000	-56.5	-66	-9	-7	-6	-64	-8	-5	-4	-71	-15	-12	-11	-68	-11	-9	-7
40,000	-56.5	-54	2	5	7	-54	7	4	7	-47	10	12	16	-54	2	5	6
30,000	-44.5	-43	2	5	6	-40	5	7	9	-26	18	20	22	-36	8	10	12
20,000	-21.2	-18	6	6	7	-13	8	10	12	-2	19	21	22	-11	11	13	14
10,000	-4.6	-1	3	6	7	5	9	12	13	15	20	21	22	7	11	13	14
CAIRO TO NEW YORK																	
53,000	-56.5	-58	-2	1	3	-56	1	3	4	-57	-1	2	3	-59	-3	-0	1
40,000	-56.5	-56	0	4	6	-56	0	4	6	-52	5	7	9	-55	1	4	4
30,000	-44.5	-48	-4	-1	0	-46	-1	1	2	-37	7	10	11	-42	2	5	6
20,000	-21.2	-24	-3	1	3	-21	0	3	5	-11	10	12	13	-14	5	8	9
10,000	-4.6	-9	-4	-1	1	-5	-0	3	5	4	9	11	12	-1	4	7	8
CAIRO TO NICOSIA																	
53,000	-56.5	-63	-7	-5	-3	-61	-5	-3	-2	-70	-14	-12	-11	-65	-9	-7	-5
40,000	-56.5	-55	2	5	6	-54	1	4	6	-47	10	12	13	-56	1	3	4
30,000	-44.5	-46	-1	1	2	-42	2	4	5	-28	17	19	20	-39	5	7	8
20,000	-21.2	-20	2	4	5	-16	5	7	8	-4	17	19	19	-12	9	10	11
10,000	-4.6	-4	1	3	5	1	5	8	9	11	16	18	18	5	10	12	13
CAIRO TO OSLO																	
53,000	-56.5	-58	-1	2	3	-56	1	3	5	-56	0	3	4	-60	-3	-1	1
40,000	-56.5	-57	-1	3	4	-55	1	5	6	-49	8	10	12	-54	0	3	4
30,000	-44.5	-50	-6	-4	-2	-47	-2	0	1	-37	8	10	12	-43	2	4	5
20,000	-21.2	-26	-5	-1	0	-21	-0	3	4	-11	10	12	13	-17	4	7	8
10,000	-4.6	-11	-6	-3	-1	-5	-0	3	4	4	9	11	12	-1	3	6	7
CAIRO TO PARIS																	
53,000	-56.5	-59	-2	1	2	-57	-1	2	3	-60	-4	-2	-1	-61	-5	-2	-1
40,000	-56.5	-57	-0	3	5	-57	-1	3	5	-50	7	9	11	-56	0	3	4
30,000	-44.5	-49	-4	-2	-1	-46	-1	2	3	-35	10	12	13	-41	3	5	7
20,000	-21.2	-23	-2	1	2	-19	2	5	6	-9	12	14	15	-15	6	8	9
10,000	-4.6	-7	-3	0	2	-3	2	5	6	6	11	13	14	1	6	8	9
CAIRO TO RANGOON																	
53,000	-56.5	-70	-14	-12	-10	-68	-12	-9	-8	-74	-17	-15	-13	-72	-15	-13	-12
40,000	-56.5	-55	2	5	6	-53	3	6	8	-48	9	11	13	-54	2	5	6
30,000	-44.5	-49	5	8	9	-37	8	11	12	-26	18	20	21	-34	10	13	14
20,000	-21.2	-15	8	10	11	-10	11	13	14	-3	19	20	21	-8	13	15	16
10,000	-4.6	3	7	9	10	7	12	14	15	14	19	20	21	8	12	14	15

—D—DIFFERENCE BETWEEN INDICATED PEAK CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
CAIRO TO ROME																											
55,000	-56.5	-60	-4	-1	0	-59	-2	-0	1	-65	-8	-6	-5	-63	-6	-4	-3	-62	-5	-2	-1	4	3	3	3	1146 N.M.I.	
40,000	-56.5	-56	1	4	5	-57	-1	3	5	-48	8	10	11	-56	0	3	4	-54	2	6	7	5	5	5	5		
30,000	-44.5	-48	-3	-1	0	-44	0	3	4	-32	12	14	15	-40	4	6	7	-41	3	7	9	3	3	3	3		
20,000	-21.2	-22	-1	2	3	-18	3	6	7	-8	14	15	16	-14	7	9	10	-15	6	9	11	4	4	3	3		
10,000	-4.6	-6	-1	2	3	-1	4	6	8	9	13	15	16	3	8	9	11	1	6	9	11	4	4	3	3		
CAIRO TO SANTA MARIA																											
55,000	-56.5	-61	-5	-2	-1	-60	-3	-1	1	-64	-8	-6	-5	-63	-7	-5	-3	-62	-6	-3	-1	4	4	3	3	2817 N.M.I.	
40,000	-56.5	-57	-0	3	5	-57	-1	3	5	-51	6	8	9	-56	0	3	4	-55	1	4	6	5	5	3	3		
30,000	-44.5	-46	-2	1	2	-43	1	3	4	-34	10	12	14	-40	5	7	8	-41	4	7	9	3	3	3	3		
20,000	-21.2	-20	1	4	5	-17	4	7	8	-8	13	15	15	-13	8	10	11	-14	7	10	11	4	3	2	3		
10,000	-4.6	-3	1	4	5	0	5	7	8	9	14	16	16	3	8	10	11	2	7	10	12	4	3	2	3		
CAIRO TO SHANNON																											
55,000	-56.5	-58	-2	1	3	-56	0	2	4	-58	-2	0	2	-60	-4	-2	-0	-58	-2	1	2	4	4	3	4	2218 N.M.I.	
40,000	-56.5	-57	-0	3	5	-57	-0	3	5	-50	7	9	11	-56	0	3	4	-55	2	5	7	5	6	4	4		
30,000	-44.5	-49	-4	-2	-1	-46	-1	1	2	-36	8	11	12	-42	3	5	6	-43	1	5	7	4	4	3	4		
20,000	-21.2	-24	-3	0	2	-20	1	4	6	-11	11	13	14	-16	5	8	9	-17	4	7	9	5	4	3	4		
10,000	-4.6	-8	-3	0	2	-3	1	4	5	5	10	12	13	1	5	8	9	-1	3	7	8	4	4	3	4		
CAIRO TO SINGAPORE																											
55,000	-56.5	-75	-19	-17	-16	-74	-17	-15	-14	-76	-19	-17	-16	-76	-20	-18	-17	-75	-19	-16	-15	3	3	3	3	4457 N.M.I.	
40,000	-56.5	-55	2	4	5	-52	4	6	8	-50	7	9	10	-54	2	5	6	-53	4	6	8	4	5	3	3		
30,000	-44.5	-36	9	11	12	-33	11	13	14	-28	17	18	19	-33	12	13	14	-32	12	13	14	3	3	2	3		
20,000	-21.2	-10	12	13	14	-8	13	15	16	-4	18	19	20	-7	14	16	16	-7	14	16	17	2	2	2	2		
10,000	-4.6	6	10	12	13	9	13	15	16	13	17	18	19	9	13	14	15	9	14	15	16	2	2	2	2		
CAIRO TO STOCKHOLM																											
55,000	-56.5	-58	-1	2	3	-56	1	3	4	-56	0	2	4	-59	-3	-1	1	-57	-1	2	3	4	5	3	4	1853 N.M.I.	
40,000	-56.5	-57	-1	2	4	-55	1	4	6	-49	8	10	12	-56	1	3	5	-54	2	6	8	5	5	4	4		
30,000	-44.5	-51	-6	-4	-2	-47	-2	0	2	-36	8	11	12	-43	2	4	5	-44	0	4	6	5	5	4	4		
20,000	-21.2	-26	-5	-1	0	-21	-0	3	5	-11	10	12	13	-17	4	7	8	-19	2	6	8	5	5	3	4		
10,000	-4.6	-11	-6	-3	-1	-5	-0	3	4	4	9	11	12	-1	3	6	8	-3	1	5	7	5	5	3	4		
CAIRO TO TANANARIVE																											
55,000	-56.5	-76	-19	-17	-16	-75	-19	-16	-15	-76	-19	-17	-16	-76	-19	-17	-16	-75	-19	-17	-15	3	3	3	3	3087 N.M.I.	
40,000	-56.5	-53	3	5	6	-52	4	6	7	-51	5	7	7	-53	4	5	6	-52	4	6	7	2	3	2	2		
30,000	-44.5	-34	11	12	13	-32	13	14	15	-30	14	16	16	-32	12	14	14	-32	13	14	15	2	2	2	2		
20,000	-21.2	-7	14	15	16	-7	15	16	16	-5	16	18	18	-7	15	16	16	-6	15	16	17	2	2	2	2		
10,000	-4.6	8	13	14	15	9	14	15	15	11	15	17	17	9	14	15	16	9	14	15	16	2	2	2	2		
CAIRO TO TEHRAN																											
55,000	-56.5	-63	-7	-4	-3	-61	-5	-3	-2	-70	-14	-12	-11	-65	-8	-6	-5	-63	-8	-6	-4	4	3	3	4	1055 N.M.I.	
40,000	-56.5	-55	2	5	6	-55	2	5	7	-46	10	12	13	-55	1	3	4	-53	4	7	8	4	5	3	4		
30,000	-44.5	-46	-1	1	2	-42	3	5	6	-27	18	20	21	-39	5	7	8	-38	6	10	13	3	3	3	3		
20,000	-21.2	-20	1	4	5	-16	5	7	9	-3	18	20	21	-12	9	11	12	-13	8	12	14	4	3	3	3		
10,000	-4.6	-4	1	3	5	2	6	9	10	13	14	20	20	6	10	12	13	4	9	12	14	4	4	2	3		
CAIRO TO TEL AVIV-JAFFA																											
55,000	-56.5	-65	-9	-6	-5	-63	-6	-4	-3	-71	-15	-13	-12	-67	-11	-8	-7	-67	-10	-7	-6	3	3	3	3	212 N.M.I.	
40,000	-56.5	-54	2	5	6	-55	1	4	6	-47	10	12	12	-55	1	3	4	-53	4	7	8	4	5	3	3		
30,000	-44.5	-45	-0	1	3	-41	4	5	7	-27	14	20	21	-38	6	8	9	-38	7	11	13	3	3	3	3		
20,000	-21.2	-18	3	5	6	-15	6	8	9	-3	18	20	20	-12	10	11	12	-12	9	13	14	3	3	3	2		
10,000	-4.6	-2	2	5	6	2	6	9	10	13	17	19	20	6	11	13	13	5	9	12	14	3	3	2	2		
CAIRO TO TRIPOLI																											
55,000	-56.5	-64	-8	-6	-4	-62	-5	-4	-2	-70	-13	-11	-10	-66	-10	-7	-6	-65	-9	-6	-5	3	3	3	3	946 N.M.I.	
40,000	-56.5	-55	2	5	6	-56	1	4	5	-48	9	10	11	-56	1	3	4	-53	4	6	7	4	5	2	3		
30,000	-44.5	-45	-1	1	2	-41	3	5	6	-30	15	17	18	-39	6	7	8	-39	6	9	12	3	3	3	3		
20,000	-21.2	-19	2	5	6	-15	6	8	9	-5	16	18	18	-12	9	11	11	-12	8	11	13	3	3	2	2		
10,000	-4.6	-3	2	4	5	2	6	8	10	11	16	17	18	5	10	12	12	4	9	11	13	3	3	2	2		
CAIRO TO TUNIS																											
55,000	-56.5	-62	-6	-1	-2	-60	-4	-2	-1	-67	-11	-9	-8	-64	-8	-6	-4	-63	-7	-4	-3	4	3	3	3	1150 N.M.I.	
40,000	-56.5	-55	1	4	6	-57	-0	3	5	-48	9	10	11	-56	1	3	4	-54	3	6	7	5	5	3	3		
30,000	-44.5	-46	-2	0	1	-43	1	4	5	-31	13	15	16	-40	5	7	8	-40	4	8	10	3	3	3	3		
20,000	-21.2	-20	1	3	5	-16	5	7	8	-6	15	16	17	-13	8	10	11	-14	7	10	12	4	3	2	2		
10,000	-4.6	-4	1	3	4	0	5	7	9	10	15	16	17	4	9	10	11	3	7	10	12	4	4	2	3		
CAIRO TO VIENNA																											
55,000	-56.5	-59	-2	1	2	-57	-1	1	3	-61	-5	-3	-2	-62	-5	-3	-1	-60	-3	-1	1	4	3	3	3	1276 N.M.I.	
40,000	-56.5	-56	0	3	5	-57	-0	3	5	-48	8	10	12	-56	0	3	4	-54	2	6	7	5	5	3	3		
30,000	-44.5	-49	-4	-2	-1	-45	-1	2	3	-34	11	13	14	-41	3	5	7	-42	2	6	8	3	3	3	3		
20,000	-21.2	-24	-2	1	2	-19	2	5	6	-9	12	14	15	-15	6	8	9	-17	5	8	10	4	4	3	3		
10,000	-4.6	-8	-3	-1	1	-3	2	5	6	7	11	13	14	2	6	8	10	-1	4	7	9	4	4	3	3		
CAIRO TO WARSAW																											
55,000	-56.5	-58	-2	1	3	-57	-0	2	3	-59	-3	-1	0	-61	-4	-2	-1	-59	-2	0	2	4	3	3	3	1400 N.M.I.	
40,000	-56.5	-57	-0	3	5	-56	0	4	6	-48	8	10	12	-56	0	3	4	-54	2	6	8	5	5	3	3		
30,000	-44.5	-50	-5	-3	-2	-46	-1	1	2	-35	10	12	13	-42	3	5	6	-43	2	6	8	3	3	3	3		
20,000	-21.2	-24	-3	-0	1	-20	1	4	6	-10	12	13	14	-16	6	8	9	-17	4	7	9	4	4	3	3		
10,000	-4.6	-9	-5	-2	-0	-3	1	4	6	6	10	12	13	1	5	8	9	-2	3	6	8	4	4	3	3		
CAIRO TO ZURICH																											
55,000	-56.5	-59	-2	1	2	-58	-1	1	3	-61	-5	-3	-2	-62	-5	-3	-2	-60	-3	-1	1	4	3	3	3	1480 N.M.I.	
40,000	-56.5	-56	0	3	5	-57	-1	3	5	-49	7	10	11	-56	0	3	4	-55	2	5	7	5	5	3	3		
30,000	-44.5	-49	-4	-2	-1	-45	-1	2	3	-34	10	12	14	-41	3	5	7	-42	2	6	8	3	3	3	3		
20,000	-21.2	-23	-2	1	2	-19	2	5	6	-9	12	14	15	-15	6	8	10	-16	5	8	10	4	4	3	3		
10,000	-4.6	-7	-3	0	2	-2	2	5	6	7	12	13	14	2	6	8	10	-0	4	8	9	4	4				

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	D85	50	050	075	D85	50	050	075	D85	50	050	075	D85	50	050	075	D85						
CALCULATA TO DAMASCUS																											
55,000	-56.5	-67	-10	-8	-6	-65	-8	-6	-4	-72	-15	-15	-11	-68	-12	-9	-8	-68	-12	-8	-7	4	4	4	4	2810 N.M.I.	
40,000	-56.5	-55	2	5	7	-54	5	6	8	-67	9	12	14	-54	2	5	6	-52	4	8	10	5	5	4	4		
30,000	-56.5	-42	5	6	7	-39	5	8	10	-26	18	20	22	-36	9	11	13	-36	9	13	15	4	4	3	4		
20,000	-21.2	-17	5	7	8	-12	9	11	13	-2	19	21	22	-10	11	13	15	-10	11	14	16	4	4	3	3		
10,000	-8.6	-0	4	7	8	6	10	12	14	14	19	21	21	7	11	13	14	7	11	14	16	4	3	2	3		
CALCULATA TO DHAKRA																											
55,000	-56.5	-71	-15	-12	-11	-69	-15	-10	-9	-74	-18	-15	-13	-73	-17	-14	-13	-72	-16	-12	-11	4	4	4	4	2094 N.M.I.	
40,000	-56.5	-54	2	5	7	-53	4	7	9	-68	9	12	13	-54	5	6	7	-52	4	8	10	5	5	4	4		
30,000	-48.5	-34	7	10	11	-36	9	12	13	-26	18	20	22	-33	11	14	15	-33	11	15	17	5	4	3	4		
20,000	-21.2	-13	9	11	12	-9	12	15	16	-2	19	21	22	-7	14	16	17	-8	15	16	18	5	3	3	3		
10,000	-8.6	4	8	10	11	9	14	16	17	15	19	21	22	8	13	14	15	9	13	16	18	5	3	2	3		
CALCULATA TO DJAKARBA																											
55,000	-56.5	-81	-24	-22	-21	-77	-21	-19	-18	-78	-21	-19	-18	-79	-23	-21	-20	-79	-22	-20	-19	3	3	3	3	2037 N.M.I.	
40,000	-56.5	-55	1	3	4	-52	5	6	7	-55	5	5	5	-54	2	4	5	-54	3	5	6	2	2	2	2		
30,000	-48.5	-32	15	14	15	-30	14	16	14	-10	15	16	16	-32	15	14	15	-11	14	15	17	2	2	2	2		
20,000	-21.2	-6	14	17	18	-5	16	17	18	-5	17	17	18	-6	16	17	17	-5	16	17	17	2	2	1	2		
10,000	-8.6	9	14	15	15	10	14	14	16	10	14	15	16	9	14	15	15	9	14	15	16	2	2	1	1		
CALCULATA TO GAYE																											
55,000	-56.5	-73	-17	-14	-13	-69	-15	-10	-8	-75	-19	-14	-14	-71	-17	-14	-13	-73	-16	-13	-11	4	4	5	4	230 N.M.I.	
40,000	-56.5	-54	1	4	5	-51	4	7	9	-69	7	10	12	-54	5	6	8	-51	4	8	10	4	5	5	5		
30,000	-48.5	-37	8	11	12	-35	10	13	14	-26	18	20	21	-32	12	15	14	-13	12	15	17	4	4	3	4		
20,000	-21.2	-11	10	12	14	-9	12	15	16	-2	19	20	21	-4	15	17	18	-7	14	17	18	5	3	2	3		
10,000	-8.6	5	10	12	13	8	13	15	16	12	17	18	19	8	12	14	15	8	13	15	16	5	3	2	3		
CALCULATA TO HONG KONG																											
55,000	-56.5	-74	-17	-15	-14	-72	-16	-13	-12	-75	-18	-15	-14	-72	-16	-13	-12	-73	-17	-14	-13	4	4	4	4	1427 N.M.I.	
40,000	-56.5	-55	2	4	5	-52	4	7	8	-50	6	8	10	-54	3	5	6	-53	4	6	8	5	3	3	3		
30,000	-48.5	-35	10	12	13	-32	12	14	15	-27	17	19	19	-31	15	15	14	-31	13	15	17	3	3	2	3		
20,000	-21.2	-10	12	14	15	-7	14	16	17	-3	18	19	20	-6	15	17	18	-4	15	17	18	3	3	2	2		
10,000	-8.6	5	9	11	12	9	13	15	16	12	16	17	18	8	13	14	15	8	13	15	15	5	2	1	2		
CALCULATA TO ISTANBUL																											
55,000	-56.5	-65	-6	-4	-2	-61	-5	-2	-1	-67	-10	-8	-A	-64	-8	-5	-4	-64	-7	-4	-3	4	4	4	4	1147 N.M.I.	
40,000	-56.5	-55	1	4	4	-54	2	5	7	-67	9	12	14	-55	2	4	6	-53	4	7	10	5	5	4	4		
30,000	-48.5	-45	-0	2	4	-41	5	6	8	-28	14	19	20	-34	6	9	10	-33	4	11	13	4	4	4	4		
20,000	-21.2	-20	1	4	5	-15	7	9	11	-4	17	19	20	-12	9	11	13	-13	8	12	14	4	4	3	3		
10,000	-8.6	-4	0	3	5	5	7	10	11	12	14	18	19	4	9	11	13	4	8	12	14	4	4	3	4		
CALCULATA TO KARACHI																											
55,000	-56.5	-73	-14	-14	-12	-70	-15	-11	-9	-75	-18	-15	-14	-74	-17	-15	-13	-73	-16	-13	-11	4	4	5	4	1175 N.M.I.	
40,000	-56.5	-55	2	5	7	-53	4	7	9	-68	8	12	13	-54	5	6	8	-53	4	8	10	5	5	5	5		
30,000	-48.5	-37	8	11	13	-35	9	13	14	-26	18	20	21	-32	12	15	14	-33	12	15	17	5	5	3	4		
20,000	-21.2	-11	10	12	13	-9	13	15	16	-2	19	20	21	-6	15	17	18	-7	14	17	18	5	4	3	3		
10,000	-8.6	5	9	11	12	9	14	14	17	14	18	20	20	8	13	14	15	9	13	16	17	5	3	2	3		
CALCULATA TO LISBON																											
55,000	-56.5	-60	-4	-1	1	-59	-2	0	2	-62	-4	-3	-1	-62	-4	-3	-2	-61	-4	-1	0	4	4	4	4	4896 N.M.I.	
40,000	-56.5	-54	0	3	5	-55	1	4	6	-69	8	10	12	-55	1	4	6	-54	2	4	8	5	5	4	4		
30,000	-48.5	-47	-2	0	2	-63	1	4	6	-52	12	15	16	-40	5	7	9	-41	4	8	10	4	4	4	4		
20,000	-21.2	-22	-1	2	4	-17	5	7	9	-7	14	16	17	-14	7	10	11	-15	6	10	12	4	4	3	4		
10,000	-8.6	-6	-1	2	3	0	5	7	9	9	14	16	17	2	7	9	11	1	6	9	11	5	4	3	4		
CALCULATA TO MADRAS																											
55,000	-56.5	-77	-21	-19	-18	-74	-17	-15	-13	-77	-20	-18	-16	-78	-21	-19	-14	-76	-20	-17	-15	5	4	4	3	747 N.M.I.	
40,000	-56.5	-54	0	3	4	-52	4	7	8	-51	6	9	10	-54	2	5	7	-53	5	7	8	5	4	4	4		
30,000	-48.5	-34	10	13	14	-32	12	15	16	-28	17	19	19	-32	13	15	16	-31	13	16	17	5	4	3	3		
20,000	-21.2	-7	14	15	16	-7	14	16	17	-6	18	19	19	-6	14	17	18	-4	15	17	18	5	3	2	2		
10,000	-8.6	4	12	14	15	10	14	16	17	11	16	17	17	9	13	14	15	9	14	15	16	2	2	2	2		
CALCULATA TO MADRID																											
55,000	-56.5	-60	-4	-1	1	-59	-2	0	2	-62	-4	-3	-2	-62	-4	-3	-2	-61	-4	-1	0	4	4	4	4	4619 N.M.I.	
40,000	-56.5	-54	0	4	5	-55	1	5	6	-69	8	11	13	-55	1	4	6	-54	3	6	8	5	5	4	4		
30,000	-48.5	-47	-2	0	2	-63	1	4	6	-52	13	15	16	-40	5	7	9	-40	4	8	10	4	4	4	4		
20,000	-21.2	-22	-1	2	4	-17	5	7	9	-7	14	16	17	-14	7	10	11	-15	6	10	12	5	4	3	4		
10,000	-8.6	-6	-2	2	3	0	5	7	9	9	14	16	17	2	7	9	11	1	6	9	11	5	4	3	4		
CALCULATA TO MANILA																											
55,000	-56.5	-77	-20	-18	-17	-75	-19	-17	-15	-77	-20	-17	-16	-75	-18	-16	-15	-76	-19	-17	-15	5	4	4	3	1912 N.M.I.	
40,000	-56.5	-55	2	5	4	-52	5	6	7	-52	4	6	7	-54	3	5	6	-53	1	5	6	5	3	3	3		
30,000	-48.5	-33	12	15	16	-11	13	15	16	-29	16	17	18	-31	14	15	16	-11	14	15	16	5	3	2	2		
20,000	-21.2	-7	14	15	16	-5	16	17	18	-4	17	18	19	-6	16	17	18	-6	14	17	18	2	2	1	2		
10,000	-8.6	7	12	13	14	10	14	16	16	11	16	17	17	9	13	15	15	9	14	15	16	2	2	1	2		
CALCULATA TO MILAN																											
55,000	-56.5	-60	-4	-1	1	-59	-2	0	2	-62	-4	-3	-2	-62	-4	-3	-2	-60	-4	-1	0	4	4	4	4	4022 N.M.I.	
40,000	-56.5	-54	0	4	5	-55	2	5	7	-69	8	11	13	-55	2	4	6	-54	5	7	9	5	5	4	4		
30,000	-48.5	-47	-3	-0	1	-63	1	4	6	-52	12	15	17	-40	5	7	9	-41	4	8	11	4	4	4	4		
20,000	-21.2	-23	-2	2	3	-17	5	7	9	-7	14	16	17	-14	7	10	11	-15	6	10	12	5	4	3	4		
10,000	-8.6	-7	-2	1	2	-0	4	7	9	9	13	15	16	2	4	9	10	1	5	9	11	5	4	3	4		
CALCULATA TO MOSCOW																											
55,000	-56.5	-60	-5	-0	1	-57	-1	2	3	-58	-2	1	3	-60	-3	-0	1	-59	-2	1	2	4	4	4	4	2495 N.M.I.	
40,000	-56.5	-54	0	3	5	-53	5	7	8	-68	9	12	13	-54	5	6	8	-53	4	8	10	5	5	5	5		
30,000	-48.5	-48	-5	-1	1	-45	2	5	6	-32	11	16	17	-40	4	7	8	-41	4	8	11	5	5	4	4		
20,000	-21.2	-24	-3	1	3	-17	4	7	9	-8	13	16															

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURE																		STANDARD DEVIATION							
HEIGHT IN FEET	ISA TEMP.	JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
CALCUTTA TO HANKING																									
51,000	-56.5	-69	-12	-7	-67	-11	-8	-7	-71	-14	-11	-9	-68	-12	-9	-8	5	4	5	4	1707 N.MI.				
40,000	-56.5	-58	3	5	-55	4	7	8	-49	8	10	12	-55	4	6	8	4	4	4	4	4	4	4	4	
30,000	-48.5	-38	6	11	-16	9	11	12	-27	18	20	21	-33	11	14	15	4	4	4	3	4	4	3	4	
20,000	-21.2	-15	6	10	-10	11	13	14	-5	19	20	21	-9	12	15	16	4	3	2	3	4	3	2	3	
10,000	-4.6	-0	4	7	5	9	11	12	12	16	17	18	5	10	11	13	4	3	2	3	4	3	2	3	
CALCUTTA TO NEW DELHI																									
51,000	-56.5	-71	-15	-12	-68	-11	-8	-7	-74	-18	-14	-13	-72	-15	-13	-11	4	4	5	4	708 N.MI.				
40,000	-56.5	-55	2	5	-55	3	7	8	-49	8	11	13	-54	3	6	8	5	5	5	5	5	5	5	5	
30,000	-48.5	-38	7	10	-36	8	11	13	-26	18	20	22	-33	12	14	16	5	5	5	4	5	5	4	5	
20,000	-21.2	-13	6	11	-10	11	14	15	-2	19	21	22	-7	14	16	17	3	4	3	3	4	3	3	3	
10,000	-4.6	5	8	10	8	13	15	16	13	17	18	19	7	12	14	15	3	3	2	3	4	3	2	3	
CALCUTTA TO PIPING																									
51,000	-56.5	-64	-7	-5	-65	-7	-4	-3	-67	-10	-7	-6	-65	-9	-6	-4	4	4	5	4	1748 N.MI.				
40,000	-56.5	-54	3	5	-51	4	7	8	-48	9	12	13	-53	4	7	8	4	4	4	4	4	4	4	4	
30,000	-48.5	-42	2	5	-40	5	8	10	-27	18	20	22	-36	9	11	13	4	4	4	4	4	4	4	4	
20,000	-21.2	-19	2	5	-14	7	10	11	-5	18	20	21	-11	10	12	14	4	4	3	3	4	4	3	4	
10,000	-4.6	-4	1	5	2	6	9	10	11	16	17	18	1	7	10	11	4	4	2	4	4	4	2	4	
CALCUTTA TO RANGOON																									
51,000	-56.5	-76	-20	-17	-75	-16	-14	-13	-77	-20	-17	-16	-76	-19	-17	-15	3	4	4	4	554 N.MI.				
40,000	-56.5	-56	1	3	-52	5	7	8	-51	5	8	9	-54	2	5	6	3	3	4	4	4	4	4	4	
30,000	-48.5	-36	10	12	-32	11	15	16	-27	17	18	19	-32	13	15	17	3	3	2	3	4	3	2	3	
20,000	-21.2	-7	13	15	-6	15	17	17	-4	17	19	19	-6	15	17	18	3	3	2	2	4	3	2	2	
10,000	-4.6	7	12	14	5	14	15	16	11	16	17	18	3	13	14	15	3	2	1	2	4	3	1	2	
CALCUTTA TO ROME																									
51,000	-56.5	-61	-5	-2	-60	-5	-1	1	-64	-8	-5	-3	-63	-7	-4	-3	4	4	4	4	5891 N.MI.				
40,000	-56.5	-56	1	4	-55	2	5	7	-48	9	12	13	-55	1	4	6	5	5	4	4	4	4	4	4	
30,000	-48.5	-46	-2	1	-42	2	5	6	-10	14	17	18	-19	5	8	9	4	4	4	4	4	4	4	4	
20,000	-21.2	-21	0	3	-16	5	8	10	-6	15	17	18	-13	8	10	12	4	4	3	3	4	4	3	3	
10,000	-4.6	-6	-1	2	1	6	8	10	10	15	17	18	1	8	10	11	4	4	3	4	4	3	4	4	
CALCUTTA TO SINGAPORE																									
51,000	-56.5	-80	-23	-21	-77	-20	-18	-17	-78	-21	-19	-18	-79	-22	-20	-19	3	3	4	3	1565 N.MI.				
40,000	-56.5	-56	1	3	-52	5	6	7	-51	3	5	6	-54	2	4	5	3	2	3	3	4	3	3	3	
30,000	-48.5	-32	12	14	-30	14	16	17	-29	15	16	17	-31	11	15	15	2	2	2	2	4	2	2	2	
20,000	-21.2	-6	15	17	-5	16	18	18	-4	17	18	18	-6	16	17	17	2	2	1	2	4	2	1	2	
10,000	-4.6	9	13	15	10	14	16	16	10	15	16	16	9	14	15	15	2	2	1	2	4	2	1	2	
CALCUTTA TO TAIPEI																									
51,000	-56.5	-72	-16	-15	-71	-15	-12	-11	-71	-17	-14	-12	-71	-15	-12	-10	4	4	4	4	1818 N.MI.				
40,000	-56.5	-54	5	5	-52	4	7	8	-50	7	9	10	-55	1	6	7	3	3	3	3	4	3	3	3	
30,000	-48.5	-35	10	12	-31	11	14	15	-27	17	19	20	-31	13	15	16	3	3	2	3	4	3	2	3	
20,000	-21.2	-11	11	13	-7	14	16	16	-1	18	19	20	-6	15	17	18	3	3	2	1	4	3	2	1	
10,000	-4.6	5	8	10	8	12	14	15	12	16	17	18	8	12	14	15	1	2	2	2	4	3	2	2	
CALCUTTA TO TAVANAYIVU																									
51,000	-56.5	-74	-22	-20	-76	-20	-17	-16	-75	-19	-17	-15	-74	-21	-19	-18	3	4	3	3	5478 N.MI.				
40,000	-56.5	-54	2	4	-52	5	7	8	-52	4	6	7	-51	3	5	6	3	3	3	3	4	3	3	3	
30,000	-48.5	-31	13	15	-31	11	15	16	-30	14	16	16	-32	12	14	15	2	3	2	2	4	3	2	2	
20,000	-21.2	-5	16	17	-6	15	16	17	-5	16	18	18	-6	15	16	17	1	2	2	2	4	3	2	2	
10,000	-4.6	9	14	16	10	14	15	15	9	14	15	15	9	14	15	15	1	2	2	2	4	3	2	2	
CALCUTTA TO TEMERAN																									
51,000	-56.5	-67	-10	-8	-65	-8	-6	-4	-71	-15	-12	-10	-68	-11	-9	-7	4	4	5	4	2081 N.MI.				
40,000	-56.5	-55	2	5	-54	1	6	8	-47	9	12	14	-54	2	5	7	5	5	5	5	4	4	4	4	
30,000	-48.5	-41	5	6	-39	6	9	10	-27	17	19	20	-36	9	12	13	5	5	4	4	4	4	4	4	
20,000	-21.2	-17	4	7	-12	9	12	13	-2	19	21	22	-10	11	14	15	4	4	3	3	4	4	3	3	
10,000	-4.6	-0	4	7	6	10	13	14	14	19	21	21	6	11	13	14	4	3	2	3	4	3	2	3	
CALCUTTA TO TEL AVIV-JAFFA																									
51,000	-56.5	-68	-11	-9	-66	-9	-7	-5	-72	-16	-13	-12	-69	-15	-10	-9	4	4	4	4	2880 N.MI.				
40,000	-56.5	-54	2	5	-54	3	6	8	-47	9	12	14	-54	2	5	6	4	5	4	4	4	4	4	4	
30,000	-48.5	-41	3	6	-39	6	9	10	-26	17	19	20	-35	9	12	13	4	4	3	4	4	4	3	4	
20,000	-21.2	-16	5	7	-12	9	12	13	-2	19	21	22	-9	12	14	15	3	1	3	3	4	3	3	3	
10,000	-4.6	0	5	7	6	11	13	14	15	19	21	22	7	12	13	15	3	3	2	3	4	3	2	3	
CALCUTTA TO TINIPOLI																									
51,000	-56.5	-65	-8	-6	-63	-6	-4	-3	-70	-14	-11	-10	-66	-10	-7	-6	4	4	4	4	5966 N.MI.				
40,000	-56.5	-55	2	5	-55	2	5	7	-47	9	12	13	-55	1	4	6	5	5	4	4	4	4	4	4	
30,000	-48.5	-45	1	4	-41	4	7	8	-28	17	19	20	-37	7	10	11	4	4	3	3	4	4	3	3	
20,000	-21.2	-18	5	7	-14	7	10	11	-4	18	20	21	-11	10	12	13	4	4	3	3	4	4	3	3	
10,000	-4.6	-2	2	5	4	8	11	12	11	18	19	20	6	10	12	13	4	4	2	3	4	4	2	3	
CALCUTTA TO TUNIS																									
51,000	-56.5	-63	-6	-1	-61	-5	-2	-1	-67	-11	-8	-7	-65	-8	-5	-4	4	4	4	4	4055 N.MI.				
40,000	-56.5	-55	1	4	-55	1	5	7	-47	9	12	13	-55	1	4	5	5	5	4	4	4	4	4	4	
30,000	-48.5	-45	-1	2	-42	3	5	7	-29	15	18	19	-18	6	9	10	4	4	4	4	4	4	4	4	
20,000	-21.2	-20	1	4	-15	6	9	10	-5	16	18	19	-12	9	11	12	4	4	3	3	4	4	3	3	
10,000	-4.6	-4	1	5	2	7	9	11	11	16	18	19	4	9	11	12	4	4	3	3	4	4	3	3	
CALGARY TO DENVER																									
51,000	-56.5	-59	-2	1	-56	0	1	4	-56	-2	-0	1	-61	-4	-2	-1	5	4	3	4	780 N.MI.				
40,000	-56.5	-56	1	5	-57	-0	4	6	-54	2	5	6	-56	0	1	5	7	6	4	5	4	4	4	4	
30,000	-44.5	-50	-6	-4	-48	-3	-1	0	-18	7	9	10	-45	-2	4	5	4	3	3	4	4	3	3	4	
20,000	-21.2	-27	-6	-1	-21	-0	3	4	-11	11	12	13	-17	4	7	9	7	4	3	3	4	4	3	3	
10,000	-4.6	-12	-7	-3	-4	0	4	6	9	13	15	17	-1	4	8	10	7	5	3	6	4	3	6	6	
CALGARY TO LOS ANGELES																									
51,000	-56.5	-60	-4	0	-58	-1	1	3	-60	-4	-2	-1	-62	-6	-3	-2	4	4	3	4	1048 N.MI.				
40,000	-56.5	-57	-1	4	-57	-1	3	5	-54	2	4	6	-56	0	3	5	7	5	3	4	4	3	4	4	
30,000	-44.5	-49	-4	-2	-46	-2	0	1	-38	7	9	10	-42	3	5	6	4	3	3	4	4	3	3	4	
20,000	-21.2	-24	-3	2	-20	1	4	6	-10	11	13	14													

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	150 TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY				APRIL				JULY				OCTOBER			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
CALGARY TO PHOENIX																	
55,000	-56.5	-60	-4	-1	1	-58	-2	1	2	-61	-5	-3	-2	-63	-6	-4	-3
40,000	-56.5	-56	0	5	7	-57	-1	5	5	-54	2	4	6	-54	0	5	5
30,000	-44.5	-49	-4	-2	-1	-47	-2	0	1	-57	8	9	10	-42	3	5	6
20,000	-21.2	-24	-3	1	4	-20	1	4	6	-10	12	13	14	-15	6	9	10
10,000	-4.6	-8	-4	1	5	-2	2	5	7	10	15	17	18	1	6	9	11
CAMPECHE TO CIUDAD DEL CARMEN																	
55,000	-56.5	-77	-20	-18	-17	-75	-18	-17	-16	-75	-17	-16	-15	-78	-22	-20	-19
40,000	-56.5	-55	1	5	5	-55	2	5	4	-54	0	1	2	-54	2	4	4
30,000	-44.5	-54	8	10	10	-35	10	11	11	-55	12	13	13	-52	12	13	14
20,000	-21.2	-8	15	15	16	-7	15	16	17	-6	15	16	16	-6	15	16	17
10,000	-4.6	8	12	14	15	9	14	16	16	9	14	15	15	10	15	16	16
CAMPECHE TO MERID																	
55,000	-56.5	-76	-20	-18	-17	-74	-18	-16	-15	-75	-16	-15	-15	-78	-22	-20	-19
40,000	-56.5	-56	1	2	5	-55	2	5	4	-54	0	1	2	-54	2	4	4
30,000	-44.5	-56	8	9	10	-55	9	10	11	-55	12	13	13	-52	12	13	14
20,000	-21.2	-8	15	15	16	-7	14	16	16	-6	15	16	16	-6	15	16	17
10,000	-4.6	8	12	14	14	9	15	15	16	9	14	15	15	10	14	15	15
CANYON 6 TO NOGALLS																	
55,000	-56.5	-67	-11	-8	-7	-64	-9	-7	-6	-70	-14	-12	-11	-69	-12	-9	-8
40,000	-56.5	-56	0	4	6	-58	-1	1	5	-54	5	4	4	-55	1	3	4
30,000	-44.5	-45	1	3	4	-42	5	4	5	-53	12	13	14	-37	7	9	10
20,000	-21.2	-16	5	8	10	-14	7	9	11	-6	15	16	17	-10	12	14	15
10,000	-4.6	0	5	8	10	5	10	13	14	15	18	19	20	7	12	14	15
CANYON 15. TO HONOLULU																	
55,000	-56.5	-78	-22	-20	-19	-77	-21	-19	-18	-77	-20	-18	-17	-76	-20	-18	-17
40,000	-56.5	-55	5	5	6	-54	2	4	5	-54	2	4	5	-54	2	4	5
30,000	-44.5	-55	11	13	14	-53	11	13	14	-53	12	13	14	-52	12	13	14
20,000	-21.2	-6	15	16	17	-7	14	15	16	-6	15	17	17	-6	15	17	17
10,000	-4.6	9	14	15	15	9	13	15	15	9	14	15	15	10	15	16	16
CANYON 15. TO NANOI																	
55,000	-56.5	-81	-24	-23	-23	-80	-23	-21	-20	-76	-20	-18	-17	-77	-21	-19	-18
40,000	-56.5	-54	5	4	5	-53	4	5	5	-55	2	5	4	-54	2	5	4
30,000	-44.5	-51	15	15	15	-52	13	14	15	-53	12	13	14	-52	12	13	14
20,000	-21.2	-4	17	18	18	-6	15	16	17	-7	14	15	16	-6	15	16	17
10,000	-4.6	10	15	16	16	10	15	16	16	8	15	16	15	9	14	15	15
CAPE TOWN TO DURBAN																	
55,000	-56.5	-64	-8	-5	-4	-64	-8	-5	-4	-58	-1	1	1	-62	-5	-2	-1
40,000	-56.5	-54	5	6	7	-55	1	4	5	-52	4	7	8	-55	4	6	8
30,000	-44.5	-57	8	10	11	-59	6	8	9	-42	2	5	6	-59	6	8	9
20,000	-21.2	-10	11	13	14	-12	9	11	12	-17	4	6	7	-15	8	10	12
10,000	-4.6	7	12	14	15	5	9	11	12	-0	4	6	7	4	9	11	12
CAPE TOWN TO ENILBOE																	
55,000	-56.5	-74	-17	-15	-13	-73	-16	-14	-13	-68	-11	-9	-8	-71	-14	-12	-11
40,000	-56.5	-52	4	6	7	-53	4	6	7	-52	5	7	8	-52	4	6	7
30,000	-44.5	-52	15	16	16	-53	11	13	14	-53	11	13	14	-53	11	13	14
20,000	-21.2	-6	15	16	17	-7	14	15	16	-9	12	14	15	-8	13	15	16
10,000	-4.6	10	14	15	16	8	13	14	15	6	9	11	11	8	13	14	15
CAPE TOWN TO JOHANNESBURG																	
55,000	-56.5	-66	-10	-7	-6	-66	-9	-7	-5	-59	-5	-0	1	-65	-7	-4	-2
40,000	-56.5	-55	5	6	8	-55	2	4	6	-52	5	7	8	-55	4	6	8
30,000	-44.5	-56	9	11	12	-58	7	9	10	-41	4	6	8	-54	7	9	11
20,000	-21.2	-9	12	14	15	-11	10	12	13	-16	5	8	9	-12	9	11	13
10,000	-4.6	8	15	15	16	6	10	12	13	0	5	7	8	5	10	12	13
CAPE TOWN TO KIMBERLEY																	
55,000	-56.5	-65	-9	-6	-5	-65	-8	-6	-4	-58	-2	1	2	-62	-6	-3	-1
40,000	-56.5	-55	5	6	8	-55	1	4	5	-52	4	7	8	-55	5	6	8
30,000	-44.5	-57	8	10	11	-58	6	8	10	-42	2	5	7	-59	6	8	10
20,000	-21.2	-10	12	13	14	-12	9	11	12	-17	4	7	8	-15	9	11	12
10,000	-4.6	8	12	14	15	5	10	12	13	-0	4	6	7	4	9	11	12
CAPE TOWN TO LLOPDORVILLE																	
55,000	-56.5	-75	-17	-14	-13	-74	-16	-13	-12	-67	-10	-8	-7	-69	-15	-11	-9
40,000	-56.5	-55	4	6	7	-53	5	6	7	-52	5	7	8	-55	4	6	7
30,000	-44.5	-55	12	14	14	-54	11	13	13	-50	9	11	12	-54	10	12	13
20,000	-21.2	-6	15	16	17	-8	14	15	16	-10	11	13	14	-8	13	15	16
10,000	-4.6	9	14	15	16	8	12	14	15	5	8	10	11	8	13	14	15
CAPE TOWN TO PORT ELIZABETH																	
55,000	-56.5	-65	-8	-4	-2	-65	-6	-4	-2	-57	-0	5	4	-60	-5	-0	1
40,000	-56.5	-54	5	6	7	-54	1	5	5	-53	4	7	8	-55	5	6	8
30,000	-44.5	-56	6	9	10	-40	5	7	9	-44	0	5	5	-40	5	7	9
20,000	-21.2	-12	10	12	13	-15	8	10	11	-19	2	5	6	-14	7	9	10
10,000	-4.6	5	10	12	13	5	8	10	11	-1	5	7	8	5	7	10	11
CAPE TOWN TO WINDHOK																	
55,000	-56.5	-69	-12	-9	-8	-67	-11	-8	-7	-61	-4	-2	-0	-64	-8	-5	-4
40,000	-56.5	-55	4	6	8	-55	2	4	6	-52	5	7	8	-55	4	6	8
30,000	-44.5	-55	9	11	13	-57	8	10	11	-40	5	7	9	-57	7	10	11
20,000	-21.2	-8	15	15	16	-11	10	12	13	-15	6	8	9	-11	10	12	13
10,000	-4.6	9	15	15	16	6	11	13	14	0	5	7	8	6	10	13	14
CARACAS TO CUMAN																	
55,000	-56.5	-78	-21	-20	-19	-78	-21	-20	-19	-75	-17	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	5	4	5	-52	4	6	7	-55	1	5	4	-54	5	4	5
30,000	-44.5	-55	11	13	13	-51	14	15	15	-53	12	13	13	-51	13	14	15
20,000	-21.2	-6	15	16	17	-5	14	17	18	-7	14	15	16	-6	14	17	17
10,000	-4.6	9	15	15	15	9	14	15	16	10	14	15	16	9	14	15	16

ND--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL							
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
CARACAS TO CUMACAO																									
51,000	-56.5	-78	-21	-20	-19	-78	-21	-19	-19	-73	-17	-15	-14	-77	-21	-19	-18	-76	-20	-18	-17	3	3	2	3
40,000	-56.5	-54	3	4	5	-52	4	6	6	-55	1	3	3	-54	3	4	4	-54	3	4	5	2	2	2	2
30,000	-44.5	-33	11	12	13	-41	13	15	15	-33	12	13	13	-31	13	14	15	-32	12	14	14	2	2	2	2
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17	-6	15	17	17	2	2	1	1
10,000	-4.6	9	13	14	15	9	14	15	15	9	14	15	15	10	14	15	15	9	14	15	15	2	2	1	1
CARACAS TO DAKAR																									
51,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-74	-17	-16	-15	-77	-21	-19	-18	-76	-20	-18	-17	3	3	3	3
40,000	-56.5	-54	3	5	6	-54	2	5	6	-55	2	3	4	-53	3	4	5	-54	3	4	5	3	3	2	2
30,000	-44.5	-34	10	12	12	-52	12	13	14	-53	11	12	13	-52	13	14	15	-53	12	13	14	2	2	2	2
20,000	-21.2	-8	13	14	15	-7	14	16	16	-7	15	15	16	-6	16	16	17	-7	14	16	16	2	2	1	1
10,000	-4.6	8	13	14	15	8	13	14	15	9	14	15	15	9	14	15	15	9	13	14	15	2	2	1	1
CARACAS TO NOYANO																									
51,000	-56.5	-77	-20	-18	-18	-76	-20	-18	-17	-72	-16	-15	-14	-77	-21	-19	-18	-76	-19	-17	-16	3	3	2	3
40,000	-56.5	-54	2	4	5	-53	3	4	5	-54	1	2	2	-54	3	4	4	-54	2	4	4	2	2	2	2
30,000	-44.5	-35	10	11	12	-53	11	13	13	-53	11	12	13	-52	13	14	14	-53	11	13	13	2	2	1	2
20,000	-21.2	-7	14	15	16	-6	15	16	17	-7	14	15	16	-6	15	16	17	-7	14	16	16	2	2	1	1
10,000	-4.6	8	12	14	14	8	13	14	15	9	14	15	15	9	14	15	15	9	13	14	15	2	2	1	1
CARACAS TO INDIUSTON																									
51,000	-56.5	-75	-19	-17	-16	-74	-17	-16	-15	-72	-16	-16	-14	-76	-20	-18	-17	-74	-18	-16	-15	3	3	2	3
40,000	-56.5	-55	1	5	6	-54	2	4	5	-56	1	2	2	-54	2	4	4	-55	2	4	4	3	3	2	2
30,000	-44.5	-36	8	10	10	-55	10	11	12	-53	12	13	13	-53	12	13	14	-54	10	12	13	2	2	1	2
20,000	-21.2	-9	12	14	15	-8	13	15	16	-7	15	15	16	-6	15	16	17	-7	14	15	16	2	2	1	2
10,000	-4.6	7	11	13	14	8	12	14	15	9	14	15	15	9	14	15	15	8	13	14	14	2	2	1	2
CARACAS TO KINGSTON																									
51,000	-56.5	-77	-21	-19	-16	-77	-21	-19	-14	-73	-16	-15	-14	-77	-21	-19	-18	-76	-20	-18	-16	3	3	2	3
40,000	-56.5	-54	3	4	5	-53	4	5	6	-56	1	2	3	-54	3	4	4	-54	2	4	5	3	2	2	2
30,000	-44.5	-36	11	12	13	-52	12	14	14	-53	11	12	13	-52	13	14	14	-53	12	13	14	2	2	2	2
20,000	-21.2	-7	14	16	16	-6	15	17	17	-7	14	15	16	-6	16	16	17	-6	15	16	17	2	2	1	1
10,000	-4.6	8	13	14	15	9	13	15	15	9	14	15	15	9	14	15	15	9	13	15	15	2	2	1	1
CARACAS TO LAS PIEMAS																									
51,000	-56.5	-78	-21	-20	-19	-74	-21	-19	-19	-73	-17	-15	-14	-77	-21	-19	-18	-76	-20	-18	-17	3	3	2	3
40,000	-56.5	-54	3	4	5	-52	4	6	6	-55	1	3	3	-54	3	4	4	-54	3	4	5	3	3	2	2
30,000	-44.5	-35	11	13	13	-51	13	15	15	-53	12	13	13	-51	13	14	15	-52	12	14	15	2	2	2	2
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17	-6	15	17	17	2	2	1	1
10,000	-4.6	9	13	14	15	9	14	15	15	10	14	15	15	10	14	15	15	9	14	15	15	2	2	1	1
CARACAS TO LA PAZ																									
51,000	-56.5	-78	-21	-19	-18	-77	-20	-19	-14	-72	-16	-14	-13	-75	-19	-17	-16	-76	-19	-16	-15	3	3	2	3
40,000	-56.5	-55	3	5	6	-52	5	7	8	-54	3	4	5	-54	3	4	5	-53	3	6	7	3	3	2	2
30,000	-44.5	-32	13	14	14	-50	14	16	16	-52	12	14	14	-51	14	15	16	-51	13	15	16	2	2	2	2
20,000	-21.2	-5	17	18	18	-4	17	18	19	-6	15	16	17	-6	15	16	17	-6	15	17	18	2	2	2	2
10,000	-4.6	10	14	16	16	10	14	16	16	10	14	16	16	10	14	16	16	9	14	15	16	2	2	2	2
CARACAS TO LIMA																									
51,000	-56.5	-78	-21	-20	-19	-77	-21	-19	-14	-73	-17	-15	-14	-76	-20	-18	-17	-76	-20	-17	-16	3	3	2	3
40,000	-56.5	-54	3	4	5	-52	5	7	8	-54	2	4	5	-54	3	4	4	-53	3	5	6	3	3	2	2
30,000	-44.5	-32	12	14	14	-50	14	16	16	-52	12	14	14	-51	14	15	16	-51	13	15	16	2	2	2	2
20,000	-21.2	-5	17	18	19	-4	17	18	19	-6	15	16	17	-6	16	17	17	-6	16	17	18	2	2	2	1
10,000	-4.6	10	14	16	16	10	14	16	16	9	13	15	15	10	15	16	16	10	14	15	16	2	2	2	2
CARACAS TO LISBON																									
51,000	-56.5	-69	-15	-11	-9	-69	-12	-10	-9	-68	-12	-10	-9	-71	-14	-12	-11	-69	-13	-11	-9	3	3	3	3
40,000	-56.5	-56	0	3	4	-57	-6	2	4	-54	2	4	5	-55	1	3	4	-56	1	3	4	4	4	2	3
30,000	-44.5	-40	5	6	7	-48	7	8	9	-45	9	11	12	-45	9	11	12	-47	7	9	10	3	3	2	2
20,000	-21.2	-34	8	10	11	-41	10	12	13	-40	11	14	15	-40	11	14	15	-40	11	13	14	3	3	2	2
10,000	-4.6	4	8	10	11	4	9	10	11	4	11	14	14	7	11	13	13	6	10	12	13	3	3	2	2
CARACAS TO LONDON																									
51,000	-56.5	-66	-10	-7	-6	-64	-8	-6	-4	-63	-10	-8	-7	-65	-9	-6	-5	-65	-9	-6	-5	4	3	3	4
40,000	-56.5	-57	-3	3	5	-57	-3	3	5	-55	2	4	5	-55	1	3	5	-56	1	3	5	5	5	3	4
30,000	-44.5	-42	2	4	5	-41	4	6	7	-37	4	10	11	-34	7	9	10	-39	5	8	9	3	3	3	3
20,000	-21.2	-16	5	8	9	-15	7	9	10	-10	12	13	14	-11	10	12	13	-14	8	11	12	4	3	2	3
10,000	-4.6	-3	7	8	8	1	6	8	9	6	10	12	13	4	9	10	11	5	7	9	11	4	3	2	3
CARACAS TO MADRID																									
51,000	-56.5	-69	-12	-10	-8	-68	-11	-9	-8	-67	-11	-9	-8	-70	-13	-11	-10	-68	-12	-10	-9	4	3	3	3
40,000	-56.5	-57	-3	3	4	-57	-3	3	4	-54	2	4	5	-55	1	3	4	-56	1	3	4	4	4	2	3
30,000	-44.5	-41	4	6	7	-39	6	8	9	-36	9	11	12	-36	9	11	11	-38	7	9	10	3	3	2	3
20,000	-21.2	-14	8	10	11	-12	9	11	12	-8	13	14	15	-9	12	14	14	-11	10	12	13	3	3	2	3
10,000	-4.6	3	7	9	11	3	8	10	11	6	11	14	14	6	11	12	13	5	10	12	13	3	3	2	2
CARACAS TO MANACAS																									
51,000	-56.5	-79	-22	-20	-19	-78	-21	-19	-18	-73	-16	-15	-14	-77	-20	-19	-18	-76	-20	-17	-16	3	3	3	3
40,000	-56.5	-54	3	4	5	-52	5	7	8	-55	2	3	4	-54	3	4	5	-55	3	5	6	2	3	2	2
30,000	-44.5	-32	12	13	14	-50	15	16	17	-52	12	14	14	-50	14	15	16	-51	14	15	16	2	2	2	2
20,000	-21.2	-5	17	18	19	-4	17	18	19	-7	14	15	16	-6	16	17	17	-5	16	17	18	2	2	1	1
10,000	-4.6	10	14	16	16	10	15	16	17	9	14	15	15	10	15	16	17	10	14	16	16	2	2	2	2
CARACAS TO MARACAIBO																									
51,000	-56.5	-78	-21	-20	-19	-78	-21	-19	-18	-73	-17	-15	-14	-77	-21	-19	-18	-77	-20	-18	-17	3	3	2	3
40,000	-56.5	-54	3	4	5	-52	4	6	7	-55	1	3	3	-54	3	4	4	-54	3	5	5	3	3	2	3
30,000	-44.5	-33	11	13	13	-51	14	15	15	-53	12	13	13	-51	13	14	15	-52	12	14	15	2	2	2	1
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17	-6	15	17	17	2	2	1	1
10,000	-4.6	9	13	15	15	10	14	15	16	9	14	15	15	10	14	15	16	9	14	15	16	2	2		

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY				APRIL				JULY				OCTOBER			
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	JAN	APR	JUL	OCT	
CARACAS TO MIAMI																	
55,000	-56.5	-76	-20	-18	-17	-75	-19	-17	-16	-72	-16	-14	-14	-77	-20	-18	-17
40,000	-56.5	-54	2	4	5	-54	3	4	5	-54	1	2	2	-54	2	3	4
30,000	-44.5	-35	9	11	11	-34	11	12	13	-33	11	12	13	-32	12	13	14
20,000	-21.2	-8	13	15	15	-7	14	16	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	7	12	13	14	8	12	14	15	9	13	14	15	9	14	15	16
CARACAS TO MONTEGO BAY																	
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-73	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	3	4	5	-54	4	5	6	-54	1	2	3	-54	2	4	5
30,000	-44.5	-34	10	12	12	-32	12	13	14	-33	11	12	13	-32	13	14	15
20,000	-21.2	-7	14	16	16	-6	15	17	17	-7	14	15	16	-6	16	17	18
10,000	-4.6	8	13	14	15	9	13	15	15	9	14	15	15	9	14	15	15
CARACAS TO NAINAL																	
55,000	-56.5	-78	-22	-20	-19	-78	-21	-20	-19	-72	-16	-14	-13	-77	-20	-17	-16
40,000	-56.5	-54	2	4	5	-52	4	6	8	-54	2	4	5	-54	3	5	7
30,000	-44.5	-32	12	13	14	-30	15	16	17	-32	13	14	15	-31	13	15	16
20,000	-21.2	-5	16	17	18	-5	17	18	18	-7	14	15	16	-6	16	17	18
10,000	-4.6	10	14	16	16	10	14	16	16	9	13	15	15	10	14	16	16
CARACAS TO NEW ORLEANS																	
55,000	-56.5	-75	-19	-17	-16	-74	-18	-16	-15	-72	-15	-14	-13	-74	-18	-16	-15
40,000	-56.5	-55	1	3	4	-54	2	4	5	-54	0	2	2	-54	2	3	4
30,000	-44.5	-34	8	10	10	-35	10	11	12	-33	11	12	13	-33	12	13	14
20,000	-21.2	-9	13	14	15	-8	13	15	16	-7	15	15	16	-6	15	16	17
10,000	-4.6	7	11	13	13	7	12	14	14	9	14	14	15	9	14	15	15
CARACAS TO NEW YORK																	
55,000	-56.5	-72	-15	-13	-12	-70	-14	-12	-11	-69	-13	-11	-10	-71	-15	-13	-11
40,000	-56.5	-54	1	3	4	-54	1	3	4	-54	1	2	3	-55	2	4	4
30,000	-44.5	-39	8	8	9	-37	7	9	10	-34	11	12	12	-34	10	12	12
20,000	-21.2	-12	10	12	13	-10	11	12	13	-7	14	15	16	-8	13	15	15
10,000	-4.6	3	8	10	11	4	9	11	12	8	13	14	14	7	12	13	14
CARACAS TO PANAMA																	
55,000	-56.5	-78	-21	-20	-19	-77	-21	-19	-18	-73	-17	-15	-14	-78	-21	-19	-18
40,000	-56.5	-54	3	4	5	-52	5	6	7	-55	1	3	3	-54	3	4	4
30,000	-44.5	-33	11	13	13	-31	14	15	15	-33	12	13	13	-31	13	14	15
20,000	-21.2	-6	15	17	17	-5	16	18	18	-7	14	15	16	-6	16	17	17
10,000	-4.6	9	13	15	15	9	14	15	16	9	14	15	15	10	15	16	16
CARACAS TO PARIS																	
55,000	-56.5	-66	-10	-7	-4	-65	-8	-4	-5	-64	-7	-5	-4	-67	-11	-8	-7
40,000	-56.5	-57	-2	4	5	-57	-2	4	5	-55	2	4	5	-56	1	3	4
30,000	-44.5	-42	2	4	5	-40	4	6	7	-38	8	10	11	-37	7	9	10
20,000	-21.2	-16	5	8	9	-14	7	9	10	-9	12	13	14	-11	10	12	13
10,000	-4.6	0	5	7	9	1	4	8	9	4	11	12	13	4	9	11	12
CARACAS TO POINTE A PITRE																	
55,000	-56.5	-77	-21	-19	-18	-78	-21	-20	-19	-73	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	3	5	6	-53	5	6	7	-55	1	2	3	-54	3	4	5
30,000	-44.5	-34	11	12	13	-32	13	14	14	-33	11	12	13	-32	13	14	15
20,000	-21.2	-7	14	16	16	-6	15	16	17	-7	14	15	16	-6	16	17	17
10,000	-4.6	8	13	14	15	9	14	15	15	9	14	15	15	9	14	15	15
CARACAS TO PORT OF SPAIN																	
55,000	-56.5	-78	-22	-20	-19	-78	-21	-20	-19	-73	-17	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	3	4	5	-52	4	6	7	-55	1	3	4	-54	3	4	4
30,000	-44.5	-33	11	13	13	-31	14	15	15	-33	12	13	13	-31	13	14	15
20,000	-21.2	-4	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17
10,000	-4.6	9	13	14	15	9	14	15	16	9	14	15	15	10	14	15	16
CARACAS TO PUERTO CABELLO																	
55,000	-56.5	-78	-21	-20	-19	-78	-21	-20	-19	-73	-17	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	3	4	5	-52	4	6	7	-55	1	3	3	-54	3	4	4
30,000	-44.5	-31	11	13	13	-31	14	15	15	-33	12	13	13	-31	13	14	15
20,000	-21.2	-4	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17
10,000	-4.6	9	13	15	15	10	14	15	16	9	14	15	15	10	14	15	16
CARACAS TO QUITO																	
55,000	-56.5	-78	-22	-20	-19	-78	-21	-19	-18	-74	-17	-15	-14	-78	-21	-19	-18
40,000	-56.5	-54	3	4	5	-52	5	6	7	-55	2	3	4	-54	3	4	4
30,000	-44.5	-32	12	13	14	-30	14	16	16	-32	12	13	14	-31	14	15	15
20,000	-21.2	-5	16	18	18	-4	17	19	19	-7	14	15	16	-6	16	17	17
10,000	-4.6	9	14	15	16	10	15	16	16	9	14	15	16	10	15	16	16
CARACAS TO RECIFE																	
55,000	-56.5	-78	-22	-20	-18	-78	-21	-20	-19	-72	-16	-14	-13	-74	-20	-17	-15
40,000	-56.5	-54	2	4	5	-52	4	7	8	-54	3	4	5	-54	3	5	7
30,000	-44.5	-32	12	13	14	-30	15	16	17	-32	13	14	15	-30	14	16	16
20,000	-21.2	-5	16	18	18	-4	17	19	19	-7	14	15	16	-6	16	17	17
10,000	-4.6	10	14	16	16	10	14	16	16	9	13	15	15	10	15	16	17
CARACAS TO RIO DE JANEIRO																	
55,000	-56.5	-77	-21	-19	-17	-74	-20	-18	-17	-71	-15	-12	-11	-74	-17	-15	-14
40,000	-56.5	-53	3	5	6	-53	3	5	6	-54	3	4	5	-54	3	4	5
30,000	-44.5	-32	12	14	15	-31	14	15	16	-32	12	14	14	-31	14	15	16
20,000	-21.2	-5	16	18	19	-5	16	17	18	-8	13	14	15	-6	15	16	17
10,000	-4.6	10	14	16	16	10	14	16	17	8	12	13	14	10	14	16	16
CARACAS TO SAN JUAN																	
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-73	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	3	5	5	-53	3	5	5	-54	1	2	3	-54	3	4	5
30,000	-44.5	-34	10	12	13	-32	12	13	14	-33	11	12	13	-32	13	14	14
20,000	-21.2	-7	14	15	16	-6	15	16	17	-7	14	15	16	-6	16	17	17
10,000	-4.6	8	13	14	15	9	13	15	15	9	14	15	15	9	14	15	15

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																									
HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050				
CARACAS TO SANTA MARIA																									
55,000	-56.5	-71	-15	-12	-11	-70	-14	-12	-11	-69	-13	-11	-10	-72	-16	-14	-13	-71	-14	-12	-11	3	3	3	3
40,000	-56.5	-56	1	3	4	-56	0	2	4	-55	2	3	4	-55	2	3	4	-56	1	3	4	4	4	2	2
30,000	-44.5	-39	6	7	8	-37	8	9	10	-35	10	11	12	-34	10	12	13	-36	8	10	11	3	2	2	2
20,000	-21.2	-12	10	11	12	-10	11	12	13	-8	13	15	15	-8	13	15	15	-9	12	13	14	3	3	2	2
10,000	-4.6	5	9	11	12	5	9	11	12	8	12	14	14	7	12	13	14	6	11	12	13	3	2	2	2
CARACAS TO SANITAGO																									
55,000	-56.5	-75	-19	-16	-15	-74	-18	-16	-15	-69	-13	-10	-9	-71	-15	-13	-12	-73	-16	-13	-11	3	3	4	3
40,000	-56.5	-53	3	5	7	-53	4	6	7	-53	3	5	6	-54	3	4	5	-53	3	6	7	3	3	3	3
30,000	-44.5	-33	11	13	14	-32	12	14	15	-35	10	12	12	-33	12	14	15	-33	11	13	14	2	3	3	2
20,000	-21.2	-6	15	17	18	-6	15	16	17	-11	10	12	12	-7	14	15	16	-8	14	15	16	2	2	2	2
10,000	-4.6	9	14	15	16	8	13	14	15	6	10	12	13	8	13	14	15	8	12	14	15	2	2	2	2
CARACAS TO SAO PAULO																									
55,000	-56.5	-77	-21	-19	-17	-76	-20	-18	-17	-71	-14	-12	-11	-74	-17	-15	-14	-75	-18	-15	-14	3	3	3	3
40,000	-56.5	-53	3	5	6	-52	5	7	8	-53	3	5	6	-54	3	4	5	-53	3	4	5	3	3	3	2
30,000	-44.5	-32	12	14	15	-31	14	15	16	-33	12	13	14	-31	13	15	16	-32	13	15	16	2	2	2	2
20,000	-21.2	-5	16	18	19	-5	16	17	18	-9	15	14	15	-6	15	16	17	-6	15	17	18	2	2	2	2
10,000	-4.6	10	14	16	16	10	14	16	16	7	12	13	14	10	14	16	16	9	14	15	16	2	2	2	2
CARACAS TO TORONTO																									
55,000	-56.5	-71	-14	-12	-11	-69	-13	-11	-9	-68	-12	-10	-9	-72	-15	-13	-12	-70	-14	-12	-10	3	3	2	3
40,000	-56.5	-56	3	5	4	-56	1	3	4	-56	1	3	4	-55	2	4	5	-55	1	3	4	4	3	2	3
30,000	-44.5	-40	5	7	8	-38	6	8	9	-34	10	12	12	-35	9	11	12	-37	8	10	11	3	2	2	2
20,000	-21.2	-13	8	10	12	-11	10	12	13	-8	14	15	15	-9	13	14	15	-10	11	13	14	3	3	2	2
10,000	-4.6	2	6	9	10	3	8	10	11	8	12	13	14	6	11	13	14	5	9	11	12	3	3	2	2
CAMUPANO TO PORLAPAR																									
55,000	-56.5	-74	-22	-20	-19	-78	-21	-20	-19	-73	-17	-15	-14	-77	-21	-19	-18	-77	-20	-18	-17	3	3	2	3
40,000	-56.5	-54	3	4	5	-53	4	6	6	-55	1	3	4	-54	3	4	4	-54	3	5	5	3	2	2	2
30,000	-44.5	-33	11	12	13	-31	13	15	15	-33	12	13	13	-31	13	14	15	-32	12	14	15	2	2	2	2
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	17	17	-6	15	16	17	2	2	1	1
10,000	-4.6	5	13	14	15	9	14	15	16	9	14	15	15	10	14	15	16	9	14	15	16	2	2	1	2
CASABLANCA TO CONAKRY																									
55,000	-56.5	-72	-15	-13	-12	-71	-14	-12	-11	-73	-16	-14	-13	-73	-17	-15	-14	-72	-15	-13	-12	3	3	3	3
40,000	-56.5	-55	1	4	5	-54	2	5	6	-53	4	5	6	-54	3	4	5	-54	3	4	5	4	4	2	2
30,000	-44.5	-40	5	6	7	-35	9	10	11	-33	13	15	13	-35	10	11	12	-36	9	11	12	2	2	2	2
20,000	-21.2	-11	9	10	11	-10	11	12	13	-7	14	16	16	-8	13	15	15	-9	12	14	14	2	2	2	2
10,000	-4.6	5	9	11	11	6	11	12	13	12	17	18	19	8	12	14	14	8	12	14	16	2	2	2	2
CASABLANCA TO COPENHAGEN																									
55,000	-56.5	-59	-2	1	3	-56	0	3	5	-56	1	3	4	-60	-3	-3	0	-58	-1	2	3	5	4	3	4
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-52	4	7	9	-56	0	3	5	-56	3	4	6	6	6	4	4
30,000	-44.5	-44	-4	-2	0	-46	-2	1	2	-39	6	8	9	-42	2	5	6	-44	1	4	6	4	4	3	4
20,000	-21.2	-24	-2	1	3	-20	1	4	5	-12	9	11	12	-16	5	8	9	-18	3	6	8	5	4	3	4
10,000	-4.6	-7	-2	1	3	-5	1	4	5	5	10	12	13	-1	4	7	8	-2	3	6	8	5	4	3	4
CASABLANCA TO OAKAH																									
55,000	-56.5	-70	-14	-11	-10	-69	-13	-11	-9	-72	-15	-13	-12	-72	-15	-13	-12	-73	-16	-12	-11	3	3	3	3
40,000	-56.5	-56	1	3	5	-55	2	4	6	-52	4	5	6	-54	2	4	5	-54	2	4	5	4	4	2	2
30,000	-44.5	-41	4	5	6	-37	6	9	10	-34	13	15	13	-35	9	11	12	-37	8	10	13	2	2	2	2
20,000	-21.2	-13	8	9	10	-11	10	12	12	-7	14	15	16	-8	13	14	15	-10	11	13	14	2	2	2	2
10,000	-4.6	4	8	10	11	5	10	11	12	12	16	18	18	7	12	13	14	7	12	14	15	2	2	2	2
CASABLANCA TO FRANKFURT																									
55,000	-56.5	-59	-2	1	3	-57	-1	2	4	-58	-1	1	2	-61	-4	-2	-1	-59	-2	3	3	5	4	3	4
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	4	6	8	-56	0	3	4	-56	0	4	6	6	5	4	4
30,000	-44.5	-48	-3	-1	0	-45	-1	2	3	-38	7	9	10	-42	1	6	7	-43	3	5	6	4	4	3	4
20,000	-21.2	-22	-1	2	4	-19	2	5	6	-15	10	12	13	-15	6	9	10	-17	4	7	9	5	4	3	4
10,000	-4.6	-5	-1	2	4	-2	2	5	6	6	11	13	14	1	5	8	9	-0	4	8	10	5	4	3	4
CASABLANCA TO J1004																									
55,000	-56.5	-67	-10	-8	-7	-65	-8	-6	-5	-70	-14	-12	-11	-69	-12	-10	-9	-68	-11	-9	-7	3	3	3	3
40,000	-56.5	-55	2	4	6	-55	2	4	6	-49	7	9	10	-55	2	4	5	-53	3	4	7	4	4	2	3
30,000	-44.5	-44	1	3	4	-39	5	7	8	-30	14	16	17	-37	7	9	10	-38	7	10	12	3	3	3	3
20,000	-21.2	-16	5	7	8	-15	8	10	11	-6	16	17	18	-10	11	12	13	-11	10	12	14	3	3	2	2
10,000	-4.6	0	5	7	8	4	8	10	11	13	18	19	20	6	11	12	13	6	10	13	15	3	3	2	2
CASABLANCA TO JOHANNESBURG																									
55,000	-56.5	-74	-18	-16	-14	-71	-17	-15	-14	-73	-16	-14	-13	-73	-17	-15	-14	-73	-17	-15	-14	3	3	3	3
40,000	-56.5	-54	3	5	6	-52	4	6	8	-52	4	6	6	-53	4	6	6	-53	4	5	6	3	3	2	2
30,000	-44.5	-35	9	11	12	-33	12	13	14	-33	12	13	14	-33	12	13	14	-33	11	13	14	2	2	2	2
20,000	-21.2	-8	13	14	15	-7	14	15	16	-6	15	16	17	-7	14	15	16	-7	14	15	16	2	2	2	2
10,000	-4.6	8	12	13	14	8	13	14	15	9	14	15	16	9	14	15	16	9	13	15	15	2	2	2	2
CASABLANCA TO RANO																									
55,000	-56.5	-71	-14	-12	-11	-69	-13	-11	-10	-73	-16	-15	-14	-72	-16	-14	-13	-71	-15	-13	-11	3	3	3	3
40,000	-56.5	-55	2	4	6	-51	3	6	7	-52	3	6	7	-54	3	4	5	-53	3	5	6	4	4	2	2
30,000	-44.5	-41	4	5	6	-36	9	10	11	-32	12	14	15	-35	10	11	12	-36	9	11	12	2	2	2	2
20,000	-21.2	-13	8	9	10	-11	11	12	13	-6	15	16	17	-8	13	14	15	-10	12	13	14	2	2	2	2
10,000	-4.6	4	9	10	11	7	11	13	14	14	18	19	20	8	12	14	14	8	13	15	16	2	2	2	2
CASABLANCA TO KHARIQUM																									
55,000	-56.5	-67	-15	-11	-10	-68	-11	-9	-8	-72	-16	-14	-13	-71	-15	-13	-12	-70	-14	-11	-10	3	3	3	3
40,000	-56.5	-55	2	4	6	-54	3	5	7	-50	6	8	8	-54	2	4	5	-53	3	5	6	4	4	2	2
30,000	-44.5	-42	3	4	5	-37	8	9	10	-31	14	15	16	-36	9	10	11	-36	8	11	12	2	2	2	2
20,000	-21.2	-14	7	9	10	-12	10	11	12	-6	16	17	18	-9	12	13	14	-10	11	13	14	3	2	2	2
10,000	-4.6	3	7	9	10	6	10	12	13	13	18	19	20	7	12	13	14	7	12	14	16	3	3	2	

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
CASABLANCA TO LISBON																	
55,000	-56.5	-61	-5	-2	0	-60	-5	-0	1	-63	-7	-4	-3	-63	-7	-5	-3
40,000	-56.5	-58	-1	2	4	-57	-1	3	5	-52	4	6	8	-56	0	3	4
30,000	-56.5	-54	-1	1	2	-53	1	3	4	-36	9	11	12	-40	5	7	8
20,000	-56.5	-46	-1	1	2	-45	1	3	4	-29	12	13	14	-33	9	11	12
10,000	-4.6	-2	3	5	7	-1	5	7	9	10	14	16	17	3	8	10	11
CASABLANCA TO LONDON																	
55,000	-56.5	-59	-5	0	2	-57	-1	2	4	-58	-1	1	3	-61	-4	-2	-0
40,000	-56.5	-58	-2	2	5	-57	-1	1	5	-53	4	7	8	-56	0	3	5
30,000	-56.5	-47	-5	-1	1	-45	-1	2	3	-38	7	9	10	-42	3	5	7
20,000	-21.2	-22	-1	3	4	-19	2	5	6	-11	10	12	13	-15	6	9	10
10,000	-4.6	-5	-0	3	4	-2	3	5	6	6	11	13	14	1	5	8	9
CASABLANCA TO MADRID																	
55,000	-56.5	-61	-4	-1	1	-59	-5	0	2	-62	-6	-4	-2	-63	-6	-4	-3
40,000	-56.5	-58	-1	2	4	-57	-1	3	5	-52	4	6	8	-56	0	3	4
30,000	-56.5	-46	-2	1	2	-44	1	3	4	-36	6	8	10	-40	3	5	7
20,000	-21.2	-20	2	4	6	-17	4	6	8	-10	12	13	14	-13	8	10	11
10,000	-4.6	-2	2	5	6	0	5	7	8	9	14	16	17	3	7	9	10
CASABLANCA TO MUNICH																	
55,000	-56.5	-59	-2	1	3	-57	-1	2	3	-59	-2	0	1	-61	-4	-2	-1
40,000	-56.5	-58	-1	2	4	-57	-1	3	5	-53	4	6	8	-56	0	3	4
30,000	-56.5	-46	-5	-1	1	-45	-1	2	3	-37	7	9	11	-41	3	5	7
20,000	-21.2	-22	-1	2	4	-19	2	5	6	-11	10	12	13	-15	6	9	10
10,000	-4.6	-5	-1	2	4	-2	3	5	6	7	12	14	15	1	6	8	9
CASABLANCA TO NAIROBI																	
55,000	-56.5	-75	-17	-15	-14	-72	-16	-14	-13	-74	-17	-16	-15	-75	-17	-15	-14
40,000	-56.5	-54	2	4	5	-53	4	6	7	-52	5	6	7	-53	5	6	7
30,000	-56.5	-46	7	8	9	-44	11	12	13	-31	11	13	15	-33	11	13	15
20,000	-21.2	-10	11	12	13	-9	13	14	15	-5	16	17	17	-7	14	15	15
10,000	-4.6	6	11	12	13	4	13	14	15	12	17	18	18	9	13	14	15
CASABLANCA TO NATAL																	
55,000	-56.5	-74	-18	-16	-14	-74	-17	-15	-14	-73	-16	-14	-13	-75	-18	-16	-15
40,000	-56.5	-55	2	4	5	-54	2	5	6	-51	3	5	5	-53	3	5	5
30,000	-56.5	-47	8	9	10	-44	11	12	13	-35	11	13	15	-37	11	13	15
20,000	-21.2	-10	11	13	13	-8	13	14	15	-7	15	16	16	-7	14	15	15
10,000	-4.6	7	11	12	13	7	12	13	14	10	15	16	16	9	13	14	15
CASABLANCA TO NEW YORK																	
55,000	-56.5	-60	-6	-1	0	-58	-2	1	2	-60	-4	-2	-0	-62	-6	-1	-1
40,000	-56.5	-58	-1	1	5	-57	-1	3	5	-54	2	5	6	-56	1	4	5
30,000	-56.5	-46	-1	1	2	-45	-0	2	1	-37	8	10	11	-40	4	7	8
20,000	-21.2	-20	1	4	6	-19	3	5	7	-10	11	13	14	-11	8	10	12
10,000	-4.6	-5	-1	3	5	-3	2	5	6	6	10	12	13	2	6	9	10
CASABLANCA TO PARIS																	
55,000	-56.5	-59	-5	0	2	-57	-1	2	3	-59	-2	0	2	-61	-5	-2	-1
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	4	6	8	-56	0	3	4
30,000	-56.5	-47	-1	0	1	-45	-1	2	3	-37	7	9	10	-41	3	5	7
20,000	-21.2	-22	-0	3	4	-19	1	5	6	-11	10	12	13	-15	7	9	10
10,000	-4.6	-5	-0	3	5	-2	3	5	7	7	11	13	14	1	6	8	9
CASABLANCA TO ROME																	
55,000	-56.5	-60	-5	0	2	-58	-2	1	2	-62	-5	-3	-2	-62	-6	-3	-2
40,000	-56.5	-57	-1	3	5	-57	-1	3	5	-52	5	7	9	-56	0	3	4
30,000	-56.5	-47	-2	0	1	-45	-0	2	3	-36	8	10	11	-41	4	6	8
20,000	-21.2	-21	0	1	5	-18	4	6	7	-10	11	13	14	-14	7	9	10
10,000	-4.6	-4	1	4	5	-0	4	7	8	9	14	15	16	2	7	9	10
CASABLANCA TO SANTA MARIA																	
55,000	-56.5	-61	-6	-1	-2	-60	-4	-1	0	-64	-7	-5	-4	-64	-8	-5	-4
40,000	-56.5	-58	-2	2	4	-58	-1	2	4	-53	4	6	7	-56	0	3	4
30,000	-56.5	-45	-1	2	3	-42	2	4	5	-34	9	11	12	-39	5	8	9
20,000	-21.2	-18	3	6	7	-16	5	7	9	-9	12	13	14	-12	9	11	12
10,000	-4.6	-1	4	6	7	1	5	7	9	9	13	15	16	4	9	11	12
CASABLANCA TO SEVILLE																	
55,000	-56.5	-61	-5	-1	0	-60	-1	-0	1	-64	-7	-5	-4	-63	-7	-4	-1
40,000	-56.5	-57	-1	3	5	-57	-0	3	5	-51	5	7	8	-56	0	3	4
30,000	-56.5	-46	-2	1	2	-44	1	3	4	-36	9	11	12	-40	5	7	8
20,000	-21.2	-19	2	4	6	-16	5	7	8	-9	12	14	15	-13	8	10	11
10,000	-4.6	-2	2	5	6	1	5	8	9	10	15	17	18	3	8	10	11
CASABLANCA TO SHANNON																	
55,000	-56.5	-59	-1	0	2	-57	-0	2	4	-57	-1	2	3	-61	-4	-2	-0
40,000	-56.5	-58	-2	3	5	-57	-1	3	5	-53	4	7	8	-56	0	3	4
30,000	-56.5	-47	-3	0	1	-45	-0	2	3	-38	7	9	10	-42	3	5	7
20,000	-21.2	-21	-0	1	5	-19	2	5	6	-12	10	12	13	-15	6	9	10
10,000	-4.6	-5	-0	1	4	-2	2	5	6	6	10	12	13	1	5	8	9
CASABLANCA TO TUNIS																	
55,000	-56.5	-61	-4	-1	0	-60	-5	-0	1	-64	-8	-5	-4	-62	-5	-2	-1
40,000	-56.5	-57	-1	3	5	-56	0	3	5	-51	6	8	9	-56	0	3	4
30,000	-56.5	-46	-2	0	2	-44	1	3	4	-36	9	11	12	-40	4	7	8
20,000	-21.2	-20	2	4	6	-17	5	7	8	-9	12	14	15	-13	8	10	11
10,000	-4.6	-5	2	4	6	1	5	8	9	10	15	17	17	3	8	9	10
CASABLANCA TO ZURICH																	
55,000	-56.5	-59	-5	1	2	-57	-1	2	3	-59	-5	-0	1	-61	-5	-2	-1
40,000	-56.5	-58	-1	2	4	-58	-1	3	4	-53	4	6	8	-56	0	3	4
30,000	-56.5	-47	-3	1	1	-45	-1	2	3	-37	7	9	11	-41	3	5	7
20,000	-21.2	-22	-1	2	4	-19	3	5	6	-11	11	12	13	-15	7	9	10
10,000	-4.6	-5	-0	3	4	-2	3	5	7	7	12	14	15	1	6	8	9

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085
CHEROKEE SOUND TO SANDY POINT																	
53,000	-56.5	-75	-18	-17	-16	-71	-15	-13	-13	-76	-19	-17	-16	-74	-17	-16	-15
40,000	-56.5	-55	2	4	5	-55	1	3	4	-54	2	4	4	-55	1	3	4
30,000	-46.5	-37	0	2	10	-35	9	11	11	-34	11	12	12	-35	12	13	14
20,000	-21.2	-9	12	14	14	-8	15	15	15	-7	14	15	16	-6	15	16	17
10,000	-4.6	6	11	13	13	7	11	13	14	8	13	14	15	8	13	14	15
CHICAGO TO COPENHAGEN																	
53,000	-56.5	-57	-0	3	5	-51	5	8	9	-49	8	10	11	-55	2	5	6
40,000	-56.5	-55	2	6	8	-51	5	10	12	-49	7	11	12	-53	4	8	10
30,000	-46.5	-52	-8	-5	-3	-49	-6	-2	-0	-45	2	5	6	-46	-2	1	3
20,000	-21.2	-32	-11	-7	-4	-27	-6	-2	-0	-17	5	7	9	-23	-2	2	4
10,000	-4.6	-17	-13	-9	-6	-12	-8	-4	-2	-2	3	5	7	-8	-3	1	3
CHICAGO TO FRANKFURT																	
53,000	-56.5	-57	-0	3	5	-52	4	7	8	-50	6	9	10	-55	1	4	5
40,000	-56.5	-54	2	6	9	-53	4	8	11	-50	6	9	11	-53	3	7	9
30,000	-46.5	-51	-6	-4	-2	-48	-4	-1	0	-42	3	6	7	-45	-1	2	4
20,000	-21.2	-30	-9	-4	-2	-26	-4	-1	1	-15	6	9	10	-21	0	4	6
10,000	-4.6	-16	-11	-7	-4	-10	-6	-2	-0	-0	4	6	8	-6	-1	2	4
CHICAGO TO GENEVA																	
53,000	-56.5	-57	-0	3	5	-53	3	6	7	-52	5	7	9	-54	0	3	5
40,000	-56.5	-54	2	6	9	-54	3	7	10	-51	5	7	9	-54	2	5	7
30,000	-46.5	-50	-6	-3	-1	-48	-3	-1	1	-41	4	6	8	-45	-0	3	5
20,000	-21.2	-29	-8	-3	-1	-25	-3	0	2	-14	7	9	11	-20	1	5	7
10,000	-4.6	-14	-10	-5	-3	-9	-5	-1	1	0	5	7	9	-5	-0	3	5
CHICAGO TO GLASGOW																	
53,000	-56.5	-57	-0	3	5	-52	5	7	9	-50	6	9	10	-55	2	4	6
40,000	-56.5	-54	3	7	9	-52	5	9	12	-50	6	10	12	-53	4	8	10
30,000	-46.5	-51	-7	-4	-2	-48	-4	-1	0	-42	2	5	7	-46	-1	2	3
20,000	-21.2	-31	-10	-6	-3	-27	-5	-2	0	-16	5	8	10	-22	-1	3	5
10,000	-4.6	-17	-12	-8	-6	-12	-7	-3	-1	-1	4	6	7	-7	-2	2	4
CHICAGO TO HAMBURG																	
53,000	-56.5	-57	-0	3	5	-52	5	8	9	-49	7	10	11	-55	2	4	6
40,000	-56.5	-54	2	6	9	-52	5	9	12	-50	7	10	12	-53	4	8	10
30,000	-46.5	-52	-7	-4	-3	-49	-4	-1	0	-42	2	5	7	-46	-1	2	3
20,000	-21.2	-31	-10	-6	-3	-27	-5	-2	0	-16	5	8	9	-22	-1	3	5
10,000	-4.6	-17	-12	-8	-6	-12	-7	-3	-1	-1	5	6	7	-7	-3	1	3
CHICAGO TO HAVANA																	
53,000	-56.5	-68	-12	-9	-8	-66	-9	-7	-6	-64	-11	-10	-9	-70	-14	-12	-10
40,000	-56.5	-57	-0	2	3	-57	-1	2	3	-55	1	3	4	-56	0	2	3
30,000	-46.5	-42	3	5	6	-43	4	6	7	-36	11	12	13	-37	8	10	11
20,000	-21.2	-16	6	8	9	-13	8	10	11	-7	14	15	16	-10	12	13	14
10,000	-4.6	-1	4	7	8	2	7	10	11	8	13	14	15	6	11	13	14
CHICAGO TO HONOLULU																	
53,000	-56.5	-64	-7	-5	-3	-61	-5	-2	-1	-64	-8	-6	-5	-66	-10	-7	-6
40,000	-56.5	-54	1	5	7	-57	-1	3	4	-54	2	4	5	-55	1	3	4
30,000	-46.5	-44	0	3	4	-43	2	4	5	-36	9	10	11	-39	5	7	8
20,000	-21.2	-18	3	6	8	-16	5	7	9	-8	13	15	15	-12	9	12	13
10,000	-4.6	-2	2	5	7	0	5	7	9	9	14	15	16	4	8	11	13
CHICAGO TO REKIAVIAK																	
53,000	-56.5	-57	-0	3	5	-51	6	8	10	-49	7	9	11	-54	2	5	6
40,000	-56.5	-54	3	7	9	-51	6	10	12	-49	7	10	12	-52	5	9	11
30,000	-46.5	-53	-8	-5	-4	-49	-5	-2	-1	-42	2	5	6	-47	-2	1	2
20,000	-21.2	-34	-12	-8	-6	-28	-7	-3	-1	-17	5	7	9	-24	-3	1	3
10,000	-4.6	-20	-15	-11	-8	-14	-9	-5	-3	-2	3	5	6	-9	-4	-0	2
CHICAGO TO KINGSTON																	
53,000	-56.5	-70	-13	-11	-10	-67	-11	-9	-8	-69	-12	-10	-10	-72	-15	-13	-12
40,000	-56.5	-57	-0	2	4	-57	-0	2	4	-56	1	2	3	-55	1	3	4
30,000	-46.5	-41	4	6	7	-39	5	7	8	-34	11	12	13	-36	9	10	11
20,000	-21.2	-14	7	9	11	-12	9	11	12	-7	14	15	16	-9	12	14	15
10,000	-4.6	1	6	8	9	3	8	10	11	8	13	14	15	6	11	13	14
CHICAGO TO LISBON																	
53,000	-56.5	-58	-1	1	3	-56	1	4	5	-56	0	3	4	-59	-3	0	2
40,000	-56.5	-54	1	5	7	-54	1	5	7	-54	3	6	7	-55	2	5	7
30,000	-46.5	-48	-4	-1	1	-46	-2	1	2	-38	6	9	10	-43	2	5	6
20,000	-21.2	-25	-3	0	3	-22	-1	3	4	-12	9	12	13	-16	5	8	10
10,000	-4.6	-11	-6	-2	1	-6	-1	2	4	3	8	10	11	-2	3	6	8
CHICAGO TO LONDON																	
53,000	-56.5	-57	-0	3	5	-52	4	7	8	-51	6	8	10	-55	1	4	5
40,000	-56.5	-54	3	7	9	-53	4	8	11	-51	6	9	11	-53	3	7	9
30,000	-46.5	-51	-6	-3	-2	-48	-4	-1	1	-41	3	6	7	-45	-1	2	4
20,000	-21.2	-30	-9	-4	-2	-26	-4	-1	1	-15	6	9	10	-21	0	4	6
10,000	-4.6	-16	-11	-7	-4	-10	-6	-2	-0	-0	4	7	8	-6	-1	3	5
CHICAGO TO MADRID																	
53,000	-56.5	-57	-1	2	3	-55	2	4	6	-55	1	4	6	-58	-2	1	3
40,000	-56.5	-55	1	5	8	-55	1	5	8	-53	3	7	8	-54	2	5	7
30,000	-46.5	-49	-4	-1	0	-47	-2	0	2	-39	5	8	10	-43	1	4	6
20,000	-21.2	-26	-5	1	2	-23	1	2	4	-13	9	11	12	-18	4	7	9
10,000	-4.6	-12	-7	-3	-1	-7	-2	1	3	5	7	9	11	-3	2	5	7
CHICAGO TO MELBOURNE																	
53,000	-56.5	-75	-18	-14	-13	-71	-15	-12	-11	-70	-14	-12	-11	-71	-14	-12	-11
40,000	-56.5	-55	2	4	6	-55	1	4	5	-54	2	4	5	-54	2	4	5
30,000	-46.5	-37	0	2	10	-35	9	10	11	-34	9	10	11	-34	9	10	11
20,000	-21.2	-11	10	12	13	-11	10	12	13	-9	12	13	14	-10	11	13	14
10,000	-4.6	5	10	12	13	6	10	12	13	7	12	13	14	6	11	13	14

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
CHICAGO TO MEXICO CITY																	
55,000	-56.5	-69	-12	-10	-9	-67	-10	-8	-7	-69	-15	-11	-10	-72	-15	-13	-12
40,000	-56.5	-57	-0	2	4	-57	-1	2	3	-55	2	3	4	-55	1	3	4
30,000	-46.5	-41	3	5	6	-40	4	6	7	-33	11	13	13	-37	8	10	11
20,000	-25.2	-15	4	8	10	-13	9	11	12	-7	14	16	16	-9	12	14	15
10,000	-4.6	0	5	8	9	5	9	12	11	9	14	15	16	7	12	14	15
CHICAGO TO MONTREAL																	
55,000	-56.5	-59	-2	1	2	-57	-0	3	4	-59	-2	0	2	-60	-4	-1	1
40,000	-56.5	-55	1	5	8	-55	1	5	8	-53	5	6	7	-55	2	5	6
30,000	-46.5	-49	-5	-2	-1	-47	-3	-0	1	-37	7	10	11	-43	2	5	6
20,000	-21.2	-24	-5	-2	0	-22	-1	2	4	-11	10	13	14	-14	5	8	10
10,000	-4.6	-13	-9	-4	-2	-7	-3	1	3	4	9	11	12	-1	4	8	10
CHICAGO TO MOSCOW																	
55,000	-56.5	-58	-2	2	4	-50	4	9	11	-47	10	12	13	-54	3	5	7
40,000	-56.5	-54	0	4	6	-51	4	10	12	-48	8	11	13	-52	4	8	10
30,000	-46.5	-54	-10	-7	-6	-50	-6	-3	-1	-45	1	4	6	-48	-4	-0	3
20,000	-21.2	-54	-13	-9	-7	-29	-8	-4	-2	-18	5	6	7	-25	-4	0	2
10,000	-4.6	-20	-15	-11	-9	-14	-10	-6	-4	-3	2	4	5	-10	-5	-2	0
CHICAGO TO OSLO																	
55,000	-56.5	-57	-1	3	5	-51	4	9	10	-48	8	10	12	-54	2	5	6
40,000	-56.5	-55	2	6	8	-51	4	10	12	-49	8	11	13	-52	4	8	10
30,000	-46.5	-53	-9	-6	-4	-49	-5	-2	-0	-43	2	4	6	-47	-3	1	2
20,000	-21.2	-33	-12	-8	-5	-28	-7	-3	-1	-17	4	7	8	-24	-3	1	3
10,000	-4.6	-18	-14	-10	-7	-13	-9	-5	-3	-2	2	5	6	-9	-4	-0	2
CHICAGO TO PANAMA																	
55,000	-56.5	-72	-15	-13	-12	-70	-13	-11	-10	-70	-11	-12	-11	-73	-17	-15	-14
40,000	-56.5	-54	1	3	4	-55	1	3	4	-54	1	2	3	-55	2	3	4
30,000	-46.5	-39	6	7	8	-37	7	9	9	-33	11	12	13	-35	10	11	12
20,000	-21.2	-12	9	11	12	-10	11	13	14	-7	14	15	16	-8	13	15	15
10,000	-4.6	5	8	10	11	5	10	12	11	9	13	14	15	6	12	14	15
CHICAGO TO PARIS																	
55,000	-56.5	-57	-0	3	5	-51	4	8	8	-51	5	8	9	-54	1	4	5
40,000	-56.5	-54	2	7	9	-53	5	8	10	-51	6	9	11	-53	1	7	9
30,000	-46.5	-50	-6	-1	-1	-48	-3	-1	1	-41	1	4	6	-45	-0	3	4
20,000	-21.2	-29	-8	-4	-1	-25	-4	-0	2	-15	7	9	11	-20	1	4	6
10,000	-4.6	-15	-10	-6	-4	-10	-5	-2	0	0	5	7	8	-5	-1	3	5
CHICAGO TO RIO DE JANEIRO																	
55,000	-56.5	-74	-18	-16	-15	-73	-17	-15	-13	-70	-14	-12	-11	-73	-17	-15	-13
40,000	-56.5	-55	2	4	5	-54	3	5	6	-54	2	4	5	-54	2	4	5
30,000	-46.5	-36	9	10	11	-34	10	12	11	-33	11	13	13	-31	12	13	13
20,000	-21.2	-9	13	14	15	-8	13	15	16	-8	13	15	16	-7	14	15	16
10,000	-4.6	6	11	12	13	7	12	13	14	8	12	14	14	8	13	14	15
CHICAGO TO ROME																	
55,000	-56.5	-57	-0	1	4	-54	1	6	7	-52	4	7	8	-57	-0	3	4
40,000	-56.5	-55	2	6	8	-54	2	7	9	-52	5	8	10	-54	3	6	8
30,000	-46.5	-50	-5	-1	-1	-48	-1	-0	1	-40	4	7	8	-44	0	3	5
20,000	-21.2	-28	-7	-1	0	-24	-1	1	2	-14	7	10	11	-19	2	5	7
10,000	-4.6	-14	-9	-5	-2	-8	-4	-0	1	1	6	8	9	-4	0	4	6
CHICAGO TO SAN JUAN																	
55,000	-56.5	-69	-13	-11	-9	-67	-11	-8	-7	-68	-11	-10	-9	-71	-14	-12	-11
40,000	-56.5	-58	0	1	4	-57	-0	2	3	-56	1	2	3	-55	1	3	4
30,000	-46.5	-41	4	6	7	-39	5	7	8	-34	10	12	12	-36	8	10	11
20,000	-21.2	-14	7	9	10	-12	9	11	12	-7	14	15	16	-9	12	14	15
10,000	-4.6	1	5	8	9	5	7	9	11	8	12	14	14	6	11	12	13
CHICAGO TO SANTA MARIA																	
55,000	-56.5	-57	-3	-0	1	-57	-1	2	3	-59	-3	-0	1	-61	-5	-2	0
40,000	-56.5	-57	-0	4	6	-56	0	4	6	-54	2	5	6	-55	1	4	5
30,000	-46.5	-47	-5	-0	1	-46	-1	1	3	-37	7	10	11	-41	3	6	7
20,000	-21.2	-23	-2	2	4	-20	1	4	5	-11	11	13	14	-15	7	10	11
10,000	-4.6	-9	-4	-0	2	-5	-0	3	4	4	9	11	12	0	5	8	10
CHICAGO TO SANTIAGO																	
55,000	-56.5	-74	-17	-15	-14	-72	-16	-14	-13	-70	-13	-11	-10	-72	-16	-14	-12
40,000	-56.5	-54	7	4	5	-54	2	5	6	-54	2	4	5	-54	2	4	5
30,000	-46.5	-36	9	10	11	-34	10	12	11	-33	11	13	13	-31	12	13	13
20,000	-21.2	-9	13	14	15	-8	13	15	16	-9	12	13	14	-8	13	15	16
10,000	-4.6	6	11	12	13	7	11	13	14	8	12	14	14	7	12	13	14
CHICAGO TO SHANNON																	
55,000	-56.5	-57	-0	1	5	-53	4	7	8	-51	5	8	9	-55	1	4	5
40,000	-56.5	-54	5	7	9	-53	4	8	11	-51	6	9	11	-53	4	8	10
30,000	-46.5	-50	-6	-3	-2	-48	-4	-1	1	-41	3	6	8	-45	-0	2	4
20,000	-21.2	-30	-9	-4	-2	-26	-4	-1	1	-15	6	9	11	-21	0	4	6
10,000	-4.6	-16	-11	-7	-5	-10	-6	-2	-0	-0	4	7	8	-6	-1	3	5
CHICAGO TO STOCKHOLM																	
55,000	-56.5	-58	-1	1	5	-50	6	9	10	-48	9	11	12	-54	2	5	6
40,000	-56.5	-55	1	5	7	-51	6	10	12	-49	8	11	13	-52	4	8	10
30,000	-46.5	-54	-9	-6	-5	-50	-5	-2	-1	-43	1	4	6	-47	-1	0	2
20,000	-21.2	-33	-12	-8	-6	-29	-8	-4	-2	-18	4	6	8	-24	-3	1	3
10,000	-4.6	-19	-14	-10	-8	-14	-9	-5	-3	-3	2	4	6	-9	-5	-1	1
CHICAGO TO TOKYO																	
55,000	-56.5	-52	4	8	10	-51	6	8	10	-51	5	8	9	-54	3	5	7
40,000	-56.5	-53	3	7	9	-52	5	8	10	-50	6	10	12	-52	4	7	9
30,000	-46.5	-52	-8	-5	-4	-50	-5	-2	-1	-39	5	8	9	-47	-2	1	2
20,000	-21.2	-32	-11	-6	-4	-27	-6	-2	-0	-14	8	10	11	-24	-2	1	3
10,000	-4.6	-18	-13	-8	-6	-12	-7	-4	-2	1	6	8	10	-8	-4	-0	1

*0-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
CHICAGO TO TORONTO																	
55,000	-56.5	-55	-5	0	2	-54	-1	2	5	-60	-4	-1	0	-62	-5	-2	2
40,000	-56.5	-56	1	5	7	-56	1	5	7	-53	5	5	6	-55	1	6	6
30,000	-56.5	-56	-2	-0	-0	-56	-2	0	2	-37	10	11	11	-42	2	5	6
20,000	-71.2	-75	-4	-1	1	-21	0	5	5	-10	11	15	16	-16	6	9	10
10,000	-4.6	-12	-7	-5	-1	-6	-1	2	4	5	10	12	15	0	5	8	10
CHICAGO TO VANCOUVER																	
55,000	-56.5	-56	-1	2	4	-56	1	1	5	-57	-1	2	5	-60	-5	-1	1
40,000	-56.5	-56	1	5	8	-56	0	4	7	-54	5	5	7	-56	0	4	5
30,000	-56.5	-51	-6	-4	-2	-48	-5	-1	0	-38	6	9	10	-43	1	4	5
20,000	-71.2	-78	-7	-2	0	-22	-1	2	4	-11	10	12	15	-18	5	6	8
10,000	-4.6	-15	-9	-4	-1	-6	-1	2	4	6	11	15	16	-2	5	7	9
CHICAGO TO VIENNA																	
55,000	-56.5	-57	-0	5	5	-52	4	7	11	-50	7	9	10	-55	1	4	5
40,000	-56.5	-55	2	6	8	-52	4	11	11	-50	6	10	12	-53	5	7	9
30,000	-56.5	-51	-7	-4	-2	-48	-4	-1	0	-42	5	5	7	-45	-1	2	4
20,000	-71.2	-78	-9	-5	-5	-26	-5	-1	1	-15	6	10	10	-21	-0	4	6
10,000	-4.6	-16	-11	-7	-5	-11	-5	-2	-1	-1	4	6	11	-6	-2	2	4
CHICAGO TO WAKKANAI																	
55,000	-56.5	-57	-0	5	5	-51	5	11	11	-49	10	11	11	-55	2	4	6
40,000	-56.5	-55	1	6	8	-51	5	12	12	-49	7	10	12	-53	4	7	9
30,000	-56.5	-52	-8	-5	-5	-49	-6	-2	-0	-42	2	5	6	-46	-2	1	5
20,000	-71.2	-78	-11	-6	-4	-27	-6	-2	-0	-16	5	7	9	-23	-1	2	4
10,000	-4.6	-17	-12	-8	-6	-12	-7	-4	-2	-2	5	5	7	-10	-5	-1	1
CHICAGO TO WINNIPEG																	
55,000	-56.5	-54	-1	2	5	-54	1	5	4	-54	-1	1	5	-60	-5	-0	1
40,000	-56.5	-55	2	6	8	-54	1	5	7	-55	1	5	6	-55	1	5	6
30,000	-56.5	-51	-6	-4	-2	-48	-1	-1	0	-34	7	9	11	-44	1	5	6
20,000	-71.2	-79	-8	-4	-2	-27	-1	2	4	-11	10	12	14	-14	5	7	9
10,000	-4.6	-15	-11	-6	-1	-7	-2	1	5	5	12	15	15	-2	5	7	9
CHICAGO TO ZURICH																	
55,000	-56.5	-57	-0	1	5	-54	4	6	11	-51	6	8	9	-56	1	5	5
40,000	-56.5	-56	2	6	9	-54	5	10	10	-51	6	9	11	-54	5	7	9
30,000	-56.5	-50	-6	-5	-2	-44	-1	-1	1	-41	5	6	7	-45	-0	5	6
20,000	-71.2	-79	-8	-4	-1	-25	-4	-0	2	-15	6	9	10	-21	1	4	6
10,000	-4.6	-15	-10	-6	-4	-10	-5	-2	0	0	5	7	11	-5	-1	5	5
CHICAGO TO CULDAH																	
55,000	-56.5	-57	1	15	15	-50	7	9	10	-50	6	9	10	-51	5	8	9
40,000	-56.5	-52	5	11	12	-51	5	10	12	-50	7	11	15	-52	5	11	15
30,000	-56.5	-52	-7	-5	-5	-50	-5	-2	-0	-50	7	10	12	-47	-2	1	2
20,000	-71.2	-51	-9	-5	-5	-27	-6	-2	-0	-12	9	12	15	-24	-5	0	2
10,000	-4.6	-16	-12	-8	-6	-15	-8	-5	-5	2	7	9	10	-9	-5	-2	0
CHICAGO TO LUXEMBOURG																	
55,000	-56.5	-55	4	7	9	-57	-0	5	5	-60	-5	0	2	-59	-2	1	5
40,000	-56.5	-56	7	11	11	-54	1	6	8	-48	11	11	15	-51	5	11	15
30,000	-56.5	-56	-2	2	1	-42	2	6	8	-29	16	19	21	-37	11	12	15
20,000	-71.2	-78	-6	-5	-1	-14	2	6	8	-5	16	18	19	-15	6	10	11
10,000	-4.6	-16	-10	-6	-4	-5	-0	5	4	1	4	7	11	-5	2	6	9
CHICAGO TO DALLAS																	
55,000	-56.5	-74	-17	-15	-14	-70	-14	-11	-9	-76	-19	-16	-15	-75	-17	-14	-15
40,000	-56.5	-56	1	5	5	-52	4	7	9	-50	7	10	11	-54	2	5	7
30,000	-56.5	-56	11	11	11	-54	10	15	16	-26	14	20	21	-32	12	15	16
20,000	-71.2	-10	11	15	16	-8	15	15	16	-5	14	20	20	-6	15	17	18
10,000	-4.6	6	10	12	15	8	15	16	15	12	17	18	18	8	12	16	15
CHICAGO TO RANGOON																	
55,000	-56.5	-76	-20	-14	-16	-71	-17	-14	-15	-77	-20	-18	-16	-76	-19	-17	-15
40,000	-56.5	-56	1	5	4	-52	5	11	12	-51	5	11	12	-54	2	5	6
30,000	-56.5	-56	10	12	15	-52	11	15	16	-27	17	18	19	-32	15	15	16
20,000	-71.2	-8	15	15	16	-6	15	17	18	-4	17	18	19	-6	15	17	18
10,000	-4.6	7	12	14	15	9	16	15	16	11	16	17	17	8	15	16	15
CHRISTCHURCH TO MELBOURNE																	
55,000	-56.5	-60	-5	-1	1	-59	-2	0	2	-56	1	5	5	-54	5	5	6
40,000	-56.5	-56	0	4	5	-56	0	5	5	-55	2	5	7	-52	4	10	10
30,000	-56.5	-41	1	5	7	-46	-2	1	2	-51	-6	-4	-2	-47	-2	0	1
20,000	-71.2	-15	6	8	10	-20	1	4	5	-25	-4	-1	0	-21	0	5	4
10,000	-4.6	1	6	8	10	-5	2	4	5	-7	-5	-1	1	-4	0	5	5
CHRISTCHURCH TO NANTAI																	
55,000	-56.5	-64	-11	-9	-8	-67	-11	-8	-6	-61	-6	-4	-5	-62	-6	-4	-2
40,000	-56.5	-55	2	4	6	-54	2	4	6	-54	2	5	6	-54	5	6	7
30,000	-56.5	-54	7	9	10	-54	5	11	11	-45	1	4	5	-42	2	5	6
20,000	-71.2	-11	10	12	15	-14	7	10	11	-18	5	5	7	-16	5	7	11
10,000	-4.6	5	10	12	15	5	8	10	11	-2	5	5	6	1	5	7	9
CHRISTCHURCH TO OMAHA																	
55,000	-56.5	-60	-5	-0	1	-58	-1	1	2	-56	1	5	5	-54	5	5	6
40,000	-56.5	-56	1	4	6	-55	1	4	6	-55	2	5	7	-55	4	10	10
30,000	-56.5	-42	2	5	6	-46	-1	1	5	-51	-7	-4	-5	-48	-5	0	1
20,000	-71.2	-16	5	8	9	-20	1	4	5	-25	-4	-1	0	-21	-0	2	4
10,000	-4.6	0	5	7	11	-5	2	4	5	-8	-5	-1	0	-5	-0	2	4
CHRISTCHURCH TO SYDNEY																	
55,000	-56.5	-62	-5	-5	-1	-60	-4	-1	0	-57	-0	2	4	-55	1	5	6
40,000	-56.5	-56	0	5	5	-56	1	4	6	-54	2	5	7	-55	4	7	9
30,000	-56.5	-41	4	6	7	-45	-1	2	5	-50	-5	-5	-1	-46	-2	1	2
20,000	-71.2	-18	7	9	10	-19	2	5	6	-24	-5	-0	1	-20	1	5	5
10,000	-4.6	2	7	9	11	-2	2	5	6	-7	-2	0	1	-5	1	4	5

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
CHUNG KING TO HONG KONG																									
51,000	-56.5	-71	-14	-11	-10	-71	-14	-12	-10	-71	-15	-12	-10	-69	-15	-10	-8	-71	-14	-11	-9	4	4	4	4
40,000	-56.5	-53	4	6	7	-52	4	6	8	-50	7	9	10	-53	4	6	7	-52	5	7	9	3	3	3	3
30,000	-64.5	-35	9	11	13	-34	11	13	14	-27	17	19	20	-31	13	15	16	-32	13	15	17	3	3	3	3
20,000	-71.2	-12	9	11	12	-8	13	15	16	-3	18	19	20	-8	14	16	17	-8	13	16	17	3	3	2	3
10,000	-4.6	1	6	8	9	6	11	12	13	11	16	17	18	7	11	13	14	6	11	13	14	3	2	2	2
CHUNG KING TO MANILA																									
51,000	-56.5	-74	-17	-15	-11	-74	-14	-15	-14	-74	-17	-14	-13	-72	-15	-13	-11	-73	-17	-14	-13	4	4	4	4
40,000	-56.5	-53	5	5	6	-52	4	6	7	-51	5	7	8	-53	4	6	7	-52	4	6	7	3	3	3	3
30,000	-64.5	-33	11	13	14	-32	12	14	15	-29	14	17	18	-31	14	15	16	-31	13	15	16	3	3	2	2
20,000	-71.2	-9	12	13	14	-7	15	16	17	-4	18	19	19	-7	15	16	17	-7	15	16	17	2	2	2	2
10,000	-4.6	4	9	11	12	4	13	14	15	11	16	17	17	8	13	14	15	8	13	14	15	3	2	1	2
CHUNG KING TO NANKING																									
51,000	-56.5	-65	-8	-5	-5	-65	-9	-4	-5	-67	-11	-7	-4	-65	-9	-6	-4	-66	-9	-5	-5	5	4	5	5
40,000	-56.5	-52	4	7	8	-51	4	7	8	-48	9	11	12	-52	5	7	9	-51	5	8	10	4	4	4	4
30,000	-64.5	-40	5	8	9	-37	7	10	11	-27	18	20	21	-34	11	13	14	-34	10	14	16	4	4	3	4
20,000	-71.2	-14	5	8	7	-12	9	11	13	-3	18	20	21	-11	10	13	14	-11	10	13	15	4	4	2	4
10,000	-4.6	-5	0	3	4	1	6	8	9	11	16	17	18	3	8	10	11	3	7	10	12	4	3	2	3
CHUNG KING TO PEIPIING																									
51,000	-56.5	-60	-5	0	2	-61	-4	-2	-0	-63	-7	-4	-2	-62	-6	-3	-1	-62	-5	-1	0	5	4	5	5
40,000	-56.5	-53	4	6	8	-53	4	7	9	-47	10	12	14	-52	5	8	9	-51	5	9	11	4	5	4	5
30,000	-64.5	-45	-0	3	4	-41	1	6	8	-37	18	20	22	-37	8	10	12	-37	7	12	14	4	5	4	5
20,000	-71.2	-23	-1	2	3	-14	5	8	10	-3	18	20	21	-14	7	10	12	-14	7	11	14	4	5	3	5
10,000	-4.6	-8	-4	-1	1	-2	3	4	7	10	15	17	18	1	5	8	9	0	5	9	11	4	4	3	5
CHUNG KING TO RANGOON																									
51,000	-56.5	-73	-17	-14	-13	-72	-15	-13	-11	-74	-18	-15	-13	-72	-15	-13	-11	-73	-16	-13	-12	4	4	4	4
40,000	-56.5	-55	7	4	5	-52	4	7	8	-50	4	8	9	-54	5	5	6	-53	4	6	8	3	3	3	3
30,000	-64.5	-35	9	12	13	-33	12	14	15	-27	17	19	19	-32	13	15	16	-32	13	15	16	3	3	2	3
20,000	-71.2	-10	11	13	14	-7	14	16	17	-3	18	19	20	-7	14	16	17	-7	14	16	17	3	3	2	3
10,000	-4.6	4	8	10	11	8	13	14	15	12	16	17	18	7	12	13	14	8	12	14	15	3	2	2	2
CHUNG KING TO TAIPEI																									
51,000	-56.5	-69	-11	-9	-8	-70	-11	-10	-9	-70	-14	-11	-9	-68	-12	-9	-7	-69	-11	-9	-8	5	4	5	5
40,000	-56.5	-52	4	6	8	-52	4	6	8	-49	7	10	11	-52	4	7	8	-52	5	8	9	3	4	3	3
30,000	-64.5	-34	9	11	12	-35	10	12	13	-27	17	19	20	-32	13	15	16	-32	12	15	17	4	3	3	3
20,000	-71.2	-13	8	10	11	-9	12	14	15	-3	18	19	20	-8	13	15	16	-9	13	15	17	3	3	2	3
10,000	-4.6	-0	4	6	8	5	9	11	12	11	16	17	18	4	10	12	13	5	10	12	14	1	3	2	3
CHURCHILL TO REFIKAVIK																									
51,000	-56.5	-54	-1	3	5	-48	9	12	13	-45	11	13	14	-52	5	7	8	-51	4	9	11	6	4	5	5
40,000	-56.5	-55	1	5	8	-49	8	12	14	-47	10	13	15	-50	4	10	12	-50	4	10	12	6	4	5	5
30,000	-64.5	-36	-11	-8	-7	-51	-6	-3	-2	-45	-1	2	3	-50	-5	-2	-0	-50	-6	-2	-0	4	5	4	5
20,000	-71.2	-18	-14	-11	-11	-53	-11	-7	-5	-61	-1	4	5	-28	-7	-3	-1	-20	-9	-4	-1	6	6	4	6
10,000	-4.6	-24	-19	-15	-13	-18	-14	-10	-7	-6	-1	2	3	-14	-10	-4	-4	-16	-11	-6	-4	6	6	4	6
CHURCHILL TO LONDON																									
51,000	-56.5	-57	-1	3	5	-49	7	10	11	-46	10	12	14	-51	1	4	7	-51	5	8	10	6	4	5	6
40,000	-56.5	-55	1	5	8	-50	6	11	13	-48	9	12	14	-52	5	9	11	-51	5	9	12	7	4	5	6
30,000	-64.5	-34	-9	-6	-5	-50	-5	-2	-1	-46	0	1	4	-48	-4	-0	1	-48	-4	-1	1	6	4	4	5
20,000	-71.2	-14	-13	-9	-7	-40	-8	-4	-2	-39	2	5	7	-26	-4	-0	2	-27	-6	-1	1	6	6	4	6
10,000	-4.6	-19	-15	-11	-9	-15	-10	-6	-4	-8	1	3	4	-11	-6	-1	-1	-12	-8	-5	-1	6	6	4	6
CHURCHILL TO MONTREAL																									
51,000	-56.5	-54	1	4	6	-52	5	7	9	-51	6	8	9	-55	7	4	6	-53	5	6	8	5	4	5	6
40,000	-56.5	-53	3	7	11	-52	5	9	11	-51	6	9	11	-52	4	8	10	-52	4	8	10	6	4	5	5
30,000	-64.5	-34	-9	-6	-5	-50	-6	-1	-2	-41	1	4	7	-47	-2	1	2	-48	-4	0	1	4	4	4	4
20,000	-71.2	-15	-14	-10	-7	-29	-7	-4	-2	-16	5	8	10	-23	-2	2	4	-26	-4	0	3	4	6	4	5
10,000	-4.6	-23	-14	-13	-10	-14	-10	-6	-3	-1	4	6	8	-8	-5	1	4	-11	-7	-2	1	7	4	4	7
CHURCHILL TO OTTAWA																									
51,000	-56.5	-54	0	4	6	-52	4	7	9	-51	6	8	9	-55	7	4	5	-53	5	6	8	5	4	5	6
40,000	-56.5	-54	3	7	11	-52	4	8	10	-51	5	9	10	-52	4	8	10	-52	4	8	10	6	4	5	5
30,000	-64.5	-34	-9	-6	-5	-50	-6	-1	-2	-41	1	4	7	-47	-2	1	2	-48	-4	0	1	4	4	4	4
20,000	-71.2	-15	-14	-10	-7	-28	-7	-3	-1	-16	4	8	10	-23	-2	2	4	-25	-4	1	3	6	6	4	6
10,000	-4.6	-22	-14	-13	-10	-14	-9	-5	-3	-1	4	6	8	-8	-5	1	4	-11	-7	-2	1	7	4	4	7
CHURCHILL TO RESOLUTE BAY																									
51,000	-56.5	-54	-1	1	5	-47	9	12	14	-45	11	13	14	-52	5	6	7	-51	6	9	10	6	4	5	5
40,000	-56.5	-57	-0	4	6	-50	7	10	12	-47	10	13	15	-51	6	9	11	-51	6	10	12	6	5	5	5
30,000	-64.5	-38	-13	-10	-9	-53	-9	-6	-4	-46	-1	1	2	-52	-7	-5	-3	-52	-8	-4	-2	4	5	1	4
20,000	-71.2	-41	-20	-17	-15	-55	-14	-10	-8	-21	-0	3	4	-51	-10	-6	-4	-52	-11	-6	-5	5	6	4	5
10,000	-4.6	-29	-24	-20	-18	-21	-17	-13	-10	-6	-1	1	3	-17	-12	-9	-7	-18	-14	-8	-6	6	6	4	5
CHURCHILL TO SAN FRANCISCO																									
51,000	-56.5	-58	-1	2	4	-55	7	4	6	-55	1	1	4	-59	-2	0	1	-57	-0	1	4	5	4	5	6
40,000	-56.5	-56	1	5	7	-53	1	5	7	-53	3	6	8	-55	2	5	7	-55	2	5	7	6	6	4	5
30,000	-64.5	-37	-7	-4	-1	-44	-4	-2	-0	-40	5	7	8	-46	0	2	4	-46	-2	2	3	4	1	3	4
20,000	-71.2	-30	-8	-4	-1	-24	-2	1	3	-13	8	10	11	-20	2	5	7	-21	-0	4	6	7	5	3	5
10,000	-4.6	-15	-10	-5	-3	-8	-5	0	2	5	9	12	13	-4	1	5	7	-5	-1	4	6	7	5	4	6
CHURCHILL TO VANCOUVER																									
51,000	-56.5	-54	1	5	7	-52	5	7	9	-50	6	9	10	-56	1	3	5	-53	1	6	7	6	4	5	6
40,000	-56.5	-55	2	6	8	-53	5	7	9	-52	5	8	10	-54	3	6	8	-53	1	7	9	6	4	5	5
30,000	-64.5	-34	-9	-6	-5	-50	-6	-3	-2	-42	2	5	6	-47	-2	0	2	-48	-4	-0	2	4	4	3	4
20,000	-71.2	-34	-13	-8	-5	-27	-5	-2	-0	-16	5	7	9	-23	-2	2	4	-25	-4	1	3	7	5	4	6
10,000	-4.6	-20	-15	-10	-7	-11	-7	-3	-1	0	5	7	9	-8	-3	1	3	-10	-5	-0	2	8	5	4	6
CHURCHILL TO WHITEHORSE																									
51,000	-56.5	-54	2	6	8	-49	7	10	11	-48	9	11	12	-53	4	6	7	-51	5	8	10	6	4	5	5
40,000	-56.5	-5																							

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION																			
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT								
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085												
CLEVELAND TO MEXICO CITY																																	
55,000	-56.5	-69	-13	-10	-9	-67	-10	-8	-7	-69	-13	-11	-10	-72	-15	-13	-12	-69	-13	-10	-8									1505 N.M.I.			
40,000	-56.5	-57	-0	2	4	-57	-1	2	3	-55	2	3	3	-55	1	3	4	-56	1	2	3	3	3	3	3	3	3	3	3	3			
30,000	-44.5	-41	3	5	6	-40	4	6	7	-33	11	13	13	-36	8	10	11	-38	7	9	10	3	2	2	2	2	2	2	2				
20,000	-21.2	-15	6	9	10	-12	9	11	12	-7	14	15	16	-9	12	14	15	-11	10	12	13	3	3	2	3	3	3	3	3				
10,000	-4.6	1	5	8	9	4	9	11	13	9	14	15	16	7	12	13	14	5	10	12	13	4	4	2	3	3	3	3	3				
CLEVELAND TO MONTREAL																																	
55,000	-56.5	-59	-2	1	2	-57	-0	3	4	-59	-3	0	2	-61	-4	-3	0	-59	-2	1	2	4	4	4	4	4	4	4	4	428 N.M.I.			
40,000	-56.5	-55	1	5	7	-55	1	5	8	-53	3	5	7	-55	2	5	7	-55	2	5	6	6	6	6	6	6	6	6	6	6			
30,000	-44.5	-49	-4	-2	-0	-47	-2	0	1	-37	7	10	11	-42	2	5	6	-44	1	4	6	4	4	4	4	4	4	4	4	4			
20,000	-21.2	-26	-5	-3	1	-22	-1	2	4	-11	10	12	14	-16	5	8	10	-19	2	6	8	5	5	3	3	3	3	3	3	3			
10,000	-4.6	-13	-8	-4	-1	-8	-3	1	3	4	9	11	12	-1	4	8	10	-4	0	4	6	7	5	3	3	3	3	3	3	3			
CLEVELAND TO TORONTO																																	
55,000	-56.5	-59	-3	-0	1	-58	-1	2	3	-60	-4	-1	0	-62	-5	-2	-1	-60	-3	-0	2	4	4	4	4	4	4	4	4	4	148 N.M.I.		
40,000	-56.5	-56	1	5	7	-56	1	5	7	-54	3	5	6	-55	1	5	6	-55	1	4	6	6	6	6	6	6	6	6	6	6	6		
30,000	-44.5	-48	-4	-1	-0	-46	-2	0	2	-37	8	10	11	-42	3	5	7	-43	1	5	7	4	3	3	3	3	3	3	3	3	3		
20,000	-21.2	-25	-4	-0	2	-21	0	3	5	-10	11	13	14	-15	6	9	11	-18	3	7	9	5	5	3	3	3	3	3	3	3	3		
10,000	-4.6	-12	-7	-3	-1	-6	-2	2	4	5	9	11	12	0	5	8	10	-3	1	5	7	6	5	3	3	3	3	3	3	3	3		
CLEVELAND TO VANCOUVER																																	
55,000	-56.5	-58	-1	2	4	-56	1	3	5	-57	-1	2	3	-60	-3	-1	3	-58	-1	2	4	5	5	4	3	3	3	3	3	3	1781 N.M.I.		
40,000	-56.5	-55	1	5	8	-54	1	5	7	-54	3	5	7	-56	1	4	6	-55	1	4	6	6	6	6	6	6	6	6	6	6	6		
30,000	-44.5	-51	-6	-2	-0	-48	-3	-1	0	-38	6	9	10	-44	1	4	5	-45	-1	3	5	4	3	3	3	3	3	3	3	3	3		
20,000	-21.2	-28	-7	-3	-0	-22	-1	2	4	-11	10	12	13	-14	3	6	8	-20	1	5	7	6	5	3	3	3	3	3	3	3	3		
10,000	-4.6	-14	-9	-4	-2	-7	-2	2	4	5	10	12	14	-2	3	7	9	-4	0	5	7	7	5	4	4	4	4	4	4	4	4		
COCOS IS. TO COLOMBO																																	
55,000	-56.5	-82	-25	-23	-22	-78	-21	-19	-18	-78	-21	-19	-18	-80	-23	-21	-20	-79	-23	-21	-19	3	3	3	3	3	3	3	3	3	3	1524 N.M.I.	
40,000	-56.5	-54	2	4	5	-52	5	6	7	-54	2	4	6	-54	2	4	6	-54	3	5	6	3	2	2	2	2	2	2	2	2	2	2	
30,000	-44.5	-31	14	15	16	-31	14	15	16	-31	13	15	15	-32	12	13	14	-31	13	15	15	2	2	2	2	2	2	2	2	2	2	2	
20,000	-21.2	-5	16	17	18	-6	16	17	17	-5	16	17	17	-6	15	16	17	-5	16	17	17	3	1	1	1	1	1	1	1	1	1	1	
10,000	-4.6	10	14	15	16	9	14	15	15	8	13	14	14	9	14	15	15	9	14	15	15	1	1	1	1	1	1	1	1	1	1	1	
COCOS IS. TO DARWIN																																	
55,000	-56.5	-82	-26	-24	-22	-79	-22	-20	-19	-77	-21	-19	-18	-78	-22	-20	-19	-79	-23	-20	-19	3	3	3	3	3	3	3	3	3	3	3	1094 N.M.I.
40,000	-56.5	-54	3	4	5	-52	4	5	6	-54	3	4	5	-54	2	4	5	-54	3	5	5	2	2	2	2	2	2	2	2	2	2	2	
30,000	-44.5	-31	14	15	16	-32	13	14	14	-33	12	14	14	-33	12	13	14	-32	12	14	15	2	2	2	2	2	2	2	2	2	2	2	2
20,000	-21.2	-5	16	17	17	-6	15	16	17	-6	15	16	16	-7	15	16	16	-6	15	16	17	1	1	1	1	1	1	1	1	1	1	1	
10,000	-4.6	10	14	15	16	9	14	15	16	8	12	14	14	9	13	14	15	9	13	15	15	1	2	2	2	2	2	2	2	2	2	2	2
COCOS IS. TO MAURITIUS																																	
55,000	-56.5	-77	-21	-18	-17	-75	-19	-16	-15	-72	-15	-13	-12	-74	-18	-16	-14	-75	-18	-15	-14	4	4	4	4	4	4	4	4	4	4	2302 N.M.I.	
40,000	-56.5	-53	5	6	6	-53	4	5	6	-52	4	6	7	-53	3	5	6	-53	4	6	7	3	3	3	3	3	3	3	3	3	3	3	
30,000	-44.5	-31	14	15	16	-33	11	13	14	-33	11	13	14	-34	11	12	13	-33	12	14	15	2	2	2	2	2	2	2	2	2	2	2	2
20,000	-21.2	-5	16	17	17	-6	14	15	15	-7	15	16	17	-8	14	15	15	-7	14	16	16	3	2	2	2	2	2	2	2	2	2	2	2
10,000	-4.6	9	14	15	15	8	13	14	15	6	11	12	13	8	12	14	14	8	12	14	14	1	2	2	2	2	2	2	2	2	2	2	2
COCOS IS. TO PERIM																																	
55,000	-56.5	-75	-19	-16	-15	-73	-16	-14	-13	-71	-15	-12	-11	-71	-15	-12	-11	-72	-16	-13	-12	4	4	4	4	4	4	4	4	4	4	4	1587 N.M.I.
40,000	-56.5	-54	2	5	6	-54	2	4	5	-53	4	6	7	-53	3	5	6	-54	3	5	6	3	3	3	3	3	3	3	3	3	3	3	
30,000	-44.5	-33	12	13	14	-36	9	10	11	-36	9	11	12	-37	8	10	11	-35	9	11	13	2	2	2	2	2	2	2	2	2	2	2	2
20,000	-21.2	-7	14	15	16	-10	11	13	13	-11	10	12	12	-11	11	12	13	-10	11	13	14	2	2	2	2	2	2	2	2	2	2	2	2
10,000	-4.6	9	13	14	15	6	11	12	13	4	8	10	11	5	9	11	12	4	10	12	13	2	2	2	2	2	2	2	2	2	2	2	2
COCOS IS. TO SINGAPORE																																	
55,000	-56.5	-82	-24	-24	-23	-79	-22	-21	-20	-78	-21	-19	-18	-80	-23	-21	-20	-80	-23	-21	-20	3	3	3	3	3	3	3	3	3	3	3	918 N.M.I.
40,000	-56.5	-54	2	4	5	-52	5	6	7	-54	2	3	4	-54	2	3	4	-54	3	4	5	2	2	2	2	2	2	2	2	2	2	2	2
30,000	-44.5	-31	14	15	15	-31	14	15	15	-32	13	14	15	-32	12	13	14	-31	13	14	15	2	2	2	2	2	2	2	2	2	2	2	2
20,000	-21.2	-5	16	17	18	-6	14	16	17	-6	14	16	17	-6	15	16	17	-5	16	17	17	1	1	1	1	1	1	1	1	1	1	1	1
10,000	-4.6	10	14	15	15	9	14	15	15	8	13	14	14	9	14	15	15	9	14	15	15	1	1	1	1	1	1	1	1	1	1	1	1
COLD BAY TO SANTIAGO																																	
55,000	-56.5	-52	4	8	10	-52	5	8	10	-50	6	9	10	-53	3	6	7	-52	5	7	9	5	5	3	3	3	3	3	3	3	3	3	1560 N.M.I.
40,000	-56.5	-54	3	7	10	-53	4	8	10	-51	5	9	10	-53	4	7	9	-53	4	8	10	7	6	5	5	5	5	5	5	5	5	5	5
30,000	-44.5	-49	-5	-2	-1	-49	-4	-2	-0	-42	2	5	6	-46	-2	1	3	-47	-2	1	3	4	3	4	4	4	4	4	4	4	4	4	4
20,000	-21.2	-24	-0	-2	-0	-27	-5	-2	-0	-15	6	9	10	-23	-2	1	3	-23	-2	2	5	4	3	4	4	4	4	4	4	4	4	4	4
10,000	-4.6	-12	-7	-3	-1	-11	-7	-4	-2	-0	4	7	8	-7	-3	0	2	-8	-3	1	3	6	6	3	3	3	3	3	3	3	3	3	3
COLD BAY TO TOKYO																																	
55,000	-56.5	-49	8	12	13	-52	5	8	9	-53	3	6	8	-54	3	6	7	-52	5	9	11	5	6	4	4	4	4	4	4	4	4	4	2602 N.M.I.
40,000	-56.5	-50	6	10	12	-52	5	9	11	-50	7	10	12	-52	5	8	10	-51	6	9	11	5	6	4	4	4	4	4	4	4	4	4	4
30,000	-44.5	-49	-5	-2	-0	-47	-3	0	2	-36	9	12	13	-44	1	4	5	-44	0	5	8	4	4	4	4	4	4	4	4	4	4	4	4
20,000	-21.2	-24	-7	-4	-2	-24	-3	0	2	-11	10	13	14	-22	-0	3	5	-21	-0	4													

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
COLOGNE TO DUSSELDORF																	
55,000	-56.5	-57	-0	5	5	-54	5	5	7	-50	6	9	10	-58	-1	2	5
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	9	11	-56	0	5	5
30,000	-56.5	-51	-6	-4	-2	-48	-5	-1	1	-41	4	6	8	-44	0	5	5
20,000	-21.2	-27	-6	-2	0	-25	-1	2	5	-14	7	9	10	-18	5	6	8
10,000	-4.6	-11	-6	-5	-1	-6	-2	1	5	1	6	8	9	-5	2	5	6
COLOGNE TO FRANKFURT																	
55,000	-56.5	-56	0	5	5	-54	5	5	7	-51	6	8	10	-58	-1	1	5
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	8	10	-56	0	5	5
30,000	-56.5	-51	-6	-4	-2	-48	-5	-1	1	-41	4	6	8	-44	1	5	5
20,000	-21.2	-27	-6	-2	0	-22	-1	2	5	-14	7	9	11	-16	5	6	8
10,000	-4.6	-11	-7	-5	-1	-6	-2	1	5	2	6	9	10	-5	2	5	7
COLOGNE TO GENEVA																	
55,000	-56.5	-57	-0	5	5	-54	2	5	6	-52	5	7	6	-58	-2	1	2
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-52	4	8	9	-56	0	5	5
30,000	-56.5	-50	-6	-5	-2	-47	-5	-0	1	-40	5	7	8	-45	1	4	5
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-15	8	10	11	-17	4	7	8
10,000	-4.6	-10	-5	-2	0	-6	-1	2	5	5	7	9	11	-2	5	6	7
COLOGNE TO GLASGOW																	
55,000	-56.5	-57	-1	2	4	-55	5	6	7	-49	8	10	11	-57	-1	2	4
40,000	-56.5	-58	-2	5	5	-55	2	7	9	-50	6	10	12	-56	0	4	6
30,000	-56.5	-51	-6	-5	-2	-48	-5	-1	1	-41	5	6	7	-45	-0	5	4
20,000	-21.2	-27	-6	-2	0	-25	-2	1	5	-15	6	8	10	-19	2	5	7
10,000	-4.6	-10	-6	-2	0	-7	-5	0	2	0	5	7	8	-5	1	4	6
COLOGNE TO HAMBURG																	
55,000	-56.5	-57	-0	5	5	-55	5	6	7	-49	7	9	11	-57	-1	2	5
40,000	-56.5	-58	-2	2	4	-55	1	6	8	-51	6	9	11	-56	0	5	5
30,000	-56.5	-51	-7	-4	-2	-48	-6	-1	0	-41	4	6	7	-44	0	5	6
20,000	-21.2	-28	-7	-5	-0	-25	-2	1	5	-15	7	9	10	-19	2	4	6
10,000	-4.6	-12	-7	-5	-1	-7	-2	1	2	1	6	8	9	-4	1	4	6
COLOGNE TO HELSINKI																	
55,000	-56.5	-57	-1	5	4	-55	4	6	8	-48	9	11	12	-56	0	5	4
40,000	-56.5	-58	-2	1	5	-54	2	7	9	-50	6	10	12	-56	1	4	6
30,000	-56.5	-52	-8	-5	-4	-49	-5	-2	-1	-42	5	6	7	-45	-1	2	5
20,000	-21.2	-40	-9	-5	-2	-25	-4	-0	2	-15	6	8	9	-20	1	5	6
10,000	-4.6	-14	-10	-6	-5	-9	-4	-1	1	0	5	7	8	-6	-1	2	4
COLOGNE TO ISTANBUL																	
55,000	-56.5	-56	1	4	5	-55	2	4	6	-55	5	6	7	-59	-2	0	2
40,000	-56.5	-58	-1	2	4	-56	0	4	6	-50	6	9	11	-56	0	5	4
30,000	-56.5	-51	-7	-4	-5	-47	-5	-0	1	-19	6	8	10	-45	2	4	5
20,000	-21.2	-27	-5	-2	0	-22	-0	5	4	-12	9	11	12	-17	4	7	8
10,000	-4.6	-11	-7	-5	-2	-6	-1	2	4	5	8	10	11	-2	5	6	7
COLOGNE TO PLZAVIA																	
55,000	-56.5	-58	-1	2	4	-55	5	8	9	-47	9	12	15	-56	1	4	5
40,000	-56.5	-57	-1	4	6	-52	4	9	12	-49	8	12	14	-55	2	6	8
30,000	-56.5	-52	-7	-4	-5	-48	-4	-1	1	-45	2	4	6	-46	-1	2	5
20,000	-21.2	-28	-7	-5	-1	-26	-4	-1	1	-17	4	7	8	-21	-0	4	6
10,000	-4.6	-12	-7	-4	-2	-10	-5	-2	0	-2	5	5	6	-4	-1	2	4
COLOGNE TO LISBON																	
55,000	-56.5	-58	-2	2	5	-54	1	5	5	-55	1	4	5	-60	-5	-1	1
40,000	-56.5	-58	-2	2	4	-57	-1	5	5	-55	5	6	8	-56	0	5	5
30,000	-56.5	-58	-4	-1	0	-46	-2	1	2	-19	6	8	10	-42	2	5	6
20,000	-21.2	-25	-2	1	5	-20	1	4	5	-12	9	11	12	-16	5	8	9
10,000	-4.6	-7	-2	1	1	-5	1	4	5	5	9	11	12	-0	4	7	8
COLOGNE TO LONDON																	
55,000	-56.5	-57	-1	5	5	-54	5	5	7	-50	6	9	10	-58	-1	2	5
40,000	-56.5	-58	-2	2	4	-55	1	5	8	-51	5	9	11	-56	0	4	5
30,000	-56.5	-50	-6	-5	-2	-48	-5	-1	1	-41	4	6	8	-44	0	1	5
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	7	9	10	-18	5	6	8
10,000	-4.6	-10	-5	-2	0	-6	-2	1	5	1	6	8	9	-5	2	5	7
COLOGNE TO MADRID																	
55,000	-56.5	-58	-1	2	4	-56	1	4	5	-55	2	4	6	-59	-5	-0	1
40,000	-56.5	-58	-2	2	4	-57	-1	5	5	-55	4	7	8	-56	0	5	5
30,000	-56.5	-58	-4	-2	0	-47	-2	1	2	-39	6	8	9	-45	2	5	6
20,000	-21.2	-24	-5	1	2	-21	1	1	5	-12	9	11	12	-16	5	8	9
10,000	-4.6	-7	-5	1	2	-4	1	5	5	4	9	11	12	-1	4	7	8
COLOGNE TO MOSCOW																	
55,000	-56.5	-56	0	4	5	-55	4	6	8	-48	9	11	12	-56	0	1	4
40,000	-56.5	-59	-2	1	5	-55	2	6	8	-50	6	10	11	-56	1	4	6
30,000	-56.5	-55	-8	-5	-4	-49	-4	-1	0	-41	4	6	8	-45	-0	2	4
20,000	-21.2	-29	-4	-4	-2	-24	-5	1	5	-15	7	9	10	-20	1	5	7
10,000	-4.6	-14	-10	-6	-4	-8	-4	-0	2	0	5	7	8	-6	-1	5	4
COLOGNE TO MUNICH																	
55,000	-56.5	-56	0	4	5	-54	2	5	6	-51	5	8	9	-58	-1	1	5
40,000	-56.5	-58	-2	2	4	-56	0	4	6	-52	5	8	10	-56	0	5	5
30,000	-56.5	-51	-6	-4	-2	-48	-5	-1	1	-40	4	7	8	-44	1	4	5
20,000	-21.2	-27	-6	-2	0	-22	-1	2	5	-14	8	10	11	-18	5	6	8
10,000	-4.6	-11	-7	-5	-1	-6	-2	1	5	2	7	9	10	-2	2	5	7
COLOGNE TO NEW YORK																	
55,000	-56.5	-57	-0	5	4	-55	5	6	7	-52	4	7	8	-57	-0	5	4
40,000	-56.5	-55	2	6	8	-54	5	7	9	-52	5	8	10	-54	2	6	8
30,000	-56.5	-49	-5	-7	-0	-47	-5	-0	1	-41	4	7	8	-44	1	5	5
20,000	-21.2	-27	-6	-1	1	-24	-5	1	5	-14	7	10	11	-19	2	6	8
10,000	-4.6	-15	-8	-4	-2	-8	-4	-0	2	1	5	8	9	-4	1	4	6

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
COLOGNE TO DUBLIN																											
55,000	-56.5	-57	-1	2	4	-55	4	6	8	-48	8	11	12	-57	-0	2	4	-54	3	6	8	5	4	3	4	555	N.M.I.
40,000	-56.5	-59	-2	2	4	-54	3	7	9	-50	7	10	12	-56	0	4	6	-55	2	7	9	6	4	5	5	4	4
30,000	-54.5	-52	-7	-5	-5	-49	-4	-2	-0	-47	3	5	7	-45	-1	2	3	-47	-2	1	3	4	4	4	4	4	4
20,000	-21.2	-29	-8	-4	-2	-24	-3	0	2	-15	4	8	9	-20	-1	5	7	-22	-1	3	5	6	5	3	5	4	4
10,000	-4.6	-15	-4	-5	-2	-8	-4	-1	1	0	5	7	8	-5	-1	3	4	-7	-2	7	5	6	5	3	5	5	5
COLOGNE TO PARIS																											
55,000	-56.5	-57	-0	3	5	-54	2	5	6	-51	5	8	9	-58	-1	1	3	-55	2	5	7	5	4	4	4	714	N.M.I.
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-52	5	8	10	-56	0	3	5	-56	1	5	7	6	4	5	4	4	4
30,000	-54.5	-50	-6	-3	-2	-48	-3	-0	1	-40	4	7	8	-44	1	3	5	-45	-1	3	4	4	4	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	7	10	11	-19	3	6	8	-20	1	5	7	6	5	3	5	4	4
10,000	-4.6	-10	-5	-2	0	-6	-1	2	3	2	7	9	10	-2	2	5	7	-4	1	4	6	6	4	3	5	5	5
COLOGNE TO PRAGUE																											
55,000	-56.5	-56	0	4	5	-54	3	5	7	-50	6	9	10	-58	-1	1	3	-54	2	5	7	5	4	3	4	276	N.M.I.
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	9	10	-56	0	3	5	-55	1	5	7	5	4	5	5	4	4
30,000	-54.5	-51	-7	-4	-2	-48	-4	-1	0	-41	4	6	8	-44	1	3	5	-45	-1	2	4	4	4	4	4	4	4
20,000	-21.2	-27	-6	-2	-0	-23	-1	2	3	-14	7	9	11	-18	1	3	6	-21	1	4	6	6	4	3	5	4	4
10,000	-4.6	-12	-7	-3	-1	-7	-2	1	3	2	6	8	10	-3	2	5	7	-5	-0	3	5	6	4	3	5	5	5
COLOGNE TO ROMI																											
55,000	-56.5	-56	0	4	5	-55	2	4	6	-54	3	5	7	-59	-2	0	1	-56	1	5	5	5	4	3	4	589	N.M.I.
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-52	4	7	9	-56	0	3	4	-56	1	4	6	5	4	5	4	4	4
30,000	-54.5	-50	-6	-3	-1	-47	-3	0	1	-39	5	8	9	-43	2	4	6	-45	-0	3	5	4	4	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-21	-0	3	4	-12	9	11	12	-17	4	7	9	-19	2	6	7	5	4	3	4	4	4
10,000	-4.6	-9	-5	-1	1	-5	-1	2	3	4	8	10	12	-1	3	6	8	-3	2	5	7	5	4	3	4	4	4
COLOGNE TO SANTA MARIA																											
55,000	-56.5	-59	-2	1	2	-56	0	3	5	-56	1	3	5	-60	-4	-1	0	-58	-1	2	3	5	4	4	4	1608	N.M.I.
40,000	-56.5	-58	-2	2	4	-58	-1	3	5	-53	3	6	8	-56	0	3	5	-56	0	4	6	6	4	5	5	4	4
30,000	-54.5	-50	-6	-3	-1	-45	-1	2	3	-38	6	8	10	-42	3	5	7	-43	1	4	6	6	4	3	4	4	4
20,000	-21.2	-22	-1	2	4	-20	2	4	6	-12	9	11	12	-15	6	8	10	-17	4	7	9	5	4	3	4	4	4
10,000	-4.6	-6	-1	2	4	-3	2	4	6	4	9	11	12	0	5	7	9	-1	3	6	8	5	4	3	4	4	4
COLOGNE TO SHANNON																											
55,000	-56.5	-57	-1	2	4	-54	3	6	7	-50	6	9	10	-57	-1	2	3	-55	2	5	7	5	4	3	4	605	N.M.I.
40,000	-56.5	-58	-2	3	5	-55	1	6	8	-51	6	9	11	-56	0	4	6	-55	1	6	8	6	4	5	5	4	4
30,000	-54.5	-50	-6	-3	-2	-47	-3	-0	1	-41	4	6	8	-44	0	3	5	-46	-1	2	4	4	4	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-23	-1	2	4	-15	7	9	10	-19	3	6	8	-20	-1	4	6	6	5	3	5	4	4
10,000	-4.6	-10	-5	-1	0	-6	-2	1	3	1	6	8	9	-3	2	5	6	-4	0	4	5	5	4	3	5	5	5
COLOGNE TO STOCKHOLM																											
55,000	-56.5	-57	-1	3	4	-55	4	6	8	-48	9	11	12	-57	-0	2	4	-54	3	6	8	5	4	3	4	641	N.M.I.
40,000	-56.5	-58	-2	1	4	-56	2	7	9	-50	6	10	12	-56	0	4	6	-55	2	6	8	6	4	5	5	4	4
30,000	-54.5	-52	-8	-5	-5	-49	-5	-2	-1	-42	5	8	9	-45	-1	2	3	-47	-3	1	3	6	4	4	4	4	4
20,000	-21.2	-29	-8	-4	-2	-25	-3	-0	2	-15	4	8	9	-20	-1	5	7	-22	-1	3	5	4	4	4	4	4	4
10,000	-4.6	-14	-5	-5	-5	-9	-4	-1	1	0	5	7	8	-6	-1	2	4	-7	-2	1	3	6	5	3	5	5	5
COLOGNE TO TENERIFE																											
55,000	-56.5	-57	-0	3	5	-55	1	4	5	-55	1	3	5	-59	-2	0	2	-57	-0	3	4	5	4	3	4	7094	N.M.I.
40,000	-56.5	-58	-1	2	4	-55	1	4	6	-49	8	10	12	-56	0	3	4	-54	2	6	8	5	4	5	4	4	4
30,000	-54.5	-51	-6	-4	-2	-46	-2	1	2	-36	9	11	13	-43	2	4	6	-44	1	5	7	4	4	4	4	4	4
20,000	-21.2	-26	-5	-2	0	-20	1	4	6	-10	11	13	14	-17	4	7	9	-18	3	7	9	5	5	3	4	4	4
10,000	-4.6	-11	-6	-5	-1	-4	1	4	5	5	10	12	13	-1	4	7	8	-3	2	6	8	5	4	3	4	4	4
COLOGNE TO TEL AVIV-JAFFA																											
55,000	-56.5	-58	-1	2	3	-56	0	3	4	-59	-2	0	1	-60	-4	-1	-0	-58	-2	1	2	4	3	3	4	1667	N.M.I.
40,000	-56.5	-57	-0	3	5	-56	0	3	5	-49	7	10	11	-56	0	3	4	-55	2	5	7	5	4	4	4	4	4
30,000	-54.5	-50	-6	-3	-2	-46	-2	1	2	-35	9	11	13	-42	3	5	6	-43	1	5	7	4	4	3	4	4	4
20,000	-21.2	-25	-5	-0	1	-20	1	4	5	-10	11	13	14	-16	5	8	9	-18	4	7	9	5	4	3	4	4	4
10,000	-4.6	-9	-5	-2	0	-4	1	4	5	5	10	12	13	0	5	8	9	-2	5	6	8	5	4	3	4	4	4
COLOGNE TO VIENNA																											
55,000	-56.5	-56	1	4	6	-54	3	5	6	-51	6	8	9	-58	-1	1	3	-55	2	5	7	5	4	3	4	402	N.M.I.
40,000	-56.5	-58	-2	2	4	-56	1	4	6	-51	5	8	10	-56	0	3	5	-56	1	5	7	5	4	5	5	4	4
30,000	-54.5	-51	-7	-4	-2	-48	-3	-1	1	-40	4	7	8	-44	1	3	5	-44	-1	2	4	4	4	4	4	4	4
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	3	-14	8	10	11	-18	3	6	8	-20	-1	4	6	6	4	3	5	4	4
10,000	-4.6	-12	-7	-3	-1	-6	-2	1	3	2	7	9	10	-3	2	5	7	-5	-0	4	5	6	4	3	5	5	5
COLOGNE TO WARSAW																											
55,000	-56.5	-56	0	4	5	-55	3	4	6	-49	7	9	11	-57	-1	2	3	-54	2	6	7	5	4	3	4	521	N.M.I.
40,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	6	9	11	-56	0	3	5	-55	1	5	7	5	4	5	5	4	4
30,000	-54.5	-52	-7	-4	-5	-49	-4	-1	-0	-41	4	6	8	-44	0	3	4	-46	-2	2	4	4	4	4	4	4	4
20,000	-21.2	-28	-7	-3	-1	-25	-2	1	3	-14	7	9	10	-19	2	6	8	-21	0	4	6	6	5	3	5	4	4
10,000	-4.6	-15	-4	-4	-2	-7	-3	0	2	1	6	8	9	-4	1	4	6	-6	-1	2	4	6	5	3	5	5	5
COLOGNE TO ZURICH																											
55,000	-56.5	-58	0	4	5	-54	2	5	6	-51	5	7	9	-58	-2	1	2	-55	1	5	6	5	4	3	4	212	N.M.I.
40,000	-56.5	-58	-2	2	4	-56	0	4	6	-52	5	8	10	-56	0	3	5	-56	1	5	7	6	4	5	4	4	4
30,000	-54.5	-50	-6	-3	-2	-48	-3	-0	1	-40	4	7	8	-44	1	3	5	-45	-1	1	3	4	4	4	4	4	4
20,000	-21.2	-27	-5	-2	0	-22	-1	2	4	-14	8	10	11	-18	4	7	8	-20	-1	5	7	6	4	3	5	4	4
10,000	-4.6	-10	-6	-2	-0	-6	-1	2	3	2	7	9	10	-2	2	6	7	-4	1	4	6	6	4	3	4	4	4
COLOGNE TO DAMASCUS																											
55,000	-56.5	-73	-17	-15	-13	-72	-16	-15	-12	-75	-18	-16	-15	-75	-18	-16	-15	-74	-17	-15	-13	3	4	1	3	7900	N.M.I.
40,000	-56.5	-55	-7	4	6	-55	4	7	8	-48	8	10	11	-54	5	5	6	-52	4	7	8	4	4	1	3	4	4
30,000	-54.5	-57	8	10	11	-55	10	12	13	-27	17	19	20	-34	11	13	14	-33	12	14	16	3	3	1	3	4	4
20,000	-21.2	-11	10	12	13	-9	12	14	15																		

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	JAN	APR	JUL	OCT
COLOMBO TO DJAKARTA																	
53,000	-56.5	-82	-26	-24	-23	-79	-22	-20	-19	-78	-22	-20	-19	-80	-23	-21	-20
40,000	-56.5	-55	2	3	4	-52	5	6	7	-54	2	3	4	-54	3	5	6
30,000	-44.5	-31	14	15	15	-30	14	16	16	-31	14	15	15	-32	13	14	14
20,000	-21.2	-5	16	17	18	-5	16	17	17	-5	16	17	17	-6	16	17	18
10,000	-4.6	10	14	15	16	10	14	15	16	9	14	15	15	9	14	15	16
COLOMBO TO HONG KONG																	
53,000	-56.5	-79	-22	-20	-19	-76	-20	-17	-16	-77	-21	-18	-17	-78	-21	-18	-17
40,000	-56.5	-55	1	3	4	-52	5	6	7	-54	2	4	5	-55	3	5	6
30,000	-44.5	-32	13	14	15	-30	14	16	17	-29	15	16	17	-31	14	15	16
20,000	-21.2	-6	15	16	17	-5	16	18	18	-4	17	18	18	-5	16	17	18
10,000	-4.6	8	13	14	15	10	15	16	17	10	15	16	16	9	14	15	16
COLOMBO TO ISTANBUL																	
53,000	-56.5	-70	-15	-11	-10	-69	-12	-10	-8	-72	-16	-13	-12	-72	-15	-13	-11
40,000	-56.5	-55	1	4	6	-55	3	6	8	-58	9	11	12	-58	4	7	9
30,000	-44.5	-40	5	7	9	-37	7	10	11	-28	16	18	19	-35	9	11	12
20,000	-21.2	-14	7	9	10	-11	10	12	13	-6	17	19	20	-9	12	14	15
10,000	-4.6	2	6	8	9	6	11	13	14	12	17	18	19	7	11	13	14
COLOMBO TO KARACHI																	
53,000	-56.5	-78	-21	-19	-18	-76	-19	-17	-15	-77	-20	-18	-16	-79	-22	-20	-19
40,000	-56.5	-55	1	4	5	-52	4	7	8	-50	7	9	10	-54	3	5	7
30,000	-44.5	-33	11	14	15	-32	13	15	16	-28	16	18	19	-32	13	14	15
20,000	-21.2	-8	14	15	16	-6	15	17	18	-4	17	19	20	-6	15	17	18
10,000	-4.6	8	12	14	14	10	15	16	17	12	16	18	18	9	13	15	15
COLOMBO TO KUALA LUMPUR																	
53,000	-56.5	-82	-26	-24	-23	-78	-22	-20	-19	-78	-22	-20	-19	-80	-23	-21	-20
40,000	-56.5	-55	1	3	4	-52	5	6	7	-54	2	3	4	-54	3	5	6
30,000	-44.5	-31	14	15	15	-30	15	16	17	-32	13	14	15	-31	14	15	16
20,000	-21.2	-5	16	17	18	-5	16	17	18	-6	16	17	18	-5	16	17	18
10,000	-4.6	10	14	15	16	10	15	16	16	9	14	15	15	10	14	15	16
COLOMBO TO LISBON																	
53,000	-56.5	-68	-11	-9	-7	-67	-10	-8	-6	-70	-14	-11	-10	-68	-12	-9	-8
40,000	-56.5	-55	1	4	5	-54	2	5	7	-49	8	10	11	-55	2	4	5
30,000	-44.5	-41	3	6	7	-39	6	8	9	-30	14	16	17	-37	8	10	11
20,000	-21.2	-15	6	8	9	-15	9	11	12	-6	16	17	18	-10	11	13	15
10,000	-4.6	1	5	7	8	4	9	11	12	12	16	18	18	6	10	12	13
COLOMBO TO MADRAS																	
53,000	-56.5	-81	-24	-22	-21	-77	-20	-18	-17	-78	-21	-19	-18	-80	-24	-22	-21
40,000	-56.5	-56	1	3	4	-52	5	7	8	-55	4	6	7	-54	2	4	5
30,000	-44.5	-31	13	15	16	-30	14	16	17	-30	14	16	17	-32	13	14	15
20,000	-21.2	-5	16	17	18	-6	15	17	18	-5	16	17	18	-5	16	17	18
10,000	-4.6	10	14	16	16	10	15	16	17	10	14	15	16	9	14	15	15
COLOMBO TO MADRID																	
53,000	-56.5	-67	-11	-8	-7	-66	-10	-8	-6	-70	-13	-11	-10	-68	-12	-9	-8
40,000	-56.5	-55	1	4	5	-54	2	5	7	-49	8	10	11	-55	2	4	5
30,000	-44.5	-41	3	6	7	-39	6	8	9	-30	14	16	17	-37	8	10	11
20,000	-21.2	-16	6	8	9	-15	8	10	12	-6	16	17	18	-10	11	13	15
10,000	-4.6	0	5	7	8	4	9	11	12	11	16	17	18	6	10	12	13
COLOMBO TO MANILA																	
53,000	-56.5	-81	-24	-22	-21	-78	-22	-20	-19	-78	-22	-19	-18	-80	-23	-21	-20
40,000	-56.5	-55	1	3	4	-52	5	6	7	-54	2	4	5	-54	2	4	5
30,000	-44.5	-31	14	15	15	-30	15	16	17	-30	14	15	16	-31	13	15	15
20,000	-21.2	-5	16	17	18	-4	17	18	19	-5	16	17	18	-5	16	17	18
10,000	-4.6	9	14	15	16	10	15	16	16	10	15	15	16	9	14	15	15
COLOMBO TO MILAN																	
53,000	-56.5	-67	-10	-8	-6	-66	-9	-7	-5	-69	-12	-10	-9	-67	-11	-8	-7
40,000	-56.5	-56	1	4	5	-54	2	5	7	-48	8	10	12	-55	2	4	5
30,000	-44.5	-42	3	5	6	-39	5	8	9	-30	14	16	17	-37	8	10	11
20,000	-21.2	-17	4	7	8	-13	8	10	11	-6	16	17	18	-11	10	12	13
10,000	-4.6	-1	4	6	7	4	8	10	12	11	15	17	18	5	9	12	14
COLOMBO TO NAIROBI																	
53,000	-56.5	-80	-24	-22	-21	-78	-22	-19	-18	-79	-23	-21	-20	-79	-22	-20	-19
40,000	-56.5	-54	2	4	5	-52	5	7	8	-54	3	4	5	-55	3	6	7
30,000	-44.5	-30	14	15	16	-30	15	16	17	-31	14	15	16	-31	13	14	15
20,000	-21.2	-4	17	18	18	-5	16	17	18	-6	16	17	18	-5	16	17	18
10,000	-4.6	10	14	15	16	10	14	15	16	9	14	15	16	10	14	15	16
COLOMBO TO NEW DELHI																	
53,000	-56.5	-77	-20	-18	-17	-75	-17	-14	-13	-76	-20	-17	-15	-77	-21	-18	-17
40,000	-56.5	-56	1	4	5	-55	4	7	8	-50	6	9	11	-54	3	5	7
30,000	-44.5	-34	10	13	14	-33	12	14	16	-28	17	19	20	-32	12	14	16
20,000	-21.2	-8	15	16	15	-7	14	16	17	-3	18	19	20	-6	15	17	18
10,000	-4.6	7	11	13	14	10	14	16	17	11	16	17	18	9	13	15	15
COLOMBO TO RANGOON																	
53,000	-56.5	-80	-24	-22	-21	-76	-20	-18	-16	-78	-21	-19	-18	-80	-24	-22	-21
40,000	-56.5	-56	1	3	4	-52	5	7	8	-53	3	5	6	-54	2	4	5
30,000	-44.5	-31	13	15	15	-30	15	16	17	-29	15	16	17	-31	13	15	15
20,000	-21.2	-5	16	17	18	-5	16	18	18	-4	17	18	18	-6	16	17	18
10,000	-4.6	10	14	15	16	10	15	16	17	10	15	15	16	9	14	15	15
COLOMBO TO ROME																	
53,000	-56.5	-68	-12	-9	-8	-67	-11	-8	-7	-71	-14	-12	-11	-70	-14	-12	-10
40,000	-56.5	-55	1	4	5	-54	3	6	7	-48	8	10	12	-55	2	4	5
30,000	-44.5	-41	4	6	7	-38	6	9	10	-29	15	17	18	-36	8	10	11
20,000	-21.2	-15	6	8	9	-12	9	11	12	-5	16	18	19	-10	11	13	15
10,000	-4.6	1	5	7	8	5	9	11	13	12	16	18	18	6	11	12	13

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																					
HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION							
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN	APR	JUL	OCT	
		5000	075	085	50	050	075	085	50	050	075	085	50	050	075	085					50
COLOMBO TO SHARJAH																					
53,000	-56.5	-77	-21	-19	-17	-76	-20	-17	-16	-76	-20	-18	-16	-78	-22	-20	-19	-77	-21	-18	-16
40,000	-56.5	-55	1	4	5	-52	5	7	8	-50	7	9	10	-54	3	5	6	-52	4	7	8
30,000	-44.5	-33	11	13	15	-32	13	15	16	-28	17	18	19	-32	13	14	15	-31	13	16	17
20,000	-21.2	-8	13	15	16	-6	15	17	17	-4	17	19	20	-6	15	17	17	-6	15	17	18
10,000	-4.6	8	12	14	14	10	15	16	17	12	17	18	19	9	13	15	15	10	14	16	17
COLOMBO TO SINGAPORE																					
53,000	-56.5	-82	-26	-24	-23	-78	-22	-20	-19	-78	-22	-20	-19	-80	-24	-22	-21	-80	-23	-21	-20
40,000	-56.5	-55	1	3	4	-52	5	6	7	-54	2	3	4	-54	2	3	4	-54	3	5	6
30,000	-44.5	-31	14	15	15	-30	15	16	17	-31	14	15	16	-32	13	14	15	-31	14	15	16
20,000	-21.2	-5	16	18	18	-5	16	17	18	-5	16	17	18	-6	16	17	17	-5	16	17	18
10,000	-4.6	10	14	15	16	10	15	15	16	9	14	15	15	9	14	15	15	10	14	15	16
COLOMBO TO TANANARIVE																					
53,000	-56.5	-79	-23	-20	-19	-77	-20	-18	-16	-74	-18	-16	-14	-77	-21	-19	-18	-77	-20	-18	-16
40,000	-56.5	-53	3	5	6	-52	5	6	7	-53	3	5	6	-53	3	5	5	-53	4	6	7
30,000	-44.5	-30	15	16	16	-31	14	15	16	-32	13	14	15	-33	12	13	14	-31	13	15	16
20,000	-21.2	-5	16	17	18	-6	15	16	17	-5	16	17	18	-6	15	16	17	-6	16	17	17
10,000	-4.6	10	14	15	16	10	14	15	16	9	14	15	15	9	14	15	15	9	14	15	15
COLOMBO TO TEL AVIV-JAFFA																					
53,000	-56.5	-74	-17	-15	-14	-73	-16	-14	-13	-75	-19	-16	-15	-76	-19	-17	-16	-74	-18	-15	-14
40,000	-56.5	-55	2	4	6	-52	4	7	8	-49	8	10	11	-54	3	5	6	-52	4	7	8
30,000	-44.5	-36	8	10	12	-34	10	12	14	-27	17	19	20	-33	11	13	14	-33	12	15	16
20,000	-21.2	-11	11	12	13	-9	13	14	15	-4	18	19	20	-7	14	15	16	-7	14	16	17
10,000	-4.6	5	10	11	12	8	13	14	15	14	18	19	20	8	13	14	15	9	13	16	17
COLOMBO TO TRIPOLI																					
53,000	-56.5	-72	-16	-14	-13	-71	-15	-12	-11	-74	-18	-16	-14	-74	-17	-15	-14	-73	-16	-14	-12
40,000	-56.5	-55	2	4	6	-53	3	6	7	-49	8	10	11	-54	2	4	5	-53	4	6	8
30,000	-44.5	-38	7	9	10	-35	9	11	12	-28	17	18	19	-34	10	12	13	-34	11	13	15
20,000	-21.2	-12	9	11	12	-10	12	13	14	-4	17	19	19	-8	13	15	15	-8	13	15	16
10,000	-4.6	4	9	10	11	7	12	13	14	13	18	19	20	8	13	14	15	8	13	15	16
COLOMBO TO TUNIS																					
53,000	-56.5	-70	-14	-11	-10	-69	-12	-10	-9	-73	-16	-14	-13	-72	-15	-13	-12	-71	-14	-12	-10
40,000	-56.5	-55	2	4	6	-54	3	6	7	-48	8	10	11	-54	2	4	5	-53	4	6	8
30,000	-44.5	-39	5	7	8	-37	8	10	11	-29	16	18	19	-35	9	11	12	-35	9	13	14
20,000	-21.2	-14	8	9	10	-11	10	12	13	-5	17	18	19	-9	12	14	14	-10	12	14	16
10,000	-4.6	2	7	9	10	6	10	12	13	12	17	18	19	7	12	13	14	7	11	14	15
COPENHAGEN TO OAKAR																					
53,000	-56.5	-64	-7	-4	-3	-62	-5	-3	-2	-63	-6	-4	-3	-65	-9	-6	-5	-63	-7	-4	-3
40,000	-56.5	-57	-1	3	5	-56	1	4	6	-52	4	6	8	-55	1	3	5	-55	1	4	6
30,000	-44.5	-45	-1	2	3	-42	3	5	6	-46	8	10	11	-39	5	7	9	-41	4	7	8
20,000	-21.2	-19	2	5	6	-16	5	7	8	-10	11	13	14	-13	9	11	12	-14	7	9	11
10,000	-4.6	-2	2	5	6	0	5	7	9	8	13	14	15	3	7	9	10	2	7	10	11
COPENHAGEN TO OUSSELDORF																					
53,000	-56.5	-57	-0	3	5	-53	3	6	7	-49	8	10	11	-57	-1	2	3	-54	3	6	8
40,000	-56.5	-58	-2	2	4	-55	2	6	8	-50	6	10	12	-56	0	4	5	-55	2	6	8
30,000	-44.5	-51	-7	-4	-3	-49	-4	-2	-0	-41	3	6	7	-45	-0	2	4	-47	-2	2	3
20,000	-21.2	-28	-7	-3	-1	-24	-3	1	2	-15	6	9	10	-19	2	5	7	-22	-0	3	5
10,000	-4.6	-13	-4	-4	-2	-8	-3	0	2	1	5	7	9	-5	-0	3	5	-6	-2	2	4
COPENHAGEN TO FRANKFURT																					
53,000	-56.5	-57	-0	3	5	-53	3	6	7	-49	7	10	11	-57	-1	2	3	-54	2	6	7
40,000	-56.5	-58	-2	2	4	-55	2	6	8	-51	6	9	11	-56	0	4	5	-55	1	6	8
30,000	-44.5	-51	-7	-4	-3	-49	-4	-2	-0	-41	3	6	7	-45	-0	3	4	-46	-2	2	4
20,000	-21.2	-28	-7	-3	-1	-24	-2	1	2	-15	7	9	10	-19	2	6	7	-21	-0	3	5
10,000	-4.6	-13	-4	-4	-2	-7	-3	0	2	1	5	8	9	-5	0	3	5	-6	-1	2	4
COPENHAGEN TO GENEVA																					
53,000	-56.5	-57	-0	3	5	-53	3	5	7	-50	6	8	10	-58	-1	1	3	-55	2	5	7
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	9	10	-56	0	3	5	-55	1	5	7
30,000	-44.5	-51	-6	-4	-2	-48	-4	-1	0	-41	4	6	8	-44	0	3	5	-46	-1	2	4
20,000	-21.2	-27	-6	-2	-0	-23	-2	1	3	-14	7	9	11	-18	3	6	8	-21	1	4	6
10,000	-4.6	-11	-7	-3	-1	-7	-2	1	2	2	6	8	10	-3	1	4	6	-5	-0	3	5
COPENHAGEN TO GLASGOW																					
53,000	-56.5	-58	-1	2	4	-53	4	7	8	-48	9	11	12	-57	-0	3	4	-54	3	6	8
40,000	-56.5	-58	-2	2	5	-54	3	8	10	-49	7	11	13	-56	1	4	6	-54	2	7	10
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-42	3	5	6	-45	-1	2	4	-47	-2	1	3
20,000	-21.2	-28	-7	-3	-1	-24	-3	0	2	-16	5	8	9	-20	1	5	7	-22	-1	3	5
10,000	-4.6	-12	-7	-4	-2	-8	-4	-1	1	-0	4	6	8	-5	-1	3	4	-6	-2	2	3
COPENHAGEN TO HAMBURG																					
53,000	-56.5	-57	-0	3	5	-53	4	6	8	-48	8	11	12	-57	-0	2	4	-54	3	6	8
40,000	-56.5	-59	-2	2	4	-54	2	7	9	-50	6	10	12	-56	0	4	6	-55	2	6	9
30,000	-44.5	-52	-7	-5	-3	-49	-5	-2	-1	-42	3	6	7	-45	-1	2	4	-47	-2	1	3
20,000	-21.2	-29	-8	-4	-2	-24	-3	0	2	-15	6	8	10	-20	1	5	7	-22	-1	3	5
10,000	-4.6	-13	-9	-5	-3	-8	-4	-0	1	0	5	7	8	-6	-1	2	4	-7	-2	1	3
COPENHAGEN TO HELSINKI																					
53,000	-56.5	-58	-1	2	4	-52	4	7	8	-47	10	12	13	-56	1	3	5	-53	3	7	9
40,000	-56.5	-59	-3	1	3	-53	3	7	9	-50	7	11	12	-55	1	5	7	-54	2	7	9
30,000	-44.5	-53	-9	-6	-5	-50	-6	-3	-1	-42	3	5	7	-46	-2	1	3	-48	-3	1	3
20,000	-21.2	-31	-10	-6	-4	-26	-5	-1	1	-16	5	8	9	-21	-0	4	6	-23	-2	2	4
10,000	-4.6	-16	-11	-7	-5	-10	-6	-2	-0	-1	4	6	7	-7	-2	1	3	-8	-4	0	2
COPENHAGEN TO HONOLULU																					
53,000	-56.5	-59	-3	0	2	-51	5	8	9	-49	8	10	10	-55	1	3	4	-54	3	6	7
40,000	-56.5	-56	0	4	6	-51	5	9	11	-48	8	11	13	-53	4	7	8	-52	4	8	10
30,000	-44.5	-52	-7	-5	-3	-49	-5	-2	-1	-43	2	4	6	-48	-3	-1	1	-48	-3	0	2
20,000	-21.2	-30	-9	-5	-3	-28	-7	-4	-2	-17	4	7	8	-25	-4	-1	1	-25	-4	0	2
10,000	-4.6	-15	-10	-7	-5	-13	-9	-6	-4	-2	3	5	6	-10	-5	-3	-1	-10	-5	-2	0

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																										
HEIGHT IN FEET	150 TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION												
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT	
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085					
COPENHAGEN TO ISTANBUL																										
55,000	-56.5	-58	-1	2	4	-54	2	5	6	-52	5	7	8	-58	-1	1	2	-55	2	5	6					1085 N.M.I.
40,000	-56.5	-58	-1	2	4	-55	1	5	6	-50	7	10	11	-56	0	3	5	-55	2	6	8	5	5	5	5	
30,000	-56.5	-58	-1	2	4	-48	-3	-1	1	-39	5	8	9	-44	1	5	5	-46	-1	5	5	4	4	4	4	
20,000	-21.2	-28	-6	-3	-1	-25	-1	2	4	-15	8	10	11	-18	5	6	8	-20	1	5	6	5	5	5	5	
10,000	-4.6	-15	-8	-4	-2	-6	-2	1	5	2	7	9	10	-3	1	5	6	-5	-0	3	5	5	5	5	5	
COPENHAGEN TO JUHANNESBURG																										
55,000	-56.5	-70	-15	-11	-10	-69	-12	-10	-9	-68	-12	-10	-9	-70	-15	-11	-10	-69	-15	-10	-9					4970 N.M.I.
40,000	-56.5	-58	-2	5	6	-54	5	6	7	-51	5	7	8	-54	5	5	6	-55	5	6	7	5	5	5	5	
30,000	-56.5	-59	6	7	5	-56	8	10	11	-55	11	15	16	-55	9	11	12	-56	8	11	12	2	5	5	5	
20,000	-21.2	-15	8	10	11	-11	10	12	15	-7	14	15	16	-10	12	15	16	-10	11	15	16	5	5	2	2	
10,000	-4.6	5	8	9	10	5	9	11	12	8	12	14	16	6	11	15	15	5	10	12	15	5	5	2	2	
COPENHAGEN TO KARACHI																										
55,000	-56.5	-59	-5	0	2	-54	-1	1	5	-58	-2	1	2	-61	-4	-1	-0	-59	-2	0	2					2990 N.M.I.
40,000	-56.5	-57	-0	5	5	-54	2	6	7	-48	9	11	15	-55	1	4	6	-55	5	7	9	5	5	5	5	
30,000	-56.5	-49	-4	-1	0	-44	0	5	5	-55	11	14	15	-61	5	6	7	-62	5	7	9	4	4	4	4	
20,000	-21.2	-24	-5	0	2	-48	5	6	8	-8	15	15	16	-16	5	8	10	-17	5	9	11	5	5	5	5	
10,000	-4.6	-9	-4	-1	1	-2	5	6	8	8	12	14	15	0	5	8	9	-1	4	8	10	5	5	5	5	
COPENHAGEN TO REFLAVIA																										
55,000	-56.5	-58	-1	2	4	-51	6	8	10	-44	10	12	14	-55	1	4	6	-55	4	7	9					1157 N.M.I.
40,000	-56.5	-58	-1	5	5	-51	5	10	12	-48	9	12	14	-54	2	6	8	-55	4	8	11	5	5	5		

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ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE										STANDARD DEVIATION									
		JANUARY		APRIL		JULY		OCTOBER		ANNUAL		JAN	APR	JUL	OCT						
		50 050 075 DMS	50 050 075 DMS	50 050 075 DMS	50 050 075 DMS	50 050 075 DMS	50 050 075 DMS	50 050 075 DMS	50 050 075 DMS												
COPENHAGEN TO PERIM																					
51,000	-56.5	-70	-16	-11	-10	-67	-11	-9	-7	-68	-11	-9	-7	-69	-12	-9	-8	7389 N.M.I.			
40,000	-56.5	-56	1	6	5	-53	3	6	7	-51	6	8	9	-56	2	5	6	6	6	6	
30,000	-56.5	-39	5	7	8	-34	7	9	10	-33	12	16	15	-37	8	10	11	3	3	3	
20,000	-21.2	-16	7	9	10	-12	9	11	11	-8	16	15	16	-11	10	12	13	3	3	3	
10,000	-8.6	1	6	8	9	6	9	11	12	8	12	16	15	6	9	11	12	3	3	2	
COPENHAGEN TO PRAGUE																					
51,000	-56.5	-56	0	3	5	-51	3	6	7	-49	8	10	11	-57	-1	2	3	5	6	3	
40,000	-56.5	-58	-2	2	6	-55	2	6	8	-51	6	9	11	-56	0	3	5	5	6	5	
30,000	-56.5	-52	-7	-5	-3	-49	-6	-2	-0	-41	3	6	7	-45	-0	3	6	6	6	6	
20,000	-21.2	-29	-7	-3	-1	-26	-3	1	2	-15	7	9	10	-19	2	5	7	6	5	3	
10,000	-8.6	-15	-9	-5	-2	-8	-3	0	2	-1	5	8	9	-5	-0	3	5	6	5	3	
COPENHAGEN TO RIO DE JANEIRO																					
51,000	-56.5	-70	-15	-11	-9	-69	-12	-10	-9	-67	-10	-8	-7	-70	-13	-11	-10	4	3	3	
40,000	-56.5	-56	1	6	5	-55	2	5	6	-53	6	8	9	-56	2	4	5	4	6	3	
30,000	-56.5	-39	5	7	8	-37	7	9	10	-35	10	11	12	-38	9	11	12	3	3	3	
20,000	-21.2	-15	8	10	11	-11	10	11	12	-9	12	16	15	-10	12	13	14	3	3	2	
10,000	-8.6	1	6	10	11	6	9	11	12	7	12	15	16	6	11	12	13	3	3	2	
COPENHAGEN TO ROME																					
51,000	-56.5	-56	0	4	5	-54	2	5	6	-52	5	7	8	-58	-2	1	2	5	6	3	
40,000	-56.5	-58	-2	2	6	-56	0	4	6	-51	5	8	10	-56	0	3	5	5	6	5	
30,000	-56.5	-51	-6	-6	-2	-48	-3	-1	1	-40	3	6	7	-45	-1	4	5	6	6	6	
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	3	-13	8	10	11	-18	5	6	8	5	6	3	
10,000	-8.6	-11	-7	-1	-1	-6	-2	1	3	-2	7	9	10	-3	2	5	6	5	6	3	
COPENHAGEN TO SAN FRANCISCO																					
51,000	-56.5	-56	-2	2	6	-50	6	9	10	-48	9	10	11	-55	2	6	5	6	6	3	
40,000	-56.5	-57	-1	6	6	-51	5	9	11	-48	8	11	13	-53	6	7	9	6	6	5	
30,000	-56.5	-54	-10	-7	-6	-50	-6	-4	-1	-46	1	3	5	-48	-4	-1	1	6	6	3	
20,000	-21.2	-36	-15	-9	-6	-29	-8	-5	-1	-18	5	6	7	-25	-6	-0	2	6	5	6	
10,000	-8.6	-19	-15	-10	-8	-16	-10	-6	-6	-2	3	5	6	-10	-6	-2	-0	6	5	6	
COPENHAGEN TO SANTA MARIA																					
51,000	-56.5	-59	-2	1	3	-55	1	4	5	-54	3	5	7	-59	-1	-0	1	5	6	4	
40,000	-56.5	-58	-2	2	6	-57	-0	4	6	-52	6	7	9	-56	0	3	5	6	6	5	
30,000	-56.5	-58	-8	-1	-0	-46	-2	1	2	-39	5	8	9	-46	2	4	6	6	6	6	
20,000	-21.2	-26	-2	1	3	-21	0	3	5	-13	8	10	12	-17	5	8	9	5	6	3	
10,000	-8.6	-7	-5	1	2	-4	0	3	5	-3	7	9	11	-1	5	6	8	5	6	3	
COPENHAGEN TO SEATTLE																					
51,000	-56.5	-58	-2	2	6	-49	4	10	12	-46	11	15	16	-54	5	5	6	6	6	3	
40,000	-56.5	-57	-1	3	6	-50	6	10	12	-47	9	12	16	-52	6	8	9	6	6	5	
30,000	-56.5	-56	-11	-4	-7	-51	-7	-6	-2	-45	-0	2	3	-49	-5	-2	-1	6	6	6	
20,000	-21.2	-35	-16	-10	-8	-31	-10	-7	-5	-20	2	4	6	-27	-6	-2	-0	6	5	6	
10,000	-8.6	-21	-16	-12	-10	-16	-12	-8	-6	-6	1	3	6	-12	-8	-6	-2	6	5	6	
COPENHAGEN TO SHANGHAI																					
51,000	-56.5	-58	-1	2	6	-55	6	6	8	-58	8	10	12	-57	-0	2	6	5	6	3	
40,000	-56.5	-58	-2	3	5	-56	2	7	10	-58	7	10	13	-56	1	6	8	6	7	6	
30,000	-56.5	-51	-6	-6	-2	-48	-3	-1	0	-42	3	5	7	-45	-0	2	6	6	6	6	
20,000	-21.2	-27	-6	-2	0	-26	-1	3	5	-15	6	8	9	-20	2	5	7	6	5	3	
10,000	-8.6	-11	-6	-1	-1	-8	-4	0	2	-0	5	7	8	-6	0	3	5	5	6	3	
COPENHAGEN TO SINGAPORE																					
51,000	-56.5	-58	-2	2	6	-49	7	10	12	-45	11	15	16	-54	5	5	7	6	6	3	
40,000	-56.5	-57	-1	3	6	-50	7	11	13	-47	10	13	15	-53	6	8	10	6	6	5	
30,000	-56.5	-56	-9	-7	-5	-46	0	5	6	-48	-1	0	1	-49	-4	-1	1	6	6	6	
20,000	-21.2	-42	-11	-7	-5	-29	-8	-6	-2	-19	2	5	6	-25	-3	0	2	6	5	6	
10,000	-8.6	-16	-11	-8	-6	-13	-9	-5	-6	-6	1	3	6	-10	-5	-2	0	5	5	3	
COPENHAGEN TO STOCKHOLM																					
51,000	-56.5	-58	-1	2	6	-52	6	7	8	-47	10	12	13	-56	0	3	6	5	6	3	
40,000	-56.5	-59	-1	1	3	-53	5	7	10	-49	7	11	13	-56	1	6	8	5	6	5	
30,000	-56.5	-55	-8	-6	-6	-50	-5	-3	-1	-42	2	5	7	-46	-2	1	1	6	6	6	
20,000	-21.2	-31	-9	-5	-3	-26	-6	-1	1	-16	5	8	9	-21	0	4	6	6	5	6	
10,000	-8.6	-15	-10	-6	-6	-10	-5	-2	0	-1	6	8	9	-7	-2	1	3	6	5	3	
COPENHAGEN TO TEHRAN																					
51,000	-56.5	-57	-0	3	5	-55	2	6	8	-54	3	5	6	-58	-2	1	2	5	6	3	
40,000	-56.5	-57	-1	2	6	-55	2	5	7	-56	8	11	12	-56	1	3	5	5	6	5	
30,000	-56.5	-51	-7	-6	-1	-46	-2	1	2	-36	8	11	12	-45	1	6	5	6	6	6	
20,000	-21.2	-27	-6	-2	-0	-21	0	6	5	-11	10	13	16	-18	6	7	8	5	5	3	
10,000	-8.6	-12	-7	-6	-1	-5	0	3	5	6	9	11	12	-2	2	6	7	6	5	3	
COPENHAGEN TO TEL AVIV-JAFFA																					
51,000	-56.5	-57	-1	2	6	-56	1	3	6	-57	-0	2	3	-60	-3	-1	1	6	5	3	
40,000	-56.5	-57	-1	3	6	-56	1	6	6	-58	0	3	6	-58	0	3	6	5	5	3	
30,000	-56.5	-50	-6	-6	-2	-47	-2	0	2	-36	8	11	12	-42	2	6	6	6	6	6	
20,000	-21.2	-26	-6	-1	0	-21	0	3	5	-11	10	12	13	-17	5	7	9	5	6	3	
10,000	-8.6	-11	-6	-3	-1	-5	0	3	5	-1	6	8	9	-4	0	6	8	5	6	3	
COPENHAGEN TO TOKYO																					
51,000	-56.5	-55	1	5	7	-50	7	9	11	-47	9	12	13	-53	6	6	7	5	6	6	
40,000	-56.5	-57	-1	3	5	-50	6	10	12	-48	8	12	16	-52	6	8	10	5	6	5	
30,000	-56.5	-55	-10	-7	-6	-49	-5	-1	0	-37	7	11	13	-47	-2	1	3	6	6	5	
20,000	-21.2	-35	-16	-10	-8	-28	-6	-2	-0	-13	8	11	12	-26	-3	1	3	6	5	6	
10,000	-8.6	-22	-17	-13	-11	-13	-9	-5	-3	-2	6	9	10	-10	-5	-2	0	6	6	5	
COPENHAGEN TO VIENNA																					
51,000	-56.5	-56	0	3	5	-53	3	6	7	-49	7	9	11	-57	-1	2	3	5	6	3	
40,000	-56.5	-58	-2	2	6	-55	1	5	7	-51	6	9	11	-56	0	3	5	5	6	5	
30,000	-56.5	-52	-7	-5	-3	-49	-6	-2	-0	-41	3	6	8	-46	0	3	6	6	6	6	
20,000	-21.2	-28	-7	-3	-1	-23	-2	1	3	-14	7	9	10	-19	2	6	7	6	5	3	
10,000	-8.6	-13	-8	-5	-2	-8	-3	0	2	-1	6	8	9	-4	0	4	5	6	5	3	

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
COPENHAGEN TO WARSEN																											
51,000	-56.5	-56	0	5	5	-55	4	6	7	-50	8	11	12	-57	-0	2	4	-54	5	6	8	5	4	5	4	559 N.M.I.	
40,000	-56.5	-59	-2	1	3	-54	2	6	8	-50	6	10	11	-56	0	4	5	-55	2	6	8	5	4	5	5		
30,000	-56.5	-59	-2	1	3	-54	2	6	8	-50	6	10	11	-56	0	4	5	-55	2	6	8	5	4	5	5		
20,000	-56.5	-59	-2	1	3	-54	2	6	8	-50	6	10	11	-56	0	4	5	-55	2	6	8	5	4	5	5		
10,000	-56.5	-59	-2	1	3	-54	2	6	8	-50	6	10	11	-56	0	4	5	-55	2	6	8	5	4	5	5		
COPENHAGEN TO ZURICH																											
51,000	-56.5	-56	0	5	5	-54	5	5	7	-50	7	9	10	-58	-1	2	3	-54	2	5	7	5	4	5	4	515 N.M.I.	
40,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	5	9	11	-56	0	3	5	-55	1	5	8	6	4	5	5		
30,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	5	9	11	-56	0	3	5	-55	1	5	8	6	4	5	5		
20,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	5	9	11	-56	0	3	5	-55	1	5	8	6	4	5	5		
10,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	5	9	11	-56	0	3	5	-55	1	5	8	6	4	5	5		
CURITIBA TO RIO DE JANEIRO																											
51,000	-56.5	-75	-10	-15	-12	-71	-15	-12	-11	-65	-8	-5	-4	-66	-9	-7	-6	-69	-12	-9	-7	4	4	5	4	565 N.M.I.	
40,000	-56.5	-52	5	7	9	-55	5	6	8	-52	5	7	9	-56	5	7	8	-55	4	6	8	4	4	5	5		
30,000	-56.5	-52	5	7	9	-55	5	6	8	-52	5	7	9	-56	5	7	8	-55	4	6	8	4	4	5	5		
20,000	-56.5	-52	5	7	9	-55	5	6	8	-52	5	7	9	-56	5	7	8	-55	4	6	8	4	4	5	5		
10,000	-56.5	-52	5	7	9	-55	5	6	8	-52	5	7	9	-56	5	7	8	-55	4	6	8	4	4	5	5		
DACCA TO KARACHI																											
51,000	-56.5	-72	-10	-15	-12	-69	-15	-10	-8	-75	-18	-15	-13	-73	-17	-14	-13	-72	-16	-12	-11	4	4	5	4	1270 N.M.I.	
40,000	-56.5	-55	2	5	7	-55	5	7	9	-50	8	12	13	-54	5	8	9	-55	4	8	10	5	5	5	5		
30,000	-56.5	-55	2	5	7	-55	5	7	9	-50	8	12	13	-54	5	8	9	-55	4	8	10	5	5	5	5		
20,000	-56.5	-55	2	5	7	-55	5	7	9	-50	8	12	13	-54	5	8	9	-55	4	8	10	5	5	5	5		
10,000	-56.5	-55	2	5	7	-55	5	7	9	-50	8	12	13	-54	5	8	9	-55	4	8	10	5	5	5	5		
DACCA TO LAHORE																											
51,000	-56.5	-69	-15	-10	-9	-66	-10	-7	-5	-72	-16	-15	-11	-70	-15	-10	-9	-69	-15	-10	-8	4	4	5	4	967 N.M.I.	
40,000	-56.5	-55	2	5	7	-55	5	7	9	-50	8	12	13	-54	5	8	9	-55	4	8	10	5	5	5	5		
30,000	-56.5	-55	2	5	7	-55	5	7	9	-50	8	12	13	-54	5	8	9	-55	4	8	10	5	5	5	5		
20,000	-56.5	-55	2	5	7	-55	5	7	9	-50	8	12	13	-54	5	8	9	-55	4	8	10	5	5	5	5		
10,000	-56.5	-55	2	5	7	-55	5	7	9	-50	8	12	13	-54	5	8	9	-55	4	8	10	5	5	5	5		
DACCA TO MANGCON																											
51,000	-56.5	-76	-14	-17	-16	-71	-16	-14	-12	-76	-20	-17	-16	-75	-19	-16	-15	-75	-18	-15	-14	5	4	4	4	524 N.M.I.	
40,000	-56.5	-56	1	5	8	-52	5	7	9	-51	5	8	9	-54	2	5	6	-55	5	6	8	5	5	5	5		
30,000	-56.5	-56	1	5	8	-52	5	7	9	-51	5	8	9	-54	2	5	6	-55	5	6	8	5	5	5	5		
20,000	-56.5	-56	1	5	8	-52	5	7	9	-51	5	8	9	-54	2	5	6	-55	5	6	8	5	5	5	5		
10,000	-56.5	-56	1	5	8	-52	5	7	9	-51	5	8	9	-54	2	5	6	-55	5	6	8	5	5	5	5		
DARAR TO DUSSELDORF																											
51,000	-56.5	-65	-8	-5	-4	-65	-8	-6	-5	-66	-10	-8	-6	-65	-8	-5	-4	-65	-8	-5	-4	4	4	5	5	2484 N.M.I.	
40,000	-56.5	-57	-0	1	5	-56	0	4	5	-55	4	6	7	-55	1	5	5	-55	1	4	5	5	5	5	5		
30,000	-56.5	-57	-0	1	5	-56	0	4	5	-55	4	6	7	-55	1	5	5	-55	1	4	5	5	5	5	5		
20,000	-56.5	-57	-0	1	5	-56	0	4	5	-55	4	6	7	-55	1	5	5	-55	1	4	5	5	5	5	5		
10,000	-56.5	-57	-0	1	5	-56	0	4	5	-55	4	6	7	-55	1	5	5	-55	1	4	5	5	5	5	5		
DARAR TO FRANKFURT																											
51,000	-56.5	-65	-8	-5	-4	-65	-8	-6	-5	-66	-10	-8	-6	-65	-8	-5	-4	-65	-8	-5	-4	4	4	5	5	2469 N.M.I.	
40,000	-56.5	-57	-0	1	5	-56	0	4	5	-55	4	6	7	-55	1	5	5	-55	1	4	5	5	5	5	5		
30,000	-56.5	-57	-0	1	5	-56	0	4	5	-55	4	6	7	-55	1	5	5	-55	1	4	5	5	5	5	5		
20,000	-56.5	-57	-0	1	5	-56	0	4	5	-55	4	6	7	-55	1	5	5	-55	1	4	5	5	5	5	5		
10,000	-56.5	-57	-0	1	5	-56	0	4	5	-55	4	6	7	-55	1	5	5	-55	1	4	5	5	5	5	5		
DARAR TO FREELTON																											
51,000	-56.5	-77	-21	-14	-18	-76	-20	-14	-17	-76	-19	-17	-16	-78	-21	-19	-19	-77	-20	-18	-17	5	5	5	5	445 N.M.I.	
40,000	-56.5	-54	5	5	6	-55	4	6	7	-54	2	5	6	-52	5	6	6	-55	5	5	6	5	4	2	2		
30,000	-56.5	-54	5	5	6	-55	4	6	7	-54	2	5	6	-52	5	6	6	-55	5	5	6	5	4	2	2		
20,000	-56.5	-54	5	5	6	-55	4	6	7	-54	2	5	6	-52	5	6	6	-55	5	5	6	5	4	2	2		
10,000	-56.5	-54	5	5	6	-55	4	6	7	-54	2	5	6	-52	5	6	6	-55	5	5	6	5	4	2	2		
DARAR TO GENEVA																											
51,000	-56.5	-66	-9	-6	-5	-64	-8	-5	-4	-67	-10	-8	-7	-67	-11	-9	-8	-66	-10	-7	-5	4	5	5	5	2251 N.M.I.	
40,000	-56.5	-56	0	5	5	-56	1	4	5	-52	4	6	7	-55	1	5	5	-55	2	4	5	5	5	5	5		
30,000	-56.5	-56	0	5	5	-56	1	4	5	-52	4	6	7	-55	1	5	5	-55	2	4	5	5	5	5	5		
20,000	-56.5	-56	0	5	5	-56	1	4	5	-52	4	6	7	-55	1	5	5	-55	2	4	5	5	5	5	5		
10,000	-56.5	-56	0	5	5	-56	1	4	5	-52	4	6	7	-55	1	5	5	-55	2	4	5	5	5	5	5		
DARAR TO GLASGOW																											
51,000	-56.5	-64	-8	-5	-3	-67	-6	-3	-2	-65	-7	-6	-5	-65	-9	-7	-6	-64	-7	-5	-1	4	4	5	5	2541 N.M.I.	
40,000	-56.5	-57	-1	5	5	-56	0	4	6	-52	4	6	8	-55	1	4	5	-55	1	4	6	5	4	5	5		
30,000	-56.5	-57	-1	5	5	-56	0	4	6	-52	4	6	8	-55	1	4	5	-55	1	4	6	5	4	5	5		
20,000	-56.5	-57	-1	5	5	-56	0	4	6	-52	4	6	8	-55	1	4	5	-55	1	4	6	5	4	5	5		
10,000	-56.5	-57	-1	5	5	-56	0	4	6	-52	4	6	8	-55	1	4	5	-55	1	4	6	5	4	5	5		
DARAR TO HAMBURG																											
51,000	-56.5	-64	-8	-5	-3	-67	-6	-3	-2	-64	-7	-5	-4	-66	-9	-7	-6	-64	-7	-5	-3	4	4	5	5	2668 N.M.I.	
40,000	-56.5	-57	-0	5	5	-56	0	4	6	-52	4	6	7	-55	1	5	5	-55	1	4	6	5	5	5	5		
30,000	-56.5	-57	-0	5	5	-56	0	4	6	-52	4	6	7	-55	1	5	5	-55	1	4	6	5	5	5	5		
20,000	-56.5	-57	-0	5	5	-56	0	4	6	-52	4	6	7	-55	1	5	5	-55	1	4	6	5	5	5	5		
10,000	-56.5	-57	-0	5	5	-56	0	4	6	-52	4	6	7	-55	1	5	5	-55	1	4	6	5	5	5	5		
DARAR TO INCIRLETA																											
51,000	-56.5	-67	-11	-8	-7	-66	-9	-7	-6	-71	-14	-12	-11	-69	-12	-10	-9	-68	-12	-9	-8	5	5	5	5	5106 N.M.I.	
40,000	-56.5	-55	2	4	6	-55	2	5	6	-50	6	8	9	-55	2	4	5	-54									

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	DEC
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
DAKAR TO JOHANNESBURG																									
55,000	-56.5	-77	-20	-18	-17	-76	-19	-17	-16	-72	-16	-14	-13	-74	-18	-16	-15	-75	-18	-16	-14	5	5	5	5
40,000	-56.5	-55	5	5	6	-52	4	7	8	-53	4	5	6	-52	4	6	7	-53	4	6	7	5	5	5	5
30,000	-44.5	-32	12	14	14	-31	13	14	15	-33	11	13	15	-32	12	14	15	-32	12	14	15	2	2	2	2
20,000	-21.2	-6	15	16	17	-6	15	16	17	-7	14	16	16	-6	15	16	16	-6	15	16	16	1	2	2	2
10,000	-4.6	9	14	15	16	9	14	15	16	7	11	13	15	10	14	16	16	9	13	15	16	2	2	2	2
DAKAR TO KANO																									
55,000	-56.5	-76	-20	-18	-17	-76	-19	-17	-16	-76	-20	-18	-17	-77	-20	-19	-18	-76	-20	-18	-17	5	5	5	5
40,000	-56.5	-54	5	5	6	-52	4	7	8	-54	5	4	4	-52	5	6	7	-53	4	5	6	5	5	5	5
30,000	-44.5	-36	9	10	11	-32	13	14	15	-32	12	14	15	-32	13	14	15	-33	12	13	14	2	2	2	2
20,000	-21.2	-9	12	13	13	-7	14	15	16	-5	16	17	17	-6	15	16	17	-7	14	15	16	1	2	1	1
10,000	-4.6	8	13	14	15	12	14	15	16	12	16	17	18	10	14	15	16	10	14	16	16	1	2	1	1
DAKAR TO LAJES																									
55,000	-56.5	-69	-12	-10	-9	-68	-11	-9	-8	-69	-15	-11	-10	-71	-14	-12	-11	-69	-13	-10	-9	4	5	5	5
40,000	-56.5	-57	-0	3	4	-56	0	3	5	-55	2	4	5	-55	2	4	5	-55	1	3	4	4	4	2	3
30,000	-44.5	-41	5	5	6	-38	7	8	9	-35	10	11	12	-36	9	11	12	-37	7	9	10	5	2	2	2
20,000	-21.2	-14	7	9	10	-12	9	11	12	-8	13	15	15	-9	13	14	15	-11	11	12	13	5	5	2	2
10,000	-4.6	5	8	10	11	4	8	10	11	9	13	15	15	7	11	13	15	6	10	12	13	5	5	2	2
DAKAR TO LAS PALMAS																									
55,000	-56.5	-72	-16	-14	-13	-72	-15	-13	-12	-75	-17	-15	-14	-74	-18	-16	-15	-75	-16	-14	-13	5	5	5	5
40,000	-56.5	-55	1	4	5	-55	2	4	6	-55	3	5	5	-55	3	5	5	-54	2	4	5	5	4	2	2
30,000	-44.5	-39	6	7	8	-35	9	11	11	-34	11	12	13	-34	10	12	13	-35	9	11	12	2	2	2	2
20,000	-21.2	-12	9	11	11	-10	11	13	13	-7	14	16	16	-7	14	15	16	-9	12	14	15	2	2	2	2
10,000	-4.6	5	10	11	12	6	11	12	13	11	16	17	17	8	13	14	14	8	12	14	15	2	2	2	2
DAKAR TO LEOPOLDBERG																									
55,000	-56.5	-77	-21	-19	-18	-77	-20	-19	-18	-76	-19	-18	-17	-77	-21	-19	-18	-77	-20	-18	-17	5	5	5	5
40,000	-56.5	-54	5	4	5	-52	5	7	8	-54	2	4	4	-52	5	6	7	-53	4	5	6	5	5	2	2
30,000	-44.5	-34	11	12	13	-30	14	15	16	-32	12	13	14	-31	14	15	16	-32	13	14	15	2	2	2	2
20,000	-21.2	-7	14	15	15	-6	16	17	17	-5	16	17	17	-6	16	16	17	-6	15	16	17	1	2	1	1
10,000	-4.6	9	14	14	15	10	14	16	16	9	14	15	16	10	15	16	16	10	14	15	16	1	2	1	1
DAKAR TO LISBON																									
55,000	-56.5	-68	-12	-9	-8	-67	-11	-8	-7	-70	-15	-11	-10	-70	-14	-12	-11	-69	-12	-10	-8	4	5	5	5
40,000	-56.5	-56	0	3	4	-56	1	4	5	-52	4	5	6	-55	2	4	5	-55	2	4	5	4	4	2	3
30,000	-44.5	-42	3	5	6	-34	6	8	9	-34	10	12	13	-36	8	10	11	-36	7	9	10	5	2	2	2
20,000	-21.2	-14	7	9	10	-12	9	11	11	-9	14	15	16	-9	12	13	14	-11	10	12	13	5	2	2	2
10,000	-4.6	5	7	9	10	4	9	11	11	11	15	17	17	6	11	12	13	6	11	13	14	5	5	2	2
DAKAR TO LONDON																									
55,000	-56.5	-65	-8	-6	-4	-65	-7	-4	-3	-65	-8	-6	-5	-66	-10	-8	-7	-65	-8	-6	-4	4	4	5	5
40,000	-56.5	-57	-0	3	5	-56	0	4	5	-55	4	6	7	-55	1	4	5	-55	1	4	5	5	5	5	5
30,000	-44.5	-44	1	5	6	-41	4	6	7	-36	9	11	12	-38	6	8	9	-40	5	7	9	5	5	5	5
20,000	-21.2	-17	4	6	7	-15	6	8	9	-9	12	14	14	-12	10	11	12	-13	8	10	12	5	5	2	3
10,000	-4.6	-0	6	6	8	2	6	8	9	9	13	15	16	4	9	10	11	5	8	11	12	5	5	2	3
DAKAR TO MADRID																									
55,000	-56.5	-68	-11	-9	-7	-68	-10	-8	-6	-69	-15	-11	-10	-69	-15	-11	-10	-68	-12	-9	-8	4	5	5	5
40,000	-56.5	-56	0	3	5	-56	1	4	5	-52	4	6	7	-55	2	4	5	-55	2	4	5	4	4	2	3
30,000	-44.5	-42	2	4	5	-39	4	7	8	-34	10	12	13	-37	8	10	11	-38	7	9	10	5	2	2	3
20,000	-21.2	-15	6	8	9	-14	6	10	11	-8	13	15	15	-10	12	13	14	-11	10	12	13	5	2	2	2
10,000	-4.6	2	7	9	10	4	9	10	11	11	16	17	18	6	11	12	13	6	10	13	14	5	5	2	2
DAKAR TO MARSEILLES																									
55,000	-56.5	-66	-10	-7	-6	-65	-9	-6	-5	-68	-11	-9	-8	-68	-12	-10	-9	-67	-10	-8	-6	4	5	5	5
40,000	-56.5	-56	0	3	5	-56	1	4	5	-52	4	6	7	-55	2	4	5	-55	2	4	5	4	4	2	3
30,000	-44.5	-45	2	5	6	-40	5	7	8	-35	10	11	12	-37	7	9	10	-39	6	8	10	5	5	2	3
20,000	-21.2	-16	5	7	8	-14	6	9	10	-8	13	15	15	-10	11	12	13	-12	9	11	13	5	5	2	2
10,000	-4.6	1	6	8	9	3	8	10	11	11	16	17	18	5	10	11	12	5	10	12	14	5	5	2	2
DAKAR TO MONTREAL																									
55,000	-56.5	-66	-9	-7	-6	-64	-8	-6	-5	-66	-9	-7	-6	-68	-11	-9	-8	-66	-9	-7	-6	5	5	5	5
40,000	-56.5	-57	-0	3	5	-56	0	3	5	-55	2	4	5	-55	2	4	5	-56	1	3	4	5	5	5	5
30,000	-44.5	-45	2	4	5	-41	4	6	7	-36	9	11	12	-37	8	10	11	-39	6	8	9	5	5	5	5
20,000	-21.2	-17	5	7	8	-15	6	8	10	-9	12	14	15	-11	11	13	14	-13	8	11	12	4	5	2	3
10,000	-4.6	-1	6	8	9	0	5	7	8	7	11	13	14	5	9	11	12	5	7	10	11	4	5	2	3
DAKAR TO MUNICH																									
55,000	-56.5	-65	-8	-6	-4	-64	-7	-5	-3	-66	-9	-7	-6	-67	-10	-8	-7	-65	-9	-6	-5	4	5	5	5
40,000	-56.5	-57	-0	3	5	-56	1	4	5	-52	4	6	7	-55	1	4	5	-55	2	4	5	5	5	5	5
30,000	-44.5	-44	0	2	4	-41	4	6	7	-35	9	11	12	-38	6	8	9	-40	5	8	9	5	5	5	5
20,000	-21.2	-18	4	6	7	-15	6	8	9	-9	12	14	15	-11	10	12	12	-13	8	10	12	2	2	1	1
10,000	-4.6	-1	4	6	8	2	7	9	10	10	14	16	17	4	9	11	11	4	8	11	13	5	5	2	3
DAKAR TO NAIROBI																									
55,000	-56.5	-77	-21	-19	-18	-77	-20	-18	-17	-76	-20	-18	-17	-77	-21	-19	-18	-77	-20	-18	-17	5	5	5	5
40,000	-56.5	-54	5	4	5	-52	5	7	8	-54	5	4	4	-52	5	6	7	-53	4	5	6	2	5	5	5
30,000	-44.5	-34	11	12	13	-30	14	15	16	-32	12	13	14	-31	14	15	16	-32	13	14	15	2	2	2	2
20,000	-21.2	-7	14	15	16	-5	16	17	18	-5	16	17	17	-6	16	16	17	-6	15	16	17	1	2	1	1
10,000	-4.6	9	14	15	16	10	15	16	16	10	15	16	16	10	15	16	16	10	14	15	16	1	2	1	1
DAKAR TO NAIJA																									
55,000	-56.5	-78	-21	-19	-18	-78	-21	-19	-18	-74	-18	-16	-14	-77	-21	-19	-18	-77	-20	-18	-16	5	5	5	5
40,000	-56.5	-54	2	4	5	-53	3	4	5	-54	3	4	5	-53	4	5	6	-53	3	4	5	5	4	2	2
30,000	-44.5	-35	11	12	13	-30	14	15	16	-32	12	13	14	-31	14	15	15	-32	13	14	15	2	2	2	2
20,000	-21.2	-7	14	16	16	-6	15	17	17	-6	15	16	17	-6	16	17	17	-6	15	16	17	2	2	1	1
10,000	-4.6	9	14	15	15	9	14	15	16	9	14	15	15	10	15	16	16	9	14	15	16	1	2	1	2
DAKAR TO NEW ORLEANS																									
55,000	-56.5	-72	-16	-14	-12	-71	-14</																		

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50-050	075	085	50-050	075	085	50-050	075	085	50-050	075	085	50-050	075	085	JAN APR JUL OCT
OSAKA TO NEW YORK																	
55,000	-56.5	-68	-11	-9	-8	-66	-10	-8	-7	-68	-11	-9	-8	-70	-13	-11	-10
40,000	-56.5	-57	-0	3	4	-57	-1	2	4	-55	2	3	4	-55	2	4	5
30,000	-46.5	-41	3	5	6	-39	5	7	8	-35	10	11	12	-34	9	11	12
20,000	-21.2	-15	7	9	10	-13	8	10	11	-8	13	15	15	-9	12	14	14
10,000	-4.6	1	6	8	9	2	7	9	10	8	12	13	14	6	10	12	13
OSAKA TO PARIS																	
55,000	-56.5	-65	-9	-6	-5	-64	-7	-5	-4	-64	-9	-7	-6	-67	-10	-8	-7
40,000	-56.5	-57	-0	3	5	-56	0	6	5	-53	4	6	7	-55	1	3	5
30,000	-46.5	-44	1	3	4	-41	4	6	7	-35	9	11	12	-38	6	8	9
20,000	-21.2	-17	4	6	7	-15	7	9	10	-9	12	14	15	-11	10	12	13
10,000	-4.6	0	5	7	8	2	7	9	10	9	14	16	16	4	9	11	12
OSAKA TO PORT OF SPAIN																	
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-74	-18	-16	-15	-77	-21	-19	-18
40,000	-56.5	-54	3	5	6	-54	2	5	6	-54	2	3	4	-54	3	4	5
30,000	-46.5	-34	10	11	12	-32	12	13	14	-33	11	12	13	-32	13	14	15
20,000	-21.2	-8	13	14	15	-7	14	16	16	-7	15	16	16	-6	14	16	16
10,000	-4.6	8	13	14	14	8	13	14	15	9	14	15	15	9	13	14	15
OSAKA TO RECIFE																	
55,000	-56.5	-78	-21	-19	-18	-78	-21	-19	-18	-74	-17	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	2	4	5	-53	3	6	7	-54	3	4	5	-53	4	5	5
30,000	-46.5	-33	11	12	13	-30	14	15	16	-32	12	14	15	-31	14	15	15
20,000	-21.2	-7	15	16	16	-6	16	17	17	-6	16	17	17	-6	16	17	17
10,000	-4.6	9	14	15	15	9	14	15	16	9	14	15	16	10	15	16	17
OSAKA TO RIO DE JANEIRO																	
55,000	-56.5	-77	-21	-18	-17	-77	-20	-18	-17	-72	-16	-13	-12	-75	-18	-16	-15
40,000	-56.5	-54	3	5	6	-53	4	6	8	-53	4	5	6	-53	4	5	6
30,000	-46.5	-33	12	13	14	-31	13	15	16	-33	12	13	14	-32	13	14	15
20,000	-21.2	-6	15	16	17	-6	15	17	17	-6	15	16	17	-6	15	16	17
10,000	-4.6	9	14	15	16	9	14	15	16	8	12	14	14	10	14	16	16
OSAKA TO ROME																	
55,000	-56.5	-66	-10	-7	-6	-65	-9	-7	-5	-69	-12	-10	-9	-68	-12	-10	-9
40,000	-56.5	-54	1	4	5	-55	1	4	6	-52	5	6	7	-55	2	4	5
30,000	-46.5	-43	1	3	4	-39	5	7	8	-34	10	12	13	-37	7	9	10
20,000	-21.2	-14	5	7	8	-13	8	9	10	-8	13	15	16	-10	11	12	13
10,000	-4.6	1	5	7	8	4	8	10	11	11	16	18	18	5	10	11	12
OSAKA TO SAN JUAN																	
55,000	-56.5	-76	-19	-17	-16	-76	-19	-17	-17	-73	-17	-15	-14	-76	-20	-18	-17
40,000	-56.5	-54	2	4	5	-55	2	4	5	-55	2	3	4	-54	3	4	5
30,000	-46.5	-34	9	10	11	-34	11	12	12	-34	11	12	12	-34	11	12	13
20,000	-21.2	-9	12	13	14	-8	13	15	15	-8	13	15	16	-6	15	16	17
10,000	-4.6	7	12	13	14	7	12	13	14	9	14	15	15	9	13	14	15
OSAKA TO SANTA MARIA																	
55,000	-56.5	-69	-13	-11	-9	-68	-12	-10	-9	-70	-14	-12	-11	-71	-15	-13	-12
40,000	-56.5	-57	-0	3	4	-56	0	3	5	-53	4	5	6	-54	2	4	5
30,000	-46.5	-41	4	6	7	-37	7	9	9	-34	10	12	12	-35	9	11	12
20,000	-21.2	-14	8	9	10	-12	10	11	12	-8	14	15	15	-8	13	14	15
10,000	-4.6	4	8	10	11	4	9	11	11	9	14	15	16	7	12	13	14
OSAKA TO TEL AVIV-JAFFA																	
55,000	-56.5	-70	-13	-11	-10	-68	-11	-10	-9	-73	-16	-15	-14	-71	-15	-13	-12
40,000	-56.5	-54	2	5	6	-54	2	5	7	-50	6	7	8	-54	3	4	5
30,000	-46.5	-42	3	4	5	-37	8	9	10	-31	14	16	16	-36	9	10	11
20,000	-21.2	-15	7	8	9	-12	9	11	12	-5	16	17	18	-9	12	13	14
10,000	-4.6	7	7	8	9	5	10	12	12	14	18	19	20	7	12	13	14
OSAKA TO VIENNA																	
55,000	-56.5	-64	-8	-5	-4	-63	-7	-5	-3	-64	-9	-7	-6	-67	-10	-8	-7
40,000	-56.5	-54	0	3	5	-54	1	4	5	-52	4	6	7	-55	1	3	5
30,000	-46.5	-44	0	2	3	-41	4	5	6	-35	9	11	12	-38	6	8	9
20,000	-21.2	-14	3	5	7	-15	6	8	9	-9	12	14	15	-12	10	11	12
10,000	-4.6	-1	4	6	7	2	6	8	10	10	16	16	17	4	9	10	11
OSAKA TO ZURICH																	
55,000	-56.5	-65	-9	-6	-4	-64	-7	-5	-4	-64	-10	-8	-6	-67	-11	-8	-7
40,000	-56.5	-57	-0	3	5	-54	1	4	5	-52	4	6	7	-55	1	3	5
30,000	-46.5	-44	1	3	4	-40	4	6	7	-35	9	11	12	-38	7	9	10
20,000	-21.2	-17	4	6	7	-14	7	9	10	-9	13	14	15	-11	10	12	13
10,000	-4.6	-0	4	6	7	2	7	9	10	10	15	16	17	4	9	11	12
DALLAS TO MEXICO CITY																	
55,000	-56.5	-72	-14	-14	-13	-70	-14	-11	-10	-72	-15	-14	-13	-75	-19	-17	-16
40,000	-56.5	-56	0	2	3	-57	-0	2	3	-55	1	2	3	-55	2	3	4
30,000	-46.5	-39	5	7	8	-38	6	8	8	-32	12	13	14	-35	10	12	12
20,000	-21.2	-12	9	11	12	-10	11	13	14	-6	14	15	16	-9	12	14	15
10,000	-4.6	4	9	11	12	8	13	15	16	10	15	16	16	9	14	15	16
DALLAS TO MONTERREY																	
55,000	-56.5	-70	-13	-11	-10	-68	-11	-9	-8	-71	-14	-13	-12	-74	-17	-15	-14
40,000	-56.5	-57	-0	2	4	-57	-1	1	3	-55	2	3	4	-55	1	3	4
30,000	-46.5	-41	4	5	6	-40	5	6	7	-32	12	14	14	-34	9	11	12
20,000	-21.2	-14	7	9	10	-12	9	11	12	-6	15	16	17	-9	13	14	15
10,000	-4.6	2	7	9	11	7	11	14	15	11	15	16	17	8	13	15	16
DALLAS TO TORONTO																	
55,000	-56.5	-63	-6	-4	-2	-61	-4	-1	0	-65	-8	-6	-5	-64	-9	-7	-5
40,000	-56.5	-57	-0	3	5	-56	-1	2	4	-54	3	4	5	-54	1	4	5
30,000	-46.5	-44	-1	1	2	-44	1	3	4	-35	10	12	13	-38	4	7	8
20,000	-21.2	-21	-0	3	5	-17	4	7	8	-8	13	15	15	-13	9	11	12
10,000	-4.6	-7	-2	1	3	-1	3	7	8	8	12	14	15	3	8	11	13

*D—DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL			
		50	D50	D75	D85	50	D50	D75	D85	50	D50	D75	D85	50	D50	D75	D85	JAN	APR	JUL	OCT
DAMASCUS TO DHAKHAN																					
51,000	-56.5	-66	-10	-7	-6	-65	-8	-6	-5	-72	-15	-13	-12	-68	-12	-10	-8	843 N.MI.			
40,000	-56.5	-54	2	5	6	-54	2	5	7	-46	10	12	13	-55	2	4	5	3	3	3	3
30,000	-44.5	-43	1	3	5	-40	5	7	8	-26	18	20	21	-37	8	10	11	3	3	3	3
20,000	-21.2	-17	4	6	7	-14	7	9	10	-3	19	21	22	-10	11	12	13	3	3	3	2
10,000	-4.6	-1	3	6	7	4	8	11	12	15	20	21	22	7	12	13	14	3	3	2	3
DAMASCUS TO FRANKFURT																					
51,000	-56.5	-57	-1	2	4	-56	0	3	4	-58	-2	0	2	-60	-4	-1	0	1572 N.MI.			
40,000	-56.5	-57	-0	3	5	-56	0	4	5	-49	8	10	11	-56	0	3	4	4	3	3	4
30,000	-44.5	-50	-6	-3	-2	-46	-2	1	2	-36	9	11	13	-42	2	5	6	5	4	4	4
20,000	-21.2	-25	-4	-1	1	-20	1	4	5	-10	11	13	14	-16	5	8	9	4	4	3	3
10,000	-4.6	-10	-5	-2	-0	-4	1	4	5	5	10	12	13	0	5	7	9	5	4	3	4
DAMASCUS TO JIBRA																					
51,000	-56.5	-68	-12	-9	-8	-67	-11	-9	-7	-73	-16	-14	-13	-71	-14	-12	-10	1767 N.MI.			
40,000	-56.5	-54	2	5	7	-53	3	6	8	-47	10	12	13	-54	2	5	6	4	4	3	4
30,000	-44.5	-41	4	6	8	-38	7	9	10	-26	18	20	21	-35	9	11	12	4	4	3	3
20,000	-21.2	-15	6	8	9	-11	10	12	13	-3	19	21	22	-9	12	14	15	3	3	3	3
10,000	-4.6	1	5	8	9	6	11	13	14	15	20	22	23	7	12	14	15	3	3	2	3
DAMASCUS TO KARACHI																					
51,000	-56.5	-67	-10	-8	-6	-66	-9	-7	-5	-72	-16	-13	-12	-69	-12	-10	-8	1681 N.MI.			
40,000	-56.5	-54	2	5	7	-54	3	6	8	-46	10	12	13	-54	2	4	6	4	5	3	4
30,000	-44.5	-42	2	5	7	-39	5	8	9	-26	18	20	21	-36	8	11	12	4	5	3	4
20,000	-21.2	-17	4	7	8	-13	5	11	12	-2	19	21	22	-10	11	13	14	4	4	3	3
10,000	-4.6	-1	4	6	8	5	10	12	13	15	20	22	23	7	12	13	14	4	3	2	3
DAMASCUS TO LISBON																					
51,000	-56.5	-59	-5	0	2	-54	-2	1	2	-63	-7	-5	-3	-62	-5	-3	-2	2199 N.MI.			
40,000	-56.5	-57	-0	1	5	-57	-1	1	5	-50	7	9	10	-56	0	2	4	4	4	3	3
30,000	-44.5	-47	-4	-1	0	-45	-0	2	3	-34	10	12	14	-41	4	6	7	5	5	3	3
20,000	-21.2	-22	-1	2	4	-14	3	5	7	-9	13	14	15	-14	7	9	10	3	3	3	3
10,000	-4.6	-5	-1	2	4	-1	4	6	8	4	13	15	16	2	7	9	10	4	3	3	3
DAMASCUS TO MADRID																					
51,000	-56.5	-59	-2	1	2	-54	-1	1	2	-63	-6	-4	-3	-62	-5	-3	-2	1936 N.MI.			
40,000	-56.5	-57	-0	1	5	-57	-1	1	5	-49	7	9	11	-56	0	2	4	4	4	3	3
30,000	-44.5	-44	-4	-1	0	-45	-1	2	3	-34	10	13	14	-41	4	6	7	5	5	3	3
20,000	-21.2	-22	-1	2	3	-14	3	5	6	-9	12	14	15	-14	7	9	10	5	3	3	3
10,000	-4.6	-6	-1	1	3	-1	3	6	7	8	13	15	16	2	7	9	10	4	4	3	3
DAMASCUS TO MILAN																					
51,000	-56.5	-58	-1	2	3	-57	-0	2	3	-61	-4	-2	-1	-61	-4	-2	-1	1456 N.MI.			
40,000	-56.5	-57	-0	1	5	-57	-0	3	5	-49	8	10	11	-56	0	2	4	4	3	3	3
30,000	-44.5	-49	-5	-3	-1	-46	-1	1	2	-35	10	12	13	-42	3	5	7	3	5	3	3
20,000	-21.2	-24	-3	-0	2	-20	2	4	6	-9	12	14	15	-15	6	8	9	4	4	3	3
10,000	-4.6	-4	-4	-1	1	-3	2	4	6	6	11	13	14	1	6	8	9	4	4	3	3
DAMASCUS TO NEW DELHI																					
51,000	-56.5	-65	-8	-5	-4	-63	-7	-4	-3	-70	-14	-11	-10	-68	-10	-7	-6	2109 N.MI.			
40,000	-56.5	-54	2	5	7	-54	2	5	7	-47	10	13	14	-55	2	4	6	4	5	4	4
30,000	-44.5	-44	1	4	5	-41	4	7	8	-27	18	20	21	-37	7	10	11	4	4	3	4
20,000	-21.2	-19	2	5	6	-14	8	10	11	-3	19	21	22	-11	10	12	13	4	4	3	3
10,000	-4.6	-3	2	5	6	4	9	11	12	15	19	21	22	6	11	13	14	4	4	3	3
DAMASCUS TO NICOSIA																					
51,000	-56.5	-62	-5	-1	-1	-60	-3	-1	-0	-69	-13	-11	-10	-64	-7	-5	-4	178 N.MI.			
40,000	-56.5	-55	1	4	6	-56	1	4	6	-46	10	12	13	-56	0	3	4	4	3	3	3
30,000	-44.5	-47	-3	-0	1	-44	1	3	4	-28	16	18	19	-40	5	7	8	3	3	3	3
20,000	-21.2	-21	0	3	4	-17	4	6	8	-5	16	18	19	-13	8	10	11	4	4	3	3
10,000	-4.6	-5	-1	2	3	0	5	7	9	11	16	17	18	5	9	11	12	4	4	2	3
DAMASCUS TO NIVAOH																					
51,000	-56.5	-67	-10	-8	-7	-66	-9	-7	-6	-72	-16	-14	-13	-69	-13	-10	-9	759 N.MI.			
40,000	-56.5	-54	2	5	6	-54	2	5	7	-47	10	12	13	-54	2	4	5	4	4	3	3
30,000	-44.5	-45	1	4	5	-39	5	7	8	-26	18	20	21	-36	8	10	11	3	3	3	3
20,000	-21.2	-17	5	7	8	-13	8	10	11	-3	19	21	22	-10	11	13	14	3	3	3	2
10,000	-4.6	-0	4	6	7	4	9	11	12	15	20	21	22	7	12	13	14	3	3	2	2
DAMASCUS TO ROME																					
51,000	-56.5	-58	-2	1	2	-58	-1	1	2	-63	-7	-5	-4	-62	-5	-3	-2	1223 N.MI.			
40,000	-56.5	-56	0	3	5	-57	-1	3	5	-49	9	11	12	-56	0	2	4	4	3	3	3
30,000	-44.5	-49	-4	-2	-1	-45	-1	2	3	-35	11	14	15	-41	3	6	7	3	3	3	3
20,000	-21.2	-23	-2	1	2	-19	2	5	6	-8	13	15	16	-15	7	9	10	4	4	3	3
10,000	-4.6	-7	-3	0	2	-2	3	5	7	8	12	14	15	2	7	9	10	4	4	3	3
DAMASCUS TO TEL AVIV-JAFFA																					
51,000	-56.5	-61	-7	-4	-3	-61	-5	-3	-2	-70	-14	-12	-11	-65	-9	-7	-5	112 N.MI.			
40,000	-56.5	-55	2	5	6	-55	1	4	6	-46	10	12	13	-56	1	3	4	4	3	3	3
30,000	-44.5	-46	-2	1	2	-42	2	4	5	-27	17	19	20	-39	6	7	8	3	3	3	3
20,000	-21.2	-20	2	4	5	-16	5	7	8	-4	17	19	20	-12	9	11	11	3	3	3	2
10,000	-4.6	-4	1	3	5	1	6	8	10	12	17	18	19	6	10	12	13	4	4	2	3
DAMASCUS TO TRIPOLI																					
51,000	-56.5	-62	-6	-4	-2	-60	-4	-2	-1	-68	-12	-10	-9	-64	-8	-6	-4	1159 N.MI.			
40,000	-56.5	-55	1	4	6	-56	0	4	5	-47	9	11	12	-56	1	3	4	4	3	3	3
30,000	-44.5	-46	-2	0	1	-43	2	4	5	-30	14	16	17	-40	5	7	8	3	3	3	3
20,000	-21.2	-20	1	3	5	-16	5	7	8	-6	15	17	18	-13	8	10	11	4	3	2	2
10,000	-4.6	-4	0	1	4	1	5	8	9	10	15	16	17	5	9	11	12	4	4	2	3
DAMASCUS TO TUNIS																					
51,000	-56.5	-60	-4	-1	0	-59	-2	-0	1	-66	-10	-7	-6	-63	-6	-4	-3	1287 N.MI.			
40,000	-56.5	-56	1	4	5	-57	-0	3	5	-48	9	11	12	-56	0	2	4	4	3	3	3
30,000	-44.5	-47	-3	-1	0	-44	0	2	3	-32	13	15	16	-40	4	6	7	5	3	3	3
20,000	-21.2	-22	-0	2	4	-18	4	6	7	-7	14	16	17	-14	7	9	10	4	4	3	3
10,000	-4.6	-6	-1	2	3	-1	4	7	8	9	14	15	16	3	8	10	11	4	4	3	3

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE				STANDARD DEVIATION											
		JANUARY		APRIL		JULY		OCTOBER		ANNUAL		JAN	APR	JUL	OCT		
		50	050 DTS DMS	50	050 DTS DMS	50	050 DTS DMS	50	050 DTS DMS	50	050 DTS DMS						
DARWIN TO DJAKARTA																	
55,000	-56.5	-85	-26 -24 -25	-80	-25 -21 -20	-78	-22 -20 -19	-80	-25 -21 -20	-80	-25 -21 -20	5	5	5	5		
40,000	-56.5	-54	5 4 5	-52	4 6 6	-54	2 4 4	-54	2 4 5	-54	5 4 5	2	2	2	2		
30,000	-44.5	-51	14 15 16	-52	15 14 15	-52	12 14 15	-52	12 14 15	-52	15 14 15	2	2	2	2		
20,000	-21.2	-5	16 17 17	-6	16 16 17	-6	15 16 17	-6	15 16 17	-6	16 16 17	1	1	1	2		
10,000	-4.6	10	14 15 16	10	14 16 16	8	15 16 15	9	14 15 15	9	14 15 16	1	2	2	2		
DARWIN TO HONG KONG																	
55,000	-56.5	-81	-24 -22 -21	-80	-25 -21 -20	-78	-21 -19 -18	-79	-22 -20 -19	-79	-25 -20 -19	5	5	5	5		
40,000	-56.5	-54	5 4 6	-52	5 6 7	-54	5 4 5	-54	2 4 5	-55	5 5 6	2	2	2	2		
30,000	-44.5	-51	14 15 16	-51	14 15 16	-51	14 15 15	-51	13 15 15	-51	15 15 15	2	2	2	2		
20,000	-21.2	-5	16 17 17	-5	16 17 18	-5	16 17 17	-6	16 17 17	-5	16 17 18	1	2	1	2		
10,000	-4.6	9	14 15 15	10	15 16 17	10	14 15 16	10	14 15 16	10	14 16 16	1	2	1	2		
DARWIN TO JOHANNESBURG																	
55,000	-56.5	-71	-15 -12 -11	-70	-15 -11 -10	-66	-9 -7 -6	-68	-11 -9 -7	-69	-12 -9 -8	4	4	4	4		
40,000	-56.5	-54	5 5 6	-55	2 4 5	-52	4 6 8	-55	4 6 7	-55	5 5 7	4	5	5	5		
30,000	-44.5	-54	11 15 16	-57	8 10 11	-57	7 10 11	-57	7 9 10	-56	8 11 12	5	5	4	5		
20,000	-21.2	-8	15 16 15	-11	10 12 15	-15	9 11 12	-11	10 12 15	-11	11 12 15	2	2	5	5		
10,000	-4.6	4	12 14 14	6	10 12 15	5	7 9 10	4	9 11 12	5	10 12 12	2	2	5	5		
DARWIN TO MANILA																	
55,000	-56.5	-82	-26 -24 -25	-80	-24 -22 -21	-78	-22 -20 -19	-80	-25 -22 -21	-80	-24 -21 -20	5	5	5	5		
40,000	-56.5	-54	2 4 4	-52	5 6 7	-54	2 4 5	-54	2 4 4	-54	5 5 6	2	2	2	2		
30,000	-44.5	-51	14 15 16	-51	14 15 16	-51	13 14 15	-51	13 14 15	-51	15 15 15	2	2	2	2		
20,000	-21.2	-5	17 17 18	-5	16 17 18	-5	16 17 17	-6	16 17 17	-5	16 17 17	1	2	1	1		
10,000	-4.6	10	15 15 16	10	15 16 17	9	14 15 15	10	15 15 16	10	15 16 16	1	2	1	1		
DARWIN TO MELBOURNE																	
55,000	-56.5	-75	-17 -15 -11	-71	-15 -12 -11	-69	-12 -10 -9	-69	-12 -10 -8	-71	-14 -11 -10	4	4	5	5		
40,000	-56.5	-55	5 5 6	-54	2 4 5	-54	5 5 6	-55	5 6 7	-54	5 5 6	5	5	5	4		
30,000	-44.5	-54	10 12 11	-57	7 9 10	-59	6 8 9	-58	6 8 9	-57	7 10 11	5	5	5	5		
20,000	-21.2	-8	15 14 15	-11	10 12 15	-14	7 9 10	-15	9 10 11	-12	10 12 15	2	5	5	5		
10,000	-4.6	8	15 14 15	4	9 11 12	1	6 8 9	4	8 10 11	4	9 11 15	2	2	5	5		
DARWIN TO MOUNT ISA																	
55,000	-56.5	-81	-24 -22 -21	-78	-22 -20 -18	-77	-20 -18 -17	-77	-20 -18 -17	-78	-22 -19 -18	5	5	5	5		
40,000	-56.5	-55	4 5 6	-55	4 5 6	-54	2 4 5	-54	5 5 6	-55	5 5 6	2	2	2	5		
30,000	-44.5	-51	15 15 16	-52	12 14 16	-55	11 15 16	-55	12 15 16	-52	12 14 15	2	2	5	5		
20,000	-21.2	-6	15 17 17	-6	15 16 17	-8	15 15 15	-8	14 15 16	-7	14 16 16	2	2	2	2		
10,000	-4.6	10	15 16 16	8	11 14 15	8	12 14 14	8	13 14 15	8	15 15 15	2	2	2	2		
DARWIN TO NATAOBI																	
55,000	-56.5	-81	-24 -22 -21	-78	-21 -19 -14	-74	-19 -17 -16	-78	-21 -19 -18	-78	-22 -19 -18	5	5	5	5		
40,000	-56.5	-51	5 5 6	-52	4 6 7	-54	5 4 5	-54	5 4 5	-55	1 5 6	2	2	2	2		
30,000	-44.5	-50	14 15 16	-51	15 15 15	-52	12 14 15	-55	12 15 16	-52	15 14 15	2	2	2	2		
20,000	-21.2	-5	16 17 18	-6	15 16 17	-6	15 16 17	-6	15 16 16	-6	16 16 17	1	1	1	2		
10,000	-4.6	10	14 15 15	9	14 15 15	8	12 14 14	9	13 15 15	9	14 16 15	1	1	2	2		
DARWIN TO PERTH																	
55,000	-56.5	-74	-20 -17 -16	-74	-17 -15 -14	-72	-15 -11 -12	-72	-15 -13 -12	-75	-17 -14 -15	4	5	5	5		
40,000	-56.5	-55	1 5 6	-55	2 4 5	-54	5 5 6	-55	5 5 7	-54	5 5 6	5	5	5	5		
30,000	-44.5	-53	12 13 14	-56	9 11 11	-56	9 11 12	-56	8 10 11	-55	9 12 15	5	2	5	5		
20,000	-21.2	-7	14 15 16	-9	12 13 14	-12	9 11 12	-11	11 12 15	-10	11 15 14	2	2	5	5		
10,000	-4.6	10	15 16 17	7	11 15 16	4	9 10 11	6	10 12 15	7	11 15 16	2	2	5	5		
DARWIN TO PORT MORSBY																	
55,000	-56.5	-82	-26 -24 -25	-80	-25 -21 -20	-78	-22 -20 -19	-80	-25 -21 -20	-80	-25 -21 -20	5	5	5	5		
40,000	-56.5	-51	5 5 5	-52	4 6 7	-54	2 5 6	-54	2 4 5	-54	5 5 6	2	2	2	5		
30,000	-44.5	-51	14 15 16	-52	15 14 15	-52	12 14 15	-52	13 14 15	-52	15 14 15	2	2	2	2		
20,000	-21.2	-4	17 18 19	-6	15 17 17	-6	15 16 17	-6	15 16 17	-6	16 17 18	2	2	2	2		
10,000	-4.6	10	15 16 16	10	14 15 16	9	13 14 15	9	13 15 15	9	14 15 16	2	2	2	2		
DARWIN TO SINGAPORE																	
55,000	-56.5	-85	-26 -24 -25	-80	-25 -22 -21	-78	-22 -20 -19	-80	-24 -22 -21	-80	-24 -22 -20	5	5	5	5		
40,000	-56.5	-54	2 4 4	-52	5 6 7	-54	2 5 6	-54	2 5 4	-54	5 4 5	2	2	2	2		
30,000	-44.5	-51	14 15 16	-51	15 15 15	-52	13 14 15	-52	13 14 16	-51	11 15 15	2	2	2	2		
20,000	-21.2	-5	16 17 18	-5	16 17 17	-6	15 16 17	-6	15 16 17	-5	16 17 17	1	1	1	1		
10,000	-4.6	10	14 15 15	10	15 16 16	9	13 14 15	9	14 15 15	9	14 15 16	1	1	1	1		
DARWIN TO SOERABAYA																	
55,000	-56.5	-85	-26 -24 -25	-80	-25 -21 -20	-78	-22 -20 -19	-80	-25 -21 -20	-80	-25 -21 -20	5	5	5	5		
40,000	-56.5	-54	5 4 5	-52	4 6 6	-54	2 4 4	-54	2 4 5	-54	5 4 5	2	2	2	2		
30,000	-44.5	-51	14 15 16	-52	15 14 15	-52	12 14 15	-52	13 14 15	-52	15 14 15	2	2	2	2		
20,000	-21.2	-5	16 17 17	-6	16 16 17	-6	15 16 16	-6	15 16 17	-6	16 16 17	1	1	1	2		
10,000	-4.6	10	14 15 16	10	15 16 16	8	13 14 15	9	14 15 15	9	14 15 16	1	2	2	2		
DARWIN TO STONEY																	
55,000	-56.5	-75	-19 -17 -15	-71	-14 -14 -15	-70	-14 -12 -11	-70	-14 -11 -10	-72	-14 -13 -11	5	4	5	4		
40,000	-56.5	-55	4 6 7	-54	5 5 6	-54	2 5 6	-54	5 5 7	-54	5 5 6	5	5	5	4		
30,000	-44.5	-54	11 15 14	-56	8 10 11	-56	7 9 10	-57	7 9 11	-56	8 11 12	5	5	5	5		
20,000	-21.2	-8	15 15 16	-10	11 15 16	-15	8 10 11	-12	9 11 12	-11	11 15 16	2	2	5	5		
10,000	-4.6	8	13 14 15	5	10 11 12	5	7 9 10	5	9 11 12	5	10 12 15	2	2	5	5		
DARWIN TO TAIPEI																	
55,000	-56.5	-80	-24 -22 -21	-79	-25 -20 -19	-77	-21 -19 -17	-78	-21 -19 -18	-79	-22 -20 -18	5	5	5	5		
40,000	-56.5	-54	5 4 5	-52	5 6 7	-54	5 4 5	-54	5 4 5	-55	5 5 6	2	2	2	2		
30,000	-44.5	-51	14 15 16	-51	15 15 15	-51	14 15 16	-51	15 15 15	-51	14 15 16	2	2	2	2		
20,000	-21.2	-5	16 17 17	-5	16 17 14	-5	16 17 17	-6	16 17 17	-5	16 17 17	1	2	1	2		
10,000	-4.6	9	14 15 15	10	15 16 16	10	15 15 16	10	14 15 16	10	14 16 16	2	2	1	1		
DARWIN TO TONKIN GULF																	
55,000	-56.5	-77	-21 -18 -17	-75	-19 -16 -15	-72	-16 -13 -12	-75	-17 -15 -14	-74	-18 -15 -14	4	4	5	5		
40,000	-56.5	-55	5 5 6	-55	5 5 6	-52	4 6 7	-55	5 5 6	-55	5 5 6	5	5	5	5		
30,000	-44.5	-51	15 15 16	-54	11 12 13	-54	11 13 14	-54	10 12 13	-55	11 15 16	2	2	5	5		
20,000	-21.2	-6	16 16 17	-8	14 15 15	-8	15 15 16	-8	15 14 15	-7	14 15 16	1	2	2	2		
10,000	-4.6	9	14 15 15	8	13 14 15	6	10 12 13	7	11 13 14	8	12 13 14	1	2	5	2		

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	JAN	APR	JUL	OCT
DARWIN TO TOKYO																	
55,000	-56.5	-77	-20	-14	-17	-75	-19	-17	-15	-75	-19	-16	-14	-76	-19	-16	-15
40,000	-56.5	-52	4	6	7	-55	6	6	7	-55	6	6	7	-55	6	6	7
30,000	-56.5	-31	13	15	16	-33	12	13	14	-33	14	15	16	-31	13	15	16
20,000	-21.2	-7	14	15	16	-7	15	16	17	-5	16	17	18	-6	15	16	17
10,000	-4.6	7	11	11	13	9	13	15	16	10	15	16	16	9	13	15	15
DENVER TO HONOLULU																	
55,000	-56.5	-65	-9	-6	-5	-62	-6	-5	-2	-66	-9	-7	-6	-65	-9	-6	-6
40,000	-56.5	-56	1	5	7	-57	-1	2	4	-56	2	4	5	-56	1	3	4
30,000	-56.5	-43	2	4	6	-42	3	5	6	-36	9	11	12	-34	6	8	9
20,000	-21.2	-16	5	8	10	-15	6	9	10	-8	14	15	16	-11	10	13	14
10,000	-4.6	0	5	8	9	1	6	9	10	10	16	16	17	5	10	12	13
DENVER TO SAN JUAN																	
55,000	-56.5	-70	-15	-11	-10	-67	-11	-9	-4	-69	-12	-11	-10	-72	-15	-11	-9
40,000	-56.5	-56	0	5	7	-57	-0	2	3	-55	1	2	3	-56	1	3	4
30,000	-56.5	-41	4	5	6	-49	5	7	8	-56	11	12	13	-56	8	10	11
20,000	-21.2	-14	7	9	10	-12	9	11	12	-7	14	15	16	-9	12	14	15
10,000	-4.6	1	6	8	9	4	9	11	12	9	14	15	15	7	11	13	14
DENVER TO VANCOUVER																	
55,000	-56.5	-59	-2	1	2	-56	0	3	4	-59	-2	0	1	-61	-5	-2	-1
40,000	-56.5	-50	0	5	7	-57	-0	3	4	-56	0	3	5	-56	0	3	5
30,000	-56.5	-50	-5	-5	-2	-67	-4	-1	1	-58	7	8	7	-63	2	4	6
20,000	-21.2	-26	-5	0	2	-21	-0	5	4	-11	11	12	13	-17	4	7	9
10,000	-4.6	-10	-6	-1	1	-4	0	4	6	8	13	15	16	-0	4	8	10
DETROIT TO LONDON																	
55,000	-56.5	-57	-0	3	5	-51	4	6	8	-51	5	8	9	-56	1	4	5
40,000	-56.5	-54	3	7	9	-51	4	6	10	-51	6	9	11	-55	3	7	9
30,000	-56.5	-50	6	-3	-1	-48	-4	-1	1	-41	3	6	8	-45	-0	3	4
20,000	-21.2	-29	-4	-5	-1	-25	-4	-0	2	-15	6	9	10	-20	1	4	6
10,000	-4.6	-15	-10	-6	-4	-10	-5	-2	0	-5	6	7	8	-5	-1	3	5
DETROIT TO MEXICO CITY																	
55,000	-56.5	-69	-12	-10	-9	-67	-10	-8	-6	-69	-13	-11	-10	-72	-15	-13	-12
40,000	-56.5	-57	-0	2	4	-57	-1	2	3	-55	2	3	4	-55	1	3	4
30,000	-56.5	-41	5	5	6	-40	4	6	7	-35	11	13	13	-37	8	10	11
20,000	-21.2	-15	6	8	10	-15	9	11	12	-7	14	15	16	-9	12	14	15
10,000	-4.6	0	5	7	9	4	9	11	12	9	14	15	15	7	11	13	14
DETROIT TO MONTREAL																	
55,000	-56.5	-54	-2	1	3	-56	0	3	4	-59	-2	1	2	-60	-4	-1	1
40,000	-56.5	-55	1	5	8	-55	2	6	8	-55	3	6	7	-55	2	5	7
30,000	-56.5	-49	-5	-2	-1	-47	-1	-0	1	-41	2	5	6	-44	0	4	6
20,000	-21.2	-26	-5	-1	1	-25	-2	2	3	-11	10	12	14	-17	5	8	10
10,000	-4.6	-15	-9	-6	-2	-4	-5	0	2	4	9	11	12	-1	4	7	9
DETROIT TO SHANNON																	
55,000	-56.5	-57	-0	3	5	-51	4	6	8	-51	5	8	9	-56	1	4	5
40,000	-56.5	-54	3	7	9	-51	4	6	10	-51	6	9	11	-55	3	7	9
30,000	-56.5	-50	6	-3	-1	-48	-4	-1	1	-41	3	6	8	-45	-0	3	4
20,000	-21.2	-29	-4	-5	-1	-25	-4	-0	2	-15	6	9	10	-20	1	4	6
10,000	-4.6	-16	-11	-6	-4	-10	-5	-2	0	0	5	7	8	-5	-1	3	5
DETROIT TO TORONTO																	
55,000	-56.5	-59	-3	0	2	-57	-1	2	3	-60	-5	-1	1	-61	-5	-2	-1
40,000	-56.5	-56	1	5	7	-56	1	5	7	-55	3	5	7	-55	2	5	6
30,000	-56.5	-49	-4	-2	-0	-47	-2	0	2	-41	2	5	6	-44	1	4	6
20,000	-21.2	-25	-4	-1	1	-21	-0	1	5	-10	11	13	14	-16	5	9	10
10,000	-4.6	-12	-8	-5	-1	-7	-2	2	4	5	9	11	12	-0	5	8	10
DETROIT TO VANCOUVER																	
55,000	-56.5	-58	-1	2	4	-55	1	4	5	-57	-0	2	3	-59	-3	-0	1
40,000	-56.5	-55	1	5	8	-56	1	5	7	-56	1	4	6	-55	1	4	6
30,000	-56.5	-51	-6	-2	-2	-48	-4	-1	0	-48	6	8	10	-46	1	3	5
20,000	-21.2	-28	-7	-5	-0	-25	-1	2	3	-12	10	12	13	-14	5	6	8
10,000	-4.6	-14	-9	-5	-2	-7	-2	2	3	5	10	12	14	-2	5	6	8
DHAKRA TO DJAKARTA																	
55,000	-56.5	-79	-22	-20	-19	-77	-20	-18	-17	-77	-21	-18	-17	-79	-22	-20	-19
40,000	-56.5	-55	2	4	5	-52	5	7	8	-51	5	7	8	-54	3	4	5
30,000	-56.5	-53	12	14	15	-51	15	15	16	-29	16	17	18	-32	12	14	15
20,000	-21.2	-7	14	16	16	-6	15	17	17	-4	17	18	19	-6	15	16	17
10,000	-4.6	8	15	16	15	10	14	16	16	11	16	17	17	9	14	15	15
DHAKRA TO ISTANBUL																	
55,000	-56.5	-62	-6	-5	-2	-61	-5	-5	-1	-68	-12	-10	-9	-65	-9	-6	-5
40,000	-56.5	-55	1	4	6	-55	2	5	7	-60	10	12	13	-55	1	3	4
30,000	-56.5	-50	-2	1	2	-42	2	4	6	-28	16	18	19	-39	6	8	9
20,000	-21.2	-20	1	5	5	-16	5	7	8	-5	17	19	20	-12	9	11	12
10,000	-4.6	0	5	8	9	1	6	8	10	12	17	18	19	5	10	12	13
DHAKRA TO JOHANNESBURG																	
55,000	-56.5	-76	-20	-14	-16	-76	-19	-17	-16	-75	-19	-17	-15	-75	-19	-16	-15
40,000	-56.5	-54	4	5	6	-52	5	7	8	-51	5	7	8	-52	4	6	7
30,000	-56.5	-52	12	14	15	-51	13	14	15	-51	13	14	15	-52	13	14	15
20,000	-21.2	-6	15	16	17	-6	15	16	17	-6	15	16	17	-6	15	16	17
10,000	-4.6	9	14	15	16	9	14	15	16	10	14	15	16	9	14	15	16
DHAKRA TO KARACHI																	
55,000	-56.5	-70	-14	-12	-10	-70	-14	-11	-10	-74	-17	-15	-13	-71	-17	-14	-13
40,000	-56.5	-54	3	5	7	-52	4	7	9	-47	9	12	13	-54	3	5	7
30,000	-56.5	-58	6	9	11	-56	9	11	13	-26	19	21	22	-24	11	13	14
20,000	-21.2	-15	8	10	11	-9	13	14	16	-5	19	20	21	-8	14	15	16
10,000	-4.6	5	8	10	11	9	14	16	17	16	21	22	23	8	15	16	17

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY				APRIL				JULY				OCTOBER			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
DHANBAN TO KHARTOUM																	
55,000	-56.5	-73	-17	-15	-14	-75	-17	-14	-13	-75	-18	-16	-15	-75	-19	-17	-16
40,000	-56.5	-54	5	5	6	-55	4	6	7	-49	7	9	10	-51	5	5	6
30,000	-44.5	-54	7	9	10	-34	11	12	13	-27	17	19	19	-33	12	13	14
20,000	-21.2	-11	11	12	13	-8	13	14	15	-4	17	19	20	-7	14	16	16
10,000	-4.6	6	11	12	13	9	15	15	16	15	20	21	22	9	14	15	16
DHANBAN TO LISBON																	
55,000	-56.5	-62	-5	-2	-1	-60	-4	-2	-0	-66	-10	-7	-6	-64	-8	-5	-4
40,000	-56.5	-56	1	4	6	-56	0	4	5	-49	8	10	11	-54	1	3	4
30,000	-44.5	-46	-2	1	2	-45	1	4	5	-37	13	15	16	-39	5	7	8
20,000	-21.2	-20	1	4	5	-17	5	7	8	-7	14	16	17	-13	8	10	11
10,000	-4.6	-4	1	3	5	1	5	8	9	11	15	17	18	4	8	10	11
DHANBAN TO LONDON																	
55,000	-56.5	-59	-3	0	2	-58	-1	1	2	-60	-4	-2	-0	-62	-5	-3	-1
40,000	-56.5	-56	0	3	5	-55	1	4	6	-48	8	11	12	-54	1	3	4
30,000	-44.5	-49	-4	-2	-0	-45	-0	2	3	-34	11	13	14	-41	3	6	7
20,000	-21.2	-23	-2	1	2	-19	2	5	6	-9	12	14	16	-15	6	9	10
10,000	-4.6	-8	-3	-0	1	-2	2	5	7	7	12	14	15	1	6	9	10
DHANBAN TO MADRID																	
55,000	-56.5	-61	-5	-2	-1	-60	-4	-1	-0	-66	-9	-7	-6	-64	-8	-5	-4
40,000	-56.5	-56	1	4	6	-56	0	4	5	-48	8	10	11	-54	1	3	4
30,000	-44.5	-46	-2	0	2	-45	1	3	5	-37	13	15	16	-39	5	7	8
20,000	-21.2	-21	1	3	5	-17	4	7	8	-7	14	16	17	-13	8	10	11
10,000	-4.6	-4	0	3	5	0	5	7	9	10	15	17	18	4	8	10	11
DHANBAN TO MILAN																	
55,000	-56.5	-60	-4	-1	1	-59	-3	-0	1	-64	-8	-5	-4	-63	-7	-4	-3
40,000	-56.5	-56	1	4	5	-56	1	4	6	-48	9	11	12	-54	1	3	4
30,000	-44.5	-48	-3	-1	1	-44	1	3	6	-32	15	16	17	-40	4	7	8
20,000	-21.2	-22	-1	2	3	-18	5	6	7	-7	14	16	17	-14	7	9	11
10,000	-4.6	-6	-2	1	3	-1	4	6	8	9	14	16	17	3	8	10	11
DHANBAN TO MOSCOW																	
55,000	-56.5	-59	-3	0	2	-58	-1	1	2	-59	-3	-1	0	-61	-4	-2	-0
40,000	-56.5	-56	0	3	5	-54	2	5	7	-47	9	12	13	-53	2	4	5
30,000	-44.5	-49	-4	-2	-0	-44	1	4	5	-32	12	15	16	-41	3	6	7
20,000	-21.2	-24	-1	0	2	-18	5	6	8	-7	14	16	17	-16	6	8	10
10,000	-4.6	-9	-4	-1	1	-1	5	6	8	8	15	15	16	1	5	8	10
DHANBAN TO NAIROBI																	
55,000	-56.5	-76	-20	-18	-17	-77	-20	-18	-17	-76	-19	-17	-16	-77	-21	-19	-17
40,000	-56.5	-54	5	4	5	-52	5	7	8	-51	5	7	8	-53	4	5	6
30,000	-44.5	-34	11	12	13	-31	13	15	15	-29	15	17	17	-31	13	15	15
20,000	-21.2	-7	15	16	16	-6	15	16	17	-4	17	18	19	-6	15	16	17
10,000	-4.6	9	15	15	15	10	14	16	16	15	18	19	20	9	14	15	16
DHANBAN TO NEW DELHI																	
55,000	-56.5	-69	-12	-10	-8	-68	-11	-9	-7	-73	-16	-13	-12	-71	-14	-12	-10
40,000	-56.5	-54	5	6	7	-51	5	7	8	-47	9	12	14	-54	5	7	8
30,000	-44.5	-40	5	8	10	-37	7	10	12	-26	18	21	22	-34	10	13	14
20,000	-21.2	-15	6	8	10	-10	11	13	15	-2	19	21	22	-9	13	15	16
10,000	-4.6	1	6	8	9	5	11	13	16	16	21	22	23	7	12	14	15
DHANBAN TO RIVNOM																	
55,000	-56.5	-70	-14	-11	-10	-70	-15	-11	-10	-74	-17	-15	-14	-73	-17	-14	-13
40,000	-56.5	-54	5	5	6	-51	4	7	8	-47	9	11	12	-54	5	5	6
30,000	-44.5	-39	5	8	9	-34	9	11	12	-26	19	20	21	-34	11	13	14
20,000	-21.2	-15	8	10	11	-10	11	13	14	-3	18	20	21	-8	13	15	16
10,000	-4.6	5	8	10	11	7	12	14	15	16	21	22	23	8	13	14	15
DHANBAN TO ROME																	
55,000	-56.5	-61	-5	-2	-1	-60	-4	-2	-0	-67	-10	-8	-7	-64	-8	-5	-4
40,000	-56.5	-55	1	4	6	-56	1	4	6	-47	9	11	12	-54	1	3	4
30,000	-44.5	-47	-2	0	1	-45	1	4	5	-30	14	16	17	-39	5	7	8
20,000	-21.2	-21	0	1	4	-17	4	7	8	-6	15	17	18	-13	8	10	11
10,000	-4.6	-5	-0	2	4	0	5	7	9	11	15	17	18	4	9	11	12
DHANBAN TO TEMERN																	
55,000	-56.5	-65	-9	-6	-5	-65	-8	-6	-4	-71	-15	-12	-11	-68	-11	-8	-7
40,000	-56.5	-54	2	5	6	-54	3	6	8	-46	10	12	14	-55	2	4	5
30,000	-44.5	-41	2	4	6	-49	5	7	9	-26	18	20	21	-37	8	10	11
20,000	-21.2	-18	1	6	7	-14	8	10	11	-2	19	21	22	-11	11	12	13
10,000	-4.6	-2	3	6	7	4	9	11	12	16	20	22	23	7	11	13	14
DHANBAN TO TEL AVIV-JAFFA																	
55,000	-56.5	-67	-10	-8	-7	-66	-9	-7	-6	-72	-16	-14	-13	-69	-13	-10	-9
40,000	-56.5	-54	3	5	6	-54	3	5	7	-46	10	12	13	-54	2	4	5
30,000	-44.5	-45	2	4	5	-39	5	7	9	-26	19	20	21	-36	8	10	11
20,000	-21.2	-17	5	7	8	-13	8	10	11	-2	19	21	22	-10	11	13	14
10,000	-4.6	-1	4	6	7	4	9	11	12	15	20	21	22	7	12	14	16
DHANBAN TO TRAPOLI																	
55,000	-56.5	-66	-9	-7	-6	-64	-7	-5	-4	-71	-14	-12	-11	-68	-11	-9	-8
40,000	-56.5	-54	2	5	6	-55	1	5	6	-47	9	11	12	-55	2	3	5
30,000	-44.5	-44	0	2	4	-40	4	6	7	-28	17	19	20	-37	7	11	13
20,000	-21.2	-18	4	6	7	-14	7	9	10	-4	17	19	20	-11	10	12	13
10,000	-4.6	-1	5	5	6	5	7	10	11	13	18	19	20	6	11	13	14
DHANBAN TO TUNIS																	
55,000	-56.5	-65	-7	-4	-3	-62	-5	-3	-2	-69	-12	-10	-9	-66	-9	-7	-6
40,000	-56.5	-55	2	4	6	-56	1	4	6	-47	9	11	12	-55	1	3	4
30,000	-44.5	-45	-1	1	3	-42	3	5	6	-29	15	17	18	-39	6	8	9
20,000	-21.2	-19	2	4	6	-16	5	8	9	-5	16	18	19	-12	9	11	12
10,000	-4.6	-3	1	4	5	2	6	9	10	12	16	18	19	5	10	11	12

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURES AND STANDARD DEVIATION																		STANDARD DEVIATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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ROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	INROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	JAN	APR	JUL	OCT
Doha to Jidda																	
53,000	-56.5	-72	-15	-15	-12	-72	-15	-15	-12	-72	-15	-15	-12	-72	-15	-15	-12
40,000	-56.5	-56	5	5	6	-55	6	6	8	-48	8	10	11	-55	5	5	6
30,000	-56.5	-39	6	6	9	-35	10	12	13	-24	18	20	20	-35	11	13	14
20,000	-21.2	-12	9	11	12	-9	12	14	15	-5	18	19	20	-7	14	15	16
10,000	-6.6	5	9	11	12	8	11	14	15	16	21	22	23	9	15	15	15
DURDYAIR to Rome																	
53,000	-56.5	-56	0	5	5	-56	1	5	6	-57	-1	1	5	-60	-6	-1	0
40,000	-56.5	-57	-1	5	6	-58	-1	2	6	-50	6	9	10	-56	0	5	6
30,000	-56.5	-50	-5	-5	-1	-46	-2	1	2	-37	7	9	11	-47	5	5	6
20,000	-21.2	-25	-6	-1	1	-20	1	4	5	-11	10	12	13	-16	5	8	9
10,000	-6.6	-8	-6	-1	1	-6	1	4	5	5	10	12	13	-0	6	7	8
DURDYAIR to Skopje																	
53,000	-56.5	-56	0	5	5	-57	1	5	5	-60	-5	-1	0	-57	-1	2	4
40,000	-56.5	-57	-1	5	6	-57	-1	2	6	-50	7	10	11	-56	0	5	6
30,000	-56.5	-51	-6	-6	-2	-47	-2	0	2	-42	2	5	6	-44	0	4	6
20,000	-21.2	-25	-6	-1	1	-20	1	5	5	-11	10	12	13	-16	5	8	9
10,000	-6.6	-10	-5	-2	-1	-6	0	5	5	5	9	11	13	-0	6	7	8
DURDYAIR to East London																	
53,000	-56.5	-65	-6	-6	-6	-65	-2	1	2	-62	-5	-5	-1	-62	-6	-2	-1
40,000	-56.5	-55	5	6	8	-55	1	6	8	-53	6	8	8	-55	5	6	8
30,000	-56.5	-36	8	11	12	-38	6	8	10	-32	2	5	7	-39	6	8	10
20,000	-21.2	-9	12	13	14	-12	9	11	12	-15	8	11	12	-13	8	11	12
10,000	-6.6	6	13	14	15	5	10	12	13	0	5	7	8	6	9	12	13
DURDYAIR to Perth																	
53,000	-56.5	-61	-5	-2	-1	-62	-5	-2	-1	-57	-1	2	5	-60	-5	0	2
40,000	-56.5	-55	2	5	7	-57	-1	2	6	-54	5	6	7	-52	6	7	9
30,000	-56.5	-39	6	6	9	-41	5	5	7	-45	-0	5	7	-42	2	5	7
20,000	-21.2	-15	8	11	12	-16	5	7	9	-20	1	5	5	-17	6	7	8
10,000	-6.6	2	7	9	10	1	5	8	9	-3	1	6	5	-5	2	5	6
DUSSELDORF to Frankfurt																	
53,000	-56.5	-56	0	5	5	-56	1	5	7	-50	6	8	10	-58	-1	1	5
40,000	-56.5	-58	-2	2	6	-56	1	5	7	-51	5	9	10	-56	0	5	5
30,000	-56.5	-51	-6	-6	-2	-48	-5	-1	1	-41	6	6	8	-44	1	5	5
20,000	-21.2	-27	-6	-2	0	-25	-1	2	3	-16	7	9	11	-18	5	6	8
10,000	-6.6	-11	-7	-5	-1	-6	-2	1	1	2	6	8	10	-5	2	5	7
DUSSELDORF to Geneva																	
53,000	-56.5	-57	-0	5	5	-56	2	5	6	-52	5	7	8	-58	-2	1	2
40,000	-56.5	-58	-2	2	6	-57	-0	6	6	-52	6	8	9	-56	0	5	5
30,000	-56.5	-50	-6	-5	-2	-47	-5	-0	1	-40	5	7	8	-45	1	5	5
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-15	8	10	11	-18	6	7	8
10,000	-6.6	-10	-5	-2	0	-6	-1	2	3	2	7	9	10	-2	5	6	7
DUSSELDORF to Glasgow																	
53,000	-56.5	-57	-1	2	6	-55	5	6	7	-49	8	10	11	-57	-1	2	4
40,000	-56.5	-58	-2	5	5	-56	2	7	9	-50	6	10	12	-56	0	6	6
30,000	-56.5	-51	-6	-6	-2	-48	-5	-1	1	-41	5	6	7	-45	-0	5	6
20,000	-21.2	-27	-6	-2	0	-25	-2	1	1	-15	6	8	10	-19	2	5	7
10,000	-6.6	-10	-6	-2	-0	-7	-5	0	2	0	5	7	8	-6	1	6	6
DUSSELDORF to Hamburg																	
53,000	-56.5	-57	-0	5	5	-55	5	6	7	-49	7	9	11	-57	-1	2	5
40,000	-56.5	-58	-2	2	6	-55	2	6	8	-51	6	9	11	-56	0	6	5
30,000	-56.5	-51	-7	-6	-3	-48	-6	-1	0	-41	5	6	7	-46	0	5	6
20,000	-21.2	-28	-7	-5	-0	-25	-2	1	1	-15	7	9	10	-19	2	6	7
10,000	-6.6	-12	-7	-5	-1	-7	-5	0	2	1	6	8	9	-6	0	6	5
DUSSELDORF to Helsinki																	
53,000	-56.5	-57	-1	5	6	-55	6	6	8	-48	9	11	12	-56	0	5	6
40,000	-56.5	-59	-2	1	5	-56	5	7	9	-50	7	10	12	-56	1	6	6
30,000	-56.5	-52	-8	-5	-6	-49	-5	-2	-1	-42	5	6	7	-46	-1	2	5
20,000	-21.2	-50	-9	-5	-2	-25	-6	-0	1	-15	6	8	9	-20	1	6	6
10,000	-6.6	-14	-10	-6	-6	-9	-5	-1	1	-0	5	7	8	-6	-1	2	4
DUSSELDORF to Istanbul																	
53,000	-56.5	-56	1	6	5	-55	2	6	6	-55	5	6	7	-59	-2	0	2
40,000	-56.5	-58	-1	7	6	-56	0	6	6	-50	6	9	11	-56	0	5	6
30,000	-56.5	-51	-7	-6	-3	-47	-5	-0	1	-39	6	8	10	-45	1	6	5
20,000	-21.2	-27	-5	-2	-0	-22	-0	2	4	-15	9	11	12	-17	6	7	8
10,000	-6.6	-12	-7	-5	-2	-6	-1	2	4	5	8	10	11	-2	5	6	7
DUSSELDORF to Keflavik																	
53,000	-56.5	-58	-1	2	6	-51	5	8	9	-47	9	12	13	-55	1	6	5
40,000	-56.5	-57	-1	6	6	-52	5	9	12	-49	8	12	14	-55	2	6	8
30,000	-56.5	-52	-7	-6	-5	-48	-6	-1	1	-45	2	6	6	-46	-1	2	5
20,000	-21.2	-28	-7	-5	-1	-26	-6	-1	1	-17	6	7	8	-21	-0	6	6
10,000	-6.6	-12	-8	-6	-2	-10	-5	-2	-0	-2	5	5	6	-6	-1	2	4
DUSSELDORF to Lisbon																	
53,000	-56.5	-58	-2	2	6	-56	1	5	5	-55	1	6	5	-60	-5	-1	1
40,000	-56.5	-58	-2	2	6	-57	-1	5	5	-55	3	7	8	-56	0	5	5
30,000	-56.5	-51	-6	-1	-0	-46	-2	1	2	-39	6	8	10	-42	2	5	6
20,000	-21.2	-24	-2	1	1	-20	1	4	5	-12	9	11	12	-16	5	8	9
10,000	-6.6	-7	-2	1	1	-5	1	4	5	6	9	11	12	-0	4	7	8
DUSSELDORF to London																	
53,000	-56.5	-57	-1	5	6	-56	5	5	7	-50	6	9	10	-58	-1	2	5
40,000	-56.5	-58	-2	2	6	-55	1	6	8	-51	6	9	11	-56	0	6	5
30,000	-56.5	-50	-6	-5	-2	-48	-5	-1	1	-41	6	6	8	-46	0	5	5
20,000	-21.2	-26	-5	-1	1	-23	-1	2	4	-14	7	9	10	-18	5	6	8
10,000	-6.6	-10	-5	-2	0	-6	-2	1	3	1	6	8	9	-5	2	5	7

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
DUSSELDORF TO MADRID																											
55,000	-56.5	-58	-1	2	4	-56	1	4	5	-55	2	4	6	-59	-3	-0	1	-57	-0	3	4	5	4	4	4	777 N.M.I.	
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-55	4	7	8	-56	0	3	5	-56	0	4	6	6	6	5	4	4	
30,000	-44.5	-49	-4	-2	-0	-47	-2	1	2	-39	6	8	9	-45	2	5	6	-44	0	4	6	4	4	3	4	4	
20,000	-21.2	-24	-3	1	2	-21	1	3	5	-12	9	11	12	-16	5	8	9	-18	3	6	8	5	4	3	4	4	
10,000	-4.6	-7	-3	1	2	-4	1	3	5	4	9	11	12	-1	4	7	8	-2	3	6	8	5	4	3	4	4	
DUSSELDORF TO MONTRÉAL																											
55,000	-56.5	-56	0	3	5	-52	4	7	8	-50	6	9	10	-55	1	4	6	-54	3	6	8	5	4	4	4	3063 N.M.I.	
40,000	-56.5	-54	2	7	9	-53	4	8	11	-51	6	9	11	-53	3	7	9	-53	4	8	10	6	7	5	6	4	
30,000	-44.5	-50	-6	-3	-1	-48	-3	-1	1	-42	3	6	7	-45	-0	2	4	-46	-2	2	4	4	4	4	4	4	
20,000	-21.2	-29	-8	-3	-1	-25	-4	-0	2	-15	6	9	10	-21	0	4	6	-23	-1	3	5	7	5	4	6	4	
10,000	-4.6	-15	-10	-6	-3	-10	-5	-2	0	-2	4	6	8	-6	-1	3	5	-8	-3	1	3	6	5	3	5	4	
DUSSELDORF TO MOSCOW																											
55,000	-56.5	-56	0	3	5	-53	4	6	8	-48	9	11	12	-56	0	3	4	-53	3	7	8	5	4	4	4	1117 N.M.I.	
40,000	-56.5	-59	-2	1	3	-54	2	6	8	-50	6	10	11	-55	1	4	6	-55	2	6	8	5	4	5	5	4	
30,000	-44.5	-53	-8	-5	-4	-49	-4	-1	0	-41	4	6	8	-45	-0	2	4	-47	-2	2	4	4	4	4	4	4	
20,000	-21.2	-29	-8	-4	-2	-24	-3	1	3	-15	7	9	10	-20	1	5	7	-22	-1	3	5	6	5	3	5	4	
10,000	-4.6	-16	-10	-6	-4	-8	-4	-0	2	0	5	7	8	-6	-1	2	4	-7	-2	1	3	6	5	3	5	4	
DUSSELDORF TO MUNICH																											
55,000	-56.5	-56	0	4	5	-54	2	5	6	-51	6	8	9	-58	-1	1	3	-55	2	5	7	5	4	4	4	269 N.M.I.	
40,000	-56.5	-58	-2	7	4	-56	0	4	6	-52	5	8	10	-56	0	3	5	-56	1	5	7	6	4	5	5	4	
30,000	-44.5	-51	-6	-4	-2	-48	-3	-1	1	-40	4	7	8	-46	1	3	5	-46	-1	2	4	4	4	4	4	4	
20,000	-21.2	-27	-6	-2	0	-22	-1	2	3	-14	7	10	11	-18	3	6	8	-20	1	5	6	6	4	3	5	4	
10,000	-4.6	-11	-7	-3	-1	-6	-2	1	3	2	7	9	10	-2	2	5	7	-4	0	4	6	6	4	3	5	4	
DUSSELDORF TO NEW YORK																											
55,000	-56.5	-57	-0	3	4	-53	3	6	7	-52	5	7	9	-57	-0	3	4	-55	2	5	7	4	4	4	4	3247 N.M.I.	
40,000	-56.5	-55	2	6	8	-54	3	7	10	-52	5	8	10	-54	3	6	8	-55	3	7	9	4	4	5	5	4	
30,000	-44.5	-49	-5	-2	-0	-47	-3	-0	1	-41	4	7	8	-44	1	3	5	-45	-1	3	5	4	4	5	5	4	
20,000	-21.2	-27	-6	-1	1	-24	-3	1	3	-14	7	10	11	-19	2	6	8	-21	0	4	6	4	4	5	5	4	
10,000	-4.6	-15	-8	-4	-2	-8	-4	-0	2	1	5	8	9	-4	1	4	6	-6	-1	2	4	6	4	5	5	4	
DUSSELDORF TO OSLO																											
55,000	-56.5	-57	-1	2	4	-53	4	6	8	-48	9	11	12	-57	-0	2	4	-54	3	6	8	5	4	4	4	533 N.M.I.	
40,000	-56.5	-59	-2	2	4	-54	3	7	9	-50	7	10	12	-56	0	4	6	-55	2	7	9	6	4	6	4	4	
30,000	-44.5	-52	-7	-5	-3	-49	-4	-2	-1	-42	5	5	7	-45	-1	2	3	-47	-2	1	3	4	4	4	4	4	
20,000	-21.2	-29	-8	-4	-2	-24	-3	-0	2	-16	6	8	9	-20	1	5	7	-22	-1	3	5	6	5	3	5	4	
10,000	-4.6	-13	-8	-5	-2	-8	-4	-1	1	-0	5	7	8	-5	-1	2	4	-7	-2	1	3	6	5	3	5	4	
DUSSELDORF TO PARIS																											
55,000	-56.5	-57	-0	3	5	-54	2	5	6	-51	6	8	9	-58	-1	1	3	-55	2	5	7	5	4	4	4	216 N.M.I.	
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	8	10	-56	0	3	5	-56	1	5	7	4	4	5	5	4	
30,000	-44.5	-50	-6	-3	-2	-48	-3	-1	1	-40	4	7	8	-46	1	3	5	-46	-1	3	4	4	4	5	5	4	
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	7	10	11	-18	3	6	8	-20	1	5	7	4	4	5	5	4	
10,000	-4.6	-10	-5	-2	0	-6	-1	2	3	2	6	9	10	-2	2	5	7	-4	1	4	6	6	4	5	5	4	
DUSSELDORF TO PRAGUE																											
55,000	-56.5	-56	0	4	5	-54	3	5	7	-50	6	9	10	-58	-1	1	3	-54	2	5	7	5	4	4	4	295 N.M.I.	
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	9	10	-56	0	3	5	-55	1	5	7	6	4	5	5	4	
30,000	-44.5	-51	-7	-4	-2	-48	-4	-1	0	-41	4	6	8	-44	1	3	5	-46	-1	2	4	4	4	4	4	4	
20,000	-21.2	-27	-6	-2	-0	-23	-2	1	3	-14	7	9	11	-18	3	6	8	-21	1	4	6	4	4	3	5	4	
10,000	-4.6	-12	-7	-3	-1	-7	-2	1	3	2	6	8	10	-3	2	5	6	-5	-0	3	5	6	4	5	5	4	
DUSSELDORF TO ROME																											
55,000	-56.5	-56	0	4	5	-55	2	4	6	-53	3	5	7	-59	-2	0	2	-56	1	4	5	5	4	4	4	618 N.M.I.	
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-52	4	7	9	-56	0	3	4	-56	1	4	6	5	4	5	5	4	
30,000	-44.5	-50	-6	-3	-2	-47	-3	-0	1	-39	5	8	9	-45	2	4	6	-45	-0	3	5	4	4	4	4	4	
20,000	-21.2	-26	-5	-1	1	-21	-0	3	4	-15	9	11	12	-17	4	7	9	-19	2	5	7	5	4	5	5	4	
10,000	-4.6	-9	-5	-1	1	-5	-1	2	4	3	8	10	11	-1	3	6	8	-3	1	5	7	5	4	5	5	4	
DUSSELDORF TO SANTA MARIA																											
55,000	-56.5	-59	-2	1	2	-56	0	3	5	-56	1	3	5	-60	-3	-1	0	-58	-1	2	3	4	4	4	4	1602 N.M.I.	
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-55	3	6	8	-56	0	3	5	-56	0	4	6	6	4	5	5	4	
30,000	-44.5	-54	-3	-1	0	-45	-1	2	3	-38	6	8	10	-42	3	5	6	-41	1	4	6	4	4	5	5	4	
20,000	-21.2	-22	-1	2	4	-20	1	4	6	-12	9	11	12	-16	6	8	10	-17	4	7	9	5	4	3	4	4	
10,000	-4.6	-6	-1	2	4	-3	1	4	6	4	9	10	12	0	5	7	9	-1	3	6	8	5	4	3	4	4	
DUSSELDORF TO SHANNON																											
55,000	-56.5	-57	-1	2	4	-56	3	6	7	-50	7	9	10	-57	-1	2	3	-55	2	5	7	5	4	4	4	584 N.M.I.	
40,000	-56.5	-58	-2	3	5	-55	2	6	9	-51	6	9	12	-56	0	4	6	-55	2	6	9	4	7	6	5	4	
30,000	-44.5	-50	-6	-3	-2	-47	-3	-0	1	-41	4	6	7	-44	0	3	5	-46	-1	2	4	4	4	4	4	4	
20,000	-21.2	-26	-5	-1	1	-23	-2	2	4	-15	7	9	10	-19	3	6	8	-20	1	4	6	4	5	3	5	4	
10,000	-4.6	-10	-5	-1	0	-6	-2	1	3	1	5	8	9	-3	2	5	6	-4	0	3	5	5	4	3	5	4	
DUSSELDORF TO STOCKHOLM																											
55,000	-56.5	-57	-1	2	4	-55	4	6	8	-48	9	11	12	-57	-0	3	4	-54	3	6	8	5	4	4	4	628 N.M.I.	
40,000	-56.5	-59	-2	1	4	-56	3	7	9	-50	7	10	12	-56	1	4	6	-55	2	6	9	6	4	5	5	4	
30,000	-44.5	-52	-8	-5	-4	-49	-5	-2	-1	-42	5	5	7	-45	-1	2	3	-47	-3	1	3	4	4	4	4	4	
20,000	-21.2	-29	-8	-4	-2	-25	-3	-0	2	-15	6	8	9	-20	1	5	7	-22	-1	3	5	6	5	3	5	4	
10,000	-4.6	-14	-9	-5	-3	-9	-4	-1	1	0	5	7	8	-6	-1	2	4	-7	-2	1	3	6	5	3	5	4	
DUSSELDORF TO TEHRAN																											
55,000	-56.5	-57	-0	3	5	-55	1	4	5	-55	1	4	5	-59	-2	0	2	-56	0	3	4	5	4	4	4	2112 N.M.I.	
40,000	-56.5	-57	-1	2	4	-55	1	5	6	-49	8	10	12	-56	0	3	4	-54	2	3	4	5	4	5	5	4	
30,000	-44.5	-51	-6	-4	-2	-46	-2	1	2	-36	9	11	12	-43	2	4	6	-44	1	5	7	4	4	4	4	4	
20,000	-21.2	-26	-5	-2	0	-20	1	4	6	-10	11	13	14	-17	4	7	9	-18	3	7	9	5	5	3	4	4	
10,000	-4.6	-11	-7	-3	-1	-4	1	4	5	5	10	12	13	-1	4	7	8	-3	2	5	7	6	5	3	4	4	
DUSSELDORF TO TEL AVIV-JAFFA																											
55,000	-56.5	-58	-1	2	3																						

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	150 TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
DUSSELDORF TO VIENNA																	
53,000	-56.5	-56	0	4	5	-56	3	5	7	-51	6	8	9	-58	-1	1	3
40,000	-56.5	-56	-2	2	4	-56	1	4	6	-51	5	8	10	-58	0	3	5
30,000	-56.5	-51	-7	-6	-2	-48	-3	-1	1	-40	4	7	8	-44	1	3	5
20,000	-21.2	-27	-6	-2	0	-22	-1	2	3	-14	7	10	11	-18	3	6	8
10,000	-4.6	-12	-7	-3	-1	-6	-2	1	3	2	6	9	10	-3	2	5	7
DUSSELDORF TO ZURICH																	
53,000	-56.5	-56	0	3	5	-54	2	5	6	-51	5	8	9	-58	-2	1	2
40,000	-56.5	-56	-2	2	4	-56	0	4	6	-52	5	8	10	-56	0	3	5
30,000	-56.5	-50	-6	-1	-2	-48	-3	-1	1	-40	4	7	8	-44	1	3	5
20,000	-21.2	-27	-5	-2	0	-22	-1	2	4	-14	8	10	11	-18	3	6	8
10,000	-4.6	-11	-6	-2	-0	-6	-1	2	1	2	7	9	10	-2	2	5	7
EAST LONDON TO PORT ELIZABETH																	
53,000	-56.5	-63	-7	-4	-3	-63	-7	-4	-3	-57	-0	2	4	-60	-4	-1	1
40,000	-56.5	-54	3	6	7	-56	1	3	5	-52	6	7	8	-53	3	6	8
30,000	-44.5	-18	7	9	10	-39	5	7	9	-44	1	4	5	-40	5	7	9
20,000	-21.2	-11	10	12	13	-13	8	10	11	-19	3	5	6	-14	7	9	11
10,000	-4.6	6	10	12	13	4	9	11	12	-1	4	6	7	1	8	10	11
EDMONTON TO LOS ANGELES																	
53,000	-56.5	-60	-1	0	2	-57	-1	2	1	-59	-3	-1	0	-62	-5	-3	-1
40,000	-56.5	-57	-0	4	7	-57	-0	3	5	-54	2	5	6	-56	0	4	5
30,000	-44.5	-49	-5	-2	-1	-47	-2	-0	1	-38	6	8	9	-42	2	5	6
20,000	-21.2	-25	-4	1	1	-21	0	1	5	-11	11	12	13	-16	5	8	10
10,000	-4.6	-9	-5	-0	2	-4	1	6	6	8	13	15	16	-0	4	8	10
EDMONTON TO MONTREAL																	
53,000	-56.5	-58	0	4	6	-53	3	6	7	-51	4	6	8	-56	0	3	4
40,000	-56.5	-54	1	6	9	-54	3	7	9	-52	4	7	9	-53	3	7	8
30,000	-44.5	-51	-9	-6	-4	-50	-5	-1	-1	-40	4	7	8	-44	-1	1	3
20,000	-21.2	-31	-12	-7	-5	-26	-5	-1	1	-14	7	10	11	-21	0	4	6
10,000	-4.6	-20	-15	-10	-7	-11	-6	-2	-0	1	6	8	10	-6	-1	1	5
EDMONTON TO OTTAWA																	
53,000	-56.5	-56	0	4	6	-53	3	6	7	-53	4	6	7	-57	-0	2	4
40,000	-56.5	-54	2	6	9	-54	3	7	9	-52	4	7	9	-54	3	6	8
30,000	-44.5	-51	-8	-6	-4	-50	-5	-3	-1	-40	4	7	8	-44	-1	1	3
20,000	-21.2	-31	-12	-7	-5	-26	-5	-1	1	-14	7	10	11	-21	0	4	6
10,000	-4.6	-20	-15	-10	-7	-11	-6	-2	-0	1	6	8	10	-6	-1	1	5
EDMONTON TO SINGAPORE																	
53,000	-56.5	-57	-0	4	6	-49	4	11	12	-46	10	12	13	-51	4	6	7
40,000	-56.5	-50	1	5	7	-50	6	10	12	-48	9	12	14	-51	4	9	11
30,000	-44.5	-50	-12	-9	-7	-52	-7	-4	-3	-48	-0	2	3	-50	-5	-2	-1
20,000	-21.2	-19	-16	-14	-12	-12	-11	-7	-5	-20	2	4	6	-18	-7	-1	-1
10,000	-4.6	-26	-21	-17	-14	-18	-13	-9	-7	-4	0	3	4	-14	-9	-5	-3
EDMONTON TO TORONTO																	
53,000	-56.5	-57	-0	1	5	-54	2	5	6	-54	2	5	6	-56	-1	2	1
40,000	-56.5	-54	2	6	8	-54	2	6	8	-53	4	7	8	-54	2	6	7
30,000	-44.5	-52	-8	-5	-4	-49	-5	-2	-1	-39	5	7	9	-45	-1	2	3
20,000	-21.2	-32	-11	-6	-4	-25	-1	-0	2	-13	8	10	12	-20	1	5	7
10,000	-4.6	-18	-14	-9	-6	-9	-5	-1	1	1	7	10	11	-5	0	4	6
EDMONTON TO VANCOUVER																	
53,000	-56.5	-58	0	4	6	-53	4	6	8	-52	5	7	8	-57	-1	2	3
40,000	-56.5	-54	1	5	7	-54	2	6	8	-51	4	7	9	-55	1	5	6
30,000	-44.5	-52	-7	-5	-3	-49	-4	-2	-1	-41	3	6	7	-45	-1	2	3
20,000	-21.2	-30	-9	-4	-1	-25	-1	-0	2	-15	6	9	10	-21	0	4	6
10,000	-4.6	-15	-11	-5	-3	-9	-4	-1	1	2	7	9	10	-5	-1	3	5
EDMONTON TO WINNIPEG																	
53,000	-56.5	-56	1	4	6	-53	3	6	7	-52	4	6	7	-57	-0	2	3
40,000	-56.5	-55	2	6	8	-54	2	6	8	-53	4	7	9	-55	2	5	7
30,000	-44.5	-53	-9	-6	-5	-50	-5	-1	-2	-40	4	6	7	-46	-1	1	2
20,000	-21.2	-33	-12	-7	-5	-25	-4	-0	1	-14	7	9	10	-22	-0	1	5
10,000	-4.6	-19	-14	-9	-6	-9	-5	-1	1	2	7	10	11	-6	-1	3	5
EL ADEM TO ENTABE																	
53,000	-56.5	-74	-18	-16	-15	-71	-17	-15	-14	-75	-18	-17	-16	-75	-18	-17	-16
40,000	-56.5	-54	3	5	5	-53	4	6	7	-51	4	6	7	-53	4	6	7
30,000	-44.5	-37	7	9	10	-31	12	13	14	-29	15	16	17	-33	12	13	14
20,000	-21.2	-9	12	11	14	-8	13	15	15	-4	17	18	18	-7	14	15	16
10,000	-4.6	7	11	11	14	8	11	14	15	12	16	17	18	9	14	15	16
EL ADEM TO KHARTOUM																	
53,000	-56.5	-71	-14	-12	-11	-69	-13	-11	-10	-74	-17	-15	-14	-73	-16	-14	-13
40,000	-56.5	-54	1	5	6	-54	3	5	6	-49	7	9	10	-54	3	5	6
30,000	-44.5	-41	4	5	6	-36	9	10	11	-28	16	18	19	-35	10	12	14
20,000	-21.2	-15	4	10	11	-11	11	12	13	-4	17	18	19	-8	13	14	15
10,000	-4.6	3	8	10	11	6	11	11	14	11	18	19	20	8	13	14	15
EL ADEM TO LONDON																	
53,000	-56.5	-58	-1	2	3	-56	0	2	4	-58	-2	0	2	-60	-4	-2	-0
40,000	-56.5	-57	-1	3	5	-57	-1	3	5	-58	6	9	10	-56	0	3	4
30,000	-44.5	-49	-6	-2	-1	-46	-1	1	2	-17	8	10	11	-42	3	5	6
20,000	-21.2	-24	-1	0	2	-20	2	4	6	-11	11	13	14	-16	4	8	9
10,000	-4.6	-8	-3	0	2	-1	1	4	6	6	10	12	13	0	5	7	9
EL ADEM TO SHARJAH																	
53,000	-56.5	-67	-10	-8	-7	-65	-9	-7	-6	-72	-15	-13	-12	-69	-13	-10	-9
40,000	-56.5	-54	2	5	6	-54	2	5	7	-47	10	12	13	-55	2	4	5
30,000	-44.5	-41	2	6	5	-39	5	7	9	-26	18	20	21	-37	8	10	11
20,000	-21.2	-17	5	7	8	-13	8	10	11	-3	18	20	21	-10	11	13	13
10,000	-4.6	-0	4	6	7	4	9	11	12	15	19	21	21	7	12	13	14

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
EL PASO TO MEXICO CITY																									
51,000	-56.5	-72	-16	-14	-15	-70	-14	-12	-10	-72	-16	-14	-13	-75	-19	-17	-16	-72	-16	-13	-12	3	3	2	3
40,000	-56.5	-56	0	1	4	-57	-0	2	3	-55	2	3	4	-55	1	3	4	-56	1	3	4	4	3	2	2
30,000	-44.5	-19	5	7	7	-39	6	7	8	-32	12	13	14	-35	10	11	12	-36	8	10	11	2	2	2	2
20,000	-21.2	-12	9	11	12	-10	11	13	15	-6	15	16	17	-8	13	15	16	-9	12	14	16	3	3	1	2
10,000	-4.6	5	9	11	13	8	13	15	16	11	15	16	17	9	14	15	16	8	13	14	15	3	3	1	2
ENTERO TO JOHANNESBURG																									
51,000	-56.5	-76	-19	-17	-16	-75	-19	-16	-15	-70	-14	-12	-11	-73	-16	-14	-11	-74	-17	-14	-13	4	4	3	3
40,000	-56.5	-52	4	6	7	-52	5	7	8	-52	5	6	7	-52	4	6	7	-52	5	6	7	3	3	3	3
30,000	-44.5	-30	14	15	16	-32	13	15	15	-33	11	15	16	-32	12	14	15	-32	13	14	15	2	2	2	2
20,000	-21.2	-5	16	17	18	-6	15	16	17	-7	14	16	17	-7	14	16	16	-6	15	16	17	1	2	2	2
10,000	-4.6	10	15	16	16	9	13	15	15	6	10	12	13	9	14	15	16	8	13	14	15	2	2	2	2
ENTERO TO KHARTOUM																									
51,000	-56.5	-78	-21	-19	-18	-74	-21	-19	-18	-74	-20	-18	-17	-77	-21	-19	-18	-77	-21	-19	-18	3	3	3	3
40,000	-56.5	-54	3	4	5	-52	5	7	8	-53	4	5	6	-52	5	6	7	-52	4	6	7	2	3	2	2
30,000	-44.5	-31	12	13	14	-30	15	16	16	-31	14	15	16	-30	14	15	16	-31	14	15	16	2	2	2	2
20,000	-21.2	-5	16	17	18	-5	16	17	18	-5	16	17	18	-6	16	17	17	-5	16	17	18	1	2	1	1
10,000	-4.6	10	15	16	17	10	15	16	16	11	15	16	17	10	15	16	16	10	15	16	17	2	2	1	1
ENTERO TO AIZUPU																									
51,000	-56.5	-74	-22	-20	-19	-74	-21	-19	-18	-75	-19	-17	-16	-77	-21	-19	-18	-77	-21	-18	-17	3	3	3	3
40,000	-56.5	-51	1	5	5	-52	5	7	8	-53	4	5	6	-52	5	6	7	-52	4	6	7	2	3	2	2
30,000	-44.5	-31	14	15	15	-29	15	16	17	-32	13	14	15	-30	15	16	16	-30	14	15	16	2	2	2	2
20,000	-21.2	-4	17	18	18	-4	17	18	19	-5	16	17	18	-6	16	17	17	-5	16	18	18	1	2	1	1
10,000	-4.6	10	15	16	16	10	14	15	16	9	14	15	15	10	15	16	16	10	14	15	16	2	1	2	1
ENTERO TO NAIROBI																									
51,000	-56.5	-74	-22	-20	-19	-74	-21	-19	-18	-75	-19	-17	-16	-77	-21	-19	-18	-77	-21	-18	-17	3	3	3	3
40,000	-56.5	-53	3	5	6	-52	5	7	8	-53	4	5	6	-52	5	6	7	-52	4	6	7	2	3	2	2
30,000	-44.5	-31	14	15	16	-29	15	16	17	-32	13	14	15	-30	14	16	16	-30	14	15	16	2	2	2	2
20,000	-21.2	-4	17	18	18	-4	17	18	19	-5	16	17	18	-6	16	17	17	-5	16	18	18	1	1	1	1
10,000	-4.6	10	15	16	16	10	14	15	16	9	14	15	15	10	15	16	16	10	14	15	16	1	1	2	1
ENTERO TO ROME																									
51,000	-56.5	-70	-14	-12	-11	-70	-15	-11	-10	-72	-16	-14	-13	-72	-15	-13	-12	-71	-14	-12	-11	3	3	3	3
40,000	-56.5	-54	2	4	5	-54	3	5	7	-51	6	7	8	-54	3	4	5	-53	3	5	6	3	3	2	2
30,000	-44.5	-40	5	6	7	-36	9	10	11	-31	14	15	16	-35	10	11	12	-35	9	12	13	2	2	2	2
20,000	-21.2	-15	9	10	11	-10	11	13	15	-6	16	17	18	-9	12	14	16	-9	12	14	15	3	2	2	2
10,000	-4.6	4	6	10	11	6	11	12	13	11	15	17	17	8	12	13	14	7	12	14	15	3	2	2	2
ENTERO TO SALISBURY																									
51,000	-56.5	-77	-21	-18	-17	-77	-20	-18	-16	-72	-16	-14	-13	-75	-18	-16	-15	-75	-19	-16	-15	3	4	3	3
40,000	-56.5	-52	4	6	7	-52	5	7	8	-52	5	6	7	-52	4	6	7	-52	5	7	8	3	3	2	2
30,000	-44.5	-30	14	16	16	-31	14	15	16	-31	13	15	15	-31	13	15	15	-31	13	15	16	2	2	2	2
20,000	-21.2	-5	17	17	18	-5	16	17	18	-6	16	17	17	-6	16	17	17	-5	16	17	17	1	2	2	2
10,000	-4.6	10	14	15	16	9	14	15	15	7	12	13	14	10	14	16	16	9	14	15	16	1	2	2	2
FAIRBANKS TO SEATTLE																									
51,000	-56.5	-54	5	6	6	-51	6	9	10	-49	7	9	10	-53	1	6	7	-52	5	7	9	3	4	3	4
40,000	-56.5	-54	2	7	9	-52	4	9	10	-51	6	9	11	-53	1	7	9	-53	4	8	10	7	4	3	4
30,000	-44.5	-52	7	9	9	-40	5	9	9	-41	1	4	5	-47	5	0	1	-48	4	0	2	4	3	4	5
20,000	-21.2	-10	9	9	9	-27	6	9	9	-16	5	7	9	-24	5	1	3	-25	5	1	3	7	3	4	5
10,000	-4.6	-15	10	9	9	-12	7	9	9	-1	4	6	7	-8	4	1	1	-9	4	0	2	7	4	3	4
FORTALEZA TO LIGPOLLOVILLE																									
51,000	-56.5	-78	-21	-19	-18	-74	-21	-19	-18	-75	-17	-15	-14	-76	-19	-18	-17	-76	-20	-17	-16	1	3	3	3
40,000	-56.5	-54	2	4	5	-52	4	6	7	-53	4	5	6	-51	4	5	6	-51	3	6	7	3	3	2	2
30,000	-44.5	-52	11	14	14	-50	15	16	17	-52	12	14	14	-51	11	15	16	-51	13	15	16	2	2	2	2
20,000	-21.2	-5	16	17	18	-5	16	17	18	-6	15	17	17	-6	16	17	17	-5	16	17	18	2	2	2	2
10,000	-4.6	10	14	15	16	10	14	16	16	8	13	14	16	10	15	16	17	9	14	15	16	1	2	2	2
FORTALEZA TO PANAMA																									
51,000	-56.5	-74	-22	-20	-19	-74	-21	-19	-18	-75	-16	-14	-13	-77	-20	-19	-18	-76	-20	-17	-16	3	3	3	3
40,000	-56.5	-54	3	4	5	-52	5	7	8	-54	3	4	5	-54	3	4	5	-51	3	5	6	2	3	2	2
30,000	-44.5	-32	12	13	14	-30	15	16	17	-32	13	14	15	-30	14	16	16	-31	13	15	16	2	2	2	2
20,000	-21.2	-5	17	18	18	-4	17	18	19	-7	16	15	16	-6	16	17	17	-5	16	17	18	2	2	1	1
10,000	-4.6	10	14	16	16	10	15	16	16	9	14	15	15	10	15	16	17	10	14	16	16	2	2	2	2
FORTALEZA TO RECIFE																									
51,000	-56.5	-74	-21	-19	-17	-74	-21	-19	-18	-71	-15	-13	-11	-75	-19	-17	-16	-75	-19	-16	-14	4	3	3	3
40,000	-56.5	-54	2	4	5	-52	4	7	8	-53	4	5	6	-53	1	5	6	-53	3	6	7	3	4	2	2
30,000	-44.5	-32	13	14	15	-30	15	16	17	-32	13	14	15	-31	14	15	16	-31	14	15	16	2	2	2	2
20,000	-21.2	-5	17	18	18	-4	17	18	19	-7	16	15	16	-6	16	17	17	-5	16	17	18	2	2	2	2
10,000	-4.6	10	14	16	16	10	14	16	16	8	13	14	15	10	15	16	17	10	14	16	16	2	2	2	2
PORT DE FRANCE TO POINTE A PITRE																									
51,000	-56.5	-77	-21	-19	-18	-74	-21	-19	-19	-73	-16	-15	-14	-77	-20	-19	-18	-76	-20	-17	-16	3	3	2	3
40,000	-56.5	-54	3	5	6	-54	3	4	5	-55	1	2	3	-54	3	4	4	-54	2	4	4	3	2	2	2
30,000	-44.5	-34	10	12	12	-33	12	13	13	-34	11	12	12	-32	11	14	14	-33	11	13	13	2	2	2	2
20,000	-21.2	-7	14	15	16	-7	14	16	16	-7	14	15	16	-6	16	16	17	-7	15	16	16	2	2	1	1
10,000	-4.6	8	12	14	14	8	13	14	15	9	14	15	15	9	14	15	15	9	13	14	15	2	2	1	1
PORT DE FRANCE TO ST. LUCIA																									
51,000	-56.5	-77	-21	-19	-18	-74	-22	-20	-19	-73	-16	-15	-14	-77	-21	-19	-18	-76	-20	-18	-16	3	3	2	3
40,000	-56.5	-54	3	5	6	-54	3	4	5	-55	1	2	3	-54	3	4	4	-54	2	4	5	3	2	2	2
30,000	-44.5	-34	11	12	13	-32	12	13	14	-34	11	12	12	-32	13	14	14	-33	12	13	14	2	2	2	2
20,000	-21.2	-7	14	15	16	-7	15	16	17	-7	14	15	16	-6	16	17	17	-6	15	16	16	2	2	1	1
10,000	-4.6	8	13	14	15	9	13	15	15	9	14	15	15	9	14	1									

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																						STANDARD DEVIATION			
HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
FRANKFURT TO GENEVA																								248 N.M.I.	
55,000	-56.5	-56	0	5	5	-55	2	5	6	-52	4	7	8	-50	-2	1	2	-55	1	4	6	5	4	5	5
40,000	-56.5	-56	-2	2	4	-57	-0	4	6	-52	4	7	9	-50	0	3	5	-56	1	4	7	4	4	5	4
30,000	-56.5	-56	-4	-1	2	-57	-2	3	5	-40	5	7	9	-43	1	4	5	-45	-1	3	5	4	4	5	4
20,000	-56.5	-56	-6	-3	-2	-47	-5	-0	1	-15	8	10	11	-17	4	7	8	-20	2	5	7	5	4	5	4
10,000	-56.5	-56	-8	-5	-2	-22	-8	2	4	-5	7	9	11	-2	3	6	7	-4	1	5	6	5	4	5	4
FRANKFURT TO GLASGOW																								579 N.M.I.	
55,000	-56.5	-57	-1	1	4	-55	5	6	7	-49	7	10	11	-57	-1	2	4	-54	2	6	8	5	4	5	4
40,000	-56.5	-57	-2	2	4	-55	2	6	9	-50	6	10	12	-56	0	4	6	-55	2	6	9	4	7	0	5
30,000	-56.5	-57	-4	-1	1	-48	-5	-1	1	-41	3	6	7	-44	0	3	4	-46	-2	2	4	4	5	3	5
20,000	-56.5	-57	-6	-3	-2	-48	-7	1	5	-15	6	9	10	-19	2	6	7	-21	0	4	6	4	5	3	5
10,000	-56.5	-57	-8	-5	-2	-23	-2	1	2	1	5	7	9	-3	1	4	6	-5	-0	3	5	5	4	5	5
FRANKFURT TO HAMBURG																								222 N.M.I.	
55,000	-56.5	-56	0	5	5	-54	5	6	7	-50	7	9	10	-57	-1	2	3	-54	2	5	7	5	4	5	5
40,000	-56.5	-56	-2	2	4	-55	1	5	8	-51	6	9	11	-56	0	3	5	-55	1	6	8	4	4	5	5
30,000	-56.5	-56	-4	-1	1	-48	-4	-1	0	-41	4	6	7	-44	0	3	4	-46	-2	2	4	4	4	5	5
20,000	-56.5	-56	-6	-3	-2	-48	-6	1	5	-14	7	9	10	-19	3	6	8	-21	0	4	6	4	4	5	5
10,000	-56.5	-56	-8	-5	-2	-23	-2	1	2	1	6	8	9	-4	1	4	6	-5	-1	3	5	4	4	5	5
FRANKFURT TO HELSINKI																								830 N.M.I.	
55,000	-56.5	-57	-1	1	4	-55	4	6	8	-48	9	11	12	-56	0	3	4	-53	3	6	8	5	4	5	5
40,000	-56.5	-57	-2	2	4	-54	2	6	9	-50	6	10	12	-56	1	4	6	-55	2	6	8	5	4	5	5
30,000	-56.5	-57	-4	-1	1	-49	-5	-2	-1	-41	3	6	7	-45	-1	2	3	-47	-3	1	3	4	4	5	5
20,000	-56.5	-57	-6	-3	-2	-49	-7	1	5	-15	6	8	10	-20	1	5	7	-22	-1	3	5	4	5	3	5
10,000	-56.5	-57	-8	-5	-2	-25	-3	0	2	0	5	7	8	-6	-1	2	4	-7	-3	1	3	4	5	3	5
FRANKFURT TO ISTANBUL																								1006 N.M.I.	
55,000	-56.5	-56	1	4	5	-55	2	4	6	-54	3	5	6	-59	-2	0	2	-56	1	4	5	5	4	5	4
40,000	-56.5	-56	-1	2	4	-56	0	4	5	-50	6	9	11	-56	0	3	4	-55	1	5	7	5	4	5	4
30,000	-56.5	-56	-3	0	1	-47	-3	-0	1	-38	8	9	10	-43	2	4	5	-45	-0	3	5	4	4	5	4
20,000	-56.5	-56	-5	-2	0	-42	-5	3	4	-12	9	11	12	-17	4	7	8	-19	2	5	7	5	4	5	4
10,000	-56.5	-56	-7	-4	-2	-35	-7	2	4	3	8	10	11	-2	3	6	7	-4	1	4	6	5	4	5	4
FRANKFURT TO REPLAYIK																								1295 N.M.I.	
55,000	-56.5	-56	-1	5	4	-51	5	8	9	-47	9	11	13	-56	1	4	5	-55	5	7	9	5	4	5	4
40,000	-56.5	-57	-1	4	6	-52	4	9	11	-49	8	11	13	-55	2	6	8	-55	5	8	10	4	7	6	4
30,000	-56.5	-57	-3	3	5	-48	-4	-1	1	-43	7	9	10	-46	-1	2	3	-47	-2	1	3	4	4	5	4
20,000	-56.5	-57	-5	1	1	-45	-6	-1	1	-41	6	8	9	-44	0	4	5	-45	-2	2	4	4	5	4	5
10,000	-56.5	-57	-7	-2	1	-41	-8	-2	0	-37	5	7	8	-41	-1	2	3	-42	-2	1	3	5	5	3	5
FRANKFURT TO KHARTOUM																								2372 N.M.I.	
55,000	-56.5	-56	-7	-5	-3	-43	-6	-4	-3	-46	-9	-7	-6	-46	-10	-8	-6	-45	-8	-6	-4	4	3	3	3
40,000	-56.5	-56	-9	-7	-5	-46	-8	-6	-5	-49	-7	-9	-8	-49	-12	-10	-8	-48	-10	-8	-6	4	3	3	3
30,000	-56.5	-56	-11	-9	-7	-49	-10	-8	-7	-52	-12	-14	-12	-52	-14	-12	-10	-51	-12	-10	-8	3	3	3	3
20,000	-56.5	-56	-13	-11	-9	-52	-12	-10	-9	-55	-14	-16	-14	-55	-16	-14	-12	-54	-14	-12	-10	3	3	3	3
10,000	-56.5	-56	-15	-13	-11	-55	-14	-12	-11	-58	-16	-18	-16	-58	-18	-16	-14	-57	-16	-14	-12	3	3	3	3
FRANKFURT TO LEOPOLDOVILLE																								5284 N.M.I.	
55,000	-56.5	-56	-12	-10	-9	-48	-11	-9	-8	-70	-15	-11	-10	-70	-14	-12	-11	-69	-15	-10	-9	3	3	3	3
40,000	-56.5	-56	-14	-12	-10	-51	-13	-11	-10	-73	-17	-13	-12	-73	-16	-14	-13	-72	-17	-12	-11	3	3	3	3
30,000	-56.5	-56	-16	-14	-12	-54	-15	-13	-12	-76	-19	-15	-14	-76	-18	-16	-15	-75	-19	-14	-13	3	3	3	3
20,000	-56.5	-56	-18	-16	-14	-57	-17	-15	-14	-79	-21	-17	-16	-79	-20	-18	-17	-78	-21	-16	-15	3	3	3	3
10,000	-56.5	-56	-20	-18	-16	-60	-19	-17	-16	-82	-23	-19	-18	-82	-22	-20	-19	-81	-23	-18	-17	3	3	3	3
FRANKFURT TO LISBON																								1012 N.M.I.	
55,000	-56.5	-58	-2	2	3	-56	0	5	5	-54	1	5	5	-60	-3	-1	1	-57	-1	2	4	5	4	5	4
40,000	-56.5	-58	-4	0	1	-58	-1	3	5	-56	1	5	5	-58	0	3	5	-56	0	4	6	4	4	5	4
30,000	-56.5	-58	-6	-2	0	-60	-3	1	3	-58	0	3	5	-60	-2	1	3	-58	-1	2	4	4	4	5	4
20,000	-56.5	-58	-8	-4	-2	-62	-5	-1	1	-60	-4	1	3	-62	-4	1	3	-60	-6	0	2	4	4	5	4
10,000	-56.5	-58	-10	-6	-4	-64	-7	1	3	-62	-6	1	3	-64	-6	1	3	-62	-8	0	2	4	4	5	4
FRANKFURT TO LONDON																								555 N.M.I.	
55,000	-56.5	-57	-0	5	5	-54	5	5	7	-51	6	8	10	-58	-1	1	3	-55	2	5	7	5	4	5	4
40,000	-56.5	-57	-2	2	4	-56	3	5	7	-53	5	7	9	-56	0	3	5	-55	1	5	7	4	4	5	4
30,000	-56.5	-57	-4	0	1	-58	1	3	5	-55	3	5	7	-58	-1	1	3	-56	-1	2	4	4	4	5	4
20,000	-56.5	-57	-6	-3	-2	-60	-3	1	3	-57	1	3	5	-60	-3	1	3	-58	-3	0	2	4	4	5	4
10,000	-56.5	-57	-8	-5	-2	-62	-5	1	3	-59	0	3	5	-62	-5	1	3	-60	-5	0	2	4	4	5	4
FRANKFURT TO LOS ANGELES																								5030 N.M.I.	
55,000	-56.5	-58	-1	2	4	-52	5	7	9	-50	6	8	9	-56	1	5	5	-54	2	5	7	5	4	5	4
40,000	-56.5	-58	-3	0	1	-54	3	5	7	-52	7	10	11	-55	3	7	9	-53	4	7	10	4	6	5	4
30,000	-56.5	-58	-5	-2	0	-56	1	3	5	-54	5	5	6	-56	-2	1	3	-54	-3	1	3	4	5	4	4
20,000	-56.5	-58	-7	-4	-2	-58	0	3	5	-56	3	5	6	-58	-4	1	3	-56	-5	1	3	4	5	4	4
10,000	-56.5	-58	-9	-6	-4	-60	-2	1	3	-58	2	5	6	-60	-6	1	3	-58	-7	0	2	4	5	4	4
FRANKFURT TO MADRID																								768 N.M.I.	
55,000	-56.5	-58	-1	2	4	-54	5	7	9	-52	6	8	9	-58	-1	1	3	-57	-0	2	4	5	4	5	4
40,000	-56.5	-58	-3	0	1	-56	3	5	7	-54	7	9	11	-56	0	3	5	-56	0	4	6	4	4	5	4
30,000	-56.5	-58	-5	-2	0	-58	1	3	5	-56	3	5	7	-58	-2	1	3	-56	-2	2	4	4	4	5	4
20,000	-56.5	-58	-7	-4	-2	-60	-3	1	3	-58	1	3	5	-60	-4	1	3	-58	-4	0	2	4	4	5	4
10,000	-56.5	-58	-9	-6	-4	-62	-5	1	3	-60	2	5	6	-62	-6	1	3	-60	-6	0	2	4	4	5	4
FRANKFURT TO MILAN																								264 N.M.I.	
55,000	-56.5	-56	0	4	5	-55	2	5	6	-52	4	7	8	-50	-2	1	2	-55	1	4	6	5	4	5	4
40,000	-56.5	-56	-2	2	4	-57	-0	3	5	-52	4	7	9	-50	0	3	5	-56	0	4	6	4	4	5	4
30,000	-56.5	-56	-4	-1	1	-48	-4	-1	1	-41	3	6	7	-44	0	3	4	-46	-2	2	4	4	4	5	4
20,000	-56.5	-56	-6	-3	-2	-47	-5	-0	1	-40	5	7	9	-43	1	4	5	-45	-1	3	5	4	4	5	4
10,000	-56.5	-56	-8	-5	-2	-22	-8	2	4	-15	8	10	11	-17	4	7	8	-20	2	5	7	5	4	5	4
FRANKFURT TO MONTREAL																								5160 N.M.I.	
55,000	-56.5	-56	0	3	5	-52	4	7	8	-50	6	9	10	-55	1	4	5	-54	3	6	8	5	4	5	

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION															
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT				
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
FRANKFURT TO MOSCOW																													
55,000	-36.5	-56	0	4	5	-55	4	6	7	-48	8	11	12	-56	0	3	4	-53	3	6	8	5	4	5	4	1091 N.M.I.			
40,000	-36.5	-59	-2	1	3	-55	2	5	7	-50	6	9	11	-56	1	4	6	-55	2	6	8	5	5	5	5				
30,000	-36.5	-53	-6	-5	-6	-49	-6	-1	0	-41	6	7	8	-45	-0	2	4	-47	-2	2	4	4	4	4	4				
20,000	-21.2	-29	-8	-6	-2	-26	-3	1	3	-16	7	9	10	-20	2	5	7	-22	-1	3	5	6	5	3	5				
10,000	-4.6	-14	-10	-6	-6	-8	-3	0	2	0	5	7	8	-5	-1	3	5	-7	-2	1	3	6	5	3	5				
FRANKFURT TO MUNICH																													
55,000	-36.5	-56	1	4	6	-54	2	5	6	-51	5	8	9	-58	-2	1	2	-55	2	5	6	5	4	5	4	168 N.M.I.			
40,000	-36.5	-58	-2	2	4	-56	0	4	6	-52	5	8	10	-56	0	3	5	-56	1	5	7	5	6	5	5				
30,000	-36.5	-51	-6	-4	-2	-48	-3	-1	1	-40	6	7	8	-43	1	4	5	-46	-1	3	4	4	4	4	4				
20,000	-21.2	-27	-6	-2	0	-22	-1	2	3	-13	8	10	11	-18	3	7	8	-20	1	5	7	6	5	3	5				
10,000	-4.6	-11	-7	-3	-1	-6	-2	1	3	2	7	9	10	-2	2	6	7	-4	0	4	6	6	5	3	5				
FRANKFURT TO AMSTERDAM																													
55,000	-36.5	-60	-12	-10	-8	-60	-11	-9	-8	-69	-13	-11	-10	-70	-13	-11	-10	-69	-12	-10	-9	3	3	3	3	3408 N.M.I.			
40,000	-36.5	-55	-2	4	5	-54	-2	5	6	-51	4	8	9	-54	2	4	6	-53	3	5	7	3	4	3	3				
30,000	-36.5	-41	3	5	6	-38	7	9	10	-32	13	14	15	-36	9	10	11	-37	8	10	12	3	3	3	3				
20,000	-21.2	-15	7	9	10	-12	9	11	12	-7	15	16	17	-10	11	13	15	-11	10	13	16	3	3	2	2				
10,000	-4.6	1	4	8	9	4	9	11	12	10	14	16	17	6	11	13	15	5	10	12	13	3	3	2	2				
FRANKFURT TO NEW YORK																													
55,000	-36.5	-57	-0	5	6	-54	3	6	7	-52	4	7	8	-57	-0	3	4	-55	2	5	6	4	4	4	4	3340 N.M.I.			
40,000	-36.5	-55	1	6	8	-54	2	7	9	-52	5	8	10	-54	2	6	8	-54	3	7	9	4	7	5	5				
30,000	-36.5	-49	-5	-2	-0	-47	-3	-0	1	-40	6	7	8	-44	1	3	5	-45	-1	3	5	4	4	4	4				
20,000	-21.2	-27	-6	-1	1	-24	-2	1	3	-14	7	10	11	-19	2	6	8	-21	0	4	6	6	5	4	5				
10,000	-4.6	-13	-8	-4	-1	-8	-3	-0	2	1	6	8	9	-4	1	4	6	-6	-1	2	4	6	5	3	5				
FRANKFURT TO OSLO																													
55,000	-36.5	-57	-1	2	4	-55	4	6	8	-48	8	10	12	-57	-0	2	4	-54	3	6	8	5	4	5	4	596 N.M.I.			
40,000	-36.5	-59	-2	2	4	-54	-2	7	9	-50	7	10	12	-56	0	3	6	-55	2	6	9	5	6	5	5				
30,000	-36.5	-52	-7	-5	-3	-46	-4	-2	-0	-42	3	5	7	-45	-1	2	4	-47	-2	1	3	4	6	5	5				
20,000	-21.2	-29	-8	-6	-2	-24	-3	0	2	-15	6	8	9	-20	1	5	7	-22	-1	3	5	6	5	3	5				
10,000	-4.6	-13	-8	-5	-2	-8	-4	-0	1	0	5	7	8	-5	-1	3	4	-7	-2	2	4	6	5	3	5				
FRANKFURT TO PARIS																													
55,000	-36.5	-57	-0	5	5	-54	2	5	6	-51	5	8	9	-58	-2	1	3	-55	1	5	6	5	4	4	4	267 N.M.I.			
40,000	-36.5	-58	-2	4	5	-54	0	4	7	-52	5	8	10	-54	0	3	5	-54	1	5	7	5	4	4	5				
30,000	-36.5	-50	-6	-5	-2	-48	-3	-0	1	-40	6	7	8	-44	1	4	5	-45	-1	3	4	4	4	4	4				
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	8	10	11	-18	3	7	8	-20	1	5	7	6	4	4	5				
10,000	-4.6	-10	-6	-2	0	-8	-1	2	3	-2	7	9	10	-2	3	6	7	-4	1	4	6	6	4	4	5				
FRANKFURT TO PRAGUE																													
55,000	-36.5	-56	1	4	6	-54	3	5	7	-50	6	8	10	-56	-1	1	3	-55	2	5	7	5	4	5	4	220 N.M.I.			
40,000	-36.5	-58	-2	2	4	-56	1	4	6	-51	5	8	10	-56	0	3	5	-54	1	5	7	5	6	5	5				
30,000	-36.5	-51	-7	-6	-2	-48	-6	-1	0	-40	6	7	8	-44	1	3	5	-44	-1	2	4	4	4	4	4				
20,000	-21.2	-27	-6	-2	0	-23	-1	2	3	-14	7	10	11	-14	3	6	8	-20	1	4	6	6	4	4	5				
10,000	-4.6	-12	-7	-3	-1	-7	-2	1	3	2	6	9	10	-3	2	5	7	-5	-0	3	5	6	4	4	5				
FRANKFURT TO RIO DE JANEIRO																													
55,000	-36.5	-71	-14	-12	-11	-70	-14	-11	-10	-68	-12	-10	-8	-71	-14	-12	-11	-70	-13	-11	-10	4	3	3	3	5163 N.M.I.			
40,000	-36.5	-55	1	4	5	-55	2	5	6	-53	4	5	6	-54	2	4	5	-54	2	4	5	4	4	4	4				
30,000	-36.5	-39	6	8	9	-34	10	10	11	-34	10	12	13	-35	10	11	12	-36	9	11	12	3	3	2	3				
20,000	-21.2	-17	9	11	12	-10	13	14	15	-9	13	14	15	-9	12	14	15	-10	11	13	14	3	2	2	2				
10,000	-4.6	4	9	11	12	5	10	12	13	4	13	14	15	7	12	13	14	6	11	13	14	3	2	2	2				
FRANKFURT TO ROME																													
55,000	-36.5	-54	0	4	6	-55	1	4	6	-54	3	5	6	-59	-2	0	1	-56	1	3	5	5	4	4	4	522 N.M.I.			
40,000	-36.5	-58	-2	2	4	-57	-1	3	5	-52	4	7	9	-56	0	3	4	-54	1	4	6	5	5	4	5				
30,000	-36.5	-50	-6	-5	-1	-47	-3	0	2	-39	6	8	9	-43	2	4	6	-45	-0	3	5	4	4	4	4				
20,000	-21.2	-26	-5	-1	1	-21	0	3	4	-12	9	11	12	-17	4	7	9	-14	2	6	7	5	4	4	5				
10,000	-4.6	-9	-5	-1	1	-5	-0	2	4	4	8	11	12	-1	3	6	8	-3	2	5	7	5	4	4	5				
FRANKFURT TO SAN FRANCISCO																													
55,000	-36.5	-58	-1	3	5	-51	6	8	10	-49	8	10	11	-55	1	4	5	-53	3	6	8	4	4	4	4	4936 N.M.I.			
40,000	-36.5	-56	0	5	7	-52	5	9	11	-49	7	10	12	-53	4	7	9	-53	4	8	10	4	4	5	4				
30,000	-36.5	-53	-9	-6	-5	-49	-5	-2	-1	-43	2	4	5	-47	-3	0	2	-48	-4	-0	2	4	4	4	4				
20,000	-21.2	-33	-11	-7	-5	-28	-7	-3	-1	-17	6	7	8	-24	-3	1	3	-25	-4	0	2	6	5	4	6				
10,000	-4.6	-14	-13	-9	-7	-13	-8	-4	-2	-1	3	6	7	-9	-4	-0	2	-10	-5	-1	1	8	5	4	6				
FRANKFURT TO SANTA MONICA																													
55,000	-36.5	-59	-2	1	2	-56	0	5	6	-53	0	5	6	-60	-4	-1	0	-58	-1	2	3	5	4	4	4	1645 N.M.I.			
40,000	-36.5	-58	-2	2	4	-58	-1	3	5	-56	3	6	8	-57	-0	3	5	-54	0	4	6	5	4	5	4				
30,000	-36.5	-44	-3	-1	1	-45	-1	2	3	-38	6	9	10	-42	3	5	7	-43	1	4	6	4	4	4	4				
20,000	-21.2	-22	-1	2	4	-20	2	4	6	-12	9	11	12	-15	6	9	10	-17	4	7	9	4	4	4	4				
10,000	-4.6	-6	-1	2	4	-3	2	4	6	4	9	11	12	0	5	7	9	-1	4	7	8	5	4	4	5				
FRANKFURT TO SHANNON																													
55,000	-36.5	-57	-1	3	4	-54	3	5	7	-50	6	9	10	-58	-1	2	3	-55	2	5	7	5	4	4	4	672 N.M.I.			
40,000	-36.5	-58	-2	3	5	-55	1	4	6	-51	6	9	11	-56	0	4	6	-55	1	6	8	4	7	5	5				
30,000	-36.5	-50	-6	-3	-2	-47	-3	-0	1	-41	6	6	8	-44	0	3	5	-46	-1	2	4	4	4	4	4				
20,000	-21.2	-26	-5	-1	1	-23	-1	2	4	-14	7	9	10	-18	3	6	8	-20	1	4	6	6	5	3	5				
10,000	-4.6	-10	-5	-1	0	-6	-2	1	3	1	6	8	9	-3	2	5	7	-4	0	4	5	5	4	4	5				
FRANKFURT TO STOCKHOLM																													
55,000	-36.5	-57	-0	5	6	-54	3	6	8	-48	8	11	12	-57	-0	2	4	-54	3	6	8	5	4	5	4	660 N.M.I.			
40,000	-36.5	-59	-2	1	3	-54	2	6	9	-50	6	10	12	-56	0	4	6	-55	2	6	9	5	4	5	5				
30,000	-36.5	-52	-8	-5	-1	-43	-3	-2	-1	-41	3	6	7	-45	-1	2	4	-47	-2	1	3	4	4	4	4				
20,000	-21.2	-24	-9	-6	-2	-34	-3	0	2	-15	6	8	10	-20	1	5	7	-22	-1	3	5	6	5	3	5				
10,000	-4.6	-14	-9	-5	-3	-8	-																						

* (D) -- DIFFERENCE BETWEEN INDICATED PER CLNT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION																							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN				APR				JUL				OCT			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
FRANKFURT TO TEL AVIV-JERUSALEM																																		1595 N.M.I.			
51,000	-56.5	-58	-1	2	3	-56	0	2	4	-59	-3	-0	1	-61	-4	-2	-0	-58	-2	1	2	4	3	3	4	4	3	3	4	4	3	4					
40,000	-56.5	-57	-0	3	5	-57	0	2	4	-59	0	10	11	-56	0	3	4	-55	2	5	7	5	5	4	4	4	3	4	4	3	4						
30,000	-44.5	-50	-5	-1	-1	-46	-1	1	2	-35	9	12	13	-42	3	5	6	-43	1	5	7	4	4	3	3	4	3	3	4	3	4						
20,000	-21.2	-25	-3	-0	1	-20	1	4	5	-10	11	13	14	-16	6	8	9	-18	4	7	9	4	4	3	3	4	3	3	4	3	4						
10,000	-4.6	-9	-4	-1	0	-4	1	4	6	6	10	12	11	1	5	8	9	-2	3	6	8	4	4	3	3	4	3	3	4	3	4						
FRANKFURT TO TOKYO																																		5051 N.M.I.			
51,000	-56.5	-55	2	5	7	-50	6	9	10	-48	9	11	13	-53	3	6	7	-51	5	8	10	5	4	4	4	4	3	4	4	3	4						
40,000	-56.5	-57	-1	3	5	-51	6	10	12	-49	8	12	14	-52	4	7	9	-52	4	9	11	5	5	5	5	5	4	5	5	4	5						
30,000	-44.5	-54	-10	-7	-6	-49	-4	-1	0	-37	7	11	12	-46	-2	1	3	-47	-2	3	5	4	4	3	3	4	3	3	4	3	4						
20,000	-21.2	-24	-11	-9	-7	-27	-6	-2	0	-13	8	11	13	-23	-2	2	4	-24	-3	2	5	4	4	3	3	4	3	3	4	3	4						
10,000	-4.6	-21	-16	-12	-10	-11	-8	-4	-2	-2	7	9	10	-9	-5	-1	1	-10	-6	-1	2	6	6	5	5	4	4	3	4	3	4						
FRANKFURT TO TRIPOLI																																		1062 N.M.I.			
51,000	-56.5	-58	-1	2	3	-57	-0	2	4	-59	-2	0	1	-61	-4	-2	-1	-58	-2	1	2	5	4	3	3	4	3	3	4	3	4						
40,000	-56.5	-57	-1	3	5	-57	-1	3	5	-51	6	8	9	-56	0	3	4	-55	1	5	6	5	5	4	4	4	3	4	4	3	4						
30,000	-44.5	-56	-4	-2	-0	-46	-1	1	1	-37	7	10	11	-42	3	5	7	-43	1	5	7	4	4	3	3	4	3	3	4	3	4						
20,000	-21.2	-24	-3	1	2	-19	2	4	6	-11	11	12	14	-15	6	8	9	-17	4	7	9	5	4	3	3	4	3	3	4	3	4						
10,000	-4.6	-7	-2	1	2	-3	2	5	6	6	11	13	14	1	5	7	9	-1	4	7	9	5	4	3	3	4	3	3	4	3	4						
FRANKFURT TO VIENNA																																		335 N.M.I.			
51,000	-56.5	-56	1	4	6	-54	2	5	6	-51	5	8	9	-58	-1	1	2	-55	2	5	7	5	4	3	3	4	3	3	4	3	4						
40,000	-56.5	-54	-7	2	4	-56	0	4	6	-51	5	8	10	-56	0	3	5	-56	1	5	7	5	5	5	5	4	5	5	4	5							
30,000	-44.5	-51	-7	-4	-7	-48	-1	-1	1	-40	4	7	8	-43	1	4	5	-46	-1	2	4	4	4	4	4	4	3	4	4	3	4						
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	4	-13	8	10	11	-18	3	6	8	-20	1	5	6	6	4	3	3	4	3	3	4	3	4						
10,000	-4.6	-12	-7	-1	-1	-6	-2	1	3	2	7	9	10	-2	2	5	7	-5	0	4	6	6	4	3	3	4	3	3	4	3	4						
FRANKFURT TO ZURICH																																		155 N.M.I.			
51,000	-56.5	-54	0	4	5	-54	2	5	6	-52	5	7	9	-58	-2	1	2	-55	1	5	6	5	4	3	3	4	3	3	4	3	4						
40,000	-56.5	-54	-2	2	4	-57	-0	4	6	-52	4	8	9	-56	0	3	5	-56	1	5	7	6	4	3	3	4	3	3	4	3	4						
30,000	-44.5	-50	-6	-1	-2	-48	-3	-0	1	-40	5	7	8	-43	1	4	5	-45	-1	3	5	4	4	4	4	4	3	4	4	3	4						
20,000	-21.2	-27	-5	-2	-0	-22	-1	2	4	-13	8	10	11	-18	4	7	8	-20	1	5	7	4	4	3	3	4	3	3	4	3	4						
10,000	-4.6	-11	-6	-2	-0	-6	-1	2	1	2	7	9	10	-2	3	6	7	-4	1	4	6	6	4	3	3	4	3	3	4	3	4						
FROBISHER DAY TO LOS ANGELES																																		2550 N.M.I.			
51,000	-56.5	-54	-1	2	4	-54	2	5	6	-54	2	4	5	-58	-1	1	2	-58	0	3	5	5	4	3	3	4	3	3	4	3	4						
40,000	-56.5	-55	1	4	6	-54	2	5	6	-52	5	7	9	-54	3	6	8	-54	3	6	8	6	4	3	3	4	3	3	4	3	4						
30,000	-44.5	-52	-4	-5	-4	-49	-5	-2	-1	-40	4	6	8	-46	-1	2	1	-47	-2	1	3	4	4	4	4	4	3	4	4	3	4						
20,000	-21.2	-32	-10	-6	-4	-26	-4	-1	1	-14	7	10	11	-21	0	4	6	-23	-2	2	5	6	5	3	3	4	3	3	4	3	4						
10,000	-4.6	-17	-15	-4	-4	-10	-5	-1	1	3	8	10	12	-6	-1	3	5	-7	-3	2	4	7	6	4	4	4	3	4	3	4							
FROBISHER DAY TO NEW YORK																																		1399 N.M.I.			
51,000	-56.5	-57	-0	3	5	-52	5	7	9	-52	5	7	9	-55	1	4	5	-54	3	6	7	5	4	3	3	4	3	3	4	3	4						
40,000	-56.5	-54	3	7	9	-51	5	9	11	-51	6	9	10	-52	5	8	10	-52	5	8	10	4	4	3	3	4	3	3	4	3	4						
30,000	-44.5	-52	-8	-5	-4	-50	-5	-2	-1	-41	3	6	7	-46	-2	1	3	-47	-3	1	3	4	4	4	4	4	3	4	4	3	4						
20,000	-21.2	-31	-12	-8	-6	-28	-7	-3	-1	-15	6	8	10	-23	-2	2	4	-25	-4	1	3	6	6	4	4	4	3	4	4	3	4						
10,000	-4.6	-21	-16	-11	-9	-14	-10	-6	-4	-1	4	6	8	-6	-4	1	3	-11	-6	-2	1	7	6	4	4	4	3	4	3	4							
FROBISHER DAY TO SAN FRANCISCO																																		2462 N.M.I.			
51,000	-56.5	-57	-1	1	3	-53	4	6	8	-52	4	6	7	-57	-0	2	3	-55	2	4	6	5	4	3	3	4	3	3	4	3	4						
40,000	-56.5	-55	1	5	6	-54	1	7	9	-52	5	8	10	-53	3	6	8	-54	3	6	8	6	4	3	3	4	3	3	4	3	4						
30,000	-44.5	-51	-9	-4	-4	-50	-5	-3	-1	-41	3	5	7	-46	-2	1	2	-48	-3	0	2	4	4	3	3	4	3	3	4	3	4						
20,000	-21.2	-31	-12	-7	-5	-27	-5	-2	-0	-15	6	8	10	-22	-1	3	5	-24	-3	1	4	6	5	4	4	4	3	4	4	3	4						
10,000	-4.6	-19	-14	-9	-7	-11	-7	-3	-1	2	6	9	10	-7	-3	1	4	-9	-4	0	3	7	6	4	4	4	3	4	3	4							
FROBISHER DAY TO VANCOUVER																																		1932 N.M.I.			
51,000	-56.5	-56	0	4	7	-50	4	9	10	-48	4	10	11	-54	3	5	6	-52	4	7	9	6	4	3	3	4	3	3	4	3	4						
40,000	-56.5	-55	2	6	8	-52	5	9	11	-50	5	10	12	-52	4	8	9	-52	4	8	10	6	6	5	5	5	4	5	5	4	5						
30,000	-44.5	-55	-10	-8	-6	-51	-7	-4	-3	-44	1	3	4	-49	-4	-1	0	-50	-5	-2	0	4	4	3	3	4	3	3	4	3	4						
20,000	-21.2	-37	-15	-11	-9	-30	-9	-5	-1	-18	3	5	7	-26	-5	-1	1	-28	-6	-2	1	6	6	4	4	4	3	4	4	3	4						
10,000	-4.6	-21	-19	-14	-11	-15	-10	-7	-5	-2	2	5	6	-11	-7	-3	-0	-13	-8	-4	-1	7	6	4	4	4	3	4	3	4							
FUKUOKA TO NAGoya																																		335 N.M.I.			
51,000	-56.5	-54	-2	2	4	-42	-5	-2	0	-63	-7	-3	-1	-63	-4	-3	-1	-62	-5	-1	2	6	5	4	4	4	3	4	4	3	4						
40,000	-56.5	-50	7	10	12	-54	1	6	8	-48	9	11	13	-52	5	8	9	-51	6	9	11	5	5	4	4	4	3	4	4	3	4						
30,000	-44.5	-42	1	6	8	-38	6	9	11	-27	17	20	21	-33	11	14	15	-35	9	14	16	5	5	4	4	4	3	4	4	3	4						
20,000	-21.2	-22	-1	2	4	-15	7	10	11	-4	17	19	20	-11	11	13	15	-13	8	12	14	4	5	3	3	4	3	3	4	3	4						
10,000	-4.6	-9	-5	-1	1	-1	3	6	8	11	15	17	18	1	8	10	12	1	5	9	11	5	4	3	3	4	3	3	4	3	4						
FUKUOKA TO OKINAWA																																		456 N.M.I.			
51,000	-56.5	-67	-9	-5	-3	-67	-10	-7	-5	-67	-11	-7	-5	-66	-10	-6	-4	-66	-10	-6	-4	5	5	4	4	4	3	4	4	3	4						
40,000	-56.5	-61	6	9	10	-54	3	6	8	-49	9	11	12	-52	5	7	9	-51	5	9	10	4	4	4	4	4	3	4	4	3	4						
30,000	-44.5	-56	8	11	13	-36	8	11	12	-28	17	19	20	-31	14	16	17	-33	12	15	17	4	4	4	4	4	3	4	4	3	4						
20,000	-21.2	-16	6	8	9	-11	11	13	14	-4	17	19	20	-8	13	15	16	-10	12	14	16	4	4	2	2	3	4	4	3	4							
10,000	-4.6	-4	1	4	5	-2	7	9	11	11	16	17	18	6	11	13	14	4	9	12	13	4	3	2	2	3	4	3	3	4							

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY				APRIL				JULY				OCTOBER			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
GANDER TO NAIKUBI																	
55,000	-56.5	-80	-25	-21	-20	-78	-21	-19	-18	-76	-19	-17	-16	-78	-22	-20	-19
40,000	-56.5	-54	1	4	5	-52	5	7	8	-54	5	8	9	-53	4	5	6
30,000	-44.5	-50	15	16	16	-30	15	16	17	-31	15	15	15	-32	13	14	15
20,000	-21.2	-4	17	14	18	-5	16	17	18	-5	16	17	18	-6	16	17	18
10,000	-4.6	10	14	15	15	10	14	15	16	9	14	15	15	9	14	15	15
GANDER TO GLOUSE BAY																	
55,000	-56.5	-56	1	1	5	-52	5	7	9	-52	5	7	9	-55	2	5	7
40,000	-56.5	-52	8	8	10	-52	5	9	11	-51	5	8	10	-52	5	8	10
30,000	-44.5	-50	-6	-2	-1	-49	-4	-2	-0	-41	3	6	8	-45	-1	2	4
20,000	-21.2	-31	-10	-5	-2	-27	-5	-2	1	-15	6	9	11	-21	-0	4	6
10,000	-4.6	-19	-14	-9	-6	-11	-6	-3	-1	-0	4	7	8	-7	-3	1	4
GANDER TO REFLAVIK																	
55,000	-56.5	-56	0	4	5	-51	6	8	10	-48	8	11	12	-54	3	6	7
40,000	-56.5	-55	4	10	10	-51	5	10	11	-50	7	10	12	-52	5	9	11
30,000	-44.5	-51	-6	-1	-2	-48	-4	-1	1	-45	1	4	5	-46	-2	1	3
20,000	-21.2	-31	-10	-6	-3	-27	-6	-2	0	-17	6	7	9	-23	-2	2	4
10,000	-4.6	-17	-12	-8	-5	-12	-7	-4	-2	-2	2	5	6	-8	-4	-0	2
GANDER TO LAMES																	
55,000	-56.5	-59	-2	0	2	-56	0	3	4	-57	-0	2	3	-60	-3	-0	1
40,000	-56.5	-57	-0	4	6	-57	-0	4	6	-54	2	5	7	-55	2	5	7
30,000	-44.5	-47	-2	1	2	-46	1	1	1	-38	6	9	10	-42	3	6	7
20,000	-21.2	-25	-1	2	3	-20	1	4	6	-12	10	12	15	-15	6	9	11
10,000	-4.6	-4	1	1	1	-4	0	3	3	3	2	12	11	-1	4	7	8
GANDER TO LONDON																	
55,000	-56.5	-57	-0	3	4	-55	3	6	7	-51	6	9	10	-56	1	3	5
40,000	-56.5	-55	2	6	8	-54	2	7	10	-51	5	9	11	-54	2	6	8
30,000	-44.5	-49	-2	-0	1	-47	-3	0	1	-41	3	6	8	-44	0	3	5
20,000	-21.2	-27	-6	-1	1	-24	-2	1	3	-15	6	9	11	-19	2	5	7
10,000	-4.6	-17	-7	-1	-1	-14	-3	0	2	0	5	7	8	-5	0	3	5
GANDER TO MONTREAL																	
55,000	-56.5	-56	0	3	4	-55	3	6	7	-55	2	5	6	-57	-1	3	4
40,000	-56.5	-55	3	7	9	-55	4	8	10	-55	4	7	8	-55	3	7	9
30,000	-44.5	-50	-2	-1	-1	-48	-4	-1	0	-39	5	8	9	-44	1	4	5
20,000	-21.2	-29	-8	-3	-1	-25	-4	-1	1	-15	8	11	12	-19	2	6	8
10,000	-4.6	-17	-12	-7	-4	-10	-6	-2	-0	2	6	9	10	-4	0	4	6
GANDER TO NASSAU																	
55,000	-56.5	-64	-7	-5	-4	-61	-5	-3	-2	-63	-6	-4	-3	-66	-9	-6	-5
40,000	-56.5	-56	0	3	5	-56	0	3	5	-55	1	3	4	-56	2	4	6
30,000	-44.5	-44	1	3	4	-45	2	4	5	-36	9	11	12	-37	6	8	10
20,000	-21.2	-18	3	6	7	-17	4	7	8	-9	12	14	15	-12	9	12	13
10,000	-4.6	-5	5	5	5	-2	5	5	7	6	10	12	13	5	7	10	11
GANDER TO NEW YORK																	
55,000	-56.5	-57	-1	2	3	-55	2	4	5	-57	-1	2	3	-59	-3	1	2
40,000	-56.5	-55	2	6	8	-54	2	6	8	-54	3	5	7	-54	3	6	8
30,000	-44.5	-47	-4	-1	1	-47	-3	-0	1	-38	7	9	10	-43	2	5	6
20,000	-21.2	-26	-4	-0	2	-25	-2	1	3	-12	9	12	13	-17	4	8	10
10,000	-4.6	-14	-9	-4	-2	-8	-4	-0	2	5	8	10	11	-2	2	6	8
GANDER TO PHOENIX																	
55,000	-56.5	-56	0	3	5	-52	4	7	8	-50	7	9	11	-55	1	4	6
40,000	-56.5	-54	2	7	9	-51	5	8	11	-51	6	10	12	-53	3	7	9
30,000	-44.5	-49	-2	-1	-1	-47	-3	-0	1	-42	3	5	7	-45	-0	3	5
20,000	-21.2	-28	-7	-2	0	-25	-3	0	2	-15	6	8	10	-20	1	5	7
10,000	-4.6	-15	-9	-4	-2	-9	-4	-1	1	-1	4	6	7	-5	-1	3	5
GANDER TO SHANNON																	
55,000	-56.5	-56	0	3	4	-55	3	6	7	-51	6	8	10	-56	1	4	5
40,000	-56.5	-54	2	7	9	-54	3	7	10	-51	5	9	11	-54	3	7	9
30,000	-44.5	-49	-2	0	1	-47	-3	0	2	-41	3	6	8	-44	0	3	5
20,000	-21.2	-27	-6	-1	1	-24	-2	1	3	-15	7	9	11	-20	2	5	7
10,000	-4.6	-12	-4	-4	-1	-8	-3	0	2	0	5	7	8	-5	0	3	5
GENEVA TO GLASGOW																	
55,000	-56.5	-57	-1	1	1	-54	1	5	7	-51	6	8	10	-58	-1	2	3
40,000	-56.5	-54	2	4	5	-55	1	5	8	-51	5	9	11	-56	0	4	6
30,000	-44.5	-50	-6	-3	-2	-47	-5	-0	1	-41	4	6	8	-46	1	3	5
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	7	9	10	-18	3	6	8
10,000	-4.6	-9	-5	-1	1	-6	-2	1	3	1	6	8	9	-2	2	5	7
GENEVA TO HAMBURG																	
55,000	-56.5	-57	-0	3	5	-54	2	5	6	-51	6	8	9	-58	-1	1	1
40,000	-56.5	-54	2	7	9	-56	0	4	7	-52	5	8	10	-56	0	3	5
30,000	-44.5	-51	-6	-3	-2	-48	-5	-1	1	-40	4	7	8	-44	1	3	5
20,000	-21.2	-27	-6	-2	0	-22	-1	2	3	-14	7	10	11	-18	3	6	8
10,000	-4.6	-11	-6	-2	-0	-6	-2	1	3	2	7	9	10	-3	2	5	7
GENEVA TO HAVANA																	
55,000	-56.5	-62	-6	-3	-2	-60	-5	-1	0	-60	-5	-1	0	-61	-5	-2	-1
40,000	-56.5	-58	-1	1	1	-57	-1	3	5	-55	2	4	5	-56	1	4	5
30,000	-44.5	-45	-1	2	3	-44	1	3	4	-37	8	10	11	-40	5	7	8
20,000	-21.2	-19	2	5	7	-18	4	6	8	-10	11	13	14	-15	8	10	12
10,000	-4.6	-4	0	4	5	-2	3	5	7	5	9	11	12	2	6	9	10
GENEVA TO HELSINKI																	
55,000	-56.5	-57	-0	3	5	-55	3	6	7	-49	8	10	11	-57	-0	2	4
40,000	-56.5	-54	2	7	9	-51	5	8	10	-51	6	9	11	-56	1	4	6
30,000	-44.5	-52	-7	-5	-5	-49	-4	-2	-0	-41	4	6	8	-45	-0	2	4
20,000	-21.2	-29	-8	-4	-2	-24	-5	0	2	-15	7	9	10	-19	2	5	7
10,000	-4.6	-13	-9	-5	-3	-8	-4	-0	1	1	5	8	9	-5	-0	3	5

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																									
HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
GENEVA TO ISTANBUL																						1032 N.M.I.			
55,000	-56.5	-58	0	4	5	-55	1	4	5	-55	1	4	5	-59	-3	-0	1	-56	0	3	4	5	4	3	4
40,000	-56.5	-58	-1	2	4	-57	-1	3	5	-51	6	9	10	-56	0	3	4	-55	1	5	7	5	5	4	4
30,000	-56.5	-51	-6	-3	-2	-47	-2	0	2	-38	7	9	10	-42	2	5	6	-44	0	4	6	4	4	4	4
20,000	-21.2	-26	-5	-1	0	-21	0	3	5	-12	10	12	13	-16	5	7	9	-19	3	6	8	5	4	3	4
10,000	-4.6	-10	-5	-2	-0	-5	-0	3	4	6	9	11	12	-1	4	6	8	-3	2	5	7	5	4	3	4
GENEVA TO KANO																						2055 N.M.I.			
55,000	-56.5	-66	-10	-7	-6	-65	-9	-6	-5	-68	-12	-10	-9	-68	-12	-10	-9	-67	-10	-8	-7	4	3	3	3
40,000	-56.5	-55	1	4	6	-55	2	5	6	-51	5	7	8	-55	2	4	5	-54	2	5	6	4	4	3	3
30,000	-56.5	-43	1	5	4	-39	5	7	8	-35	11	13	14	-37	7	9	10	-38	6	9	10	3	3	3	3
20,000	-21.2	-17	4	6	8	-14	8	9	10	-7	14	15	16	-11	10	12	13	-12	9	11	13	3	3	2	2
10,000	-4.6	0	5	7	8	4	8	10	11	11	16	18	18	5	10	11	12	5	10	13	14	3	3	2	2
GENEVA TO KILAVIA																						1627 N.M.I.			
55,000	-56.5	-57	-1	3	5	-52	4	7	9	-48	8	10	12	-54	0	3	5	-54	3	6	8	5	4	3	4
40,000	-56.5	-57	-1	4	6	-53	3	8	10	-50	7	11	13	-55	1	5	7	-54	3	7	10	7	7	5	6
30,000	-56.5	-51	-6	-4	-2	-48	-3	-0	1	-42	2	5	6	-45	-1	2	4	-46	-2	2	3	4	4	4	4
20,000	-21.2	-27	-6	-2	-0	-25	-3	0	2	-16	5	7	9	-20	1	4	6	-22	-1	3	5	6	5	4	5
10,000	-4.6	-11	-6	-3	-1	-9	-4	-1	1	-1	4	6	7	-5	0	3	5	-6	-2	2	4	5	4	3	5
GENEVA TO KURORTNOY																						2265 N.M.I.			
55,000	-56.5	-65	-8	-6	-5	-64	-7	-5	-4	-67	-11	-9	-8	-67	-11	-9	-7	-66	-9	-7	-5	4	3	3	3
40,000	-56.5	-55	1	4	5	-56	1	4	5	-50	7	9	10	-55	1	5	5	-54	3	5	7	4	4	3	3
30,000	-56.5	-44	0	2	3	-40	4	6	7	-32	15	15	16	-38	7	8	9	-39	6	9	11	3	3	3	3
20,000	-21.2	-18	3	6	7	-15	7	9	10	-7	14	16	17	-12	10	11	12	-13	8	11	13	3	3	2	2
10,000	-4.6	-1	5	6	7	2	7	9	10	10	15	16	17	5	10	11	12	4	9	11	13	4	3	2	2
GENEVA TO KUTPOLOVILLI																						3077 N.M.I.			
55,000	-56.5	-70	-13	-11	-10	-69	-12	-10	-9	-71	-14	-12	-11	-71	-15	-13	-12	-70	-14	-11	-10	3	3	3	3
40,000	-56.5	-55	2	4	5	-54	3	5	7	-52	5	6	7	-54	3	5	5	-54	3	5	6	4	4	2	2
30,000	-56.5	-40	4	6	7	-36	6	10	11	-33	12	13	14	-35	9	11	12	-36	9	11	12	2	2	2	2
20,000	-21.2	-15	8	10	10	-11	11	12	13	-6	15	16	17	-9	12	13	14	-10	11	13	14	3	2	2	2
10,000	-4.6	5	8	10	11	6	10	12	13	11	15	16	17	7	12	13	14	7	11	13	14	3	2	2	2
GENEVA TO LISBON																						807 N.M.I.			
55,000	-56.5	-59	-2	1	3	-57	-0	3	4	-57	-1	2	3	-60	-4	-1	-0	-58	-2	1	3	5	4	4	4
40,000	-56.5	-58	-2	2	4	-58	-2	2	4	-54	3	6	7	-56	0	3	4	-57	-0	3	5	6	4	4	4
30,000	-56.5	-48	-3	-1	1	-46	-1	1	3	-38	7	9	10	-42	3	5	7	-43	1	5	6	4	4	3	4
20,000	-21.2	-22	-1	2	4	-19	2	4	6	-11	10	12	13	-15	6	8	10	-17	4	7	9	5	4	3	4
10,000	-4.6	-5	-1	2	4	-2	2	5	6	6	11	13	14	0	5	7	9	-0	4	8	9	5	4	3	4
GENEVA TO LONDON																						406 N.M.I.			
55,000	-56.5	-57	-1	3	5	-54	2	5	6	-52	5	7	8	-58	-2	1	2	-55	1	4	6	5	4	4	4
40,000	-56.5	-58	-2	2	4	-56	0	4	7	-52	4	8	10	-56	0	3	5	-56	1	5	7	6	4	5	5
30,000	-56.5	-50	-5	-3	-1	-47	-5	-0	1	-40	5	7	8	-45	1	4	5	-45	-1	3	5	4	4	4	4
20,000	-21.2	-25	-4	-1	1	-22	-0	3	4	-13	8	10	11	-17	4	7	8	-20	2	5	7	5	5	3	5
10,000	-4.6	-9	-4	-1	1	-5	-1	2	4	2	7	9	10	-2	3	6	7	-3	1	5	6	5	4	3	4
GENEVA TO LOS ANGELES																						5131 N.M.I.			
55,000	-56.5	-57	-1	3	5	-53	4	6	8	-51	5	7	8	-56	0	3	4	-54	2	5	6	5	4	3	4
40,000	-56.5	-55	1	4	6	-53	3	4	10	-51	6	9	11	-53	3	7	9	-53	3	7	9	6	4	5	5
30,000	-56.5	-52	-7	-4	-3	-48	-4	-1	0	-41	3	6	7	-46	-1	2	3	-47	-2	1	3	4	4	4	4
20,000	-21.2	-30	-9	-5	-3	-24	-4	-1	1	-15	4	6	10	-21	-0	3	5	-23	-2	2	4	6	5	4	5
10,000	-4.6	-16	-11	-7	-5	-10	-5	-2	0	1	6	8	9	-6	-1	2	4	-8	-3	1	3	6	5	4	6
GENEVA TO MADRID																						565 N.M.I.			
55,000	-56.5	-58	-2	2	4	-56	0	3	5	-57	-0	2	4	-60	-4	-1	0	-58	-1	2	4	5	4	4	4
40,000	-56.5	-58	-2	2	4	-54	-2	2	4	-53	3	6	7	-56	0	3	4	-57	-0	3	5	6	4	4	4
30,000	-56.5	-48	-4	-1	0	-46	-2	1	3	-38	7	9	10	-42	3	5	7	-44	1	4	6	4	4	3	4
20,000	-21.2	-25	-2	1	3	-20	1	4	5	-11	10	12	13	-16	6	8	9	-17	4	7	9	5	4	3	4
10,000	-4.6	-6	-2	2	3	-5	2	4	6	6	10	12	13	0	5	7	8	-1	4	7	9	5	4	3	4
GENEVA TO MILAN																						115 N.M.I.			
55,000	-56.5	-56	0	3	5	-55	1	4	6	-54	3	5	6	-59	-3	0	1	-56	0	3	5	5	4	4	4
40,000	-56.5	-58	-2	2	4	-54	-1	2	4	-53	3	6	8	-56	0	3	4	-54	0	4	6	6	4	4	4
30,000	-56.5	-50	-5	-3	-1	-47	-2	0	2	-39	6	8	9	-45	2	5	6	-45	-0	3	5	4	4	4	4
20,000	-21.2	-26	-4	-1	1	-21	0	3	4	-12	9	11	12	-17	5	7	9	-19	2	6	8	5	4	3	4
10,000	-4.6	-9	-4	-0	1	-5	-0	2	4	4	8	10	12	-1	4	6	8	-3	2	5	7	5	4	3	4
GENEVA TO MONTREAL																						3187 N.M.I.			
55,000	-56.5	-57	-1	3	5	-53	3	6	7	-52	5	7	9	-56	0	3	5	-54	2	5	7	4	4	4	4
40,000	-56.5	-55	2	4	6	-54	2	7	9	-52	5	8	10	-54	3	6	8	-54	3	7	9	6	7	5	5
30,000	-56.5	-48	-5	-2	-1	-47	-5	-0	1	-41	4	7	8	-46	0	3	5	-45	-1	3	5	4	4	4	4
20,000	-21.2	-27	-6	-2	0	-24	-5	1	3	-14	7	10	11	-19	2	5	7	-21	-0	4	6	6	5	4	5
10,000	-4.6	-15	-9	-4	-2	-8	-4	-0	2	1	5	8	9	-4	0	4	6	-6	-2	2	4	6	5	3	5
GENEVA TO MOSCOW																						1301 N.M.I.			
55,000	-56.5	-56	1	4	6	-53	3	6	7	-49	7	10	11	-57	-0	2	4	-54	3	6	8	5	4	3	4
40,000	-56.5	-59	-2	1	3	-55	1	5	7	-51	6	9	10	-56	1	4	5	-55	1	5	7	5	5	5	5
30,000	-56.5	-52	-8	-5	-3	-44	-4	-1	1	-40	4	7	8	-46	0	3	4	-46	-2	2	4	4	4	4	4
20,000	-21.2	-28	-7	-3	-1	-23	-2	1	3	-14	7	9	11	-19	2	6	7	-21	0	4	6	6	5	3	5
10,000	-4.6	-15	-9	-5	-3	-7	-3	1	2	1	6	8	9	-4	0	4	5	-6	-1	2	4	6	5	3	5
GENEVA TO MUNICH																						255 N.M.I.			
55,000	-56.5	-56	0	4	5	-55	2	4	6	-53	4	6	7	-59	-2	0	2	-56	1	4	6	5	4	4	4
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	3	6	7	-56	0	3	5	-56	0	4	6	6	4	4	4
30,000	-56.5	-50	-6	-3	-2	-47	-5	-0	1	-39	5	8	9	-43	1	4	6	-45	-0	3	5	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-21	-0	3	4	-13	8	11	12	-17	4	7	9	-19	2	5	7	5	4	3	4
10,000	-4.6	-10	-5	-1	1	-5	-1	2	3	3	8	10	11	-2	3	6	8	-3	1	5	7	5	4	3	4
GENEVA TO NAIROBI																						3285 N.M.I.			
55,000	-56.5	-69	-13	-11	-9	-68	-12	-10	-9	-70	-14	-12	-11	-71	-14	-12	-11	-70	-13	-11	-10	3	3	3	3
40,000																									

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
GENEVA TO NATAI																	
55,000	-56.5	-70	-15	-11	-10	-69	-15	-11	-9	-71	-16	-12	-11	-70	-16	-11	-10
40,000	-56.5	-54	2	4	5	-54	3	5	7	-51	5	7	8	-53	3	5	6
30,000	-44.5	-40	5	7	7	-36	8	10	11	-52	13	14	15	-35	10	11	12
20,000	-21.2	-15	8	10	11	-11	11	12	13	-6	15	16	17	-9	12	13	14
10,000	-4.6	5	8	10	11	6	10	12	13	10	15	16	17	7	12	13	14
GENEVA TO NEW YORK																	
55,000	-56.5	-57	-1	2	4	-55	2	5	6	-54	3	5	7	-50	-1	4	5
40,000	-56.5	-50	1	5	7	-55	1	6	8	-53	4	7	9	-55	2	5	7
30,000	-44.5	-48	-4	-1	0	-47	-2	0	2	-40	5	8	9	-43	1	4	6
20,000	-21.2	-25	-4	0	2	-22	-1	2	4	-13	8	11	12	-18	4	7	9
10,000	-4.6	-11	-6	-2	0	-7	-2	1	1	-2	7	9	10	-3	2	5	7
GENEVA TO USLO																	
55,000	-56.5	-57	-1	5	4	-51	5	6	7	-49	7	9	11	-57	-1	2	3
40,000	-56.5	-59	-2	2	4	-55	2	6	8	-51	6	9	11	-50	0	4	6
30,000	-44.5	-51	-7	-4	-1	-48	-6	-1	0	-41	1	6	7	-45	-0	5	6
20,000	-21.2	-28	-7	-5	-1	-25	-2	1	2	-15	6	9	10	-19	2	5	7
10,000	-4.6	-12	-7	-6	-1	-7	-5	0	2	1	5	8	9	-4	0	4	5
GENEVA TO PARIS																	
55,000	-56.5	-57	-0	5	5	-55	2	4	6	-53	4	6	7	-50	-2	0	2
40,000	-56.5	-58	-2	2	4	-57	-1	3	6	-51	6	7	9	-50	0	3	5
30,000	-44.5	-50	-5	-5	-1	-47	-5	0	2	-40	5	7	9	-43	5	4	6
20,000	-21.2	-25	-4	-1	1	-21	-0	3	4	-11	8	10	12	-17	4	7	9
10,000	-4.6	-9	-4	-1	1	-5	-0	2	4	5	8	10	11	-1	3	6	8
GENEVA TO PRAGUE																	
55,000	-56.5	-56	0	4	5	-54	2	5	6	-52	5	7	8	-50	-2	1	2
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-52	6	7	9	-50	0	3	5
30,000	-44.5	-51	-6	-5	-2	-48	-5	-0	1	-40	5	7	9	-43	1	4	5
20,000	-21.2	-27	-5	-2	0	-22	-5	2	4	-11	8	10	11	-17	4	7	8
10,000	-4.6	-11	-6	-2	-0	-6	-1	2	5	5	7	9	11	-2	1	6	7
GENEVA TO RIO DE JANEIRO																	
55,000	-56.5	-72	-15	-15	-11	-71	-16	-12	-11	-69	-15	-11	-9	-73	-15	-11	-12
40,000	-56.5	-55	1	4	5	-54	2	5	6	-51	4	5	6	-54	3	4	5
30,000	-44.5	-38	7	8	9	-35	9	11	12	-35	10	12	13	-35	9	11	12
20,000	-21.2	-11	10	12	13	-10	11	13	14	-8	15	15	15	-9	12	14	14
10,000	-4.6	5	10	11	12	6	11	12	13	9	15	15	15	7	12	13	14
GENEVA TO ROME																	
55,000	-56.5	-56	0	5	5	-50	1	5	5	-60	-3	-1	1	-57	-0	2	4
40,000	-56.5	-58	-1	2	4	-52	4	7	8	-55	0	1	4	-56	0	4	6
30,000	-44.5	-49	-5	-2	-1	-47	-7	1	2	-44	6	9	10	-42	2	5	6
20,000	-21.2	-25	-4	-1	1	-20	1	5	5	-12	10	12	13	-16	5	8	9
10,000	-4.6	-8	-5	0	2	-4	0	5	5	5	9	12	11	-3	4	7	8
GENEVA TO SAN FRANCISCO																	
55,000	-56.5	-57	-1	5	5	-52	5	8	9	-50	7	9	10	-56	1	1	5
40,000	-56.5	-56	1	5	7	-52	4	8	10	-50	7	10	11	-53	1	7	9
30,000	-44.5	-51	-8	-5	-4	-49	-6	-2	-0	-42	2	5	6	-46	-2	1	1
20,000	-21.2	-52	-10	-6	-6	-27	-6	-2	-0	-16	5	7	9	-21	-2	2	4
10,000	-4.6	-17	-12	-8	-6	-12	-7	-5	-1	-0	4	7	8	-3	5	5	5
GENEVA TO SANTA MARIA																	
55,000	-56.5	-59	-5	0	2	-57	-1	2	4	-50	-1	1	3	-61	-4	-2	-1
40,000	-56.5	-59	-2	2	4	-58	-2	2	4	-56	1	6	7	-57	-0	3	4
30,000	-44.5	-47	-5	-0	1	-45	-1	2	3	-38	7	9	10	-41	5	6	7
20,000	-21.2	-21	-0	1	1	-19	2	5	6	-11	10	12	13	-15	7	9	10
10,000	-4.6	-5	-0	5	5	-2	2	5	6	5	10	12	13	1	6	8	9
GENEVA TO SHANNON																	
55,000	-56.5	-57	-1	2	4	-54	2	5	6	-52	5	7	9	-58	-2	1	1
40,000	-56.5	-58	-2	3	5	-56	0	5	7	-52	5	8	10	-56	0	4	5
30,000	-44.5	-50	-5	-2	-1	-47	-2	0	2	-40	4	7	8	-44	1	4	5
20,000	-21.2	-25	-4	-0	2	-22	-1	3	4	-14	7	10	11	-18	5	7	8
10,000	-4.6	-9	-4	0	1	-5	-1	2	4	2	7	9	10	-2	5	6	7
GENEVA TO STOCKHOLM																	
55,000	-56.5	-57	-0	5	5	-51	5	6	7	-49	7	9	11	-57	-1	2	1
40,000	-56.5	-59	-2	2	4	-55	2	6	8	-51	6	9	11	-50	0	4	5
30,000	-44.5	-52	-7	-4	-5	-49	-4	-2	-0	-41	4	6	7	-45	-0	1	4
20,000	-21.2	-29	-7	-1	-1	-26	-2	1	2	-15	7	9	10	-19	2	5	7
10,000	-4.6	-11	-8	-4	-2	-9	-5	0	2	1	6	8	9	-4	0	1	5
GENEVA TO TEMERAN																	
55,000	-56.5	-57	-0	5	4	-56	1	1	4	-58	-1	1	2	-60	-5	-1	1
40,000	-56.5	-57	-0	5	4	-56	0	4	6	-49	8	10	12	-56	0	3	4
30,000	-44.5	-50	-6	-1	-2	-46	-1	1	3	-35	10	12	13	-42	2	5	6
20,000	-21.2	-25	-4	-1	1	-20	1	4	6	-9	12	14	15	-16	5	8	9
10,000	-4.6	-10	-5	-2	-0	-5	1	4	6	6	11	13	14	0	5	8	9
GENEVA TO TEL AVIV-JAFFA																	
55,000	-56.5	-58	-2	1	3	-57	-1	2	3	-61	-5	-2	-1	-59	-5	-0	1
40,000	-56.5	-57	-0	1	5	-57	-1	1	5	-49	7	10	11	-56	0	2	4
30,000	-44.5	-49	-4	-2	-1	-45	-1	1	5	-34	10	12	13	-41	1	5	7
20,000	-21.2	-24	-2	0	2	-19	2	4	6	-9	12	14	15	-15	6	8	9
10,000	-4.6	-8	-1	-0	1	-1	2	5	6	7	11	13	14	1	6	8	9
GENEVA TO VIENNA																	
55,000	-56.5	-56	0	4	6	-55	2	5	6	-52	4	6	8	-59	-2	1	2
40,000	-56.5	-58	-2	2	4	-57	-0	5	5	-52	4	7	9	-56	0	3	4
30,000	-44.5	-51	-6	-5	-2	-47	-5	-0	1	-39	5	8	9	-43	1	4	6
20,000	-21.2	-26	-5	-2	0	-22	-0	2	4	-13	8	10	12	-17	4	7	8
10,000	-4.6	-10	-6	-2	-0	-6	-1	2	5	5	8	10	11	-2	5	6	7

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
		50	D50	D75	D85	50	D50	D75	D85	50	D50	D75	D85	50	D50	D75	D85	JAN	APR	JUL	OCT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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55,000	-56.5	-56	0	4	6	-54	2	5	6	-51	6	8	9	-58	-1	1	3	-55	2	5	7	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
GRAND CAYMAN TO SAN JOSE																	
55,000	-56.5	-77	-20	-19	-18	-76	-19	-18	-17	-73	-17	-16	-15	-76	-20	-18	-17
40,000	-56.5	-54	2	4	6	-54	3	4	5	-56	1	2	2	-54	2	3	4
30,000	-44.5	-35	9	11	11	-34	11	12	13	-33	12	13	13	-32	13	14	14
20,000	-21.2	-7	14	15	16	-6	15	16	17	-7	14	15	16	-6	15	16	17
10,000	-4.6	8	15	16	15	9	14	15	16	9	14	15	15	10	14	15	16
GUANAJATO TO PORT OF SPAIN																	
55,000	-56.5	-78	-21	-20	-19	-78	-22	-20	-19	-73	-17	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	3	5	5	-53	4	5	6	-55	1	3	4	-54	3	4	5
30,000	-44.5	-33	11	12	13	-31	13	14	15	-32	13	14	15	-32	12	14	14
20,000	-21.2	-6	15	16	17	-6	15	16	17	-7	14	15	16	-6	15	16	17
10,000	-4.6	8	15	16	15	9	14	15	16	9	14	15	15	9	14	15	15
GUANAJATO TO ST. VINCENT																	
55,000	-56.5	-78	-21	-19	-19	-78	-22	-20	-19	-73	-18	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	3	5	6	-51	3	5	6	-55	1	3	4	-54	3	4	5
30,000	-44.5	-34	11	12	13	-32	13	14	15	-33	13	14	15	-33	13	14	15
20,000	-21.2	-7	14	16	16	-6	15	16	17	-7	14	15	16	-6	15	16	17
10,000	-4.6	8	15	16	15	9	14	15	15	9	14	15	15	9	14	15	15
GUAM TO HONOLULU																	
55,000	-56.5	-75	-18	-16	-15	-71	-15	-12	-11	-73	-17	-14	-13	-73	-17	-14	-13
40,000	-56.5	-52	4	7	8	-55	2	4	6	-54	2	4	5	-54	2	4	5
30,000	-44.5	-31	12	14	15	-34	10	12	13	-32	12	14	15	-32	12	14	15
20,000	-21.2	-8	15	16	16	-8	14	15	16	-5	14	15	16	-6	15	16	17
10,000	-4.6	8	12	14	15	8	12	14	15	10	14	15	15	9	14	15	15
GUAM TO MANILA																	
55,000	-56.5	-80	-23	-21	-20	-78	-22	-20	-19	-77	-21	-18	-17	-76	-21	-19	-18
40,000	-56.5	-55	4	5	5	-55	4	6	7	-54	1	5	6	-53	3	5	6
30,000	-44.5	-30	14	16	16	-31	13	15	16	-31	14	15	16	-31	14	15	16
20,000	-21.2	-5	16	17	18	-5	16	17	18	-5	16	17	18	-5	16	17	18
10,000	-4.6	10	15	16	16	10	15	16	17	11	15	16	17	10	15	16	16
GUAM TO NAGAI																	
55,000	-56.5	-81	-24	-22	-22	-79	-23	-21	-20	-78	-23	-19	-18	-79	-23	-20	-19
40,000	-56.5	-55	3	5	5	-52	4	6	7	-55	2	5	6	-54	3	5	6
30,000	-44.5	-31	14	15	16	-32	13	14	15	-32	13	14	15	-32	13	14	15
20,000	-21.2	-4	17	18	19	-6	16	17	17	-6	15	16	17	-5	16	17	18
10,000	-4.6	10	15	16	17	10	15	16	17	9	14	15	15	10	14	15	16
GUAM TO NOUMEA																	
55,000	-56.5	-40	-24	-22	-21	-79	-23	-20	-19	-77	-21	-19	-18	-78	-22	-20	-19
40,000	-56.5	-51	4	5	5	-52	4	6	7	-54	2	4	5	-53	3	5	6
30,000	-44.5	-31	14	15	16	-32	13	14	15	-32	12	14	15	-32	13	14	15
20,000	-21.2	-4	17	18	19	-6	15	16	17	-6	15	16	17	-6	15	16	17
10,000	-4.6	10	15	16	17	10	14	16	16	9	14	15	15	10	14	15	16
GUAM TO TOKYO																	
55,000	-56.5	-71	-14	-12	-10	-69	-11	-10	-9	-70	-13	-10	-9	-70	-13	-10	-9
40,000	-56.5	-50	6	7	10	-54	3	5	7	-51	3	5	7	-52	3	5	7
30,000	-44.5	-32	12	13	16	-34	10	12	13	-30	13	14	17	-32	13	14	17
20,000	-21.2	-11	10	12	13	-8	13	15	16	-4	17	18	19	-6	15	16	17
10,000	-4.6	5	8	9	10	7	11	11	14	15	15	15	17	9	13	15	16
GUATEMALA CITY TO HAVANA																	
55,000	-56.5	-76	-20	-18	-17	-75	-19	-17	-16	-75	-16	-15	-15	-76	-23	-19	-18
40,000	-56.5	-55	2	3	4	-54	2	4	4	-54	0	1	2	-54	2	4	4
30,000	-44.5	-36	9	10	11	-34	10	11	12	-35	12	13	13	-32	12	13	14
20,000	-21.2	-8	15	16	17	-7	15	16	17	-6	15	16	17	-6	15	16	17
10,000	-4.6	8	12	14	14	9	13	15	16	9	14	15	15	10	14	15	16
GUATEMALA CITY TO HOUSTON																	
55,000	-56.5	-75	-18	-16	-15	-75	-16	-14	-13	-75	-16	-15	-14	-77	-20	-18	-17
40,000	-56.5	-56	1	2	3	-55	1	3	4	-56	1	2	2	-54	2	3	4
30,000	-44.5	-37	7	9	9	-36	6	10	10	-35	11	13	13	-35	10	13	13
20,000	-21.2	-9	12	13	14	-8	13	14	15	-7	13	14	15	-6	14	15	16
10,000	-4.6	6	11	13	14	8	11	13	14	10	14	15	15	9	13	14	15
GUATEMALA CITY TO KINGSTON																	
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-75	-17	-15	-15	-76	-21	-19	-18
40,000	-56.5	-54	2	4	5	-53	1	4	5	-54	3	4	4	-54	2	4	4
30,000	-44.5	-35	10	11	12	-33	11	12	13	-35	12	13	13	-32	13	14	14
20,000	-21.2	-7	14	15	16	-6	15	16	17	-7	13	14	15	-6	15	16	17
10,000	-4.6	8	13	14	15	9	13	15	16	9	14	15	15	10	14	15	16
GUATEMALA CITY TO LIMA																	
55,000	-56.5	-78	-22	-20	-19	-77	-21	-19	-18	-76	-21	-19	-18	-77	-20	-18	-17
40,000	-56.5	-54	3	4	5	-53	4	6	7	-55	2	3	4	-54	3	5	6
30,000	-44.5	-32	12	13	14	-31	13	15	15	-32	12	14	14	-31	13	14	15
20,000	-21.2	-5	16	17	18	-5	16	18	18	-7	14	15	16	-6	16	17	18
10,000	-4.6	9	14	15	16	10	14	15	16	9	14	15	16	9	14	15	16
GUATEMALA CITY TO LOS ANGELES																	
55,000	-56.5	-72	-16	-14	-13	-71	-14	-12	-11	-72	-15	-14	-13	-75	-18	-16	-15
40,000	-56.5	-56	1	1	1	-56	0	2	3	-55	1	3	3	-55	2	3	4
30,000	-44.5	-39	5	7	8	-38	6	8	8	-35	12	13	14	-35	10	13	12
20,000	-21.2	-12	9	12	13	-10	11	13	14	-6	15	16	16	-8	15	16	16
10,000	-4.6	5	9	12	13	8	12	14	16	11	15	16	17	9	13	15	16
GUATEMALA CITY TO MERIDIA																	
55,000	-56.5	-77	-20	-18	-18	-75	-19	-17	-16	-75	-17	-16	-15	-76	-19	-18	-17
40,000	-56.5	-55	2	3	4	-54	2	3	4	-54	3	4	4	-55	2	3	4
30,000	-44.5	-36	9	10	11	-34	10	11	12	-33	12	13	13	-34	11	12	13
20,000	-21.2	-8	14	15	16	-6	15	16	17	-6	15	16	17	-6	15	16	17
10,000	-4.6	8	13	14	15	9	14	15	16	9	14	15	15	9	14	15	15

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE										STANDARD DEVIATION			
		JANUARY		APRIL		JULY		OCTOBER		ANNUAL		JAN	APR	JUL	OCT
		50-050	075	085	50-050	075	085	50-050	075	085	50-050	075	085		
GUATEMALA CITY TO MEXICO CITY															
55,000	-56.5	-77	-20	-19	-18	-76	-19	-17	-16	-78	-22	-20	-19	3	5
40,000	-56.5	-55	2	3	4	-55	2	3	4	-54	3	4	4	2	2
30,000	-44.5	-16	9	10	11	-34	10	11	12	-32	12	14	14	2	2
20,000	-21.2	-8	14	15	16	-6	15	16	17	-6	15	16	17	2	2
10,000	-4.6	8	13	14	15	10	15	16	17	10	15	16	16	2	2
GUATEMALA CITY TO MIAMI															
55,000	-56.5	-76	-19	-18	-17	-76	-16	-16	-15	-77	-21	-19	-18	3	5
40,000	-56.5	-55	1	3	4	-54	2	3	4	-54	2	3	4	2	2
30,000	-44.5	-16	8	9	10	-35	10	11	11	-33	12	13	13	2	2
20,000	-21.2	-8	13	14	15	-7	14	15	16	-6	15	16	17	2	2
10,000	-4.6	7	12	13	14	8	13	14	15	9	14	15	16	2	2
GUATEMALA CITY TO NEW ORLEANS															
55,000	-56.5	-75	-18	-17	-16	-75	-17	-15	-14	-77	-20	-18	-17	3	5
40,000	-56.5	-56	1	2	3	-55	1	3	4	-54	2	3	4	2	2
30,000	-44.5	-17	7	9	9	-36	9	10	10	-35	11	13	13	2	2
20,000	-21.2	-9	12	14	14	-8	12	14	15	-6	15	16	16	2	2
10,000	-4.6	6	11	13	13	8	13	14	15	9	14	15	16	2	2
GUATEMALA CITY TO NEW YORK															
55,000	-56.5	-71	-15	-13	-12	-69	-12	-10	-9	-69	-13	-11	-11	3	5
40,000	-56.5	-57	-2	2	3	-56	0	2	3	-55	2	3	4	3	3
30,000	-44.5	-40	5	7	7	-38	6	8	9	-35	11	12	13	2	2
20,000	-21.2	-12	9	11	12	-11	10	12	13	-7	14	15	16	3	3
10,000	-4.6	5	7	9	10	6	9	11	12	8	13	14	15	3	3
GUATEMALA CITY TO PANAMA CITY															
55,000	-56.5	-78	-21	-19	-18	-77	-20	-19	-18	-78	-22	-20	-19	3	5
40,000	-56.5	-54	3	4	5	-53	4	5	6	-54	3	4	5	2	2
30,000	-44.5	-14	11	12	12	-32	13	14	14	-31	13	14	15	2	2
20,000	-21.2	-6	15	16	17	-5	16	17	18	-6	16	17	17	2	2
10,000	-4.6	9	13	14	15	9	14	15	16	10	15	16	16	2	2
GUATEMALA CITY TO SAN PEDRO SULA															
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-78	-22	-20	-19	3	5
40,000	-56.5	-54	2	4	5	-54	3	4	5	-54	3	4	5	2	2
30,000	-44.5	-35	10	11	12	-33	11	12	13	-32	13	14	14	2	2
20,000	-21.2	-7	14	16	16	-5	14	17	18	-7	15	16	17	2	2
10,000	-4.6	8	13	14	15	10	14	15	17	9	14	15	16	2	2
GUATEMALA CITY TO SAN SALVADOR															
55,000	-56.5	-76	-20	-18	-17	-75	-18	-16	-16	-77	-21	-19	-18	3	5
40,000	-56.5	-55	2	3	4	-54	2	3	4	-54	2	3	4	2	2
30,000	-44.5	-36	9	10	11	-34	10	11	12	-33	12	13	14	2	2
20,000	-21.2	-8	13	15	15	-7	14	16	16	-6	15	16	17	2	2
10,000	-4.6	7	12	13	14	8	13	14	15	9	14	15	15	2	2
GUATEMALA CITY TO SANTO DOMINGO															
55,000	-56.5	-77	-20	-19	-18	-76	-20	-18	-17	-78	-21	-19	-18	3	5
40,000	-56.5	-54	2	4	5	-54	3	4	5	-54	3	4	5	2	2
30,000	-44.5	-35	10	11	12	-33	11	12	13	-32	13	14	14	2	2
20,000	-21.2	-7	14	15	16	-6	15	16	17	-6	15	16	17	2	2
10,000	-4.6	8	12	14	14	9	13	15	15	10	14	15	16	2	2
GUAYAGUIL TO HOUSTON															
55,000	-56.5	-77	-20	-18	-17	-75	-19	-17	-16	-77	-21	-19	-18	3	5
40,000	-56.5	-55	2	3	4	-54	3	4	5	-54	2	3	4	2	2
30,000	-44.5	-35	10	11	11	-33	11	12	13	-32	12	14	14	2	2
20,000	-21.2	-7	14	15	16	-6	15	16	17	-6	15	16	17	2	2
10,000	-4.6	8	12	14	15	9	14	15	16	9	14	15	15	2	2
GUAYAGUIL TO LIMA															
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-75	-18	-16	-15	3	5
40,000	-56.5	-53	3	5	6	-52	4	5	6	-54	2	4	5	3	3
30,000	-44.5	-32	13	14	15	-31	14	15	16	-31	13	15	16	2	2
20,000	-21.2	-5	17	18	18	-5	16	18	18	-6	15	17	18	2	2
10,000	-4.6	10	14	15	16	9	14	15	16	9	14	15	16	2	2
GUAYAGUIL TO MIAMI															
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-77	-21	-19	-18	3	5
40,000	-56.5	-54	2	4	5	-53	4	5	6	-54	2	4	5	2	2
30,000	-44.5	-34	10	12	12	-32	12	13	14	-32	13	14	15	2	2
20,000	-21.2	-6	15	16	17	-6	16	17	17	-6	16	16	17	2	2
10,000	-4.6	8	13	14	15	9	13	15	15	10	14	15	16	2	2
GUAYAGUIL TO NEW ORLEANS															
55,000	-56.5	-77	-20	-18	-17	-75	-19	-17	-16	-77	-21	-19	-18	3	5
40,000	-56.5	-55	2	3	4	-53	3	5	6	-54	2	3	4	2	2
30,000	-44.5	-35	10	11	12	-33	11	12	13	-32	12	14	14	2	2
20,000	-21.2	-7	14	15	16	-6	15	16	17	-6	15	16	17	2	2
10,000	-4.6	8	12	14	15	9	13	15	16	9	13	15	15	2	2
GUAYAGUIL TO NEW YORK															
55,000	-56.5	-74	-17	-15	-14	-72	-16	-14	-13	-75	-18	-16	-15	3	5
40,000	-56.5	-55	1	3	4	-54	2	4	5	-55	2	4	5	3	3
30,000	-44.5	-37	8	9	10	-35	9	11	12	-33	11	13	13	2	2
20,000	-21.2	-9	12	13	14	-8	13	14	15	-7	14	15	16	2	2
10,000	-4.6	5	10	11	12	6	11	12	13	8	13	14	15	3	3
GUAYAGUIL TO PANAMA															
55,000	-56.5	-79	-22	-20	-19	-77	-21	-19	-18	-78	-21	-19	-18	3	5
40,000	-56.5	-54	3	4	5	-52	5	6	7	-55	2	3	4	2	2
30,000	-44.5	-32	12	13	14	-30	14	15	16	-32	12	14	15	2	2
20,000	-21.2	-5	16	18	18	-4	17	18	19	-6	16	17	17	2	2
10,000	-4.6	9	14	15	16	10	14	15	16	10	15	16	16	2	2

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		5000	075	085		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
GUAYAQUIL TO QUITO																									
51,000	-56.5	-79	-25	-21	-20	-78	-21	-19	-18	-74	-17	-15	-14	-77	-20	-18	-17	-77	-20	-18	-17	3	3	3	3
40,000	-56.5	-54	5	4	5	-52	5	7	8	-54	2	4	5	-54	2	3	4	-54	3	5	6	3	3	2	2
30,000	-44.5	-32	15	14	14	-30	14	16	16	-32	15	14	15	-31	14	15	16	-31	15	15	16	2	2	2	2
20,000	-21.2	-4	17	18	19	-4	17	18	19	-7	14	15	16	-6	16	17	17	-5	16	17	18	2	2	1	1
10,000	-4.6	10	14	15	16	10	14	15	16	9	14	15	15	10	15	16	16	10	14	15	16	2	2	2	1
GUAYAQUIL TO RIO DE JANEIRO																									
51,000	-56.5	-77	-20	-18	-16	-76	-19	-17	-16	-70	-14	-11	-10	-72	-15	-13	-12	-74	-17	-14	-12	4	3	4	3
40,000	-56.5	-53	4	6	7	-52	5	7	8	-53	4	6	6	-54	3	4	5	-53	4	6	8	3	4	3	3
30,000	-44.5	-32	15	14	15	-32	15	15	16	-33	15	14	15	-32	15	14	15	-32	12	14	15	2	3	3	2
20,000	-21.2	-5	16	18	19	-6	16	17	18	-9	12	13	14	-7	15	16	17	-7	15	16	17	2	2	2	2
10,000	-4.6	10	14	16	16	9	14	15	16	7	11	13	13	9	14	15	16	9	13	15	16	2	2	2	2
GUAYAQUIL TO SANTIAGO																									
51,000	-56.5	-74	-17	-15	-14	-73	-17	-15	-14	-68	-12	-9	-8	-69	-12	-10	-9	-71	-15	-12	-10	3	3	4	3
40,000	-56.5	-53	1	6	7	-53	5	6	7	-53	4	6	7	-54	3	5	6	-53	3	5	7	3	4	3	3
30,000	-44.5	-33	11	13	14	-34	11	13	14	-36	9	11	12	-34	11	13	14	-34	10	12	13	3	4	3	3
20,000	-21.2	-7	15	16	17	-8	15	16	16	-12	9	10	11	-8	13	15	16	-9	15	16	17	2	2	2	2
10,000	-4.6	9	15	15	16	7	12	13	14	5	9	11	12	7	11	13	13	7	11	13	14	2	2	2	2
HAMBURG TO HELSINKI																									
51,000	-56.5	-57	-1	2	4	-53	4	7	8	-47	10	12	13	-56	0	3	4	-53	3	7	8	5	4	5	4
40,000	-56.5	-57	-1	3	5	-54	5	7	9	-50	7	10	12	-54	1	4	6	-54	2	6	9	5	4	5	5
30,000	-44.5	-53	-8	-6	-4	-50	-5	-3	-1	-42	5	8	9	-48	-1	1	3	-48	-3	1	3	4	4	4	5
20,000	-21.2	-31	-9	-5	-3	-25	-4	-1	1	-16	6	8	9	-21	0	4	6	-23	-2	2	4	6	5	4	5
10,000	-4.6	-15	-11	-6	-4	-10	-5	-2	0	-0	4	6	8	-6	-2	2	3	-8	-3	0	2	6	5	3	5
HAMBURG TO ISTANBUL																									
51,000	-56.5	-56	1	4	5	-54	2	5	6	-52	4	7	8	-58	-2	1	2	-55	1	4	6	5	4	3	4
40,000	-56.5	-58	-1	2	4	-56	1	4	6	-50	7	9	11	-54	0	3	4	-55	2	5	7	5	4	3	4
30,000	-44.5	-51	-7	-4	-3	-48	-3	-1	1	-19	5	8	9	-43	1	4	5	-45	-1	3	5	4	4	4	5
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	4	-13	8	10	11	-18	4	6	8	-20	1	5	7	5	5	3	4
10,000	-4.6	-12	-8	-4	-2	-6	-1	2	3	2	7	9	10	-2	2	5	7	-5	0	4	6	5	5	3	4
HAMBURG TO REFLAVIA																									
51,000	-56.5	-58	-1	2	4	-51	5	8	10	-47	10	12	13	-55	1	4	5	-53	4	7	9	5	4	3	4
40,000	-56.5	-57	-1	3	5	-52	5	10	12	-48	8	12	14	-55	2	6	8	-53	4	8	11	6	7	6	6
30,000	-44.5	-52	-8	-5	-3	-48	-4	-1	0	-43	1	4	5	-46	-2	1	3	-47	-3	1	2	4	4	4	5
20,000	-21.2	-29	-8	-4	-2	-26	-3	-2	0	-18	4	6	8	-22	-1	3	5	-24	-3	1	3	4	4	4	6
10,000	-4.6	-13	-8	-5	-3	-10	-6	-3	-1	-2	3	5	6	-6	-2	1	3	-8	-5	0	2	5	5	3	5
HAMBURG TO LISBON																									
51,000	-56.5	-58	-2	2	4	-55	1	4	5	-54	2	5	6	-59	-3	-0	1	-57	-0	3	4	5	4	3	4
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-53	4	7	9	-56	0	3	5	-56	0	4	6	6	4	5	5
30,000	-44.5	-49	-4	-2	-0	-46	-2	1	2	-39	6	8	9	-43	2	4	6	-44	0	4	5	6	4	4	5
20,000	-21.2	-24	-5	1	2	-21	1	3	5	-13	9	11	12	-17	5	7	9	-18	3	6	8	5	4	3	4
10,000	-4.6	-7	-5	1	2	-4	1	3	5	4	8	11	12	-1	4	6	8	-2	2	6	8	5	4	3	4
HAMBURG TO LONDON																									
51,000	-56.5	-57	-1	3	4	-53	5	8	9	-49	7	9	11	-57	-1	2	3	-54	2	6	7	5	4	3	4
40,000	-56.5	-56	-2	2	4	-55	2	4	6	-51	6	10	12	-56	0	4	6	-55	1	6	8	6	7	5	5
30,000	-44.5	-51	-6	-4	-2	-48	-3	-1	0	-43	3	6	7	-44	0	3	4	-46	-2	2	4	6	4	4	5
20,000	-21.2	-27	-6	-2	0	-23	-2	1	1	-15	6	9	10	-19	2	4	7	-21	0	4	6	6	5	3	5
10,000	-4.6	-11	-6	-3	-1	-7	-2	1	2	1	5	8	9	-4	1	4	6	-5	-1	3	5	6	4	3	5
HAMBURG TO LOS ANGELES																									
51,000	-56.5	-58	-2	2	4	-52	5	8	9	-50	7	9	10	-56	1	3	5	-54	3	6	7	6	4	3	4
40,000	-56.5	-56	0	5	7	-52	4	8	11	-49	7	10	12	-53	4	7	9	-53	4	8	10	6	4	3	4
30,000	-44.5	-53	-9	-6	-3	-49	-5	-2	-1	-42	2	5	6	-47	-2	1	2	-48	-3	0	3	6	4	3	5
20,000	-21.2	-32	-11	-7	-5	-28	-6	-3	-1	-17	5	7	8	-23	-2	2	4	-25	-4	0	3	6	4	3	6
10,000	-4.6	-17	-13	-9	-7	-12	-7	-4	-2	-0	4	7	8	-8	-4	0	2	-10	-5	-1	2	6	5	4	6
HAMBURG TO MADRID																									
51,000	-56.5	-58	-1	2	4	-55	1	4	6	-54	1	5	7	-59	-2	0	2	-56	0	3	5	5	4	3	4
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-57	4	7	9	-56	0	3	5	-56	0	4	6	6	4	5	5
30,000	-44.5	-49	-5	-2	-1	-47	-2	0	2	-39	5	8	9	-43	2	4	6	-45	-0	3	5	6	4	4	5
20,000	-21.2	-25	-4	-0	2	-21	0	3	4	-13	8	11	12	-17	4	7	9	-19	2	4	6	5	4	3	4
10,000	-4.6	-8	-4	-0	2	-4	0	3	4	3	8	10	11	-1	3	6	7	-3	2	5	7	5	4	3	4
HAMBURG TO MILAN																									
51,000	-56.5	-56	0	4	5	-54	2	5	6	-51	5	8	9	-58	-1	1	2	-55	2	5	7	5	4	3	4
40,000	-56.5	-58	-2	2	4	-56	0	4	6	-52	5	8	10	-56	0	3	5	-56	1	5	7	6	4	3	5
30,000	-44.5	-51	-6	-3	-2	-48	-3	-1	1	-40	4	7	8	-44	1	4	5	-46	-1	2	4	6	4	3	5
20,000	-21.2	-27	-6	-2	-0	-27	-1	2	3	-14	8	10	11	-18	3	6	8	-20	1	5	6	6	4	3	5
10,000	-4.6	-11	-6	-3	-1	-6	-2	1	1	2	7	9	10	-3	2	5	7	-4	0	4	6	6	4	3	5
HAMBURG TO MONTREAL																									
51,000	-56.5	-56	0	3	5	-52	5	7	9	-49	7	10	11	-55	2	4	6	-53	3	7	8	5	4	3	4
40,000	-56.5	-54	2	7	9	-52	5	9	11	-50	6	10	12	-53	3	7	9	-52	4	8	10	6	7	5	6
30,000	-44.5	-51	-6	-3	-2	-48	-4	-1	0	-42	2	5	7	-45	-1	2	4	-47	-2	2	3	4	4	4	6
20,000	-21.2	-30	-9	-4	-2	-26	-5	-1	1	-16	5	8	9	-22	-0	3	5	-23	-2	2	4	7	6	4	6
10,000	-4.6	-15	-11	-7	-4	-11	-6	-3	-1	-1	4	6	7	-7	-2	2	4	-8	-4	0	2	6	5	3	5
HAMBURG TO MOSCOW																									
51,000	-56.5	-56	0	3	5	-53	4	6	8	-47	9	11	13	-54	1	3	5	-53	4	7	8	5	4	3	4
40,000	-56.5	-59	-2	1	3	-54	2	6	8	-50	7	10	12	-55	1	4	6	-55	2	6	8	5	4	3	5
30,000	-44.5	-53	-8	-6	-4	-49	-3	-2	-0	-41	4	6	8	-45	-1	2	3	-47	-3	1	4	4	4	4	6
20,000	-21.2	-30	-9	-5	-3	-24	-3	0	2	-15	6	9	10	-20	1	5	7	-22	-1	3	5	6	5	4	6
10,000	-4.6	-15	-10	-6	-4	-9	-4	-1	1	-0	5	7	8	-6	-2	2	4	-8	-5	1	3	6	5	3	5
HAMBURG TO MUNICH																									
51,000	-56.5	-56	0	4	5	-54	3	5	7	-50	6	9	10	-58	-1	1	3	-54	2	5	7	5	4	3	4
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	9	10	-56	0	3	5	-55	1	5	7	5	4	3	5
30,000	-44.5	-51	-7</																						

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION								
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL								
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT	
HAMBURG TO NEW YORK																										3501 N.M.I.
55,000	-56.5	-57	-0	3	4	-55	4	6	8	-51	6	8	9	-56	0	3	5	-54	2	5	7	4	4	4	4	
40,000	-56.5	-55	2	6	8	-53	3	8	10	-51	6	9	11	-54	3	7	9	-53	3	7	9	4	7	5	6	
30,000	-56.5	-50	-5	-2	-1	-48	-3	-0	1	-41	3	6	8	-44	0	3	4	-46	-1	2	4	4	4	4	4	
20,000	-21.2	-28	-7	-2	-0	-25	-3	0	2	-15	6	9	10	-20	1	5	7	-22	-1	3	6	7	5	4	5	
10,000	-4.6	-14	-9	-5	-3	-9	-5	-1	1	0	5	7	8	-5	-0	3	5	-7	-2	1	3	6	5	3	5	
HAMBURG TO OSLO																										377 N.M.I.
55,000	-56.5	-58	-1	2	4	-53	4	7	8	-47	9	11	12	-56	0	3	4	-54	3	6	8	5	4	3	4	
40,000	-56.5	-59	-2	1	4	-53	3	7	10	-49	7	11	13	-56	0	4	6	-54	2	7	9	4	6	4	5	
30,000	-56.5	-52	-8	-5	-4	-49	-5	-2	-1	-42	2	5	6	-46	-1	2	3	-47	-3	1	3	4	4	4	4	
20,000	-21.2	-30	-9	-5	-2	-25	-4	-1	1	-16	5	8	9	-21	1	4	6	-23	-2	2	4	6	5	4	5	
10,000	-4.6	-14	-9	-5	-3	-9	-4	-1	1	-0	4	6	8	-6	-2	2	4	-7	-3	1	3	6	5	3	5	
HAMBURG TO PARIS																										397 N.M.I.
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-50	6	9	10	-58	-1	2	3	-55	2	5	7	5	4	4	4	
40,000	-56.5	-58	-2	2	4	-55	1	5	8	-53	5	9	11	-56	0	3	5	-55	1	6	8	6	6	5	5	
30,000	-56.5	-51	-6	-3	-2	-48	-3	-1	1	-41	4	6	8	-44	0	3	5	-46	-1	2	4	4	4	4	4	
20,000	-21.2	-27	-6	-2	0	-25	-2	2	3	-14	7	9	10	-18	3	6	8	-21	1	4	6	6	5	3	5	
10,000	-4.6	-11	-6	-2	-0	-7	-2	1	3	1	6	8	9	-3	1	4	6	-5	-0	3	5	6	5	3	5	
HAMBURG TO PRAGUE																										265 N.M.I.
55,000	-56.5	-56	0	3	5	-53	3	6	7	-49	7	9	11	-57	-1	2	3	-54	2	6	7	5	4	3	4	
40,000	-56.5	-54	-2	2	4	-55	1	5	7	-51	6	9	11	-56	0	3	5	-55	1	6	8	5	4	3	4	
30,000	-56.5	-51	-7	-4	-3	-48	-4	-1	0	-41	4	6	8	-44	0	3	4	-46	-2	2	4	4	4	4	4	
20,000	-21.2	-28	-7	-5	-1	-25	-2	1	3	-14	7	9	10	-19	2	6	8	-21	0	4	6	6	5	3	5	
10,000	-4.6	-13	-4	-4	-2	-7	-3	0	2	1	6	8	9	-4	0	4	6	-6	-1	2	4	6	5	3	5	
HAMBURG TO RIO DE JANEIRO																										5549 N.M.I.
55,000	-56.5	-70	-14	-11	-10	-69	-13	-11	-9	-67	-11	-9	-7	-70	-13	-11	-10	-69	-13	-10	-9	4	3	3	3	
40,000	-56.5	-56	1	4	5	-55	2	5	8	-53	4	6	7	-54	2	4	5	-54	2	4	5	4	4	3	3	
30,000	-56.5	-19	4	7	8	-37	8	10	11	-35	10	12	12	-35	9	11	12	-36	8	10	11	3	3	2	3	
20,000	-21.2	-12	9	11	12	-11	10	12	13	-9	15	16	15	-9	12	14	14	-10	11	13	14	3	3	2	2	
10,000	-4.6	4	8	10	11	5	9	11	12	4	12	14	14	6	11	13	13	6	10	12	13	3	3	2	2	
HAMBURG TO ROME																										718 N.M.I.
55,000	-56.5	-56	0	4	5	-55	2	5	6	-52	4	6	8	-58	-2	3	2	-55	1	4	6	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-52	5	8	10	-56	0	3	5	-56	1	5	7	5	4	3	4	
30,000	-56.5	-51	-6	-3	-2	-48	-3	-0	1	-40	5	7	9	-43	1	4	5	-45	-1	3	5	4	4	3	4	
20,000	-21.2	-27	-6	-2	0	-22	-1	2	4	-13	8	10	11	-17	4	7	8	-20	1	5	7	5	4	3	4	
10,000	-4.6	-10	-4	-2	-0	-6	-1	2	3	3	8	10	11	-2	2	5	7	-4	1	4	6	5	4	3	4	
HAMBURG TO SANTA MARIA																										1761 N.M.I.
55,000	-56.5	-59	-2	1	3	-56	1	3	5	-55	2	4	6	-60	-3	-0	3	-57	-1	2	4	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-57	-1	4	6	-53	4	7	9	-56	0	3	5	-56	0	4	6	6	6	5	5	
30,000	-56.5	-54	-4	-1	0	-46	-1	1	3	-39	6	8	9	-42	2	5	6	-44	1	4	6	4	4	3	4	
20,000	-21.2	-25	-2	2	4	-20	1	4	5	-12	9	11	12	-16	5	8	10	-18	3	7	8	5	4	3	4	
10,000	-4.6	-7	-2	1	3	-4	1	4	5	3	8	10	11	-1	4	7	8	-2	3	6	7	5	4	3	4	
HAMBURG TO SHANNON																										680 N.M.I.
55,000	-56.5	-57	-1	2	4	-53	3	6	7	-49	7	10	11	-57	-1	2	4	-54	2	6	8	5	4	3	4	
40,000	-56.5	-58	-2	3	5	-54	2	7	9	-50	6	10	12	-56	0	4	6	-55	2	7	9	6	7	6	5	
30,000	-56.5	-50	-6	-3	-2	-46	-3	-1	1	-41	5	8	7	-45	-0	3	4	-46	-1	2	4	4	4	3	4	
20,000	-21.2	-27	-5	-1	1	-23	-2	1	3	-15	6	8	10	-19	2	5	7	-21	0	4	6	6	5	3	5	
10,000	-4.6	-10	-6	-2	-0	-7	-3	0	2	0	5	7	8	-4	1	4	6	-5	-1	3	5	5	4	3	5	
HAMBURG TO SIOUX FALLS																										445 N.M.I.
55,000	-56.5	-57	-1	2	4	-53	3	6	7	-49	7	10	11	-57	-1	2	4	-54	2	6	8	5	4	3	4	
40,000	-56.5	-58	-2	1	3	-54	2	7	9	-50	6	10	12	-56	1	4	6	-55	2	7	9	5	4	3	4	
30,000	-56.5	-53	-4	-5	-4	-50	-5	-3	-1	-42	3	5	7	-46	-1	2	3	-47	-3	1	3	4	4	3	4	
20,000	-21.2	-30	-9	-5	-3	-25	-4	-1	1	-16	6	8	9	-21	1	4	6	-23	-2	2	4	6	5	4	5	
10,000	-4.6	-14	-10	-6	-4	-9	-5	-1	0	-0	4	6	8	-6	-2	2	3	-8	-3	1	3	6	5	3	5	
HAMBURG TO TEHRAN																										2026 N.M.I.
55,000	-56.5	-57	-0	3	5	-55	2	4	5	-54	2	4	6	-58	-2	1	2	-56	0	3	4	5	4	3	4	
40,000	-56.5	-57	-1	2	4	-55	1	5	7	-49	8	11	12	-56	1	3	5	-54	2	6	8	5	4	3	4	
30,000	-56.5	-51	-7	-4	-3	-46	-2	1	2	-38	8	11	12	-43	2	4	5	-44	0	4	7	4	4	3	4	
20,000	-21.2	-27	-5	-2	-0	-21	1	4	5	-11	11	13	14	-17	4	7	8	-19	2	6	8	5	4	3	4	
10,000	-4.6	-17	-7	-5	-1	-4	0	3	5	5	9	11	12	-2	3	6	8	-3	1	5	7	6	5	3	5	
HAMBURG TO TEL AVIV-JAFFA																										1681 N.M.I.
55,000	-56.5	-57	-1	2	4	-56	1	3	4	-57	-1	1	2	-60	-3	-1	0	-58	-1	2	3	4	3	3	4	
40,000	-56.5	-57	-0	3	4	-56	1	4	6	-49	8	10	12	-56	0	3	4	-55	2	6	8	5	4	3	4	
30,000	-56.5	-50	-6	-3	-2	-46	-2	0	2	-38	9	11	12	-42	2	5	6	-44	1	5	7	4	4	3	4	
20,000	-21.2	-25	-4	-1	1	-21	1	3	5	-11	11	13	14	-16	5	7	9	-18	3	7	8	5	4	3	4	
10,000	-4.6	-10	-5	-2	-1	-4	0	3	5	5	9	11	12	-0	4	7	8	-2	2	6	8	5	4	3	4	
HAMBURG TO VIENNA																										454 N.M.I.
55,000	-56.5	-56	0	4	5	-54	3	5	7	-50	7	9	10	-58	-1	2	3	-54	2	5	7	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-55	1	5	7	-51	6	9	11	-56	0	3	5	-55	1	5	8	5	4	3	4	
30,000	-56.5	-51	-7	-4	-3	-48	-4	-1	0	-41	4	6	8	-44	0	3	5	-46	-2	2	4	4	4	4	4	
20,000	-21.2	-28	-7	-5	-1	-23	-2	1	3	-14	7	9	10	-18	3	6	8	-21	0	4	6	6	5	3	5	
10,000	-4.6	-13	-4	-4	-2	-7	-2	1	3	1	6	8	9	-4	1	4	6	-5	-1	3	5	6	5	3	5	
HAMBURG TO WARSAW																										407 N.M.I.
55,000	-56.5	-58	0	3	5	-53	3	6	7	-49	8	10	11	-57	-0	2	3	-54	3	6	8	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-55	2	6	8	-51	6	9	11	-56	0	3	5	-55	2	6	8	5	4	3	4	
30,000	-56.5	-52	-7	-5	-3	-49	-4	-2	-0	-41	3	6	7	-45	-0	3	4	-47	-2	2	3	4	4	4	4	
20,000	-21.2	-29	-8	-4	-1	-24	-3	1	2	-15	7	9	10	-19	2	5	7	-22	-0	3	5	6	5	3	5	
10,000	-4.6	-13	-9	-5	-3	-8	-3	-0	2	1	5	7	9	-5	-1	3	5	-7	-2	2	4	6	5	3	5	
HAMBURG TO ZURICH																										375 N.M.I.
55,000	-56.5	-56	0	3	5	-54	3	5	7	-50	6	8	10	-58	-3	1	3	-55	2	5	7	5	4	3	4	
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-53	5	8	10	-56	0	3	5	-55	1	5	8	5	4	3	4	
30,00																										

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
HAVANA TO HOUSTON																	
55,000	-56.5	-75	-16	-14	-15	-71	-14	-12	-11	-71	-15	-13	-13	-75	-16	-14	-12
40,000	-56.5	-57	-0	2	3	-56	1	3	4	-56	0	1	2	-55	2	3	4
30,000	-44.5	-39	6	7	8	-37	7	8	9	-35	12	13	13	-34	10	12	13
20,000	-21.2	-11	10	12	15	-10	15	15	14	-6	15	16	16	-7	14	15	16
10,000	-4.6	5	9	11	12	7	11	13	14	9	14	15	15	9	13	15	15
HAVANA TO KINGSTON																	
55,000	-56.5	-76	-20	-18	-17	-75	-18	-16	-15	-72	-16	-14	-14	-75	-18	-17	-16
40,000	-56.5	-55	2	3	4	-54	2	4	4	-56	0	1	2	-55	2	3	4
30,000	-44.5	-36	8	10	10	-35	10	11	12	-33	11	12	13	-32	12	13	14
20,000	-21.2	-8	15	16	15	-7	14	15	16	-7	15	16	17	-6	15	16	17
10,000	-4.6	7	12	13	14	8	12	14	15	9	14	15	15	8	13	14	15
HAVANA TO LIMA																	
55,000	-56.5	-78	-21	-19	-18	-77	-20	-18	-17	-75	-17	-15	-14	-77	-20	-18	-17
40,000	-56.5	-54	3	4	5	-52	4	6	7	-55	2	3	4	-54	3	4	5
30,000	-44.5	-35	11	13	13	-32	13	14	15	-32	12	13	14	-31	13	14	15
20,000	-21.2	-6	16	17	17	-5	16	17	18	-7	14	15	15	-6	16	17	17
10,000	-4.6	9	13	15	15	9	14	15	16	9	14	15	15	10	14	15	16
HAVANA TO LISBON																	
55,000	-56.5	-66	-9	-7	-5	-65	-7	-4	-3	-64	-8	-6	-5	-67	-10	-8	-7
40,000	-56.5	-56	-1	2	3	-58	-1	2	3	-55	1	3	4	-56	1	3	4
30,000	-44.5	-45	1	4	5	-42	3	5	6	-36	9	11	11	-37	7	9	10
20,000	-21.2	-16	5	8	9	-15	7	9	10	-9	12	14	15	-13	11	13	14
10,000	-4.6	-0	4	7	8	1	6	8	9	7	11	13	13	5	9	11	12
HAVANA TO LONDON																	
55,000	-56.5	-62	-5	-3	-1	-59	-3	-0	1	-59	-2	0	1	-63	-6	-3	-2
40,000	-56.5	-57	-0	3	5	-56	0	4	6	-55	2	5	6	-56	1	4	5
30,000	-44.5	-45	-1	2	3	-44	0	3	4	-40	4	7	8	-42	3	6	7
20,000	-21.2	-20	1	4	6	-18	3	6	7	-14	7	10	11	-16	5	8	10
10,000	-4.6	-6	-1	2	4	-5	2	4	6	-1	5	8	9	-1	4	6	8
HAVANA TO LOS ANGELES																	
55,000	-56.5	-76	-15	-11	-10	-68	-11	-9	-8	-70	-14	-12	-12	-75	-16	-14	-13
40,000	-56.5	-56	0	3	4	-57	-0	2	3	-55	2	3	4	-55	1	3	4
30,000	-44.5	-41	3	5	6	-40	5	6	7	-33	12	13	13	-36	9	10	11
20,000	-21.2	-14	7	10	11	-12	9	11	12	-6	15	16	17	-9	13	14	15
10,000	-4.6	3	7	10	11	6	10	13	14	11	16	17	17	8	12	14	15
HAVANA TO MADRID																	
55,000	-56.5	-65	-8	-6	-4	-62	-6	-3	-2	-63	-6	-5	-3	-66	-9	-7	-6
40,000	-56.5	-54	-1	2	4	-58	-1	2	3	-55	1	3	4	-56	1	3	4
30,000	-44.5	-44	1	3	4	-42	2	4	6	-36	9	10	11	-38	6	9	10
20,000	-21.2	-17	4	7	8	-16	6	8	9	-9	12	14	15	-11	10	12	13
10,000	-4.6	-1	5	6	8	0	5	7	8	6	11	12	13	4	9	11	12
HAVANA TO MERIDA																	
55,000	-56.5	-76	-19	-17	-16	-74	-17	-15	-14	-72	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-56	1	2	3	-55	2	3	4	-56	0	1	2	-54	2	3	4
30,000	-44.5	-37	8	9	10	-36	9	10	11	-35	12	13	13	-34	10	11	12
20,000	-21.2	-9	13	14	15	-8	13	15	16	-6	15	16	16	-6	15	16	17
10,000	-4.6	7	12	13	14	8	12	14	15	9	14	15	15	8	13	14	15
HAVANA TO MEXICO CITY																	
55,000	-56.5	-76	-19	-17	-17	-74	-17	-15	-14	-73	-16	-15	-14	-74	-21	-19	-18
40,000	-56.5	-56	1	2	3	-55	2	3	4	-56	0	1	2	-54	2	3	4
30,000	-44.5	-37	8	9	10	-36	9	10	11	-35	12	13	13	-34	10	11	12
20,000	-21.2	-9	13	14	15	-8	13	15	16	-6	15	16	16	-7	14	15	16
10,000	-4.6	7	12	13	14	8	12	14	15	9	14	15	15	10	14	15	15
HAVANA TO MIAMI																	
55,000	-56.5	-74	-18	-16	-15	-72	-16	-14	-13	-71	-15	-14	-13	-76	-19	-17	-16
40,000	-56.5	-56	1	2	3	-55	2	3	4	-56	0	1	1	-55	2	3	4
30,000	-44.5	-38	7	8	9	-36	9	10	11	-35	11	12	13	-35	9	11	12
20,000	-21.2	-9	12	13	14	-9	12	14	15	-7	15	16	16	-6	15	16	17
10,000	-4.6	6	11	12	13	7	11	13	14	9	13	14	14	8	12	13	15
HAVANA TO NEW ORLEANS																	
55,000	-56.5	-75	-16	-15	-14	-71	-14	-12	-11	-71	-15	-13	-13	-75	-16	-14	-12
40,000	-56.5	-57	-0	2	3	-56	1	3	4	-56	0	1	2	-55	2	3	4
30,000	-44.5	-38	6	8	8	-37	7	9	9	-35	12	13	13	-34	10	12	13
20,000	-21.2	-11	10	12	15	-10	11	13	14	-6	15	16	16	-7	14	16	16
10,000	-4.6	5	10	11	12	6	11	13	14	9	14	15	15	8	13	14	15
HAVANA TO NEW YORK																	
55,000	-56.5	-69	-12	-10	-9	-66	-10	-7	-6	-68	-11	-9	-8	-71	-14	-12	-10
40,000	-56.5	-57	-1	2	3	-57	-1	2	3	-56	1	2	3	-55	1	3	4
30,000	-44.5	-41	3	5	6	-40	4	6	7	-36	11	12	13	-36	8	10	11
20,000	-21.2	-14	7	9	10	-15	8	10	11	-7	14	15	16	-9	12	14	15
10,000	-4.6	0	5	7	9	2	7	9	10	8	12	13	14	6	10	12	13
HAVANA TO PANAMA																	
55,000	-56.5	-77	-20	-19	-18	-76	-19	-17	-17	-75	-16	-15	-14	-78	-21	-19	-18
40,000	-56.5	-54	2	4	5	-53	3	5	5	-56	1	2	2	-54	3	4	5
30,000	-44.5	-35	10	11	12	-33	11	13	13	-35	12	13	13	-32	13	14	14
20,000	-21.2	-7	14	15	16	-6	15	16	17	-7	15	16	17	-6	16	17	17
10,000	-4.6	8	12	14	14	8	13	14	15	9	14	15	15	10	14	15	16
HAVANA TO PARIS																	
55,000	-56.5	-62	-6	-3	-2	-59	-3	-1	1	-59	-3	-0	1	-63	-7	-4	-2
40,000	-56.5	-57	-1	3	5	-57	-0	3	5	-55	2	4	6	-55	1	4	6
30,000	-44.5	-45	-1	2	3	-44	1	3	4	-37	7	9	11	-40	4	7	8
20,000	-21.2	-20	1	5	7	-18	3	6	8	-11	11	12	13	-14	7	10	12
10,000	-4.6	-5	0	3	5	-2	2	5	6	-4	9	11	12	1	6	8	10

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT SM FEET	156 TEMP.	ENROUTE TEMPERATURE										STANDARD DEVIATION								
		JANUARY		APRIL		JULY		OCTOBER		ANNUAL		JAN	APR	JUL	OCT					
		50-050	075 085	50 050	075 085	50 050	075 085	50 050	075 085	50 050	075 085									
HAVANA TO QUITO																				
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-73	-17	-15	-15	-78	-21	-19	-18	3408 N.M.I.		
40,000	-56.5	-54	2	4	5	-53	4	5	6	-55	1	2	3	-54	2	4	5	3	2	3
30,000	-44.5	-34	11	12	12	-32	12	14	14	-33	12	13	14	-31	13	14	15	2	2	2
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	14	15	16	-6	16	16	17	2	2	1
10,000	-4.6	8	13	14	15	9	13	15	16	9	14	15	15	10	15	15	16	2	2	1
HAVANA TO RIO DE JANEIRO																				
55,000	-56.5	-77	-21	-19	-17	-76	-20	-18	-17	-72	-15	-13	-12	-75	-18	-16	-15	3575 N.M.I.		
40,000	-56.5	-53	3	5	6	-52	4	6	7	-54	2	4	5	-54	3	5	6	3	3	2
30,000	-44.5	-33	12	13	14	-31	13	15	15	-33	12	13	14	-31	13	15	15	2	2	2
20,000	-21.2	-5	16	17	18	-5	16	17	18	-8	15	16	15	-6	15	16	17	2	2	2
10,000	-4.6	9	14	15	16	9	14	15	16	8	13	14	15	10	14	15	16	2	2	2
HAVANA TO SAN FRANCISCO																				
55,000	-56.5	-68	-11	-9	-8	-66	-10	-7	-6	-69	-13	-11	-10	-71	-15	-13	-11	2728 N.M.I.		
40,000	-56.5	-57	-0	3	5	-57	-1	2	3	-55	2	3	4	-55	1	3	4	3	3	2
30,000	-44.5	-42	2	4	5	-41	4	5	6	-33	11	12	13	-37	8	10	11	3	2	2
20,000	-21.2	-15	6	9	10	-13	8	10	11	-6	15	16	16	-9	12	14	15	4	3	1
10,000	-4.6	1	6	9	10	4	9	12	13	11	16	17	17	7	11	14	15	4	4	2
HAVANA TO SAN JUAN																				
55,000	-56.5	-76	-19	-17	-16	-75	-18	-16	-15	-72	-15	-14	-13	-74	-20	-18	-17	960 N.M.I.		
40,000	-56.5	-54	2	4	4	-55	2	3	4	-54	0	1	2	-54	2	4	4	2	2	1
30,000	-44.5	-36	8	10	10	-35	10	11	12	-33	11	12	13	-32	12	13	14	2	2	1
20,000	-21.2	-8	15	16	15	-8	14	15	16	-7	14	15	16	-6	15	16	17	2	2	1
10,000	-4.6	7	11	13	14	7	12	13	14	9	13	14	14	9	13	14	15	2	2	1
HAVANA TO SANTA MARIA																				
55,000	-56.5	-68	-11	-9	-8	-65	-9	-7	-6	-66	-9	-6	-7	-69	-13	-10	-9	3043 N.M.I.		
40,000	-56.5	-57	-1	2	3	-58	-1	2	3	-56	1	2	3	-54	1	3	4	4	4	2
30,000	-44.5	-42	2	4	5	-40	4	6	7	-35	9	11	12	-36	8	10	11	3	3	2
20,000	-21.2	-14	7	9	10	-13	6	10	11	-8	13	14	15	-9	12	14	15	3	3	2
10,000	-4.6	2	6	8	10	2	7	9	10	7	12	13	13	6	11	12	13	3	3	2
HAVANA TO SANTIAGO																				
55,000	-56.5	-75	-19	-17	-16	-75	-18	-16	-15	-70	-14	-12	-11	-73	-16	-14	-13	3456 N.M.I.		
40,000	-56.5	-53	3	5	6	-53	4	6	7	-54	3	4	5	-54	3	4	5	3	3	3
30,000	-44.5	-34	11	12	13	-33	12	13	14	-34	10	12	13	-33	12	13	14	2	2	2
20,000	-21.2	-6	15	16	17	-7	15	16	17	-10	11	13	13	-7	14	16	16	2	2	2
10,000	-4.6	9	13	15	15	8	13	14	15	7	11	12	13	8	13	14	15	2	2	2
HAVANA TO TORONTO																				
55,000	-56.5	-67	-11	-9	-8	-65	-8	-6	-5	-67	-10	-8	-7	-70	-13	-11	-9	1248 N.M.I.		
40,000	-56.5	-57	-1	2	3	-57	-0	2	4	-55	1	3	5	-55	1	3	5	4	4	2
30,000	-44.5	-42	2	4	5	-41	4	5	6	-34	10	12	13	-37	7	9	10	3	3	2
20,000	-21.2	-16	5	8	9	-14	7	9	11	-8	13	15	15	-10	11	13	14	4	3	2
10,000	-4.6	-1	5	6	7	1	6	8	10	7	12	13	14	5	10	12	13	4	4	2
HELSINKI TO ISTANBUL																				
55,000	-56.5	-56	0	4	5	-54	3	5	7	-50	6	8	10	-57	-1	2	3	3456 N.M.I.		
40,000	-56.5	-58	-2	2	3	-55	2	5	7	-49	7	10	12	-54	1	4	5	5	4	4
30,000	-44.5	-53	-6	-4	-4	-48	-4	-1	1	-39	5	8	9	-44	0	3	4	4	4	4
20,000	-21.2	-26	-7	-4	-2	-23	-2	2	4	-13	6	10	11	-19	2	4	7	5	5	3
10,000	-4.6	-14	-9	-6	-4	-7	-2	1	3	1	6	8	9	-4	1	4	5	6	5	3
HELSINKI TO REFLAVIA																				
55,000	-56.5	-59	-2	1	3	-50	6	9	11	-45	11	13	14	-54	2	5	6	1319 N.M.I.		
40,000	-56.5	-58	-2	2	3	-51	6	10	13	-48	9	12	14	-54	3	7	9	4	4	5
30,000	-44.5	-54	-10	-7	-5	-50	-5	-2	-1	-44	1	5	5	-48	-1	0	2	4	4	5
20,000	-21.2	-32	-10	-7	-5	-28	-7	-4	-2	-19	3	5	7	-24	-2	2	4	4	5	6
10,000	-4.6	-15	-11	-7	-5	-12	-8	-4	-3	-3	2	4	5	-8	-4	-0	2	5	5	3
HELSINKI TO LISBON																				
55,000	-56.5	-58	-1	2	4	-54	2	5	6	-52	5	7	8	-58	-2	1	2	1016 N.M.I.		
40,000	-56.5	-59	-2	2	4	-54	1	5	7	-57	5	8	10	-56	0	4	5	5	4	5
30,000	-44.5	-50	-6	-3	-2	-48	-3	-1	1	-40	4	7	8	-44	1	3	5	4	4	4
20,000	-21.2	-26	-5	-1	1	-27	-1	2	3	-14	7	10	11	-18	3	6	8	5	5	3
10,000	-4.6	-10	-6	-2	0	-6	-1	2	3	2	7	9	10	-3	2	5	6	5	4	3
HELSINKI TO LONDON																				
55,000	-56.5	-58	-1	2	4	-53	4	6	8	-48	9	11	12	-56	0	3	4	997 N.M.I.		
40,000	-56.5	-54	-2	2	4	-54	3	7	9	-50	7	10	12	-54	1	4	6	4	4	5
30,000	-44.5	-52	-8	-5	-4	-49	-5	-2	-1	-42	3	5	7	-46	-1	2	3	4	4	4
20,000	-21.2	-29	-8	-4	-2	-25	-4	-0	2	-16	6	8	9	-20	1	4	6	4	5	4
10,000	-4.6	-14	-9	-5	-3	-9	-4	-1	1	-4	6	7	8	-6	-1	2	4	4	5	3
HELSINKI TO MADRID																				
55,000	-56.5	-57	-1	2	4	-54	2	5	7	-51	5	8	9	-58	-1	1	3	1591 N.M.I.		
40,000	-56.5	-59	-2	2	4	-54	1	5	7	-51	5	8	10	-56	0	4	5	4	4	5
30,000	-44.5	-51	-6	-4	-2	-48	-4	-1	1	-40	4	7	8	-44	0	3	5	4	4	4
20,000	-21.2	-27	-6	-2	0	-23	-2	2	3	-14	7	10	11	-18	3	6	8	4	5	3
10,000	-4.6	-11	-6	-3	-1	-7	-2	1	3	2	7	9	10	-3	1	4	6	4	4	3
HELSINKI TO NEW YORK																				
55,000	-56.5	-57	-1	2	4	-51	5	8	10	-49	8	10	11	-55	2	5	6	3566 N.M.I.		
40,000	-56.5	-55	1	5	8	-51	5	10	12	-49	7	10	12	-53	4	8	10	4	4	5
30,000	-44.5	-52	-8	-5	-3	-49	-4	-2	0	-43	2	5	6	-46	-2	1	3	4	4	4
20,000	-21.2	-31	-10	-6	-4	-27	-6	-2	0	-17	4	7	9	-23	-1	2	5	4	4	4
10,000	-4.6	-17	-12	-8	-6	-12	-7	-4	-2	-2	3	5	6	-8	-3	1	3	4	5	3
HELSINKI TO OSLO																				
55,000	-56.5	-58	-2	1	3	-52	4	7	9	-46	10	12	13	-55	1	4	5	428 N.M.I.		
40,000	-56.5	-60	-3	1	3	-53	4	8	10	-49	8	11	13	-55	1	5	7	5	4	5
30,000	-44.5	-54	-9	-6	-5	-50	-6	-3	-2	-42	2	5	6	-47	-2	0	2	4	4	4
20,000	-21.2	-32	-10	-6	-4	-27	-5	-2	0	-17	5	7	9	-22	-1	3	5	4	5	4
10,000	-4.6	-16	-12	-8	-6	-11	-6	-3	-1	-1	3	6	7	-7	-2	1	3	4	5	3

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
HELSINKI TO PARIS																	
55,000	-56.5	-57	-1	3	4	-53	4	6	8	-48	8	10	12	-57	-0	2	4
40,000	-56.5	-57	-2	1	3	-54	2	6	9	-50	6	10	12	-56	1	4	6
30,000	-56.5	-57	-4	-5	-3	-49	-5	-2	-1	-41	3	6	7	-45	-1	2	4
20,000	-21.2	-29	-8	-6	-2	-24	-5	0	2	-15	6	8	10	-20	1	5	7
10,000	-4.6	-13	-9	-5	-3	-8	-4	-1	1	0	5	7	8	-5	-1	3	4
HELSINKI TO PRAGUE																	
55,000	-56.5	-57	-0	3	5	-53	4	6	8	-48	9	11	12	-56	0	3	4
40,000	-56.5	-57	-2	1	3	-54	2	6	8	-50	6	10	11	-56	1	4	6
30,000	-56.5	-57	-4	-6	-4	-50	-5	-2	-1	-41	3	6	7	-45	-1	2	3
20,000	-21.2	-29	-9	-5	-3	-25	-4	-0	2	-15	6	8	10	-20	1	5	6
10,000	-4.6	-15	-10	-6	-4	-9	-5	-1	1	0	5	7	8	-6	-1	2	4
HELSINKI TO ROME																	
55,000	-56.5	-56	0	3	5	-54	1	5	7	-50	6	9	10	-57	-1	2	3
40,000	-56.5	-57	-2	2	3	-55	1	5	7	-51	6	9	11	-56	1	4	5
30,000	-56.5	-57	-7	-5	-3	-49	-4	-1	0	-40	4	7	8	-46	0	3	4
20,000	-21.2	-28	-7	-5	-1	-23	-2	1	3	-14	7	10	11	-19	2	6	7
10,000	-4.6	-13	-4	-5	-3	-8	-5	0	2	2	6	8	9	-4	1	4	5
HELSINKI TO SHANNON																	
55,000	-56.5	-57	-1	2	4	-52	4	7	8	-47	9	11	13	-56	0	3	5
40,000	-56.5	-57	-2	2	4	-53	3	6	10	-49	7	11	13	-56	1	5	7
30,000	-56.5	-57	-7	-5	-3	-49	-4	-2	-0	-42	2	5	7	-46	-1	2	3
20,000	-21.2	-29	-8	-4	-2	-25	-4	-0	1	-16	5	8	9	-21	0	4	6
10,000	-4.6	-13	-4	-5	-3	-9	-4	-1	0	-1	4	6	7	-5	-1	3	4
HELSINKI TO STOCKHOLM																	
55,000	-56.5	-57	-2	2	3	-52	4	7	8	-48	11	12	13	-55	1	4	5
40,000	-56.5	-57	-3	0	2	-53	3	6	10	-49	7	11	13	-55	2	5	7
30,000	-56.5	-57	-9	-7	-5	-50	-6	-3	-2	-42	2	5	7	-47	-2	1	2
20,000	-21.2	-32	-11	-7	-4	-27	-5	-2	0	-16	5	7	9	-22	-1	3	5
10,000	-4.6	-17	-12	-8	-6	-11	-7	-3	-1	-1	4	6	7	-7	-2	1	3
HELSINKI TO TEHRAN																	
55,000	-56.5	-57	-0	3	5	-54	2	5	6	-52	4	6	8	-57	-0	2	4
40,000	-56.5	-57	-1	2	4	-54	2	5	7	-48	8	11	13	-55	2	4	6
30,000	-56.5	-57	-7	-5	-3	-46	-2	1	3	-36	8	11	13	-44	1	4	5
20,000	-21.2	-28	-6	-3	-1	-21	0	4	6	-11	10	13	14	-14	5	6	8
10,000	-4.6	-13	-4	-2	-2	-5	-1	3	5	4	9	11	12	-3	2	5	7
HELSINKI TO VIENNA																	
55,000	-56.5	-56	0	3	5	-53	4	6	7	-48	8	11	12	-56	0	3	4
40,000	-56.5	-57	-2	1	3	-54	2	6	8	-50	6	9	11	-56	1	4	6
30,000	-56.5	-57	-4	-6	-4	-49	-5	-2	-1	-41	3	6	8	-45	-1	2	4
20,000	-21.2	-30	-8	-5	-2	-25	-3	0	2	-15	6	9	10	-20	1	5	7
10,000	-4.6	-15	-10	-6	-4	-9	-4	-1	1	0	5	7	8	-5	-1	3	4
HELSINKI TO WARSAW																	
55,000	-56.5	-57	-0	3	5	-53	4	6	8	-47	9	11	13	-56	1	3	5
40,000	-56.5	-57	-3	1	3	-54	2	6	8	-50	7	10	12	-55	1	4	6
30,000	-56.5	-57	-9	-6	-5	-50	-5	-2	-1	-41	3	6	7	-46	-1	2	3
20,000	-21.2	-30	-9	-5	-3	-25	-4	-0	2	-15	6	8	10	-21	1	4	6
10,000	-4.6	-16	-11	-7	-5	-10	-5	-1	0	-0	4	6	8	-6	-2	2	4
HELSINKI TO ZURICH																	
55,000	-56.5	-57	-0	3	5	-53	3	6	7	-48	8	10	11	-57	-0	2	4
40,000	-56.5	-57	-2	1	3	-54	2	6	8	-51	6	9	11	-56	1	4	6
30,000	-56.5	-57	-4	-6	-4	-49	-5	-2	-1	-41	3	6	7	-45	-0	2	4
20,000	-21.2	-29	-8	-4	-2	-24	-5	0	2	-15	6	9	10	-20	2	5	7
10,000	-4.6	-14	-9	-5	-3	-8	-4	-1	1	1	5	7	8	-5	-0	3	5
HONG KONG TO KARACHI																	
55,000	-56.5	-72	-16	-13	-12	-70	-13	-11	-9	-74	-18	-14	-11	-72	-15	-13	-11
40,000	-56.5	-74	-2	5	6	-73	4	7	8	-69	7	10	12	-74	5	6	7
30,000	-56.5	-76	8	11	12	-76	10	13	14	-77	14	20	21	-72	12	15	16
20,000	-21.2	-12	10	12	13	-8	13	15	16	-3	19	20	21	-6	15	17	18
10,000	-4.6	3	8	10	11	8	13	15	16	13	17	19	19	8	13	15	16
HONG KONG TO KUALA LUMPUR																	
55,000	-56.5	-80	-23	-21	-20	-79	-22	-20	-19	-77	-21	-19	-17	-74	-21	-19	-18
40,000	-56.5	-82	2	5	6	-82	5	6	7	-84	5	6	7	-84	2	4	5
30,000	-56.5	-84	11	14	15	-80	15	16	17	-80	15	16	16	-81	14	15	16
20,000	-21.2	-6	15	17	17	-4	17	18	19	-4	17	17	18	-6	16	17	17
10,000	-4.6	8	13	14	15	10	15	16	16	10	15	16	16	9	14	15	15
HONG KONG TO LONDON																	
55,000	-56.5	-58	-1	2	4	-55	2	4	6	-53	4	6	8	-57	-1	2	3
40,000	-56.5	-57	-0	3	5	-54	4	6	8	-48	8	11	13	-55	3	6	8
30,000	-56.5	-58	-5	-3	-1	-45	-1	2	4	-35	10	13	14	-45	2	5	6
20,000	-21.2	-27	-6	-2	-0	-21	0	4	6	-11	11	13	14	-19	1	6	8
10,000	-4.6	-12	-4	-2	-2	-5	-1	2	4	4	9	11	12	-4	1	4	6
HONG KONG TO MANILA																	
55,000	-56.5	-77	-21	-18	-17	-77	-21	-19	-17	-76	-19	-17	-15	-74	-18	-16	-14
40,000	-56.5	-79	3	4	5	-82	5	6	7	-85	5	6	7	-85	3	4	5
30,000	-56.5	-81	13	15	16	-81	14	15	16	-80	15	16	16	-80	14	15	16
20,000	-21.2	-7	14	16	16	-5	16	17	18	-4	16	17	17	-5	16	17	18
10,000	-4.6	8	12	14	14	10	14	16	16	11	16	16	17	10	14	15	16
HONG KONG TO NANKING																	
55,000	-56.5	-69	-13	-9	-7	-70	-13	-11	-9	-70	-13	-10	-9	-68	-12	-9	-7
40,000	-56.5	-72	4	6	8	-73	4	6	8	-79	7	10	11	-82	4	7	8
30,000	-56.5	-74	9	11	13	-76	10	12	13	-80	11	13	14	-81	13	16	17
20,000	-21.2	-13	8	10	11	-9	12	14	15	-4	18	19	20	-8	13	15	16
10,000	-4.6	-1	4	6	8	4	9	11	12	11	16	17	18	6	11	12	13

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085			50 050 075 085			50 050 075 085			50 050 075 085			50 050 075 085			
HONG KONG TO NEW DELHI																	
55,000	-56.5	-71	-14	-12	-10	-69	-12	-10	-8	-73	-16	-13	-12	-70	-13	-11	-9
40,000	-56.5	-54	2	5	6	-53	4	6	8	-49	7	10	11	-53	3	6	7
30,000	-44.5	-37	7	10	12	-35	9	12	13	-27	18	20	21	-33	12	14	15
20,000	-21.2	-13	8	11	12	-9	12	14	15	-2	19	20	21	-7	14	16	17
10,000	-4.6	2	7	9	10	7	12	14	15	12	17	18	19	7	11	13	14
HONG KONG TO OKINAWA																	
55,000	-56.5	-72	-16	-13	-11	-73	-16	-13	-12	-72	-15	-12	-11	-70	-14	-11	-9
40,000	-56.5	-52	4	6	7	-53	4	6	7	-50	6	9	10	-52	4	6	8
30,000	-44.5	-32	12	14	15	-33	12	14	15	-29	16	18	19	-30	15	16	17
20,000	-21.2	-10	11	13	14	-7	14	16	17	-4	17	18	19	-6	15	17	18
10,000	-4.6	1	8	9	11	7	12	13	14	11	16	17	18	8	13	14	15
HONG KONG TO OSAKA																	
55,000	-56.5	-67	-10	-7	-5	-68	-12	-8	-7	-68	-12	-9	-7	-67	-10	-7	-5
40,000	-56.5	-51	5	8	9	-53	5	8	9	-49	8	10	11	-52	5	7	9
30,000	-44.5	-36	8	11	12	-35	9	12	13	-28	17	19	20	-31	14	16	17
20,000	-21.2	-15	6	9	10	-10	11	13	15	-4	17	19	20	-8	13	15	16
10,000	-4.6	-2	2	5	6	3	8	10	11	11	16	17	18	6	11	13	14
HONG KONG TO RANGOON																	
55,000	-56.5	-76	-20	-17	-16	-75	-19	-16	-15	-76	-20	-17	-16	-74	-18	-15	-14
40,000	-56.5	-55	2	4	5	-52	5	6	7	-52	5	6	7	-54	3	5	6
30,000	-44.5	-33	12	14	15	-31	14	16	17	-28	16	17	18	-30	14	16	17
20,000	-21.2	-8	14	15	16	-5	14	17	18	-4	17	18	19	-6	15	17	18
10,000	-4.6	6	11	13	14	10	14	16	18	11	16	17	19	9	13	15	16
HONG KONG TO SAIGON																	
55,000	-56.5	-78	-22	-20	-18	-78	-21	-19	-18	-77	-20	-18	-16	-76	-21	-18	-17
40,000	-56.5	-54	2	4	5	-52	5	6	7	-53	5	6	7	-54	3	5	6
30,000	-44.5	-31	13	14	15	-30	14	16	17	-30	14	16	17	-30	14	16	17
20,000	-21.2	-6	15	16	17	-4	17	18	19	-4	17	18	19	-6	16	17	18
10,000	-4.6	8	12	14	14	10	15	16	16	11	15	16	16	9	14	15	15
HONG KONG TO SHANGHAI																	
55,000	-56.5	-70	-13	-10	-8	-70	-14	-11	-9	-70	-14	-11	-9	-69	-12	-9	-7
40,000	-56.5	-52	4	7	8	-53	4	6	8	-49	7	10	11	-52	4	7	8
30,000	-44.5	-35	10	12	13	-34	10	13	14	-28	17	19	20	-31	14	16	17
20,000	-21.2	-13	9	11	12	-9	12	14	15	-4	18	19	20	-8	13	15	17
10,000	-4.6	-0	4	7	8	5	9	11	12	11	16	17	18	6	11	13	14
HONG KONG TO SINGAPORE																	
55,000	-56.5	-80	-25	-21	-20	-79	-22	-20	-19	-78	-21	-19	-17	-78	-22	-19	-18
40,000	-56.5	-55	2	3	4	-52	5	6	7	-54	3	4	5	-54	2	4	5
30,000	-44.5	-31	13	15	15	-30	15	16	16	-30	14	15	16	-30	14	15	16
20,000	-21.2	-6	16	17	17	-4	17	18	19	-4	17	18	19	-6	16	17	18
10,000	-4.6	8	13	14	15	10	15	16	16	10	15	15	16	9	14	15	15
HONG KONG TO SYDNEY																	
55,000	-56.5	-79	-22	-20	-19	-77	-21	-18	-17	-75	-19	-17	-16	-77	-20	-18	-16
40,000	-56.5	-54	3	4	5	-53	4	6	7	-54	3	4	5	-53	3	5	6
30,000	-44.5	-32	13	14	15	-33	13	15	16	-33	13	15	16	-33	13	15	16
20,000	-21.2	-6	15	16	17	-7	14	16	16	-8	13	15	15	-7	14	15	16
10,000	-4.6	9	14	15	15	8	13	14	15	7	12	13	14	8	13	14	15
HONG KONG TO TAIPEI																	
55,000	-56.5	-73	-17	-14	-12	-74	-17	-14	-13	-73	-16	-13	-12	-71	-14	-12	-10
40,000	-56.5	-52	4	6	7	-52	4	6	7	-50	6	8	9	-52	4	6	7
30,000	-44.5	-32	12	14	15	-32	12	14	15	-28	16	18	19	-30	15	16	17
20,000	-21.2	-9	12	14	15	-7	14	16	17	-4	17	18	19	-6	15	17	18
10,000	-4.6	4	8	10	11	8	12	14	14	11	16	17	17	8	13	14	15
HONG KONG TO TOKYO																	
55,000	-56.5	-66	-9	-6	-4	-67	-11	-8	-6	-68	-11	-8	-6	-67	-10	-7	-5
40,000	-56.5	-51	6	8	10	-53	5	6	8	-49	8	10	11	-52	5	7	8
30,000	-44.5	-36	8	11	12	-35	9	12	13	-28	17	19	20	-31	14	16	17
20,000	-21.2	-15	6	9	9	-10	11	13	14	-4	17	19	20	-8	13	15	16
10,000	-4.6	-3	2	4	6	5	8	10	11	11	16	17	18	6	11	13	14
HONOLULU TO JOHNSTON IS.																	
55,000	-56.5	-74	-17	-15	-14	-71	-14	-12	-11	-73	-17	-15	-14	-73	-14	-14	-13
40,000	-56.5	-53	3	6	7	-55	1	4	5	-54	2	4	4	-54	3	4	5
30,000	-44.5	-36	9	11	12	-36	9	11	12	-34	11	12	13	-34	11	12	13
20,000	-21.2	-9	12	14	15	-9	12	14	14	-6	15	17	17	-6	15	17	17
10,000	-4.6	7	12	13	14	7	11	13	14	9	14	15	16	9	14	15	16
HONOLULU TO LONDON																	
55,000	-56.5	-59	-2	1	3	-51	5	8	10	-49	7	9	10	-56	1	3	4
40,000	-56.5	-56	1	5	7	-51	5	9	11	-49	8	11	12	-52	4	7	9
30,000	-44.5	-51	-7	-4	-5	-48	-4	-1	0	-43	2	4	6	-47	-2	0	2
20,000	-21.2	-29	-8	-5	-3	-28	-6	-3	-1	-17	4	7	8	-24	-3	1	2
10,000	-4.6	-14	-10	-6	-4	-12	-8	-5	-3	-2	3	5	6	-9	-4	-1	1
HONOLULU TO LOS ANGELES																	
55,000	-56.5	-68	-11	-9	-7	-65	-8	-6	-4	-68	-12	-10	-9	-70	-13	-11	-10
40,000	-56.5	-55	1	5	7	-57	-0	3	4	-54	2	4	5	-55	2	4	5
30,000	-44.5	-40	4	7	8	-40	5	7	8	-35	9	11	12	-37	8	9	10
20,000	-21.2	-14	8	10	11	-13	8	10	12	-7	14	15	16	-9	12	14	15
10,000	-4.6	5	8	10	12	3	8	10	11	9	14	15	16	6	11	13	14
HONOLULU TO MANILA																	
55,000	-56.5	-74	-17	-15	-13	-70	-14	-11	-10	-72	-15	-13	-11	-72	-15	-13	-11
40,000	-56.5	-52	5	7	8	-54	2	5	6	-53	3	5	6	-54	3	5	6
30,000	-44.5	-32	12	14	15	-34	10	12	13	-32	13	14	15	-33	12	14	15
20,000	-21.2	-8	13	14	15	-7	14	16	16	-5	16	17	18	-6	15	17	18
10,000	-4.6	6	11	13	14	8	12	14	15	10	15	16	16	10	14	15	16

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
HONOLULU TO MELBOURNE																											
55,000	-56.5	-76	-19	-18	-17	-75	-16	-16	-15	-75	-16	-16	-15	-75	-16	-16	-15	-74	-18	-15	-14	5	5	5	5	4789 N.M.I.	
40,000	-56.5	-54	5	5	6	-54	5	5	6	-54	2	4	5	-54	2	4	5	-54	5	4	5	5	5	5	5	5	
30,000	-44.5	-35	11	13	14	-35	10	11	12	-36	9	10	11	-35	9	11	12	-35	10	12	13	5	5	5	5	5	
20,000	-21.2	-7	14	16	17	-9	12	14	14	-10	11	13	14	-9	12	14	14	-9	13	14	15	2	2	2	2	5	
10,000	-4.6	9	13	14	15	7	12	13	14	6	10	12	12	7	11	13	14	7	12	13	14	2	2	2	2	5	
HONOLULU TO MEXICO CITY																											
55,000	-56.5	-73	-17	-14	-15	-71	-14	-12	-11	-73	-16	-14	-14	-74	-18	-16	-15	-73	-16	-14	-12	5	5	5	5	5292 N.M.I.	
40,000	-56.5	-55	2	5	6	-56	0	3	4	-55	2	3	4	-54	2	4	5	-55	2	3	4	4	4	2	2	5	
30,000	-44.5	-38	7	9	10	-37	7	9	10	-36	11	12	13	-35	10	11	12	-36	9	10	11	5	5	5	5	5	
20,000	-21.2	-11	10	12	13	-10	11	13	14	-9	15	16	16	-7	14	15	16	-9	13	14	15	5	5	5	5	5	
10,000	-4.6	6	11	13	14	7	12	14	14	9	14	15	16	9	13	15	15	8	13	14	15	5	5	5	5	5	
HONOLULU TO NANTAI																											
55,000	-56.5	-79	-25	-21	-20	-78	-21	-19	-18	-77	-20	-19	-18	-77	-20	-19	-18	-78	-21	-19	-18	2	2	2	2	2755 N.M.I.	
40,000	-56.5	-54	5	5	5	-54	5	4	5	-55	2	4	4	-54	2	4	4	-54	5	4	4	2	2	2	2	5	
30,000	-44.5	-32	12	14	14	-33	12	13	14	-32	12	13	14	-32	12	13	14	-33	12	13	14	2	2	2	2	5	
20,000	-21.2	-8	16	17	18	-7	14	16	16	-6	15	16	17	-6	15	16	17	-6	15	16	17	2	2	2	2	5	
10,000	-4.6	10	14	15	16	9	14	15	16	9	14	15	16	10	14	15	16	9	14	15	16	2	2	2	2	5	
HONOLULU TO NEW YORK																											
55,000	-56.5	-65	-7	-4	-2	-61	-4	-2	-0	-64	-7	-5	-4	-65	-9	-7	-5	-63	-7	-4	-2	4	4	5	4	4520 N.M.I.	
40,000	-56.5	-56	1	5	7	-57	-1	3	5	-54	2	4	5	-55	1	4	5	-56	1	3	4	4	4	5	4	4	
30,000	-44.5	-45	-0	7	8	-43	1	3	4	-36	9	10	11	-40	5	7	8	-41	4	6	8	4	5	5	5	4	
20,000	-21.2	-19	2	5	7	-17	4	7	8	-8	13	14	15	-12	9	11	13	-14	7	10	11	5	4	2	4	4	
10,000	-4.6	-4	1	4	6	-1	4	7	8	9	13	15	16	5	8	11	12	2	6	10	11	5	4	2	4	4	
HONOLULU TO PERTH																											
55,000	-56.5	-77	-21	-19	-18	-76	-19	-17	-16	-75	-18	-16	-15	-75	-18	-16	-15	-74	-19	-17	-16	5	5	5	5	5878 N.M.I.	
40,000	-56.5	-55	5	5	6	-54	5	5	6	-54	5	4	5	-54	5	4	5	-54	5	5	6	5	5	5	5	5	
30,000	-44.5	-35	12	14	15	-34	11	12	13	-34	11	12	13	-34	11	12	13	-34	11	13	14	2	2	2	2	5	
20,000	-21.2	-6	15	17	17	-8	15	15	15	-9	15	15	15	-8	15	15	15	-8	15	15	16	2	2	2	2	5	
10,000	-4.6	9	14	15	16	8	12	14	14	7	11	13	14	8	13	14	15	8	13	14	15	2	2	2	2	5	
HONOLULU TO PORTLAND																											
55,000	-56.5	-64	-8	-5	-5	-60	-4	-1	0	-62	-6	-4	-3	-65	-9	-6	-5	-63	-7	-5	-2	4	4	5	4	2259 N.M.I.	
40,000	-56.5	-55	2	6	8	-57	-0	3	5	-54	5	5	6	-55	2	4	4	-55	2	4	4	4	4	5	4	4	
30,000	-44.5	-47	2	5	6	-42	5	5	6	-37	8	10	11	-39	6	8	9	-40	5	7	9	4	5	5	5	4	
20,000	-21.2	-16	5	8	9	-16	5	8	9	-9	12	14	15	-12	9	12	13	-13	8	11	12	4	4	5	5	4	
10,000	-4.6	-1	4	7	9	-1	4	7	8	7	11	13	14	5	8	10	12	2	7	9	11	4	4	2	4	4	
HONOLULU TO RIO DE JANEIRO																											
55,000	-56.5	-78	-21	-19	-18	-76	-20	-18	-17	-75	-18	-16	-15	-74	-19	-16	-15	-75	-19	-16	-15	5	5	5	5	7190 N.M.I.	
40,000	-56.5	-55	5	5	6	-54	5	5	7	-54	5	4	5	-54	5	4	5	-54	5	5	6	5	5	5	5	5	
30,000	-44.5	-32	11	13	14	-33	11	13	14	-33	11	13	14	-33	11	13	14	-33	11	13	14	2	2	2	2	5	
20,000	-21.2	-6	15	16	17	-7	15	16	16	-8	15	15	15	-6	15	16	17	-7	14	16	17	2	2	2	2	5	
10,000	-4.6	9	13	15	15	9	13	14	15	7	12	13	14	9	14	15	16	6	13	14	15	2	2	2	2	5	
HONOLULU TO ROME																											
55,000	-56.5	-59	-4	1	5	-52	5	8	9	-49	7	9	10	-50	1	3	4	-54	5	5	7	5	4	5	5	4976 N.M.I.	
40,000	-56.5	-56	0	4	6	-52	5	8	10	-49	8	11	12	-53	4	6	8	-52	4	8	10	4	5	5	5	4	
30,000	-44.5	-52	-7	-4	-5	-49	-4	-2	0	-42	2	5	6	-47	-5	-0	1	-47	-5	0	2	4	4	5	5	4	
20,000	-21.2	-29	-8	-5	-5	-28	-6	-5	-2	-17	5	7	8	-24	-5	0	2	-24	-5	1	3	5	5	5	5	4	
10,000	-4.6	-14	-10	-6	-4	-12	-8	-5	-3	-1	5	6	7	-9	-4	-1	0	-9	-5	-1	1	5	5	5	5	4	
HONOLULU TO SAN FRANCISCO																											
55,000	-56.5	-67	-10	-7	-6	-65	-7	-4	-1	-66	-10	-8	-7	-68	-12	-9	-8	-66	-9	-6	-5	4	4	5	5	2081 N.M.I.	
40,000	-56.5	-55	1	5	7	-57	-0	3	4	-54	2	4	5	-55	2	4	5	-55	1	3	4	4	4	5	5	5	
30,000	-44.5	-41	5	6	7	-40	4	6	7	-36	9	11	12	-38	7	9	10	-39	6	8	10	4	4	5	5	5	
20,000	-21.2	-14	7	10	11	-14	7	10	11	-8	14	15	16	-10	11	13	15	-11	10	12	13	4	4	5	5	5	
10,000	-4.6	2	7	9	11	2	6	9	10	4	13	14	15	5	10	12	13	4	9	11	13	4	4	5	5	5	
HONOLULU TO SEATTLE																											
55,000	-56.5	-65	-7	-4	-2	-60	-5	-1	1	-62	-5	-3	-2	-65	-8	-6	-4	-62	-4	-5	-1	4	4	5	4	2324 N.M.I.	
40,000	-56.5	-55	2	6	8	-56	0	4	5	-54	5	5	6	-55	2	4	4	-55	2	4	4	4	4	5	4	4	
30,000	-44.5	-45	2	4	6	-42	5	5	6	-37	7	9	11	-39	5	8	9	-40	4	7	8	4	5	5	5	4	
20,000	-21.2	-17	4	7	9	-17	5	7	9	-9	12	14	15	-13	8	11	14	-14	7	10	12	4	4	5	5	4	
10,000	-4.6	-1	5	6	8	-1	4	6	7	6	11	13	15	5	7	10	11	2	6	9	10	4	4	2	4	4	
HONOLULU TO SYDNEY																											
55,000	-56.5	-77	-20	-19	-18	-76	-19	-17	-16	-74	-18	-16	-15	-74	-18	-16	-15	-75	-19	-16	-15	5	5	5	5	4408 N.M.I.	
40,000	-56.5	-55	5	5	6	-54	5	5	6	-54	2	4	5	-54	2	4	5	-54	5	4	5	5	5	5	5	5	
30,000	-44.5	-35	11	13	14	-34	10	12	13	-35	10	12	13	-34	10	12	13	-34	10	12	13	5	5	5	5	5	
20,000	-21.2	-6	15	16	17	-8	15	16	15	-9	15	16	14	-8	15	14	15	-8	15	15	16	2	2	2	2	5	
10,000	-4.6	9	14	15	15	8	12	14	14	7	11	12	13	8	12	13	14	8	12	14	15	2	2	2	2	5	
HONOLULU TO TAHITI																											
55,000	-56.5	-80	-25	-22	-21	-74	-22	-20	-19	-76	-19	-17	-16	-75	-19	-17	-16	-77	-21	-19	-17	5	5	5	5	2584 N.M.I.	
40,000	-56.5	-54	5	5	6	-54	2	4	5	-54	2	4	4	-54	2	4	4	-54	2	4	4	5	5	5	5	5	
30,000	-44.5	-35	12	13	14	-35	12	13	14	-35	12	13	14	-35	12	13	14	-35	12	13	14	2	2	2	2	5	
20,000	-21.2	-8	15	16	17	-7	14	15	15	-6	15	16	17	-6	15	16	17	-6	15	16	17	2	2	2	2	5	
10,000	-4.6	9	14	15	15	9	14	15	16	9	14	15	16	10	14	15	16	9	14	15	16	1	2	2	2	5	
HONOLULU TO TOKYO																											
55,000	-56.5	-65	-7	-4	-3	-61	-5	-2	-0	-64	-7	-5	-3	-66	-9	-7	-5	-64	-7	-4	-2	4	4	5	4	5541 N.M.I.	
40,000	-56.5	-50	6	10	11	-55	1	4	6	-52	4	7	8	-53	5	7	8	-53	4	7	9	4	5	5	5	4	
30,000	-44.5	-39	5	8	10	-38	7	9	11	-35	12	14	15	-34	10	13	14	-36	9	11	13	4	4	5	5	4	
20,000	-21.2																										

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	150 TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION															
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT				
		50	D50	D75	D85	50	D50	D75	D85	50	D50	D75	D85	50	D50	D75	D85	50	D50	D75	D85	50	D50	D75	D85	50	D50	D75	D85
HONOLULU TO MORE ISLAND																													
55,000	-56.5	-75	-16	-16	-15	-69	-12	-10	-9	-72	-15	-15	-12	-72	-16	-16	-15	-71	-15	-12	-11	6	5	3	5	6	5	3	5
40,000	-56.5	-52	6	7	8	-55	1	6	5	-56	2	6	5	-56	3	6	5	-56	3	5	7	5	4	5	2	5	3	2	2
30,000	-66.5	-35	10	12	13	-35	9	11	12	-33	11	13	16	-33	12	15	16	-36	11	12	13	5	5	2	2	2	2	2	2
20,000	-71.2	-9	12	16	15	-9	13	16	15	-6	15	17	17	-6	15	17	18	-7	16	15	16	5	2	2	2	2	2	2	2
10,000	-6.6	6	11	13	16	7	11	13	16	9	16	15	16	9	16	15	16	8	13	16	15	5	2	2	2	2	2	2	2
HOUSTON TO KINGSTON																													
55,000	-56.5	-76	-18	-16	-15	-72	-16	-16	-15	-72	-15	-16	-15	-76	-20	-17	-16	-76	-17	-15	-16	5	5	2	5	5	2	5	5
40,000	-56.5	-56	1	2	3	-55	1	3	6	-56	0	1	2	-55	2	3	6	-55	1	3	5	5	2	1	2	5	2	1	2
30,000	-66.5	-38	7	8	9	-36	8	9	10	-35	12	13	16	-36	11	12	13	-35	9	11	12	2	2	1	2	2	2	1	2
20,000	-71.2	-10	11	13	16	-9	12	16	15	-6	15	16	16	-7	15	16	16	-8	13	16	15	2	2	1	2	2	2	1	2
10,000	-6.6	6	10	12	15	7	12	16	16	9	16	15	15	9	15	15	15	8	12	13	16	2	5	1	2	2	2	2	2
HOUSTON TO LA PAZ																													
55,000	-56.5	-77	-20	-18	-17	-76	-19	-17	-16	-75	-16	-15	-16	-76	-20	-18	-17	-75	-19	-17	-15	5	5	2	5	5	2	5	5
40,000	-56.5	-56	2	6	5	-55	6	5	6	-55	2	3	6	-56	2	6	6	-56	2	6	5	5	5	2	2	5	5	2	2
30,000	-66.5	-36	11	12	13	-35	12	13	16	-32	12	13	16	-32	13	16	15	-33	12	13	16	2	2	2	2	2	2	2	2
20,000	-71.2	-6	15	16	17	-6	15	17	17	-7	16	15	15	-6	15	16	16	-6	15	16	17	2	2	1	2	2	2	1	2
10,000	-6.6	6	13	16	15	9	16	15	16	9	15	15	15	10	16	15	16	9	16	15	15	2	2	2	2	2	2	2	2
HOUSTON TO LISNA																													
55,000	-56.5	-77	-20	-19	-18	-76	-19	-17	-16	-75	-17	-15	-16	-77	-20	-18	-17	-76	-19	-17	-16	5	5	2	5	5	2	5	5
40,000	-56.5	-56	2	6	5	-55	3	5	6	-55	1	3	5	-56	2	6	6	-56	2	6	5	5	5	2	2	5	5	2	2
30,000	-66.5	-36	10	12	12	-35	12	13	16	-32	12	13	16	-32	13	16	15	-33	12	13	16	2	2	2	2	2	2	2	2
20,000	-71.2	-7	15	16	17	-6	15	16	17	-7	16	15	16	-6	15	16	17	-6	15	16	17	2	2	1	2	2	2	1	2
10,000	-6.6	6	13	16	15	9	16	15	16	9	16	15	15	10	16	15	16	9	16	15	15	2	2	2	2	2	2	2	2
HOUSTON TO MEXICO CITY																													
55,000	-56.5	-75	-17	-15	-16	-71	-15	-15	-12	-72	-16	-16	-16	-76	-20	-18	-17	-75	-17	-16	-15	5	5	2	5	5	2	5	5
40,000	-56.5	-56	0	2	3	-56	0	2	3	-56	1	2	3	-55	2	3	6	-56	1	2	3	5	5	2	2	5	5	2	2
30,000	-66.5	-38	6	8	8	-36	7	8	9	-32	12	13	16	-36	11	12	13	-35	9	11	12	2	2	1	2	2	2	1	2
20,000	-71.2	-11	10	12	13	-10	12	13	16	-6	15	16	16	-7	16	15	16	-8	13	16	15	5	2	1	2	2	2	1	2
10,000	-6.6	6	10	12	13	9	13	15	16	10	15	15	16	9	16	15	16	8	13	16	15	5	5	1	2	2	2	2	2
HOUSTON TO NASSAU																													
55,000	-56.5	-72	-16	-16	-15	-70	-15	-11	-10	-71	-16	-15	-12	-75	-18	-16	-15	-72	-15	-13	-12	5	5	2	5	5	2	5	5
40,000	-56.5	-57	-0	2	3	-56	0	2	3	-56	0	2	2	-55	2	3	6	-56	1	2	3	5	5	2	2	5	5	2	2
30,000	-66.5	-39	6	7	8	-36	7	8	9	-33	12	13	13	-35	10	12	13	-36	8	10	11	2	2	1	2	2	2	1	2
20,000	-71.2	-11	10	12	13	-10	11	12	13	-6	15	16	16	-7	16	15	16	-9	12	13	13	5	5	1	2	2	2	1	2
10,000	-6.6	6	9	11	12	6	11	13	16	9	16	16	15	8	13	16	15	7	12	13	13	5	5	1	2	2	2	2	2
HOUSTON TO NATAL																													
55,000	-56.5	-76	-20	-18	-17	-76	-19	-17	-16	-72	-16	-16	-15	-77	-20	-18	-17	-75	-19	-16	-15	5	5	2	5	5	2	5	5
40,000	-56.5	-55	2	6	5	-56	3	5	6	-55	1	3	5	-56	3	6	5	-56	3	6	5	5	5	2	2	5	5	2	2
30,000	-66.5	-35	10	11	12	-35	12	13	16	-31	12	13	16	-32	13	16	15	-33	11	13	16	2	2	2	2	2	2	2	2
20,000	-71.2	-7	16	15	16	-7	16	16	17	-7	16	15	16	-6	15	16	17	-7	15	16	16	2	2	1	2	2	2	1	2
10,000	-6.6	6	12	16	16	8	13	16	15	9	16	16	15	9	16	15	16	9	13	16	15	2	2	1	2	2	2	2	2
HOUSTON TO PANAMA																													
55,000	-56.5	-75	-19	-17	-16	-76	-17	-16	-15	-75	-16	-15	-16	-77	-21	-19	-18	-75	-18	-16	-16	5	5	2	5	5	2	5	5
40,000	-56.5	-55	1	1	6	-56	2	6	5	-56	1	2	2	-56	2	3	6	-55	2	3	6	2	2	2	2	5	5	2	2
30,000	-66.5	-36	8	10	16	-35	10	11	12	-35	12	13	13	-35	12	13	16	-36	10	12	12	2	2	1	2	2	2	1	2
20,000	-71.2	-8	13	16	15	-7	16	15	16	-6	15	16	16	-6	15	16	17	-7	16	15	16	2	2	1	2	2	2	1	2
10,000	-6.6	7	12	13	16	8	13	15	15	9	16	15	15	9	16	15	16	9	13	16	15	2	2	1	2	2	2	2	2
HOUSTON TO PORT OF SPAIN																													
55,000	-56.5	-75	-19	-17	-16	-76	-18	-16	-15	-72	-15	-16	-15	-76	-20	-18	-17	-76	-18	-16	-15	5	5	2	5	5	2	5	5
40,000	-56.5	-55	1	5	6	-56	2	6	6	-56	1	2	2	-56	2	6	6	-55	2	3	6	5	5	2	2	5	5	2	2
30,000	-66.5	-36	8	10	16	-35	10	11	12	-31	11	12	13	-31	12	13	16	-33	10	12	13	2	2	1	2	2	2	1	2
20,000	-71.2	-9	12	16	15	-8	13	15	15	-7	15	15	16	-6	15	16	17	-7	16	15	16	2	2	1	2	2	2	1	2
10,000	-6.6	7	11	13	15	8	12	16	15	9	16	16	15	9	16	15	15	8	13	16	16	2	2	1	2	2	2	2	2
HOUSTON TO RIO DE JANEIRO																													
55,000	-56.5	-77	-20	-18	-17	-75	-19	-17	-16	-72	-15	-15	-12	-75	-19	-17	-16	-75	-19	-16	-16	5	5	2	5	5	2	5	5
40,000	-56.5	-56	3	6	5	-55	6	6	7	-56	2	6	6	-56	3	6	5	-56	3	5	6	5	5	2	2	5	5	2	2
30,000	-66.5	-36	11	12	13	-32	12	16	16	-33	12	13	16	-32	13	16	15	-33	12	13	16	2	2	2	2	2	2	2	2
20,000	-71.2	-6	15	16	17	-6	15	17	17	-6	15	15	15	-6	15	16	17	-7	15	16	17	2	2	2	2	2	2	2	2
10,000	-6.6	9	13	15	15	9	16	15	16	8	13	16	15	10	16	15	16	9	13	15	16	2	2	2	2	2	2	2	2
HOUSTON TO SAN JUAN																													
55,000	-56.5	-76	-17	-15	-16	-72	-15	-16	-15	-71	-15	-15	-13	-75	-19	-17	-16	-71	-17	-15	-16	5	5	2	5	5	2	5	5
40,000	-56.5	-56	1	5	6	-55	1	3	6	-56	0	1	2	-55	2	3	6	-55	1	3	5	5	5	2	2	5	5	2	2
30,000	-66.5	-38	7	8	9	-36	8	9	10	-35	11	12	13	-36	11	12	13	-35	9	11	11	2	2	1	2	2	2	1	2
20,000	-71.2	-10	11	13	16	-9	12	16	16	-7	15	16	16	-7	15	16	16	-8	13	16	15	2	2	1	2	2	2	1	2
10,000	-6.6	6	10	12	13	7	11	13	16	9	16	16	15	8	13	16	15	7	12	13	16	2	5	1	2	2	2	2	2
HOUSTON TO SAO PAULO																													
55,000	-56.5	-77	-20	-18	-17	-75	-19	-17	-16	-72	-15	-15	-12	-75	-18	-16	-15	-75	-18	-16	-16	5	5	2	5	5	2	5	5
40,000	-56.5	-56	1	6	5	-55	6	6	7	-56	2	6	6	-56	3	6	5	-56	3	5	6	5	5	2	2	5	5	2	2
30,000	-66.5																												

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085			50 050 075 085			50 050 075 085			50 050 075 085			50 050 075 085			
ISTANBUL TO KARACHI																	
55,000	-56.5	-65	-6	-4	-2	-62	-5	-3	-2	-68	-12	-9	-8	-65	-9	-6	-5
40,000	-56.5	-55	1	4	6	-54	2	5	7	-67	10	12	14	-55	1	4	5
30,000	-54.5	-45	-1	2	4	-42	5	6	7	-28	16	19	20	-38	6	8	10
20,000	-21.2	-20	1	4	5	-15	6	9	10	-4	17	19	20	-12	9	11	12
10,000	-4.6	-4	0	5	5	5	7	10	11	13	17	19	20	5	10	12	13
ISTANBUL TO KHAIBIDOM																	
55,000	-56.5	-67	-10	-8	-7	-66	-9	-7	-6	-71	-14	-12	-11	-69	-13	-11	-9
40,000	-56.5	-54	2	4	6	-55	2	5	6	-48	8	10	11	-55	2	4	5
30,000	-54.5	-45	1	5	4	-39	6	7	8	-29	16	17	18	-37	8	9	10
20,000	-21.2	-16	5	7	8	-13	8	10	11	-5	16	18	18	-10	11	12	13
10,000	-4.6	-0	4	7	8	5	8	10	11	12	16	18	18	7	11	13	14
ISTANBUL TO LISBON																	
55,000	-56.5	-58	-1	2	4	-57	-0	2	4	-59	-2	-0	1	-59	-2	1	3
40,000	-56.5	-57	-5	5	5	-58	-1	2	4	-51	6	8	9	-56	0	3	4
30,000	-54.5	-49	-4	-2	-0	-46	-1	1	5	-37	8	10	11	-41	3	6	7
20,000	-21.2	-23	-2	1	5	-19	2	4	6	-11	11	13	14	-15	6	8	9
10,000	-4.6	-7	-2	1	5	-2	2	5	6	7	11	13	14	1	5	7	9
ISTANBUL TO LONDON																	
55,000	-56.5	-56	0	4	5	-55	2	4	6	-53	4	6	7	-59	-2	0	2
40,000	-56.5	-58	-1	2	4	-56	0	4	6	-50	6	9	11	-56	0	3	4
30,000	-54.5	-51	-6	-4	-2	-47	-3	-0	1	-39	6	8	9	-43	1	4	5
20,000	-21.2	-26	-5	-2	0	-22	-0	3	4	-13	9	11	12	-17	4	7	8
10,000	-4.6	-11	-6	-3	-1	-5	-1	2	4	5	7	10	11	-2	3	6	7
ISTANBUL TO MADRID																	
55,000	-56.5	-57	-1	5	4	-56	0	3	4	-58	-2	0	2	-58	-2	1	3
40,000	-56.5	-57	-1	5	5	-57	-1	2	4	-51	6	8	10	-56	0	3	4
30,000	-54.5	-49	-5	-2	-1	-46	-2	1	2	-37	8	10	11	-42	3	5	7
20,000	-21.2	-24	-3	0	2	-20	2	4	5	-11	11	12	13	-15	6	8	9
10,000	-4.6	-7	-5	0	2	-5	2	5	6	6	11	13	14	0	5	7	8
ISTANBUL TO MOSCOW																	
55,000	-56.5	-56	1	4	6	-54	5	5	6	-51	6	8	9	-57	-1	2	3
40,000	-56.5	-58	-1	2	3	-55	1	5	6	-49	8	10	12	-55	1	4	5
30,000	-54.5	-52	-4	-5	-4	-47	-1	0	2	-38	6	9	10	-44	1	3	5
20,000	-21.2	-28	-7	-5	-1	-22	-1	3	5	-13	9	11	12	-18	3	6	8
10,000	-4.6	-15	-9	-5	-3	-6	-1	2	4	2	7	9	10	-5	1	4	6
ISTANBUL TO MUNICH																	
55,000	-56.5	-56	1	4	5	-55	2	4	5	-54	2	4	6	-59	-2	0	1
40,000	-56.5	-57	-1	2	4	-57	-0	3	5	-50	7	9	11	-56	0	3	4
30,000	-54.5	-51	-6	-4	-3	-47	-3	-0	1	-38	7	9	10	-43	2	4	6
20,000	-21.2	-26	-5	-2	-0	-21	-0	3	4	-12	9	11	12	-17	5	7	8
10,000	-4.6	-11	-7	-5	-1	-5	-1	2	4	4	8	10	11	-1	3	6	8
ISTANBUL TO NAIROBI																	
55,000	-56.5	-71	-15	-13	-12	-71	-14	-12	-11	-73	-16	-15	-14	-73	-16	-14	-13
40,000	-56.5	-54	2	4	5	-53	5	5	7	-50	6	8	9	-54	5	4	5
30,000	-54.5	-39	6	7	8	-35	9	11	12	-29	15	17	17	-34	10	12	13
20,000	-21.2	-12	9	11	12	-10	11	13	14	-5	16	18	18	-8	13	14	15
10,000	-4.6	4	9	10	11	6	11	12	13	5	16	17	18	8	13	14	15
ISTANBUL TO NICOSIA																	
55,000	-56.5	-54	-2	1	2	-57	-1	1	2	-64	-7	-5	-4	-61	-5	-3	-1
40,000	-56.5	-56	0	5	5	-56	0	4	6	-47	9	11	13	-56	0	2	3
30,000	-54.5	-49	-5	-2	-1	-45	-1	1	5	-32	11	15	16	-41	3	5	7
20,000	-21.2	-23	-2	0	2	-19	2	3	6	-8	15	15	16	-15	7	8	9
10,000	-4.6	-8	-3	-1	1	-2	3	5	7	7	12	14	15	2	7	9	10
ISTANBUL TO PARIS																	
55,000	-56.5	-56	0	4	5	-55	2	4	5	-54	2	4	6	-59	-2	0	1
40,000	-56.5	-58	-1	2	4	-57	-0	3	5	-51	6	9	10	-56	0	3	4
30,000	-54.5	-51	-6	-4	-2	-47	-1	0	1	-38	6	9	10	-43	2	4	6
20,000	-21.2	-26	-5	-2	0	-21	-0	3	4	-12	9	11	12	-17	5	7	8
10,000	-4.6	-10	-6	-5	-1	-5	-1	2	4	5	8	10	11	-1	3	6	8
ISTANBUL TO PRAGUE																	
55,000	-56.5	-56	1	4	5	-55	2	4	6	-53	5	5	6	-59	-2	0	2
40,000	-56.5	-58	-1	2	4	-56	0	4	6	-50	7	10	11	-56	0	3	4
30,000	-54.5	-51	-7	-4	-3	-47	-3	-0	1	-38	6	9	10	-43	2	4	6
20,000	-21.2	-27	-5	-2	-0	-22	-0	3	4	-12	9	11	12	-17	5	7	8
10,000	-4.6	-12	-7	-6	-2	-5	-1	2	4	5	8	10	11	-2	3	6	7
ISTANBUL TO RIO DE JANEIRO																	
55,000	-56.5	-72	-16	-13	-12	-71	-15	-13	-12	-71	-15	-12	-11	-72	-15	-13	-12
40,000	-56.5	-56	2	5	6	-54	5	6	7	-52	5	6	7	-54	5	5	6
30,000	-54.5	-38	7	8	9	-35	10	11	12	-29	15	17	17	-34	10	12	13
20,000	-21.2	-11	10	12	13	-9	12	13	14	-7	14	16	16	-8	13	14	15
10,000	-4.6	5	9	11	12	7	11	13	14	10	14	16	16	8	13	14	15
ISTANBUL TO ROME																	
55,000	-56.5	-56	0	5	5	-56	1	3	4	-58	-2	1	2	-58	-1	2	3
40,000	-56.5	-57	-0	5	5	-57	-1	3	4	-49	7	10	11	-56	0	2	3
30,000	-54.5	-50	-6	-5	-2	-46	-2	1	2	-37	8	10	11	-42	3	5	6
20,000	-21.2	-25	-4	-1	1	-20	1	4	5	-11	11	13	14	-16	6	8	9
10,000	-4.6	-9	-4	-2	-0	-4	1	4	5	5	10	12	13	0	5	7	8
ISTANBUL TO SHANNON																	
55,000	-56.5	-56	0	5	5	-54	2	5	6	-52	4	6	8	-58	-2	1	2
40,000	-56.5	-58	-1	2	4	-56	0	4	6	-50	6	9	11	-56	0	3	4
30,000	-54.5	-51	-6	-4	-2	-47	-3	-0	1	-39	5	8	9	-43	1	4	5
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-13	8	10	11	-17	4	7	8
10,000	-4.6	-11	-6	-2	-1	-6	-1	2	4	2	7	9	10	-2	3	6	7

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION			
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
ISTANBUL TO SHARJAH																					
55,000	-56.5	-65	-6	-4	-2	-62	-5	-3	-2	-69	-12	-10	-9	-65	-9	-6	-5	-65	-8	-5	-4
40,000	-56.5	-55	2	4	6	-55	2	5	7	-46	10	12	13	-55	1	3	5	-55	1	3	5
30,000	-44.5	-46	-1	1	3	-42	3	5	6	-28	16	18	19	-39	6	8	9	-39	6	8	9
20,000	-21.2	-20	1	4	5	-16	5	8	9	-4	17	19	20	-12	9	11	12	-13	8	12	14
10,000	-4.6	-4	1	3	5	2	7	9	10	12	17	19	20	5	10	12	13	4	8	12	14
ISTANBUL TO TEHRAN																					
55,000	-56.5	-58	-2	1	3	-57	-1	1	3	-64	-7	-5	-4	-61	-5	-2	-1	-60	-4	-1	1
40,000	-56.5	-50	0	3	5	-55	1	5	6	-47	10	12	13	-56	0	3	4	-54	3	7	8
30,000	-44.5	-49	-5	-2	-1	-44	0	2	4	-31	14	16	17	-41	3	5	7	-41	3	5	7
20,000	-21.2	-24	-5	0	2	-18	1	6	7	-6	15	17	18	-15	6	9	10	-16	5	9	11
10,000	-4.6	-8	-4	-0	1	-1	4	6	8	9	14	16	17	5	7	10	11	1	5	9	11
ISTANBUL TO TEL AVIV-JAFFA																					
55,000	-56.5	-60	-5	-1	1	-58	-2	0	1	-66	-9	-7	-6	-63	-6	-4	-2	-62	-5	-2	-1
40,000	-56.5	-54	1	4	5	-54	0	4	6	-49	7	10	11	-56	0	2	4	-54	3	6	8
30,000	-44.5	-48	-4	-2	-1	-44	0	2	3	-31	14	16	17	-41	3	5	7	-41	3	5	7
20,000	-21.2	-22	-1	1	3	-18	1	5	7	-7	14	16	17	-14	7	9	10	-15	6	9	11
10,000	-4.6	-7	-2	0	2	-1	3	6	8	9	13	15	16	5	8	10	11	1	4	9	11
ISTANBUL TO VIENNA																					
55,000	-56.5	-56	1	4	5	-55	2	4	5	-54	2	4	6	-59	-2	0	1	-56	0	3	4
40,000	-56.5	-57	-1	2	4	-56	0	3	5	-49	7	10	11	-56	0	3	4	-55	2	5	7
30,000	-44.5	-51	-7	-4	-3	-47	-5	-1	1	-38	7	9	10	-45	2	4	6	-45	-0	4	6
20,000	-21.2	-26	-5	-2	-1	-21	-0	1	3	-12	9	11	12	-17	4	7	8	-19	2	6	7
10,000	-4.6	-12	-7	-4	-2	-5	-1	3	4	5	8	10	11	-1	3	6	7	-4	1	5	6
ISTANBUL TO WARSAW																					
55,000	-56.5	-56	1	4	5	-55	2	4	5	-54	2	4	6	-59	-2	0	1	-56	0	3	4
40,000	-56.5	-58	-1	2	4	-56	1	4	6	-49	7	10	11	-56	0	3	4	-55	2	5	7
30,000	-44.5	-52	-7	-5	-3	-47	-5	-1	1	-38	7	9	10	-45	2	4	6	-45	-0	4	6
20,000	-21.2	-27	-6	-2	-1	-22	-1	3	4	-12	9	11	12	-17	4	7	8	-20	2	5	7
10,000	-4.6	-12	-8	-4	-2	-6	-1	2	4	5	8	10	11	-2	2	5	7	-4	0	4	6
ISTANBUL TO ZURICH																					
55,000	-56.5	-56	1	4	5	-55	2	4	5	-54	2	4	6	-59	-2	0	1	-56	0	3	4
40,000	-56.5	-58	-1	2	4	-56	1	4	6	-49	7	10	11	-56	0	3	4	-55	2	5	7
30,000	-44.5	-51	-6	-4	-2	-47	-2	0	1	-38	7	9	10	-45	2	4	6	-45	-0	4	6
20,000	-21.2	-26	-5	-2	-1	-21	-0	1	3	-12	9	11	12	-17	4	7	8	-19	2	6	7
10,000	-4.6	-11	-6	-3	-1	-5	-0	3	4	5	8	10	11	-1	3	6	7	-4	0	4	6
JIDDA TO KANO																					
55,000	-56.5	-75	-19	-17	-16	-74	-18	-16	-15	-74	-19	-18	-17	-77	-20	-18	-17	-76	-19	-17	-16
40,000	-56.5	-54	3	5	5	-52	4	6	7	-52	5	6	7	-52	4	5	6	-52	4	5	6
30,000	-44.5	-37	8	9	10	-52	12	14	14	-29	15	16	17	-52	12	14	14	-53	12	14	15
20,000	-21.2	-10	12	13	14	-8	13	15	15	-4	17	18	19	-6	15	16	16	-7	14	16	17
10,000	-4.6	8	12	14	14	10	14	15	16	13	17	18	19	10	14	15	16	10	14	16	17
JIDDA TO KARACHI																					
55,000	-56.5	-72	-15	-15	-12	-72	-15	-15	-12	-74	-18	-16	-14	-75	-18	-16	-14	-75	-17	-14	-13
40,000	-56.5	-54	3	5	6	-52	4	6	7	-48	9	11	12	-55	5	5	6	-52	5	7	9
30,000	-44.5	-50	7	9	11	-55	10	12	15	-26	14	20	21	-55	12	14	15	-55	12	15	16
20,000	-21.2	-12	9	11	12	-8	15	15	16	-5	14	20	21	-7	14	16	16	-8	14	16	16
10,000	-4.6	5	9	11	12	9	14	15	16	16	21	22	23	9	15	15	15	10	14	17	18
JIDDA TO BHARUQH																					
55,000	-56.5	-75	-18	-17	-16	-75	-18	-16	-15	-76	-19	-17	-16	-77	-20	-18	-17	-75	-19	-17	-16
40,000	-56.5	-54	3	5	5	-55	4	6	7	-50	6	7	8	-55	4	5	6	-52	4	6	7
30,000	-44.5	-37	8	9	10	-55	12	15	14	-28	16	17	18	-52	12	14	15	-52	12	14	15
20,000	-21.2	-9	12	13	14	-8	14	15	16	-4	17	18	19	-6	15	16	17	-7	14	16	17
10,000	-4.6	8	12	14	15	9	14	15	16	14	19	20	20	9	14	15	16	10	15	17	18
JIDDA TO KUNALI																					
55,000	-56.5	-70	-15	-11	-10	-69	-15	-11	-10	-74	-17	-15	-14	-75	-16	-14	-13	-75	-15	-12	-11
40,000	-56.5	-54	3	5	6	-55	5	6	7	-48	9	11	12	-54	5	5	6	-52	4	7	8
30,000	-44.5	-50	6	8	9	-56	8	10	11	-26	14	20	21	-54	10	12	13	-54	10	13	14
20,000	-21.2	-14	8	9	10	-11	10	12	13	-5	14	20	21	-8	15	16	15	-9	12	15	17
10,000	-4.6	5	9	11	12	6	11	13	14	16	21	22	23	8	15	16	15	9	15	16	17
JIDDA TO RIYADH																					
55,000	-56.5	-72	-15	-13	-12	-72	-15	-13	-12	-74	-18	-16	-15	-75	-18	-16	-15	-75	-17	-14	-13
40,000	-56.5	-54	3	5	6	-55	4	6	7	-48	9	10	11	-55	5	5	6	-52	4	7	8
30,000	-44.5	-39	6	8	9	-55	10	12	15	-27	14	19	20	-55	11	13	14	-55	11	14	15
20,000	-21.2	-12	9	11	12	-9	12	13	14	-6	14	19	20	-7	14	15	16	-8	15	16	17
10,000	-4.6	5	9	11	12	8	12	14	15	16	21	22	22	9	15	15	15	9	14	16	18
JIDDA TO TEHRAN																					
55,000	-56.5	-67	-11	-8	-7	-66	-10	-8	-6	-72	-16	-14	-12	-70	-15	-11	-9	-69	-12	-10	-8
40,000	-56.5	-54	2	5	6	-54	3	6	7	-47	10	11	12	-54	2	4	5	-52	4	7	8
30,000	-44.5	-42	2	4	6	-38	6	8	9	-28	14	20	21	-56	8	10	11	-56	9	12	14
20,000	-21.2	-16	5	7	8	-13	8	10	11	-3	19	20	21	-10	11	13	14	-10	11	14	16
10,000	-4.6	0	5	7	8	5	9	11	12	16	20	22	22	7	12	14	15	7	11	15	16
JIDDA TO TRIPOLI																					
55,000	-56.5	-68	-11	-9	-8	-66	-10	-8	-7	-72	-16	-14	-13	-70	-15	-11	-10	-69	-15	-10	-9
40,000	-56.5	-54	2	5	6	-55	2	5	6	-48	8	10	11	-54	2	4	5	-55	4	6	7
30,000	-44.5	-41	1	3	4	-38	6	8	9	-28	16	18	19	-56	8	10	11	-56	9	13	15
20,000	-21.2	-16	6	8	9	-13	9	11	12	-6	17	18	19	-10	11	13	15	-11	11	13	15
10,000	-4.6	1	5	7	8	4	9	11	12	15	18	19	20	7	12	13	14	6	11	14	15
JOHANNESBURG TO KANO																					
55,000	-56.5	-76	-20	-18	-16	-76	-19	-17	-16	-72	-16	-14	-13	-74	-18	-16	-15	-75	-18	-16	-14
40,000	-56.5	-55	4	6	7	-52	5	7	8	-55	4	5	6	-52	5	6	7	-52	4	6	7
30,000	-44.5	-37	13	14	15	-51	13	15	16	-53	11	13	14	-52	13	14	15	-52	13	14	15
20,000	-21.2	-6	16	17	17	-6	16	17	17	-6	15	16	17	-6	15	16	16	-6	15	16	17
10,000	-4.6	10	14	15	16	9	14	15	16	7	11	13	13	10	15	16	16	9	15	16	17

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE										STANDARD DEVIATION			
		JANUARY		APRIL		JULY		OCTOBER		ANNUAL		JAN	APR	JUL	OCT
ENROUTE TEMPERATURE															
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ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
JOHANNESBURG TO RIO DE JANEIRO																											
55,000	-56.5	-69	-13	-10	-9	-68	-12	-9	-8	-61	-5	-2	-1	-65	-8	-5	-4	-66	-9	-6	-4	4	4	3	3		
40,000	-56.5	-53	3	6	8	-55	2	5	6	-52	5	7	9	-53	3	6	7	-53	3	6	7	4	4	3	4		
30,000	-48.5	-35	9	11	12	-37	8	10	11	-40	5	7	9	-37	7	10	11	-37	7	10	11	3	3	3	3		
20,000	-21.2	-8	13	15	16	-11	10	12	13	-15	7	9	10	-10	11	13	14	-11	10	13	14	3	3	3	3		
10,000	-4.6	8	13	15	16	6	11	13	14	1	5	7	8	6	10	12	13	5	10	12	14	3	3	3	3		
JOHANNESBURG TO ROME																											
55,000	-56.5	-72	-16	-14	-13	-72	-15	-13	-12	-71	-15	-13	-12	-72	-16	-14	-13	-72	-15	-13	-12	3	3	3	3		
40,000	-56.5	-54	3	5	6	-53	4	6	7	-51	5	7	8	-53	3	5	6	-53	4	6	7	3	3	2	2		
30,000	-48.5	-36	8	10	10	-34	10	12	13	-32	12	14	15	-34	11	12	13	-34	10	12	13	2	2	2	2		
20,000	-21.2	-10	11	13	13	-9	13	14	15	-6	15	16	17	-8	13	14	15	-8	13	15	16	2	2	2	2		
10,000	-4.6	6	11	12	13	7	12	13	14	9	13	15	15	8	13	14	15	8	12	14	15	2	2	2	2		
JOHANNESBURG TO SALISBURY																											
55,000	-56.5	-73	-17	-14	-13	-72	-15	-13	-11	-66	-9	-7	-6	-69	-12	-10	-8	-70	-15	-10	-8	4	4	3	3		
40,000	-56.5	-52	5	7	8	-52	4	6	8	-51	5	7	8	-52	4	6	7	-52	4	6	7	3	3	3	3		
30,000	-48.5	-31	14	15	16	-34	11	12	13	-35	9	11	12	-35	10	12	13	-34	11	13	14	3	3	3	3		
20,000	-21.2	-6	16	17	17	-8	13	14	15	-9	12	14	15	-8	13	14	15	-8	13	15	16	2	2	3	2		
10,000	-4.6	10	15	16	16	8	12	14	15	5	8	10	11	8	13	15	16	7	12	14	15	2	2	3	2		
JOHANNESBURG TO TANANARIVE																											
55,000	-56.5	-73	-17	-14	-12	-71	-15	-12	-11	-65	-9	-6	-5	-68	-12	-10	-8	-70	-13	-10	-8	4	4	4	4		
40,000	-56.5	-52	4	7	8	-53	3	6	7	-51	5	7	8	-53	4	6	7	-52	4	6	8	3	3	3	3		
30,000	-48.5	-31	13	15	16	-35	10	12	13	-35	9	11	12	-35	9	11	12	-34	10	13	14	3	3	3	3		
20,000	-21.2	-6	16	17	17	-9	13	14	15	-9	12	14	15	-9	13	14	15	-8	13	15	16	1	2	3	2		
10,000	-4.6	10	14	16	16	8	13	14	15	4	8	10	11	8	13	14	15	8	12	14	15	2	2	3	2		
JOHANNESBURG TO TOKYO																											
55,000	-56.5	-74	-18	-15	-14	-73	-16	-14	-12	-72	-15	-13	-12	-73	-17	-14	-13	-73	-17	-14	-12	4	4	4	4		
40,000	-56.5	-53	5	5	7	-52	4	6	8	-51	5	7	8	-53	3	5	7	-52	4	6	7	3	3	3	3		
30,000	-48.5	-33	12	14	14	-35	12	14	15	-30	14	16	17	-32	12	14	15	-32	12	15	16	3	3	3	3		
20,000	-21.2	-9	15	16	15	-8	14	15	16	-5	16	17	18	-7	14	16	16	-7	14	16	17	2	2	2	2		
10,000	-4.6	5	10	12	12	7	12	14	14	9	14	15	15	8	12	14	15	7	12	14	14	2	2	2	2		
JOHANNESBURG TO TRIPOLI																											
55,000	-56.5	-75	-18	-16	-15	-74	-17	-15	-14	-73	-16	-14	-13	-74	-17	-15	-14	-74	-17	-15	-14	3	3	3	3		
40,000	-56.5	-53	5	5	6	-52	4	6	8	-52	5	6	7	-53	4	6	6	-52	4	6	7	3	3	2	2		
30,000	-48.5	-35	10	11	12	-33	12	13	14	-32	13	14	15	-33	12	13	14	-33	12	13	14	2	2	2	2		
20,000	-21.2	-8	15	16	15	-7	14	15	16	-6	15	17	17	-7	14	15	16	-7	14	16	16	2	2	2	2		
10,000	-4.6	8	12	14	14	8	13	14	15	9	14	15	15	9	14	15	16	9	13	15	15	2	2	2	2		
JOHANNESBURG TO WINDHOEK																											
55,000	-56.5	-72	-16	-13	-11	-70	-14	-11	-10	-64	-8	-5	-4	-67	-11	-8	-7	-68	-12	-9	-7	4	4	4	4		
40,000	-56.5	-52	5	7	8	-53	3	6	7	-52	5	7	8	-53	4	6	7	-52	4	7	8	4	4	3	3		
30,000	-48.5	-32	12	14	15	-35	9	11	12	-37	8	10	11	-36	9	11	12	-35	9	12	13	3	3	3	3		
20,000	-21.2	-6	15	16	17	-9	12	13	14	-12	9	11	12	-9	12	14	14	-9	12	14	15	2	2	3	2		
10,000	-4.6	10	15	16	17	7	12	14	15	2	7	9	10	8	13	14	15	7	12	14	15	2	2	3	2		
JOHNSON IS. TO KWAJALEIN																											
55,000	-56.5	-77	-21	-19	-17	-76	-20	-18	-17	-77	-20	-18	-17	-76	-19	-17	-16	-76	-20	-18	-17	3	3	3	3		
40,000	-56.5	-53	4	6	7	-54	2	5	6	-54	2	4	4	-54	3	4	5	-54	3	5	6	3	3	2	2		
30,000	-48.5	-32	13	14	15	-33	11	13	14	-32	12	14	15	-32	13	14	15	-32	12	14	15	3	2	2	2		
20,000	-21.2	-6	16	17	18	-7	15	16	17	-6	16	17	17	-6	16	17	17	-6	15	17	17	2	2	2	2		
10,000	-4.6	9	14	15	16	9	13	15	15	10	14	15	16	10	15	16	17	10	14	15	16	2	2	2	2		
KADENA TO MEXICO CITY																											
55,000	-56.5	-59	-2	1	2	-59	-2	0	2	-61	-4	-2	-0	-62	-6	-3	-1	-60	-4	-0	1	5	4	4	4		
40,000	-56.5	-52	4	8	10	-55	2	5	7	-52	5	7	9	-53	3	6	8	-53	1	6	8	6	5	4	4		
30,000	-48.5	-43	1	4	5	-43	2	4	6	-45	10	12	13	-38	6	9	10	-40	5	8	10	4	3	3	4		
20,000	-21.2	-20	1	4	6	-18	3	7	8	-9	13	15	16	-14	7	10	11	-15	6	9	11	5	4	3	4		
10,000	-4.6	-5	-0	3	4	-5	2	5	6	7	11	13	14	1	5	8	9	-0	5	8	9	5	4	3	4		
KANO TO KHARTOUM																											
55,000	-56.5	-77	-20	-18	-17	-76	-19	-18	-17	-76	-20	-18	-17	-77	-20	-19	-18	-76	-20	-18	-17	3	3	3	3		
40,000	-56.5	-54	3	4	5	-52	5	7	8	-51	4	5	6	-52	5	6	6	-53	4	6	7	2	3	2	2		
30,000	-48.5	-35	9	10	11	-31	13	15	15	-30	14	16	16	-31	13	14	15	-32	13	14	15	2	2	2	2		
20,000	-21.2	-8	13	14	15	-7	14	16	16	-5	17	18	18	-6	15	16	16	-6	15	16	17	2	2	1	1		
10,000	-4.6	9	14	15	16	10	15	16	17	11	16	17	17	10	15	16	16	10	15	16	17	2	2	1	1		
KANO TO LAGOS																											
55,000	-56.5	-77	-21	-19	-18	-77	-20	-18	-17	-76	-20	-18	-17	-77	-21	-19	-18	-77	-20	-19	-18	3	3	3	3		
40,000	-56.5	-54	3	4	5	-52	5	7	8	-54	2	3	4	-52	5	6	7	-53	4	5	6	3	3	2	2		
30,000	-48.5	-34	10	11	12	-37	15	16	16	-32	13	14	15	-31	14	15	15	-32	13	14	15	2	2	2	2		
20,000	-21.2	-8	13	14	15	-6	15	16	17	-5	16	17	18	-6	16	16	16	-6	15	16	17	1	2	1	1		
10,000	-4.6	9	13	14	15	10	15	16	17	10	15	16	16	10	15	16	16	10	14	16	16	1	2	1	1		
KANO TO LEOPOLDVILLE																											
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-76	-19	-18	-17	-77	-21	-19	-18	-77	-20	-18	-17	3	3	3	3		
40,000	-56.5	-53	5	6	5	-52	5	7	8	-54	3	4	5	-52	5	6	7	-53	4	5	6	2	3	2	2		
30,000	-48.5	-33	11	13	13	-30	15	16	17	-32	13	14	15	-30	14	15	16	-31	13	15	15	2	2	2	2		
20,000	-21.2	-6	15	16	16	-5	16	18	18	-5	16	17	18	-6	16	16	17	-5	16	17	18	1	2	1	1		
10,000	-4.6	10	14	15	16	10	15	16	17	9	14	15	15	10	15	16	16	10	14	15	16	1	2	1	1		
KANO TO LIBREVILLE																											
55,000	-56.5	-77	-21	-19	-18	-77	-20	-19	-18	-76	-20	-18	-17	-77	-21	-19	-18	-77	-20	-19	-17	3	3	3	3		
40,000	-56.5	-54	3	4	5	-52	5	7	8	-54	2	3	4	-52	5	6	7	-53	4	5	6	2	3	2	2		
30,000	-48.5	-34	11	12	12	-30	15	16	16	-32	13	14	15	-31	14	15	16	-31	13	14	15	2	2	2	2		
20,000	-21.2	-7	14	15	16	-5	16	17	18	-5	16	17	18	-6	16	16	17	-6	16	17	17	1	2	1	1		
10,000	-4.6	9	14	15	15	10	15	16	17	9	14	15	15	10	15	16	16	10	14	1							

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				STANDARD DEVIATION			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
RANO TO LIVINGSTONE																									
55,000	-56.5	-77	-21	-18	-17	-77	-20	-18	-17	-76	-18	-16	-15	-76	-19	-17	-16	-76	-19	-17	-16	2066 N.M.I.			
40,000	-56.5	-55	5	5	6	-52	5	7	8	-53	4	5	6	-52	5	6	7	-52	4	6	7	5	5	5	5
30,000	-56.5	-52	15	14	16	-50	14	16	16	-52	12	13	14	-51	14	15	16	-51	13	15	15	2	2	2	2
20,000	-21.2	-6	16	16	17	-5	16	18	18	-5	16	17	17	-6	15	16	17	-5	16	17	18	1	2	2	1
10,000	-4.6	10	14	15	16	10	14	15	16	8	12	13	14	10	15	16	17	9	14	15	16	2	2	2	2
RANO TO LONDON																									
55,000	-56.5	-65	-9	-6	-5	-64	-7	-5	-4	-66	-10	-8	-6	-67	-10	-8	-7	-66	-9	-6	-5	2405 N.M.I.			
40,000	-56.5	-50	1	4	5	-55	2	5	6	-52	5	7	8	-55	2	4	5	-54	2	5	6	4	5	5	5
30,000	-56.5	-44	0	2	3	-60	4	6	7	-54	10	12	13	-58	6	8	9	-59	5	8	10	5	5	5	5
20,000	-21.2	-18	4	6	7	-15	7	9	10	-8	15	15	15	-12	10	11	12	-13	8	11	12	5	5	2	2
10,000	-4.6	-1	4	6	7	5	7	9	10	10	15	16	17	4	9	11	12	4	9	12	13	5	5	2	2
RANO TO LUNNON																									
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-76	-19	-17	-16	-77	-20	-18	-17	-77	-20	-18	-17	5205 N.M.I.			
40,000	-56.5	-54	5	4	5	-52	5	7	8	-54	5	4	5	-52	5	6	7	-55	4	5	6	5	5	5	5
30,000	-56.5	-53	12	13	13	-50	15	16	16	-52	12	14	14	-51	14	15	16	-51	13	15	15	2	2	2	2
20,000	-21.2	-6	15	16	16	-5	17	18	18	-5	16	17	18	-6	16	17	17	-5	16	17	18	1	2	1	1
10,000	-4.6	10	14	15	16	10	15	16	16	9	15	16	16	10	15	16	17	10	14	15	16	1	2	2	1
RANO TO MADRID																									
55,000	-56.5	-68	-52	-9	-8	-67	-10	-6	-7	-71	-14	-12	-11	-70	-15	-11	-10	-69	-12	-10	-9	1821 N.M.I.			
40,000	-56.5	-55	1	4	6	-54	2	5	7	-52	5	6	7	-54	2	4	5	-54	5	5	6	4	5	5	5
30,000	-56.5	-45	2	4	5	-54	7	8	9	-55	12	13	14	-56	8	10	11	-57	7	10	11	4	4	2	2
20,000	-21.2	-15	6	6	7	-12	9	11	11	-7	15	16	16	-10	12	13	13	-15	10	12	14	5	2	2	2
10,000	-4.6	2	7	9	10	5	10	12	12	15	17	19	19	6	15	17	18	7	11	14	15	5	2	2	2
RANO TO NASHOGI																									
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-76	-20	-18	-17	-77	-21	-19	-18	-77	-21	-19	-18	1874 N.M.I.			
40,000	-56.5	-54	5	4	5	-52	5	7	8	-53	4	4	5	-52	5	6	7	-55	4	5	6	5	5	5	5
30,000	-56.5	-53	12	13	13	-50	15	16	17	-51	15	16	16	-50	14	15	16	-53	14	15	16	2	2	2	2
20,000	-21.2	-6	15	16	17	-5	17	18	18	-5	16	17	18	-6	16	16	17	-5	16	17	18	2	2	1	1
10,000	-4.6	10	14	16	16	10	15	16	16	10	14	15	16	10	15	16	17	10	15	16	16	2	2	1	1
RANO TO NALB																									
55,000	-56.5	-76	-21	-19	-18	-77	-21	-19	-18	-75	-14	-16	-15	-77	-21	-19	-18	-77	-20	-18	-17	2825 N.M.I.			
40,000	-56.5	-54	2	4	5	-52	4	7	8	-54	5	4	5	-52	4	6	7	-55	5	6	7	5	5	5	5
30,000	-56.5	-53	11	12	13	-50	15	16	17	-52	15	16	16	-51	14	15	16	-53	15	15	15	5	5	2	2
20,000	-21.2	-7	15	16	16	-6	16	17	17	-6	16	17	17	-6	16	17	17	-6	16	17	17	2	2	2	2
10,000	-4.6	9	14	15	15	10	14	16	16	9	14	15	15	10	15	16	17	10	14	15	16	2	2	1	1
RANO TO PARIS																									
55,000	-56.5	-66	-9	-7	-5	-64	-6	-4	-4	-67	-11	-9	-8	-67	-15	-9	-8	-66	-10	-7	-6	2235 N.M.I.			
40,000	-56.5	-56	1	4	5	-55	2	5	6	-52	5	7	8	-55	2	4	5	-54	2	5	6	4	5	5	5
30,000	-56.5	-46	1	3	4	-60	5	7	8	-54	11	12	13	-56	7	9	10	-59	6	9	10	4	5	5	5
20,000	-21.2	-17	4	6	7	-14	7	9	10	-9	11	15	16	-11	10	12	12	-13	9	11	12	5	5	2	2
10,000	-4.6	-0	6	7	8	1	8	10	11	11	15	17	18	5	9	15	17	5	9	12	14	5	5	2	2
RANO TO ROME																									
55,000	-56.5	-68	-11	-9	-8	-66	-10	-8	-7	-70	-14	-12	-11	-69	-15	-11	-10	-68	-12	-9	-8	1708 N.M.I.			
40,000	-56.5	-55	2	4	6	-54	2	5	7	-51	6	7	8	-54	2	4	5	-54	3	5	6	5	5	5	5
30,000	-56.5	-45	2	5	6	-58	6	8	9	-52	12	14	15	-57	7	10	11	-57	7	10	11	4	4	2	2
20,000	-21.2	-16	5	7	8	-15	8	10	11	-6	15	16	17	-10	11	12	13	-11	10	12	13	2	2	5	2
10,000	-4.6	1	6	8	9	5	9	11	12	12	17	18	19	6	11	12	13	6	11	13	15	5	5	2	2
RANO TO SANTA PAULA																									
55,000	-56.5	-70	-15	-11	-10	-68	-12	-9	-8	-71	-15	-13	-12	-71	-14	-13	-11	-70	-15	-11	-10	2548 N.M.I.			
40,000	-56.5	-56	1	1	5	-55	2	5	6	-52	4	5	6	-54	2	4	5	-54	2	4	5	5	5	5	5
30,000	-56.5	-46	1	5	6	-57	7	9	10	-51	11	13	14	-55	9	11	13	-57	8	10	11	4	4	2	2
20,000	-21.2	-14	7	9	10	-11	10	11	12	-7	14	16	16	-9	15	16	16	-10	11	13	14	2	2	2	2
10,000	-4.6	4	8	10	11	5	10	12	13	12	17	18	19	7	12	13	14	7	12	14	15	2	2	2	2
RANO TO TASHKENT																									
55,000	-56.5	-77	-21	-18	-17	-77	-20	-18	-17	-76	-17	-15	-14	-76	-19	-17	-16	-76	-19	-17	-16	2950 N.M.I.			
40,000	-56.5	-55	4	5	6	-52	5	7	8	-55	4	5	6	-52	5	6	7	-52	4	6	7	5	5	5	5
30,000	-56.5	-51	15	16	15	-50	14	15	16	-52	12	14	14	-51	13	15	15	-51	13	15	15	2	2	2	2
20,000	-21.2	-5	16	17	17	-5	16	17	18	-5	16	17	17	-6	15	16	17	-5	16	17	18	2	2	2	2
10,000	-4.6	10	14	15	16	10	14	15	16	8	14	16	16	10	15	16	16	9	14	15	16	1	2	2	1
RANO TO TRAPOLI																									
55,000	-56.5	-71	-15	-11	-12	-70	-15	-11	-11	-74	-17	-15	-14	-75	-16	-14	-13	-72	-15	-13	-12	1265 N.M.I.			
40,000	-56.5	-54	2	5	6	-55	5	6	7	-51	5	7	7	-55	5	5	5	-51	4	5	6	5	5	5	5
30,000	-56.5	-41	4	5	6	-55	9	11	11	-51	14	15	16	-55	10	11	12	-55	9	12	13	2	2	2	2
20,000	-21.2	-15	8	9	10	-10	11	12	13	-5	16	17	18	-6	15	16	16	-9	12	14	15	2	2	2	2
10,000	-4.6	4	8	10	11	7	12	13	14	14	18	19	20	8	15	16	16	8	15	15	16	2	2	2	2
RANO TO TUNIS																									
55,000	-56.5	-70	-15	-11	-10	-68	-12	-10	-9	-72	-16	-14	-13	-71	-15	-13	-12	-70	-14	-11	-10	1491 N.M.I.			
40,000	-56.5	-54	2	5	6	-54	5	6	7	-51	6	7	8	-54	5	6	7	-55	5	6	7	5	5	5	5
30,000	-56.5	-42	5	4	5	-57	8	9	10	-52	13	15	15	-56	9	10	11	-56	8	11	12	4	4	2	2
20,000	-21.2	-15	7	8	9	-12	10	11	12	-6	15	17	17	-9	12	13	14	-10	11	13	14	5	2	2	2
10,000	-4.6	5	7	9	10	6	11	12	13	15	18	19	20	7	12	13	14	7	12	14	16	2	2	2	2
RANO TO ZURICH																									
55,000	-56.5	-66	-9	-7	-6	-65	-8	-6	-5	-68	-11	-9	-8	-68	-11	-9	-8	-67	-10	-8	-6	2124 N.M.I.			
40,000	-56.5	-55	1	4	5	-55	2	5	6	-51	5	7	8	-55	2	4	5	-54	2	5	6	4	5	5	5
30,000	-56.5	-44	1	3	4	-60	5	7	8	-55	11	13	14	-58	7	9	10	-59	6	9	10	5	5	5	5
20,000	-21.2	-17	4	6	7	-14	7	9	10	-7	14	15	16	-11	10	12	12	-12	9	11	13	5	5	2	2
10,000	-4.6	-0	4	7	8	5	8	10	11	11	16	17	18	5	10	11	12	5	9	12	14	5	5	2	2
KNNSNS CITY TO VANCOUVER																									
55,000	-56.5	-59	-2	1	2	-57	-0	2	4	-59	-5	-0	1	-61	-5	-2	-1	-59	-2	1	2	1			

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	JAN	APR	JUL	OCT
KARACHI TO KHARTOUM																	
55,000	-56.5	-74	-17	-15	-14	-74	-18	-15	-14	-75	-19	-16	-15	-75	-18	-16	-15
40,000	-56.5	-54	3	5	6	-52	4	7	8	-49	7	9	10	-53	3	5	6
30,000	-44.5	-36	8	10	11	-33	11	13	14	-27	17	19	20	-32	12	14	15
20,000	-21.2	-10	11	13	14	-7	14	16	16	-4	17	19	20	-6	15	16	17
10,000	-4.6	7	11	13	14	10	14	16	17	15	20	21	22	9	13	15	16
KARACHI TO LAHORE																	
55,000	-56.5	-69	-12	-10	-8	-67	-11	-8	-6	-72	-16	-12	-11	-70	-13	-10	-8
40,000	-56.5	-54	2	6	8	-54	3	6	8	-47	9	12	14	-54	3	6	8
30,000	-44.5	-40	5	8	10	-38	7	10	12	-26	18	21	22	-34	10	13	14
20,000	-21.2	-15	6	8	9	-10	11	14	15	-2	19	21	22	-9	12	14	16
10,000	-4.6	1	6	8	9	8	13	15	16	15	20	22	23	7	12	14	15
KARACHI TO LISBON																	
55,000	-56.5	-61	-5	-2	-0	-60	-4	-1	0	-65	-9	-6	-5	-64	-7	-5	-3
40,000	-56.5	-56	1	4	6	-56	1	4	6	-46	8	10	12	-54	1	3	4
30,000	-44.5	-46	-2	1	2	-43	1	4	5	-32	13	15	16	-39	5	7	9
20,000	-21.2	-21	0	3	4	-17	5	7	8	-7	15	17	18	-13	8	10	11
10,000	-4.6	-5	0	3	4	1	6	8	9	11	15	17	18	3	8	10	11
KARACHI TO LONDON																	
55,000	-56.5	-59	-3	0	2	-58	-1	1	2	-59	-3	-0	1	-61	-5	-2	-1
40,000	-56.5	-57	-0	3	5	-55	2	5	7	-48	8	11	12	-56	1	4	5
30,000	-44.5	-48	-4	-1	0	-44	0	3	4	-34	11	13	15	-41	4	6	7
20,000	-21.2	-24	-3	1	2	-18	1	6	8	-6	15	15	16	-15	6	9	10
10,000	-4.6	-8	-4	-0	2	-1	3	6	8	6	12	14	15	1	6	9	10
KARACHI TO MAURITIO																	
55,000	-56.5	-61	-4	-1	0	-60	-4	-1	0	-65	-9	-6	-5	-64	-7	-5	-3
40,000	-56.5	-56	1	4	6	-56	1	4	6	-46	8	11	12	-54	1	3	4
30,000	-44.5	-46	-2	1	2	-43	1	4	5	-32	13	15	16	-39	5	7	9
20,000	-21.2	-21	0	3	4	-17	5	7	8	-7	15	17	18	-13	8	10	11
10,000	-4.6	-5	-0	2	4	1	5	8	9	11	15	17	18	3	8	10	11
KARACHI TO MILAN																	
55,000	-56.5	-60	-4	-1	1	-59	-1	-0	1	-63	-7	-4	-3	-63	-6	-4	-2
40,000	-56.5	-56	1	4	5	-55	1	5	7	-49	9	11	13	-56	1	3	5
30,000	-44.5	-47	-3	0	1	-45	1	4	5	-31	15	15	17	-40	5	7	8
20,000	-21.2	-22	-1	2	3	-17	4	7	8	-7	15	17	18	-14	7	10	11
10,000	-4.6	-7	-2	1	3	0	5	7	9	10	14	16	17	3	7	10	11
KARACHI TO MOSCOW																	
55,000	-56.5	-60	-3	-0	1	-58	-1	1	2	-59	-3	0	1	-60	-4	-1	0
40,000	-56.5	-56	0	3	5	-54	3	6	8	-47	9	12	13	-54	2	5	7
30,000	-44.5	-46	-4	-1	1	-43	2	5	6	-32	13	15	17	-41	4	7	8
20,000	-21.2	-24	-3	1	2	-17	5	8	9	-7	14	16	17	-16	6	9	10
10,000	-4.6	-8	-4	-0	2	-1	4	7	8	9	14	16	17	1	5	8	10
KARACHI TO NEW DELHI																	
55,000	-56.5	-70	-14	-11	-10	-68	-12	-9	-7	-73	-17	-14	-12	-72	-15	-13	-11
40,000	-56.5	-54	2	6	6	-53	3	6	8	-48	9	12	14	-54	3	6	8
30,000	-44.5	-48	6	9	11	-37	8	11	13	-26	18	21	22	-34	11	14	15
20,000	-21.2	-14	7	9	11	-9	12	14	16	-2	19	21	22	-8	13	15	16
10,000	-4.6	3	7	9	10	9	15	16	17	15	20	21	22	7	12	14	15
KARACHI TO NICOSIA																	
55,000	-56.5	-66	-9	-7	-5	-65	-8	-6	-4	-71	-15	-13	-11	-68	-11	-9	-7
40,000	-56.5	-54	2	5	7	-54	3	6	8	-46	10	12	14	-55	2	4	5
30,000	-44.5	-43	2	4	6	-40	5	7	8	-26	18	20	21	-37	8	10	11
20,000	-21.2	-18	4	6	7	-13	8	10	11	-3	19	21	22	-11	11	12	13
10,000	-4.6	-2	3	6	7	5	9	12	13	15	19	21	22	7	11	13	14
KARACHI TO PARIS																	
55,000	-56.5	-60	-3	-0	1	-58	-2	1	2	-61	-4	-2	-0	-62	-5	-3	-1
40,000	-56.5	-56	0	3	5	-55	1	5	7	-48	8	11	12	-56	1	4	5
30,000	-44.5	-48	-3	-1	1	-44	1	5	5	-33	12	14	15	-41	4	6	8
20,000	-21.2	-23	-2	1	3	-18	4	6	8	-8	15	16	17	-15	7	9	10
10,000	-4.6	-4	-3	0	2	-1	4	7	8	8	13	15	16	2	6	9	10
KARACHI TO RANGOON																	
55,000	-56.5	-75	-18	-16	-15	-72	-15	-13	-11	-76	-20	-17	-15	-76	-19	-17	-15
40,000	-56.5	-56	1	4	5	-53	4	7	8	-49	7	10	12	-54	3	6	7
30,000	-44.5	-45	9	12	13	-33	11	14	15	-27	17	19	20	-32	13	15	16
20,000	-21.2	-9	12	14	15	-7	14	16	17	-3	18	19	20	-6	15	17	18
10,000	-4.6	6	11	13	14	10	14	16	17	13	17	18	19	8	13	14	15
KARACHI TO RAHWALPINDI																	
55,000	-56.5	-68	-11	-8	-7	-66	-10	-7	-5	-71	-15	-12	-10	-69	-13	-10	-8
40,000	-56.5	-54	2	6	8	-54	3	6	8	-47	9	12	14	-54	3	6	8
30,000	-44.5	-41	4	7	9	-38	6	9	11	-27	18	21	22	-35	10	12	14
20,000	-21.2	-16	5	7	9	-11	11	13	15	-3	19	21	22	-10	12	14	15
10,000	-4.6	0	5	7	8	7	12	14	15	16	20	22	23	7	11	13	14
KARACHI TO ROME																	
55,000	-56.5	-61	-5	-2	-1	-61	-4	-2	-0	-66	-10	-7	-6	-64	-8	-5	-4
40,000	-56.5	-55	1	4	6	-55	1	5	7	-47	9	12	13	-56	1	3	5
30,000	-44.5	-46	-2	1	2	-43	2	4	6	-30	14	17	18	-39	5	8	9
20,000	-21.2	-21	0	3	4	-16	5	8	9	-6	16	18	19	-13	8	10	11
10,000	-4.6	-5	-0	2	4	1	6	9	10	11	16	18	19	4	9	11	12
KARACHI TO SHARJAH																	
55,000	-56.5	-71	-15	-12	-11	-71	-14	-12	-10	-74	-17	-15	-13	-72	-16	-13	-11
40,000	-56.5	-54	3	5	7	-52	4	7	9	-47	9	12	13	-54	3	5	7
30,000	-44.5	-38	7	10	11	-35	9	12	13	-26	19	21	22	-33	11	14	15
20,000	-21.2	-13	9	11	12	-8	13	15	16	-3	18	20	21	-7	14	16	17
10,000	-4.6	4	8	10	11	10	14	16	17	16	21	22	23	8	13	15	16

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
KARACHI TO SINGAPORE																									
55,000	-56.5	-7V	-22	-20	-19	-76	-19	-17	-16	-77	-21	-18	-17	-79	-22	-20	-19	-78	-21	-19	-17	2557 N.M.I.			
40,000	-56.5	-56	1	5	5	-52	4	7	8	-52	5	7	8	-54	2	5	6	-53	3	6	7	3	3	4	3
30,000	-44.5	-55	12	14	15	-51	15	15	16	-29	16	17	18	-52	15	14	15	-51	15	15	16	3	3	3	3
20,000	-21.2	-7	14	16	17	-6	15	17	18	-4	17	18	19	-6	15	17	18	-6	16	17	18	2	2	2	2
10,000	-4.6	8	13	14	15	10	15	16	17	11	16	17	17	9	13	15	15	10	14	15	16	2	2	1	2
KARACHI TO SYDNEY																									
55,000	-56.5	-7H	-22	-19	-1H	-75	-19	-16	-15	-75	-1R	-16	-15	-75	-19	-17	-16	-76	-19	-17	-15	5941 N.M.I.			
40,000	-56.5	-54	2	4	5	-53	4	6	7	-53	4	5	6	-54	3	5	6	-54	3	5	6	3	3	3	3
30,000	-44.5	-55	12	13	14	-53	11	13	14	-35	12	13	14	-34	10	12	13	-33	11	13	14	2	3	3	3
20,000	-21.2	-7	14	16	16	-8	14	15	16	-8	13	14	15	-8	13	14	15	-8	13	15	16	2	2	2	2
10,000	-4.6	9	13	15	15	8	13	14	15	7	12	13	14	7	12	13	14	8	12	14	15	2	2	2	2
KARACHI TO TANANARIVE																									
55,000	-56.5	-7d	-21	-19	-1H	-77	-20	-18	-16	-76	-1R	-16	-15	-77	-21	-19	-1R	-77	-20	-18	-16	2883 N.M.I.			
40,000	-56.5	-54	3	5	6	-52	5	7	8	-52	5	7	8	-53	4	5	6	-53	4	6	7	3	3	3	3
30,000	-44.5	-51	13	15	16	-51	13	15	16	-30	14	16	16	-32	12	14	15	-31	13	15	16	2	2	2	2
20,000	-21.2	-6	15	16	17	-6	15	17	17	-5	16	18	18	-6	15	16	17	-6	16	17	18	1	2	2	2
10,000	-4.6	9	13	14	15	10	15	16	16	10	15	16	17	9	14	15	15	9	14	15	16	1	2	2	2
KARACHI TO TEHRAN																									
55,000	-56.5	-66	-10	-7	-6	-65	-9	-6	-5	-71	-15	-12	-11	-68	-12	-9	-7	-6R	-11	-6	-7	5042 N.M.I.			
40,000	-56.5	-54	2	5	7	-54	3	6	8	-67	10	12	14	-54	2	5	6	-52	4	8	10	4	5	4	4
30,000	-44.5	-52	5	6	7	-59	6	8	10	-26	14	20	22	-56	8	11	12	-56	9	13	15	4	4	3	4
20,000	-21.2	-17	4	6	8	-12	9	12	13	-2	19	21	22	-10	11	13	14	-10	11	15	17	4	3	3	3
10,000	-4.6	-1	4	6	8	6	11	13	14	16	20	22	23	7	11	13	14	7	11	15	17	4	3	3	3
KARACHI TO TEL AVIV-JAIFA																									
55,000	-56.5	-67	-11	-9	-7	-66	-10	-7	-6	-72	-16	-13	-12	-70	-13	-11	-9	-69	-12	-10	-8	1747 N.M.I.			
40,000	-56.5	-54	2	5	7	-53	5	6	8	-67	10	12	13	-54	2	4	6	-52	4	8	10	4	5	3	3
30,000	-44.5	-52	5	6	7	-59	6	8	10	-26	19	20	21	-36	9	11	12	-35	9	13	15	4	4	3	3
20,000	-21.2	-16	5	7	8	-12	9	11	12	-2	19	21	22	-10	12	13	14	-10	11	15	16	3	3	3	3
10,000	-4.6	-6	5	7	8	6	10	12	14	16	20	22	23	7	12	14	15	7	12	15	17	3	3	2	3
KARACHI TO THIRUPOLI																									
55,000	-56.5	-66	-9	-7	-5	-64	-8	-5	-4	-71	-14	-12	-11	-64	-11	-9	-7	-67	-11	-8	-6	2888 N.M.I.			
40,000	-56.5	-54	2	5	6	-55	2	5	7	-67	10	12	13	-55	2	4	5	-53	4	7	9	4	5	3	4
30,000	-44.5	-53	1	3	5	-40	4	7	8	-28	17	19	20	-37	7	9	10	-35	7	11	13	4	3	3	3
20,000	-21.2	-16	4	6	7	-14	7	10	11	-4	18	19	20	-11	10	12	13	-13	10	13	15	3	3	3	2
10,000	-4.6	-2	5	5	7	4	8	11	12	14	18	20	21	6	11	13	14	6	10	13	15	3	3	3	2
KARACHI TO TUNIS																									
55,000	-56.5	-65	-7	-6	-5	-62	-6	-5	-2	-62	-12	-10	-9	-64	-9	-7	-5	-65	-8	-6	-4	2973 N.M.I.			
40,000	-56.5	-55	1	4	6	-55	1	5	7	-67	9	12	13	-55	1	5	5	-53	5	7	9	4	5	3	3
30,000	-44.5	-55	-0	2	3	-42	3	5	6	-29	16	18	19	-34	6	4	9	-34	6	10	12	4	4	3	3
20,000	-21.2	-19	2	4	6	-15	6	8	10	-5	17	18	19	-12	9	11	12	-13	8	12	14	4	3	3	3
10,000	-4.6	-5	1	4	5	2	7	10	11	12	17	19	19	5	10	12	13	4	9	12	14	4	4	2	3
REKHAVIK TO LONDON																									
55,000	-56.5	-58	-1	3	4	-51	5	8	9	-47	9	12	13	-56	1	4	5	-53	4	7	9	5025 N.M.I.			
40,000	-56.5	-57	-6	4	7	-52	5	9	12	-49	8	12	14	-55	2	6	8	-53	4	8	11	5	4	3	4
30,000	-44.5	-51	-7	-4	-2	-44	-3	-1	1	-45	2	4	6	-46	-1	2	4	-47	-2	1	3	4	4	4	5
20,000	-21.2	-28	-7	-5	-1	-25	-4	-1	1	-17	4	7	8	-21	-0	4	4	-23	-2	2	4	6	5	4	6
10,000	-4.6	-12	-7	-4	-2	-10	-5	-2	-0	-2	3	5	6	-6	-1	2	4	-7	-3	1	3	5	5	3	5
REKHAVIK TO MONTREAL																									
55,000	-56.5	-56	0	4	5	-50	6	9	10	-49	8	10	12	-53	5	6	7	-52	4	7	9	2012 N.M.I.			
40,000	-56.5	-53	5	8	10	-50	6	10	13	-49	7	10	12	-51	5	9	11	-51	5	9	11	6	4	5	6
30,000	-44.5	-52	-4	-5	-3	-49	-5	-2	-0	-45	2	4	6	-47	-2	1	3	-48	-3	1	3	4	4	4	5
20,000	-21.2	-33	-12	-7	-5	-24	-7	-5	-1	-17	4	7	9	-24	-3	1	3	-26	-4	0	3	7	6	4	6
10,000	-4.6	-19	-15	-10	-8	-14	-9	-5	-3	-2	2	5	6	-9	-5	-3	1	-15	-7	-2	0	7	6	4	6
REKHAVIK TO NEW YORK																									
55,000	-56.5	-57	-0	3	5	-52	5	8	9	-51	6	8	10	-55	2	5	6	-53	3	6	8	2247 N.M.I.			
40,000	-56.5	-53	3	7	10	-51	5	9	12	-50	6	9	11	-52	5	8	10	-52	5	8	10	5	4	4	4
30,000	-44.5	-51	-7	-4	-2	-48	-4	-1	0	-42	3	5	7	-46	-1	2	3	-47	-2	1	3	4	4	4	4
20,000	-21.7	-31	-10	-6	-3	-27	-6	-2	0	-16	5	8	10	-22	-1	3	5	-24	-1	2	4	7	6	4	6
10,000	-4.6	-17	-11	-8	-6	-12	-7	-4	-2	-1	4	7	9	-8	-3	1	3	-10	-5	-1	1	7	6	1	6
REKHAVIK TO OSLO																									
55,000	-56.5	-58	-2	2	4	-50	6	9	11	-46	11	13	14	-55	2	5	6	-52	4	8	10	957 N.M.I.			
40,000	-56.5	-58	-1	5	6	-50	6	11	13	-47	9	13	15	-54	5	7	9	-52	4	9	11	5	4	3	4
30,000	-44.5	-53	-9	-6	-6	-49	-5	-2	-0	-44	0	3	5	-47	-3	0	2	-48	-4	-0	2	4	4	4	5
20,000	-21.2	-31	-10	-6	-6	-28	-7	-5	-1	-19	2	5	7	-23	-2	2	4	-25	-4	0	2	6	5	4	6
10,000	-4.6	-14	-10	-6	-5	-17	-7	-4	-2	-3	2	4	5	-8	-3	0	2	-9	-5	-1	1	5	5	3	5
REKHAVIK TO PRESNICK																									
55,000	-56.5	-5H	-1	3	5	-50	6	9	10	-46	10	12	14	-55	2	4	6	-52	4	8	10	741 N.M.I.			
40,000	-56.5	-56	0	5	7	-51	6	10	11	-48	8	12	14	-54	3	7	9	-52	4	9	11	5	4	3	4
30,000	-44.5	-52	-7	-4	-3	-48	-5	-1	1	-44	3	4	5	-46	-2	1	3	-47	-3	1	3	4	4	4	5
20,000	-21.2	-29	-8	-4	-1	-26	-5	-2	0	-18	3	6	7	-22	-1	1	3	-24	-3	1	3	6	5	4	6
10,000	-4.6	-13	-8	-5	-3	-11	-6	-3	-1	-5	2	4	6	-6	-2	1	3	-8	-3	-0	2	5	5	3	5
REKHAVIK TO SHANNON																									
55,000	-56.5	-57	-1	3	5	-51	6	8	10	-47	9	12	13	-55	1	4	6	-53	4	7	9	799 N.M.I.			
40,000	-56.5	-56	0	5	8	-51	5	10	12	-49	8	12	14	-54	2	7	9	-53	4	9	11	5	4	4	4
30,000	-44.5	-51	-7	-4	-2	-44	-4	-0	1	-43	1	4	6	-46	-1	2	4	-47	-2	1	3	7	7	6	6
20,000	-21.2	-31	-7	-5	-1	-26	-5	-1	1	-17	4	6	8	-22	-0	1	3	-23	-2	2	4	4	4	4	5
10,000	-4.6	-12	-7	-4	-2	-10	-5	-2	-1	-2	3	5	6	-6	-1	2	4	-8	-3	0	2	6	5	3	5
REKHAVIK TO SONORESTROMJORD																									
55,000	-56.5	-58	-2	2	5	-47	9	12	14	-44	12	14	15	-52	4	7	8	-51	6	9	11	716 N.M.I.			
40,000	-56.5	-56	1	5	7	-48	8	12	15	-46	11	14	15	-50	6	10	12	-50	6	1					

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL							
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
REFLYSK TO STOCKHOLM																									
55,000	-56.5	-58	-2	2	6	-50	6	9	11	-46	11	13	16	-55	2	5	6	-52	6	8	9	5	6	3	6
40,000	-56.5	-58	-1	3	5	-51	6	10	13	-48	9	13	16	-56	2	7	9	-53	6	9	13	6	7	5	6
30,000	-66.5	-56	-9	-6	-5	-50	-5	-2	-1	-46	3	3	5	-47	-3	0	2	-49	-6	-0	2	6	6	6	5
20,000	-21.2	-31	-10	-6	-4	-28	-7	-3	-1	-39	3	5	7	-23	-2	2	4	-25	-6	-0	2	6	5	6	6
10,000	-6.6	-15	-10	-7	-5	-12	-7	-6	-2	-3	2	4	5	-8	-3	0	2	-9	-5	-1	1	5	5	3	5
REFLYSK TO MINNIPISG																									
55,000	-56.5	-57	-0	6	6	-49	7	10	12	-47	10	12	13	-53	6	6	7	-51	5	8	10	6	6	3	3
40,000	-56.5	-55	2	6	8	-50	7	11	13	-48	9	12	13	-51	6	9	13	-51	6	10	12	6	6	5	5
30,000	-66.5	-55	-10	-6	-6	-50	-6	-3	-1	-46	1	3	5	-49	-6	-1	3	-50	-5	-1	1	6	6	6	5
20,000	-21.2	-36	-35	-31	-9	-31	-9	-5	-3	-19	2	5	7	-27	-5	-3	1	-20	-7	-2	0	6	6	6	6
10,000	-6.6	-23	-18	-16	-12	-16	-12	-8	-5	-6	1	3	5	-32	-8	-3	-1	-16	-9	-5	-2	6	6	6	6
REFLYSK TO ZURICH																									
55,000	-56.5	-57	-1	3	5	-52	5	7	9	-48	9	11	12	-56	0	3	5	-53	3	7	8	5	6	3	6
40,000	-56.5	-57	-1	3	5	-53	6	8	11	-49	7	11	13	-55	3	5	7	-56	3	7	10	6	7	5	6
30,000	-66.5	-51	-7	-6	-2	-48	-3	-1	1	-42	2	5	6	-45	-1	2	4	-47	-2	1	3	6	6	6	6
20,000	-21.2	-28	-7	-3	-3	-25	-6	-0	2	-16	5	7	9	-21	1	6	6	-22	-1	3	5	6	5	6	5
10,000	-6.6	-12	-7	-6	-2	-9	-6	-1	0	-1	6	6	7	-5	-0	3	5	-7	-2	1	3	5	5	5	5
REICHSMAN TO SINGAPORE																									
55,000	-56.5	-55	1	5	7	-52	6	7	8	-51	5	7	9	-56	1	3	5	-56	3	6	7	5	6	3	6
40,000	-56.5	-55	1	6	8	-54	5	7	9	-52	6	8	9	-56	2	6	7	-56	3	6	8	6	6	5	5
30,000	-66.5	-51	-6	-3	-2	-48	-6	-2	0	-42	3	5	6	-45	-3	2	4	-47	-2	1	3	6	3	6	6
20,000	-21.2	-28	-7	-3	-3	-25	-6	-0	2	-15	6	9	10	-22	-0	3	5	-22	-3	3	5	7	5	6	5
10,000	-6.6	-13	-8	-3	-1	-9	-5	-2	0	-5	5	8	9	-5	-1	2	6	-7	-2	2	6	7	6	5	5
RHARTOUM TO KISUMU																									
55,000	-56.5	-78	-21	-19	-18	-78	-21	-19	-18	-76	-20	-18	-17	-78	-21	-19	-18	-77	-21	-19	-18	3	3	3	3
40,000	-56.5	-56	3	6	5	-52	5	7	8	-53	6	5	6	-52	5	6	6	-52	6	6	7	2	3	2	2
30,000	-66.5	-33	12	13	16	-30	15	16	16	-33	16	15	16	-30	16	15	16	-33	16	15	16	2	2	2	2
20,000	-21.2	-5	16	17	18	-5	16	17	18	-5	16	17	18	-6	16	16	17	-5	16	17	18	3	2	1	1
10,000	-6.6	10	15	16	17	10	15	16	16	11	15	16	17	10	15	16	16	10	15	16	17	2	2	1	1
RHARTOUM TO LONDON																									
55,000	-56.5	-63	-7	-6	-3	-62	-6	-3	-2	-65	-8	-6	-5	-66	-9	-7	-6	-66	-8	-5	-6	6	3	3	3
40,000	-56.5	-56	1	6	5	-56	1	6	6	-50	7	9	10	-55	3	5	5	-56	2	5	7	6	5	3	3
30,000	-66.5	-65	-1	1	2	-42	3	5	6	-33	11	13	16	-39	6	8	9	-40	5	8	10	5	5	3	3
20,000	-21.2	-19	2	6	6	-16	5	8	9	-8	13	15	16	-13	9	10	11	-16	7	10	12	6	5	2	3
10,000	-6.6	-3	2	6	6	1	6	8	9	9	13	15	16	6	8	10	13	3	7	10	12	6	5	2	3
RHARTOUM TO MADRID																									
55,000	-56.5	-67	-10	-8	-7	-65	-9	-7	-6	-70	-13	-11	-10	-69	-12	-10	-9	-68	-11	-8	-7	5	6	3	3
40,000	-56.5	-55	1	6	6	-55	2	6	6	-50	6	8	9	-55	2	6	5	-56	3	5	7	6	6	2	3
30,000	-66.5	-63	1	3	6	-39	5	7	8	-31	13	15	16	-37	7	9	10	-38	7	10	11	5	5	3	3
20,000	-21.2	-16	5	7	8	-13	8	10	11	-6	15	16	17	-13	13	12	13	-12	10	12	13	5	3	2	3
10,000	-6.6	1	5	7	9	6	9	11	12	12	16	18	19	6	11	12	13	6	10	13	16	5	3	2	2
RHARTOUM TO NAIROBI																									
55,000	-56.5	-78	-21	-20	-19	-78	-21	-19	-18	-76	-20	-18	-17	-78	-21	-19	-18	-77	-21	-19	-18	3	3	3	3
40,000	-56.5	-56	3	6	5	-52	5	7	8	-53	6	5	6	-52	5	6	6	-52	6	6	7	2	3	2	2
30,000	-66.5	-32	12	13	16	-30	15	16	16	-33	16	15	16	-30	16	15	16	-31	16	15	16	2	2	2	2
20,000	-21.2	-5	16	17	18	-5	16	17	18	-5	16	17	18	-6	16	16	17	-5	16	17	18	2	2	1	1
10,000	-6.6	10	15	16	17	10	15	16	16	11	15	16	17	10	15	16	16	10	15	16	17	2	2	1	1
RHARTOUM TO PARIS																									
55,000	-56.5	-66	-8	-5	-6	-63	-6	-6	-5	-66	-10	-8	-7	-66	-10	-8	-7	-65	-8	-6	-6	6	3	3	3
40,000	-56.5	-56	1	6	5	-56	1	6	5	-50	7	9	10	-55	1	3	5	-56	2	5	7	6	5	3	3
30,000	-66.5	-65	-0	2	3	-61	3	5	7	-33	12	14	15	-38	6	8	9	-39	5	8	10	5	5	3	3
20,000	-21.2	-19	2	5	6	-15	6	8	9	-7	16	15	16	-12	9	11	12	-13	8	11	12	6	5	2	3
10,000	-6.6	-2	3	5	6	2	6	8	10	9	16	16	17	6	9	11	12	3	8	11	12	6	5	2	3
RHARTOUM TO ROME																									
55,000	-56.5	-66	-10	-8	-6	-65	-9	-7	-5	-70	-13	-11	-10	-69	-12	-10	-9	-67	-11	-9	-7	3	3	3	3
40,000	-56.5	-55	2	6	6	-55	1	6	6	-49	7	9	10	-55	2	6	5	-53	3	6	7	6	6	2	3
30,000	-66.5	-66	1	3	6	-39	5	7	8	-31	14	16	17	-37	7	9	10	-38	7	10	12	5	5	1	3
20,000	-21.2	-17	5	7	8	-13	8	10	11	-6	15	17	18	-11	10	12	13	-12	10	12	16	3	3	2	2
10,000	-6.6	-0	6	7	8	3	8	10	11	11	16	17	18	6	11	12	13	5	10	12	16	3	3	2	2
RHARTOUM TO STANLEYVILLE																									
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-76	-20	-18	-17	-77	-21	-19	-18	-77	-21	-19	-18	3	3	3	3
40,000	-56.5	-56	3	6	5	-52	5	7	8	-53	6	5	6	-52	5	6	7	-52	6	5	6	2	3	2	2
30,000	-66.5	-33	13	13	13	-30	16	16	16	-31	16	15	16	-30	16	15	16	-31	16	15	16	2	2	2	2
20,000	-21.2	-5	16	17	17	-5	16	18	18	-5	16	17	18	-6	16	16	17	-5	16	17	18	2	2	1	1
10,000	-6.6	10	15	16	17	10	15	16	17	10	15	16	16	10	15	16	16	10	15	16	16	2	2	1	1
RHARTOUM TO SEMERAN																									
55,000	-56.5	-69	-13	-11	-10	-68	-12	-10	-9	-73	-17	-15	-16	-71	-15	-13	-11	-71	-16	-12	-10	3	3	3	3
40,000	-56.5	-56	3	5	6	-56	3	6	7	-68	9	10	11	-56	3	6	5	-52	6	7	8	3	6	2	3
30,000	-66.5	-61	6	6	7	-37	8	10	11	-27	18	19	20	-35	9	11	12	-35	10	13	16	3	3	2	3
20,000	-21.2	-16	7	9	10	-11	10	11	12	-3	18	20	21	-9	12	16	15	-9	12	15	16	3	3	2	2
10,000	-6.6	2	7	9	10	6	10	12	13	15	20	21	22	8	12	16	15	8	12	15	17	3	3	2	2
RHARTOUM TO TEL AVIV-JAFFA																									
55,000	-56.5	-71	-16	-12	-11	-70	-13	-11	-10	-76	-17	-16	-15	-73	-16	-16	-13	-72	-15	-13	-12	3	3	3	3
40,000	-56.5	-56	3	5	6	-56	3	5	7	-69	8	9	10	-56	3	6	5	-52	6	6	7	3	6	2	2
30,000	-66.5	-60	6	6	7	-36	9	10	11	-27	17	19	19	-36	10	12	12	-35	10	13	16	2	2	2	2
20,000	-21.2	-13	8	10	11	-11	11	12	13	-6	17	19	20	-8	13	16	15	-9	12	15	16	3	2	2	2
10,000	-6.6	6	8	10	11	6	11	13	16	16	19	20	20	8	13	16	15	8	13	15	16	3	3	2	2
RHARTOUM TO TRAPOLI																									
55,000	-56.5	-70	-16	-12	-11	-69	-12	-10	-10	-73	-17	-15	-16	-72	-16	-16	-13	-71	-15	-12	-11	3	3	3	

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY				APRIL				JULY				OCTOBER			
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	JAN	APR	JUL	OCT	
KHARTOUM TO HA01 HALFA																	
55,000	-50.5	-75	-18	-16	-15	-74	-17	-16	-15	-76	-19	-17	-16	-77	-20	-18	-17
40,000	-50.5	-54	5	4	5	-53	4	6	7	-51	6	7	8	-55	4	5	6
30,000	-44.5	-37	7	9	9	-35	12	13	14	-29	16	17	18	-32	12	13	14
20,000	-21.2	-10	12	13	14	-4	13	15	15	-4	17	18	19	-7	15	16	17
10,000	-4.6	7	12	14	15	9	14	15	16	15	18	19	19	10	14	15	16
KHARTOUM TO ZURICH																	
55,000	-50.5	-64	-8	-6	-4	-65	-7	-5	-5	-67	-10	-8	-7	-67	-10	-8	-7
40,000	-50.5	-55	1	4	5	-56	1	4	5	-49	7	9	10	-55	1	3	4
30,000	-44.5	-45	-0	2	3	-41	4	6	7	-32	13	14	15	-38	6	8	9
20,000	-21.2	-18	3	5	6	-15	6	8	10	-7	14	16	17	-12	9	11	12
10,000	-4.6	-2	5	5	6	2	6	9	10	10	14	16	17	5	9	11	12
KINGSTON TO LA PAZ																	
55,000	-50.5	-76	-21	-19	-18	-77	-20	-19	-18	-73	-16	-14	-13	-76	-19	-17	-15
40,000	-50.5	-54	5	4	5	-52	5	6	7	-54	2	4	4	-54	3	4	5
30,000	-44.5	-52	12	13	14	-51	14	15	16	-52	12	13	14	-51	13	15	15
20,000	-21.2	-5	16	17	18	-5	17	18	18	-8	15	16	17	-6	15	17	17
10,000	-4.6	9	14	15	16	9	14	15	16	9	13	14	15	10	14	15	16
KINGSTON TO LIMA																	
55,000	-50.5	-78	-21	-19	-18	-77	-21	-19	-18	-73	-17	-15	-14	-77	-20	-18	-17
40,000	-50.5	-54	5	5	5	-52	4	6	7	-55	2	3	4	-54	2	4	4
30,000	-44.5	-53	12	13	14	-51	14	15	16	-52	12	13	14	-51	13	15	15
20,000	-21.2	-5	16	17	18	-5	16	18	18	-7	14	15	15	-6	16	17	17
10,000	-4.6	9	14	15	16	9	14	15	16	9	13	14	15	10	14	15	16
KINGSTON TO LISBON																	
55,000	-50.5	-67	-11	-8	-7	-68	-9	-7	-6	-69	-12	-10	-9	-67	-10	-8	-7
40,000	-50.5	-57	-1	2	3	-57	-1	2	3	-55	1	3	4	-56	0	2	3
30,000	-44.5	-42	5	5	6	-40	5	6	7	-35	9	11	11	-38	6	8	9
20,000	-21.2	-14	7	9	10	-15	8	10	11	-8	13	14	15	-10	12	13	14
10,000	-4.6	2	6	9	10	2	7	9	10	7	12	13	14	6	10	12	13
KINGSTON TO LONDON																	
55,000	-50.5	-64	-7	-5	-4	-61	-5	-5	-1	-60	-4	-2	-1	-65	-4	-5	-4
40,000	-50.5	-57	-0	3	5	-57	-0	3	5	-55	2	4	5	-55	1	4	5
30,000	-44.5	-46	0	3	4	-45	2	4	5	-57	7	9	11	-52	5	8	9
20,000	-21.2	-14	5	6	8	-17	5	7	9	-10	11	15	16	-15	8	11	12
10,000	-4.6	-5	2	5	6	-1	4	6	7	5	9	11	12	2	7	9	10
KINGSTON TO LOS ANGELES																	
55,000	-50.5	-71	-15	-13	-12	-69	-13	-11	-10	-71	-14	-13	-12	-74	-18	-15	-14
40,000	-50.5	-56	0	3	4	-56	0	2	4	-55	1	2	3	-55	2	3	4
30,000	-44.5	-40	5	6	7	-39	6	7	8	-35	12	13	13	-35	10	11	12
20,000	-21.2	-12	5	6	7	-11	10	12	13	-6	15	16	16	-8	13	15	16
10,000	-4.6	6	8	11	12	6	11	15	16	11	15	16	17	8	13	14	15
KINGSTON TO MADRID																	
55,000	-50.5	-68	-10	-7	-6	-64	-8	-6	-4	-65	-4	-6	-5	-68	-11	-9	-8
40,000	-50.5	-57	-1	2	4	-54	-1	2	3	-55	1	3	4	-56	0	2	3
30,000	-44.5	-42	2	4	5	-41	4	6	7	-37	9	10	11	-37	8	10	11
20,000	-21.2	-15	5	8	9	-14	7	10	11	-9	12	14	15	-10	11	13	14
10,000	-4.6	1	6	8	9	2	6	8	10	7	12	13	14	5	10	11	12
KINGSTON TO MEXICO CITY																	
55,000	-50.5	-77	-20	-18	-17	-75	-19	-17	-16	-73	-17	-15	-15	-78	-21	-19	-18
40,000	-50.5	-55	1	5	4	-54	2	3	4	-56	0	1	2	-54	2	3	4
30,000	-44.5	-50	9	10	10	-55	10	11	12	-51	12	13	13	-52	12	13	14
20,000	-21.2	-8	15	15	16	-7	15	16	17	-6	15	15	16	-6	15	16	17
10,000	-4.6	8	12	14	14	9	14	15	16	9	14	15	15	10	14	15	16
KINGSTON TO MIAMI																	
55,000	-50.5	-75	-19	-17	-16	-74	-17	-15	-14	-72	-15	-14	-13	-74	-20	-18	-17
40,000	-50.5	-55	1	5	4	-54	2	3	4	-54	0	1	2	-54	2	3	4
30,000	-44.5	-57	4	9	10	-45	9	11	11	-31	11	12	13	-35	12	13	14
20,000	-21.2	-9	15	14	15	-8	15	15	15	-7	15	15	16	-8	15	16	17
10,000	-4.6	7	11	13	13	7	12	13	14	9	13	14	15	8	12	13	14
KINGSTON TO MONTEGU BAY																	
55,000	-50.5	-77	-20	-18	-17	-76	-19	-17	-16	-72	-16	-15	-14	-77	-21	-19	-18
40,000	-50.5	-54	2	4	5	-54	3	4	5	-56	0	1	2	-54	3	4	4
30,000	-44.5	-55	9	11	11	-54	11	12	13	-55	11	12	13	-52	12	14	14
20,000	-21.2	-9	14	15	16	-7	15	16	17	-7	15	15	16	-6	15	16	17
10,000	-4.6	7	12	13	14	8	13	14	15	9	14	14	15	9	14	15	15
KINGSTON TO MONTREAL																	
55,000	-50.5	-68	-12	-10	-8	-66	-10	-7	-6	-67	-10	-8	-8	-70	-13	-11	-10
40,000	-50.5	-56	0	3	4	-56	0	3	4	-56	1	2	3	-55	2	4	5
30,000	-44.5	-42	3	5	6	-40	4	6	7	-34	10	11	12	-37	8	10	11
20,000	-21.2	-15	6	9	10	-14	8	10	11	-8	13	15	15	-10	11	13	14
10,000	-4.6	-1	4	7	8	1	6	8	10	7	12	13	14	5	10	12	13
KINGSTON TO VASSAU																	
55,000	-50.5	-76	-19	-17	-16	-74	-17	-16	-15	-72	-15	-14	-13	-76	-20	-18	-17
40,000	-50.5	-55	2	3	4	-54	2	3	4	-54	0	1	2	-54	2	3	4
30,000	-44.5	-56	8	9	10	-55	10	11	11	-55	10	12	13	-55	12	13	14
20,000	-21.2	-9	13	14	15	-8	14	15	16	-7	15	15	16	-6	15	16	17
10,000	-4.6	7	11	13	13	7	12	13	14	9	13	14	14	9	13	14	15
KINGSTON TO NEW ORLEANS																	
55,000	-50.5	-74	-18	-16	-15	-72	-16	-14	-13	-71	-15	-14	-13	-76	-19	-17	-16
40,000	-50.5	-56	1	2	3	-55	1	3	4	-56	0	1	2	-55	2	3	4
30,000	-44.5	-57	7	8	9	-36	8	10	10	-55	12	12	13	-55	11	13	13
20,000	-21.2	-10	12	13	14	-9	12	14	15	-7	15	15	16	-7	15	16	16
10,000	-4.6	6	10	12	13	7	11	13	14	9	14	14	15	9	13	14	15

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE					STANDARD DEVIATION				
		JANUARY 50 050 075 085	APRIL 50 050 075 085	JULY 50 050 075 085	OCTOBER 50 050 075 085	ANNUAL 50 050 075 085	JAN	APR	JUL	OCT	
KINGSTON TO NEW YORK											
55,000	-56.5	-70 -14 -12 -11	-68 -12 -9 -8	-68 -12 -10 -9	-72 -15 -13 -12	-70 -13 -11 -9	3	3	2	3	
40,000	-56.5	-56 0 2 4	-57 -0 2 3	-56 1 2 2	-55 2 3 4	-56 1 3 4	3	3	2	3	
30,000	-46.5	-46 4 6 7	-39 6 7 8	-34 11 12 12	-35 9 11 12	-37 7 9 10	3	3	2	3	
20,000	-21.2	-13 8 10 11	-12 9 11 12	-7 14 15 16	-9 13 14 15	-10 11 13 14	3	3	2	2	
10,000	-4.6	2 6 9 10	3 8 10 11	8 12 13 14	6 13 15 16	5 9 11 12	3	3	1	2	
KINGSTON TO PANAMA CITY											
55,000	-56.5	-77 -21 -19 -18	-77 -20 -18 -17	-73 -17 -15 -14	-78 -21 -19 -18	-76 -20 -18 -17	3	3	2	3	
40,000	-56.5	-54 3 4 5	-52 4 5 6	-56 1 2 3	-54 3 4 4	-54 3 4 5	2	2	2	2	
30,000	-46.5	-34 11 12 13	-32 12 14 14	-33 12 13 13	-32 13 14 14	-33 12 13 14	2	2	2	1	
20,000	-21.2	-7 15 16 17	-5 16 17 18	-7 14 15 16	-6 16 17 17	-6 15 16 17	2	2	1	1	
10,000	-4.6	8 13 14 15	9 13 15 15	9 14 15 15	10 14 15 16	9 14 15 15	2	2	1	1	
KINGSTON TO QUITO											
55,000	-56.5	-78 -21 -20 -19	-77 -21 -19 -18	-74 -17 -15 -15	-78 -21 -19 -18	-77 -20 -18 -17	3	3	2	3	
40,000	-56.5	-54 3 4 5	-52 4 6 7	-55 1 3 3	-54 3 4 4	-54 3 5 5	2	2	2	2	
30,000	-46.5	-33 11 13 13	-31 13 15 15	-33 12 13 14	-31 13 14 15	-32 13 14 15	2	2	2	2	
20,000	-21.2	-6 16 17 17	-5 16 18 18	-7 14 15 16	-6 16 17 17	-6 15 17 17	2	2	1	1	
10,000	-4.6	9 17 15 15	9 14 15 16	9 14 15 15	10 15 16 16	9 14 15 16	2	2	1	1	
KINGSTON TO PORT AU PRINCE											
55,000	-56.5	-77 -20 -18 -17	-76 -19 -18 -17	-72 -14 -15 -14	-77 -20 -19 -17	-75 -19 -17 -16	3	3	2	3	
40,000	-56.5	-54 2 4 5	-54 3 4 5	-56 0 2 2	-54 3 4 4	-54 2 3 4	2	2	2	2	
30,000	-46.5	-35 9 11 11	-34 11 12 13	-33 11 12 13	-32 12 13 14	-34 11 12 13	2	2	1	2	
20,000	-21.2	-8 14 15 16	-7 15 16 16	-7 14 15 16	-6 15 16 17	-7 14 16 16	2	2	1	1	
10,000	-4.6	7 12 11 14	8 13 14 15	9 14 15 15	9 14 15 15	8 13 14 15	2	2	1	1	
KINGSTON TO RIO DE JANEIRO											
55,000	-56.5	-77 -21 -19 -18	-76 -20 -18 -17	-71 -15 -13 -12	-75 -18 -16 -15	-75 -18 -16 -14	3	3	2	3	
40,000	-56.5	-53 3 5 6	-52 5 7 8	-54 3 4 5	-54 3 4 5	-53 3 4 7	3	3	2	2	
30,000	-46.5	-32 12 14 14	-31 14 15 16	-33 12 13 14	-31 13 15 16	-32 13 14 15	2	2	2	2	
20,000	-21.2	-5 16 18 18	-5 16 17 18	-8 13 14 15	-6 15 16 17	-6 15 17 18	2	2	2	2	
10,000	-4.6	9 14 15 16	10 14 16 16	8 12 14 14	10 14 16 16	9 14 15 16	2	2	2	2	
KINGSTON TO SAN FRANCISCO											
55,000	-56.5	-70 -13 -11 -10	-68 -11 -9 -8	-70 -13 -12 -11	-72 -16 -14 -13	-70 -13 -11 -9	3	3	2	3	
40,000	-56.5	-56 0 3 4	-57 -0 2 3	-55 1 3 3	-55 1 3 4	-56 1 3 4	4	3	2	3	
30,000	-46.5	-41 3 5 6	-40 5 6 7	-35 11 12 13	-36 9 10 11	-37 7 9 10	2	2	2	3	
20,000	-21.2	-14 7 10 11	-12 9 11 12	-6 15 16 16	-9 12 14 15	-10 11 13 14	4	3	1	1	
10,000	-4.6	2 7 10 11	5 10 12 13	11 15 16 17	7 12 14 15	6 11 13 14	4	4	1	3	
KINGSTON TO SAN JUAN											
55,000	-56.5	-76 -20 -18 -17	-76 -19 -18 -17	-72 -16 -14 -14	-77 -20 -18 -17	-75 -19 -17 -16	3	3	2	3	
40,000	-56.5	-56 1 4 5	-54 2 4 5	-56 0 2 2	-54 3 4 4	-54 2 3 4	3	2	2	2	
30,000	-46.5	-35 9 11 11	-34 11 12 13	-33 11 12 12	-32 12 13 14	-34 11 12 13	2	2	1	2	
20,000	-21.2	-8 13 15 15	-7 14 16 16	-7 14 15 16	-6 15 16 17	-7 14 16 16	2	2	1	1	
10,000	-4.6	7 12 13 14	8 13 14 15	9 13 14 15	9 14 14 15	8 13 14 15	2	2	1	1	
KINGSTON TO SANTA MARIA											
55,000	-56.5	-69 -11 -11 -9	-68 -11 -9 -8	-67 -11 -9 -8	-71 -14 -12 -11	-69 -12 -10 -9	3	3	2	3	
40,000	-56.5	-57 -0 1 4	-57 -1 2 3	-55 1 2 3	-55 1 3 4	-56 0 2 3	4	4	2	3	
30,000	-46.5	-41 4 6 7	-39 6 7 8	-35 9 11 12	-35 9 11 12	-37 7 9 10	3	2	2	3	
20,000	-21.2	-15 8 10 11	-12 9 11 12	-8 13 15 15	-9 13 14 15	-10 11 13 14	3	3	2	2	
10,000	-4.6	1 8 10 11	3 8 10 11	7 12 13 14	7 11 13 14	5 10 11 12	3	3	2	2	
KINGSTON TO TORONTO											
55,000	-56.5	-69 -13 -10 -9	-67 -10 -8 -7	-68 -11 -9 -8	-71 -14 -12 -11	-69 -12 -10 -8	3	3	2	4	
40,000	-56.5	-57 -0 2 4	-56 0 3 4	-56 1 2 3	-55 2 4 5	-56 1 1 4	4	4	2	3	
30,000	-46.5	-41 3 5 6	-40 5 7 7	-34 10 12 12	-36 8 10 11	-38 7 9 10	3	3	2	3	
20,000	-21.2	-14 7 9 10	-13 8 11 12	-8 14 15 15	-9 12 14 15	-11 10 12 13	3	3	2	3	
10,000	-4.6	0 5 7 9	2 7 9 10	8 12 13 14	6 10 12 13	4 9 10 11	4	3	2	3	
KINGSTON TO TRINIDAD											
55,000	-56.5	-77 -21 -19 -18	-77 -21 -19 -18	-71 -16 -15 -14	-77 -21 -19 -18	-76 -20 -18 -16	3	3	2	3	
40,000	-56.5	-54 3 4 5	-53 5 5 6	-56 1 2 3	-54 3 4 4	-54 2 4 5	3	2	2	2	
30,000	-46.5	-34 11 12 13	-32 12 14 14	-33 11 12 13	-32 13 14 14	-33 12 13 14	2	2	2	1	
20,000	-21.2	-7 14 16 16	-6 15 16 17	-7 14 15 16	-6 16 17 17	-6 15 16 17	2	2	1	1	
10,000	-4.6	8 13 14 15	9 13 15 15	9 14 15 15	9 14 15 15	9 13 14 15	2	2	1	1	
KISUMU TO SALISBURY											
55,000	-56.5	-77 -21 -18 -17	-77 -20 -18 -16	-72 -16 -14 -13	-75 -18 -17 -15	-75 -19 -16 -15	3	3	2	3	
40,000	-56.5	-52 4 6 7	-52 5 7 8	-52 5 6 7	-52 4 6 7	-52 5 7 8	3	3	2	2	
30,000	-46.5	-30 14 16 16	-31 14 15 16	-33 12 13 14	-31 13 15 15	-31 13 15 16	2	2	2	2	
20,000	-21.2	-5 17 17 18	-5 16 17 18	-6 16 17 17	-6 15 17 17	-5 16 17 17	1	2	2	2	
10,000	-4.6	10 14 15 16	9 14 15 15	7 12 13 14	10 14 16 16	9 14 15 15	1	2	2	2	
KOOTENAI TO SEATTLE											
55,000	-56.5	-53 3 7 9	-52 5 8 9	-50 6 9 10	-54 3 6 7	-52 4 7 8	5	4	3	4	
40,000	-56.5	-54 2 7 9	-53 4 8 10	-52 5 8 10	-53 4 7 9	-53 4 7 9	7	6	5	5	
30,000	-46.5	-50 -6 -3 -2	-49 -4 -2 -1	-43 2 4 6	-46 -2 1 3	-47 -2 1 3	4	3	4	4	
20,000	-21.2	-28 -7 -3 -1	-27 -5 -2 0	-35 6 8 10	-23 -2 1 3	-23 -2 2 4	6	5	4	5	
10,000	-4.6	-12 -8 -4 -1	-11 -7 -4 -2	-0 6 7 8	-7 -2 1 2	-8 -3 1 3	4	4	3	5	
KUALA LUMPUR TO SINGAPORE											
55,000	-56.5	-82 -26 -24 -23	-80 -23 -22 -21	-78 -22 -20 -19	-80 -24 -22 -21	-80 -24 -22 -20	3	3	3	3	
40,000	-56.5	-55 2 3 4	-51 5 6 7	-54 2 1 4	-54 2 3 4	-54 1 4 5	2	2	1	2	
30,000	-46.5	-31 14 15 15	-30 15 16 16	-31 14 15 15	-32 13 14 14	-31 14 15 16	2	2	2	1	
20,000	-21.2	-5 17 18 18	-5 16 17 18	-5 16 17 17	-6 16 17 17	-5 16 17 18	1	1	1	1	
10,000	-4.6	10 14 15 15	10 15 16 16	9 14 14 15	9 14 15 15	10 14 15 16	1	1	1	1	
KWAJALEIN TO MAKASSAR											
55,000	-56.5	-82 -25 -23 -22	-80 -24 -22 -21	-78 -22 -20 -19	-80 -23 -22 -21	-80 -24 -21 -20	3	3	3	3	
40,000	-56.5	-53 3 4 5	-52 4 6 7	-54 2 1 4	-54 2 4 4	-54 3 5 6	2	3	2	2	
30,000	-46.5	-31 14 15 16	-31 15 16 15	-31 15 16 15	-31 15 16 15	-31 17 15 15	2	2	2	2	
20,000	-21.2	-4 17 18 19	-5 16 17 17	-5 16 17 17	-6 16 17 17	-5 16 17 18	2	2	1	1	
10,000	-4.6	10 15 16 16	10 15 16 17	10 14 15 16	10 15 16 16	10 15 16 16	1	2	1	1	

-0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
LAGOS TO LEOPOLVILLE																									
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-76	-19	-17	-16	-77	-21	-19	-18	-77	-20	-18	-17	3	3	3	3
40,000	-56.5	-56	3	4	5	-52	5	7	8	-54	3	4	5	-52	5	6	7	-53	4	5	6	2	3	3	2
30,000	-46.5	-33	12	13	14	-30	15	16	17	-32	12	13	14	-30	14	15	16	-31	13	15	16	2	2	2	2
20,000	-21.2	-6	15	16	17	-4	17	18	19	-5	16	17	17	-6	16	16	17	-5	16	17	18	1	2	1	1
10,000	-4.6	10	14	15	16	10	15	16	16	8	13	14	15	10	15	16	17	10	14	15	16	1	2	2	1
LAGOS TO LIBREVILLE																									
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-76	-20	-18	-17	-77	-21	-19	-18	-77	-21	-19	-17	3	3	3	3
40,000	-56.5	-54	3	4	5	-52	5	7	8	-54	2	3	4	-51	5	6	7	-53	4	5	6	2	3	2	2
30,000	-46.5	-33	11	12	13	-30	15	16	17	-32	12	13	14	-30	14	15	16	-31	13	15	16	2	2	2	2
20,000	-21.2	-7	15	16	17	-5	16	18	18	-5	16	17	17	-6	16	16	17	-5	16	17	18	1	2	1	1
10,000	-4.6	7	14	15	16	10	15	16	17	9	14	15	15	10	15	16	17	10	14	15	16	1	2	1	1
LAGOS TO LISBON																									
55,000	-56.5	-70	-14	-12	-10	-69	-13	-11	-9	-72	-15	-13	-12	-72	-15	-13	-12	-71	-14	-12	-11	3	3	3	3
40,000	-56.5	-55	1	4	5	-54	3	5	7	-52	4	5	6	-54	3	4	5	-54	3	4	5	4	4	2	2
30,000	-46.5	-40	6	8	9	-38	8	10	11	-33	12	13	14	-35	9	11	12	-36	8	10	12	2	2	2	2
20,000	-21.2	-13	8	9	10	-11	10	12	13	-7	15	16	16	-9	13	14	14	-10	11	13	14	2	2	2	2
10,000	-4.6	4	8	10	11	6	11	12	13	12	17	18	19	7	12	13	14	7	12	14	15	2	2	2	2
LAGOS TO LONDON																									
55,000	-56.5	-67	-10	-8	-6	-65	-9	-7	-5	-67	-11	-9	-8	-68	-12	-10	-8	-67	-10	-8	-7	4	3	3	3
40,000	-56.5	-56	1	4	5	-55	2	5	7	-52	4	6	7	-54	2	4	5	-54	2	5	6	4	5	3	3
30,000	-46.5	-45	2	4	5	-49	6	7	8	-46	10	12	13	-47	7	9	10	-48	6	9	10	3	3	3	3
20,000	-21.2	-16	5	7	8	-14	8	9	10	-8	13	15	15	-11	10	12	13	-12	9	11	13	3	3	2	2
10,000	-4.6	1	5	7	8	4	8	10	11	10	15	17	17	5	10	12	13	5	10	12	14	3	3	2	2
LAGOS TO MADRID																									
55,000	-56.5	-70	-15	-11	-10	-68	-12	-10	-9	-71	-15	-13	-12	-71	-15	-13	-12	-70	-14	-11	-10	3	3	3	3
40,000	-56.5	-55	1	4	5	-54	3	5	7	-52	4	6	6	-54	3	4	5	-54	3	5	6	4	4	2	3
30,000	-46.5	-41	4	5	6	-37	8	9	10	-35	12	13	14	-35	9	11	11	-36	8	10	11	2	2	2	2
20,000	-21.2	-14	7	9	10	-11	10	12	12	-7	15	16	17	-9	12	13	14	-10	11	13	14	2	2	2	2
10,000	-4.6	3	8	10	11	6	11	12	13	15	17	18	19	7	12	13	14	7	12	14	15	2	2	2	2
LAGOS TO NAIROBI																									
55,000	-56.5	-70	-21	-19	-18	-77	-21	-19	-18	-76	-19	-18	-17	-77	-21	-19	-18	-77	-21	-19	-17	3	3	3	3
40,000	-56.5	-56	3	4	5	-52	5	7	8	-54	3	4	5	-52	5	6	7	-53	4	5	6	2	3	2	2
30,000	-46.5	-32	12	13	14	-29	15	16	17	-32	13	14	15	-30	15	16	16	-31	14	15	16	2	2	2	2
20,000	-21.2	-5	16	17	17	-4	17	18	19	-5	16	17	17	-6	16	16	17	-5	16	17	18	1	2	1	1
10,000	-4.6	10	15	16	16	10	15	16	16	9	14	15	15	10	15	16	16	10	14	15	16	1	2	1	1
LAGOS TO NEW YORK																									
55,000	-56.5	-69	-12	-10	-9	-67	-11	-9	-8	-69	-12	-10	-9	-70	-14	-12	-10	-69	-12	-10	-9	3	3	3	3
40,000	-56.5	-56	0	3	4	-56	1	4	5	-54	2	4	4	-54	2	4	5	-55	1	3	4	4	4	2	3
30,000	-46.5	-41	4	5	6	-38	6	8	9	-36	10	12	12	-36	9	11	12	-37	7	9	10	3	3	2	3
20,000	-21.2	-14	7	9	10	-11	9	11	12	-8	14	15	16	-9	12	14	15	-11	10	12	13	3	3	2	3
10,000	-4.6	2	7	9	10	5	8	10	11	9	13	14	15	6	11	13	13	5	10	12	13	3	3	2	2
LAGOS TO PARIS																									
55,000	-56.5	-67	-11	-8	-7	-66	-9	-7	-6	-68	-12	-10	-9	-69	-12	-10	-9	-68	-11	-9	-7	4	3	3	3
40,000	-56.5	-56	1	4	5	-54	2	5	7	-52	4	6	7	-54	2	4	5	-54	2	5	6	4	4	3	3
30,000	-46.5	-42	2	4	5	-39	6	8	9	-36	11	12	13	-37	8	9	10	-38	7	9	10	3	3	3	3
20,000	-21.2	-16	5	7	8	-13	8	10	11	-8	14	15	16	-10	11	12	13	-12	9	12	13	3	3	2	2
10,000	-4.6	5	8	10	11	6	9	11	12	11	14	16	17	6	10	12	12	5	10	12	14	3	3	2	2
LAGOS TO RIO DE JANEIRO																									
55,000	-56.5	-77	-20	-18	-17	-77	-20	-18	-17	-76	-19	-17	-16	-75	-18	-16	-15	-75	-18	-16	-15	4	3	3	3
40,000	-56.5	-54	3	5	6	-52	4	7	8	-51	4	5	6	-53	4	5	6	-51	4	6	7	3	4	2	3
30,000	-46.5	-32	12	14	14	-31	13	15	16	-31	12	14	15	-32	12	14	15	-32	12	14	15	2	2	2	2
20,000	-21.2	-6	16	17	18	-6	15	17	17	-7	16	18	18	-6	15	16	17	-6	15	16	17	2	2	2	2
10,000	-4.6	9	14	15	16	7	14	15	16	7	13	14	15	10	14	16	16	9	13	15	16	2	2	2	2
LAGOS TO ROME																									
55,000	-56.5	-69	-13	-10	-9	-68	-11	-9	-8	-71	-15	-13	-12	-71	-16	-14	-13	-70	-15	-13	-12	3	3	3	3
40,000	-56.5	-55	2	4	5	-54	3	5	7	-51	5	7	7	-54	3	4	5	-53	3	5	6	4	4	2	2
30,000	-46.5	-41	3	5	6	-37	8	9	10	-32	12	14	15	-34	9	10	11	-37	8	10	12	2	2	2	2
20,000	-21.2	-15	7	9	10	-12	9	11	12	-6	15	16	17	-9	12	13	14	-11	11	13	14	3	2	2	2
10,000	-4.6	2	7	9	10	6	10	12	13	12	17	18	19	7	11	13	13	7	11	14	15	3	3	2	2
LAGOS TO SANTA MARIA																									
55,000	-56.5	-73	-15	-12	-11	-70	-13	-11	-10	-72	-15	-14	-13	-72	-16	-14	-13	-71	-15	-13	-11	3	3	3	3
40,000	-56.5	-54	1	3	4	-54	2	5	6	-53	4	5	6	-54	3	4	5	-54	2	4	5	4	4	2	2
30,000	-46.5	-40	5	6	7	-36	9	10	11	-35	11	13	14	-35	10	12	12	-36	9	11	12	2	2	2	2
20,000	-21.2	-13	9	10	11	-10	11	12	13	-7	14	16	17	-8	13	15	16	-9	12	14	15	2	2	2	2
10,000	-4.6	5	9	11	12	5	11	12	13	11	16	17	18	8	12	14	14	7	12	14	15	2	2	2	2
LAGOS TO TRIPOLI																									
55,000	-56.5	-72	-16	-14	-13	-71	-15	-13	-12	-74	-17	-15	-14	-73	-16	-14	-13	-73	-16	-14	-13	3	3	3	3
40,000	-56.5	-54	3	5	6	-53	4	6	7	-52	5	6	7	-53	5	6	7	-53	4	6	7	3	3	2	2
30,000	-46.5	-39	5	6	7	-36	10	12	12	-33	11	13	14	-34	11	13	14	-35	10	12	13	2	2	2	2
20,000	-21.2	-12	9	10	11	-10	12	13	14	-5	16	17	18	-8	15	16	17	-9	15	16	17	2	2	2	1
10,000	-4.6	5	9	11	12	6	12	14	15	14	18	19	19	9	13	14	15	9	13	15	16	2	2	2	2
LAGOS TO KANAIPOLOI																									
55,000	-56.5	-65	-8	-5	-4	-63	-6	-4	-2	-68	-12	-8	-7	-65	-9	-6	-4	-65	-9	-5	-4	4	4	3	4
40,000	-56.5	-54	2	4	5	-54	2	4	6	-57	9	10	11	-54	1	4	6	-57	8	10	11	5	5	3	5
30,000	-46.5	-44	1	4	5	-41	4	7	9	-37	17	20	22	-37	8	11	12	-37	7	12	15	5	5	3	5
20,000	-21.2	-19	2	5	6	-15	8	11	15	-4	18	20	22	-12	10	12	13	-12	10	13	16	4	4	3	4
10,000	-4.6	-3	2	5	6	5	9	12	13	14	19	21	22	5	10	12	13	5	10	14	16	4	4	3	4
LAGOS TO LISBON																									
55,000																									

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION														
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT							
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085											
LAJES TO LONDON																																
55,000	-56.5	-59	-3	1	2	-56	0	3	5	-55	1	4	5	-60	-3	-1	1	-57	-1	2	4	5	4	4	4	4	4	4	4	4	1550 N.M.I.	
40,000	-56.5	-58	-2	2	5	-57	-1	3	6	-53	3	7	8	-56	0	3	5	-56	0	4	6	6	6	5	5	5	5	5	5	5	4	
30,000	-56.5	-58	-2	2	5	-57	-1	3	6	-53	3	7	8	-56	0	3	5	-56	0	4	6	6	6	5	5	5	5	5	5	5	4	
20,000	-56.5	-58	-2	2	5	-57	-1	3	6	-53	3	7	8	-56	0	3	5	-56	0	4	6	6	6	5	5	5	5	5	5	5	4	
10,000	-56.5	-58	-2	2	5	-57	-1	3	6	-53	3	7	8	-56	0	3	5	-56	0	4	6	6	6	5	5	5	5	5	5	5	4	
10,000	-4.6	-6	-1	2	4	-3	1	4	5	-12	9	11	12	-16	5	8	10	-18	4	7	9	8	5	4	3	4	4	4	4	4	4	
LAJES TO NAIROBI																																
55,000	-56.5	-71	-15	-12	-11	-70	-15	-11	-10	-72	-15	-13	-12	-72	-15	-14	-13	-71	-15	-12	-11	3	3	3	3	3	3	3	3	3	4255 N.M.I.	
40,000	-56.5	-55	1	4	5	-54	3	5	7	-52	4	6	8	-54	3	5	7	-54	3	5	6	3	4	2	2	2	2	2	2	2	2	
30,000	-56.5	-55	1	4	5	-54	3	5	7	-52	4	6	8	-54	3	5	7	-54	3	5	6	3	4	2	2	2	2	2	2	2	2	
20,000	-56.5	-55	1	4	5	-54	3	5	7	-52	4	6	8	-54	3	5	7	-54	3	5	6	3	4	2	2	2	2	2	2	2	2	
10,000	-56.5	-55	1	4	5	-54	3	5	7	-52	4	6	8	-54	3	5	7	-54	3	5	6	3	4	2	2	2	2	2	2	2	2	
10,000	-4.6	5	9	11	12	6	11	13	13	11	16	17	18	8	12	14	14	8	12	14	15	2	2	2	2	2	2	2	2	2	2	
LAJES TO NEW YORK																																
55,000	-56.5	-60	-4	-1	0	-58	-1	1	2	-60	-3	-1	-0	-62	-5	-2	-1	-60	-3	-1	1	4	4	3	4	4	4	4	4	4	2135 N.M.I.	
40,000	-56.5	-57	-1	3	5	-57	-1	3	5	-55	1	4	5	-56	1	4	5	-56	0	3	4	6	5	4	4	4	4	4	4	4	4	
30,000	-56.5	-57	-1	3	5	-57	-1	3	5	-55	1	4	5	-56	1	4	5	-56	0	3	4	6	5	4	4	4	4	4	4	4	4	
20,000	-56.5	-57	-1	3	5	-57	-1	3	5	-55	1	4	5	-56	1	4	5	-56	0	3	4	6	5	4	4	4	4	4	4	4	4	
10,000	-56.5	-57	-1	3	5	-57	-1	3	5	-55	1	4	5	-56	1	4	5	-56	0	3	4	6	5	4	4	4	4	4	4	4	4	
10,000	-4.6	-6	-2	2	4	-4	1	4	5	5	10	11	12	-14	6	9	10	-16	5	8	10	5	4	3	4	4	4	4	4	4	4	
LAS PALMAS TO LISBON																																
55,000	-56.5	-64	-7	-4	-3	-62	-5	-3	-1	-65	-9	-7	-6	-65	-9	-7	-6	-64	-8	-5	-3	4	4	3	3	3	3	3	3	3	721 N.M.I.	
40,000	-56.5	-54	-1	2	4	-57	-0	3	5	-52	4	6	7	-56	1	3	4	-56	1	3	5	5	5	3	3	3	3	3	3	3	3	
30,000	-56.5	-54	-1	2	4	-57	-0	3	5	-52	4	6	7	-56	1	3	4	-56	1	3	5	5	5	3	3	3	3	3	3	3	3	
20,000	-56.5	-54	-1	2	4	-57	-0	3	5	-52	4	6	7	-56	1	3	4	-56	1	3	5	5	5	3	3	3	3	3	3	3	3	
10,000	-56.5	-54	-1	2	4	-57	-0	3	5	-52	4	6	7	-56	1	3	4	-56	1	3	5	5	5	3	3	3	3	3	3	3	3	
10,000	-4.6	-0	5	7	8	2	6	8	9	10	14	16	17	5	9	11	12	4	9	11	13	3	3	2	3	3	3	3	3	3	3	
LA PAZ TO MIAMI																																
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-72	-16	-14	-13	-74	-19	-18	-17	-75	-19	-17	-15	3	3	3	3	3	3	3	3	3	3	2634 N.M.I.
40,000	-56.5	-54	3	4	5	-52	4	6	7	-55	2	3	4	-54	3	4	5	-54	3	4	5	3	3	2	2	2	2	2	2	2	2	2
30,000	-56.5	-54	3	4	5	-52	4	6	7	-55	2	3	4	-54	3	4	5	-54	3	4	5	3	3	2	2	2	2	2	2	2	2	2
20,000	-56.5	-54	3	4	5	-52	4	6	7	-55	2	3	4	-54	3	4	5	-54	3	4	5	3	3	2	2	2	2	2	2	2	2	2
10,000	-56.5	-54	3	4	5	-52	4	6	7	-55	2	3	4	-54	3	4	5	-54	3	4	5	3	3	2	2	2	2	2	2	2	2	2
10,000	-4.6	9	13	15	15	9	14	15	16	9	13	15	15	10	14	15	16	9	14	15	16	2	2	2	2	2	2	2	2	2	2	2
LA PAZ TO NAIROBI																																
55,000	-56.5	-77	-21	-18	-17	-76	-20	-18	-17	-70	-14	-11	-10	-73	-16	-14	-11	-74	-16	-14	-11	4	4	3	3	3	3	3	3	3	3	2036 N.M.I.
40,000	-56.5	-55	1	5	6	-52	5	7	8	-53	4	6	7	-54	5	7	8	-53	4	6	7	3	3	2	2	2	2	2	2	2	2	2
30,000	-56.5	-55	1	5	6	-52	5	7	8	-53	4	6	7	-54	5	7	8	-53	4	6	7	3	3	2	2	2	2	2	2	2	2	2
20,000	-56.5	-55	1	5	6	-52	5	7	8	-53	4	6	7	-54	5	7	8	-53	4	6	7	3	3	2	2	2	2	2	2	2	2	2
10,000	-56.5	-55	1	5	6	-52	5	7	8	-53	4	6	7	-54	5	7	8	-53	4	6	7	3	3	2	2	2	2	2	2	2	2	2
10,000	-4.6	10	14	16	16	10	14	16	16	7	12	13	14	10	14	16	16	9	14	15	16	2	2	2	2	2	2	2	2	2	2	2
LA PAZ TO NEW ORLEANS																																
55,000	-56.5	-77	-20	-16	-17	-76	-19	-17	-16	-73	-16	-14	-13	-74	-20	-18	-17	-75	-19	-16	-15	3	3	3	3	3	3	3	3	3	3	3053 N.M.I.
40,000	-56.5	-54	2	4	5	-51	4	5	6	-55	2	3	4	-54	2	4	5	-54	2	4	5	3	3	2	2	2	2	2	2	2	2	2
30,000	-56.5	-54	2	4	5	-51	4	5	6	-55	2	3	4	-54	2	4	5	-54	2	4	5	3	3	2	2	2	2	2	2	2	2	2
20,000	-56.5	-54	2	4	5	-51	4	5	6	-55	2	3	4	-54	2	4	5	-54	2	4	5	3	3	2	2	2	2	2	2	2	2	2
10,000	-56.5	-54	2	4	5	-51	4	5	6	-55	2	3	4	-54	2	4	5	-54	2	4	5	3	3	2	2	2	2	2	2	2	2	2
10,000	-4.6	8	13	14	15	9	13	15	16	9	13	15	15	10	14	15	16	9	13	15	15	2	2	2	2	2	2	2	2	2	2	2
LA PAZ TO NEW YORK																																
55,000	-56.5	-75	-18	-16	-15	-73	-17	-15	-14	-71	-14	-12	-11	-74	-18	-15	-14	-73	-17	-14	-13	3	3	3	3	3	3	3	3	3	3	3442 N.M.I.
40,000	-56.5	-55	2	4	5	-54	3	5	6	-55	2	3	4	-54	2	4	5	-54	2	4	5	3	3	2	2	2	2	2	2	2	2	2
30,000	-56.5	-55	2	4	5	-54	3	5	6	-55	2	3	4	-54	2	4	5	-54	2	4	5	3	3	2	2	2	2	2	2	2	2	2
20,000	-56.5	-55	2	4	5	-54	3	5	6	-55	2	3	4	-54	2	4	5	-54	2	4	5	3	3	2	2	2	2	2	2	2	2	2
10,000	-56.5	-55	2	4	5	-54	3	5	6	-55	2	3	4	-54	2	4	5	-54	2	4	5	3	3	2	2	2	2	2	2	2	2	2
10,000	-4.6	6	11	13	13	7	12	13	14	8	11	14	14	8	13	14	15	7	12	14	14	2	2	2	2	2	2	2	2	2	2	2
LA PAZ TO PANAMA																																
55,000	-56.5	-78	-21	-19	-18	-77	-20	-19	-17	-73	-16	-14	-13	-75	-19	-17	-16	-76	-19	-16	-15	3	3	3	3	3	3	3	3	3	3	1673 N.M.I.
40,000	-56.5	-51	3	5	6	-52	5	7	8	-54	2	3	4	-54	2	4	5	-53	3	5	7	3	3	2	2	2	2	2	2	2	2	2
30,000	-56.5	-51	3	5	6	-52	5	7	8	-54	2	3	4	-54	2	4	5	-53	3	5	7	3	3	2	2	2	2	2	2	2	2	2
20,000	-56.5	-51	3	5	6	-52	5	7	8	-54	2	3	4	-54	2	4	5	-53	3	5	7	3	3	2	2	2	2	2	2	2	2	2
10,000	-56.5	-51	3	5	6	-52	5	7	8	-54	2	3	4	-54	2	4	5	-53	3	5	7	3	3	2	2	2	2	2	2	2	2	2
10,000	-4.6	10	14	15	16	9	14	15	16	8	11	14	15	10	14	15	16	9	14	15	16	2	2	2	2	2	2	2	2	2	2	2
LA PAZ TO SANTIAGO																																
55,000	-56.5	-71	-14	-12	-10	-70	-14	-12	-10	-65	-8	-5	-4	-65	-8	-6	-5	-68	-11	-8	-6	4	4	4	4	4	4	4				

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085						
LENINGRAD TO OSLO																											
55,000	-56.5	-58	-2	2	3	-52	4	7	9	-46	10	12	13	-55	1	4	5	-53	4	7	9	5	4	5	5	589 N.M.I.	
40,000	-56.5	-60	-3	0	2	-53	3	8	10	-49	7	11	13	-55	2	5	7	-54	2	7	9	5	4	5	5		
30,000	-48.5	-54	-4	-7	-5	-50	-6	-3	-1	-42	2	5	7	-47	-2	1	2	-48	-4	0	2	4	4	4	4		
20,000	-21.2	-32	-10	-7	-4	-26	-5	-2	0	-16	-1	3	5	-22	-1	3	5	-24	-3	1	3	6	5	4	6		
10,000	-4.6	-17	-12	-8	-6	-11	-6	-3	-1	-1	3	6	7	-7	-2	1	3	-9	-4	-0	2	6	5	3	5		
LENINGRAD TO PRAGUE																											
55,000	-56.5	-57	-0	3	5	-53	4	6	8	-48	9	11	12	-56	0	3	4	-53	3	6	8	5	4	5	4	804 N.M.I.	
40,000	-56.5	-59	-2	1	3	-54	2	6	8	-50	6	10	11	-55	1	6	6	-55	2	6	8	5	4	5	5		
30,000	-48.5	-53	-8	-6	-4	-49	-5	-2	-1	-41	3	6	8	-45	-1	2	3	-47	-3	1	3	6	4	4	4		
20,000	-21.2	-30	-9	-5	-3	-25	-4	0	2	-15	6	9	10	-20	1	5	7	-22	-1	3	5	6	5	3	5		
10,000	-4.6	-15	-11	-8	-6	-9	-5	-1	1	0	5	7	8	-6	-1	2	4	-8	-3	1	3	6	5	3	5		
LENINGRAD TO STOCKHOLM																											
55,000	-56.5	-58	-1	2	4	-52	4	7	8	-46	11	12	13	-55	2	6	6	-53	4	7	9	5	4	5	6	376 N.M.I.	
40,000	-56.5	-60	-3	0	2	-53	3	7	9	-49	7	11	12	-55	2	5	7	-54	2	7	9	5	4	5	5		
30,000	-48.5	-54	-9	-7	-5	-50	-6	-3	-1	-42	3	6	7	-47	-2	1	2	-48	-4	1	3	4	4	4	4		
20,000	-21.2	-32	-11	-7	-6	-26	-5	-1	1	-16	5	8	9	-22	-1	3	5	-24	-3	1	4	4	4	4	4		
10,000	-4.6	-17	-13	-8	-6	-11	-7	-3	-1	-1	4	6	7	-7	-2	1	3	-9	-4	-1	2	6	6	3	5		
LENINGRAD TO ZURICH																											
55,000	-56.5	-57	-0	3	5	-53	3	6	7	-48	8	10	11	-57	-0	3	4	-54	3	6	8	5	4	5	4	1067 N.M.I.	
40,000	-56.5	-59	-2	1	3	-55	2	6	8	-51	6	9	11	-56	1	4	6	-55	2	6	8	5	4	5	5		
30,000	-48.5	-52	-8	-5	-4	-49	-5	-2	-1	-41	6	9	11	-45	-0	2	4	-47	-2	1	6	6	4	4	6		
20,000	-21.2	-29	-8	-4	-2	-24	-3	0	2	-15	7	9	10	-20	1	5	7	-22	-1	3	5	6	5	3	5		
10,000	-4.6	-14	-10	-6	-3	-9	-4	-1	1	1	5	7	8	-5	-1	3	5	-7	-2	1	3	6	5	3	5		
LEOPOLOVITSE TO LIBREVILLE																											
55,000	-56.5	-77	-21	-19	-18	-77	-19	-17	-16	-75	-19	-17	-16	-77	-20	-18	-17	-77	-20	-18	-17	3	3	3	3	463 N.M.I.	
40,000	-56.5	-58	3	4	5	-52	5	7	8	-53	3	5	5	-52	5	6	7	-53	4	6	6	2	3	2	2		
30,000	-48.5	-52	13	14	14	-30	15	16	17	-32	12	13	14	-30	14	15	16	-31	13	15	16	2	2	2	2		
20,000	-21.2	-15	16	17	17	-4	17	18	19	-5	16	17	17	-4	16	17	17	-5	16	17	18	1	2	2	1		
10,000	-4.6	10	14	15	16	10	14	16	16	8	13	14	14	10	15	16	17	10	14	15	16	1	2	2	2		
LEOPOLOVITSE TO LISBON																											
55,000	-56.5	-72	-16	-13	-12	-71	-15	-13	-11	-73	-16	-14	-13	-73	-16	-14	-11	-72	-16	-13	-12	3	3	3	3	2926 N.M.I.	
40,000	-56.5	-55	2	4	5	-53	3	6	7	-53	3	5	6	-53	3	5	6	-53	3	5	6	3	4	2	2		
30,000	-48.5	-58	6	7	8	-54	10	11	12	-54	12	13	14	-54	11	12	13	-55	10	12	13	2	2	2	2		
20,000	-21.2	-11	10	11	12	-9	12	13	14	-6	15	16	17	-8	13	14	15	-9	13	14	15	2	2	2	2		
10,000	-4.6	5	10	11	12	7	12	13	14	11	16	17	18	8	13	14	15	6	13	14	15	2	2	2	2		
LEOPOLOVITSE TO LONDON																											
55,000	-56.5	-69	-12	-10	-9	-68	-11	-9	-8	-69	-13	-11	-9	-70	-13	-11	-10	-69	-12	-10	-9	4	3	3	3	3449 N.M.I.	
40,000	-56.5	-55	1	4	5	-54	3	5	7	-52	4	6	7	-54	3	4	5	-54	3	5	6	4	3	3	3		
30,000	-48.5	-41	4	5	6	-57	7	9	10	-53	11	13	14	-56	9	10	11	-57	8	10	11	2	2	2	2		
20,000	-21.2	-14	7	9	10	-12	9	11	12	-7	14	15	16	-10	11	13	13	-11	10	12	14	3	3	2	3		
10,000	-4.6	2	7	9	10	5	9	11	12	10	14	16	17	6	11	12	13	6	10	13	16	3	3	2	2		
LEOPOLOVITSE TO MADRID																											
55,000	-56.5	-72	-15	-13	-12	-71	-14	-12	-11	-72	-16	-14	-13	-72	-16	-14	-13	-72	-15	-13	-12	3	3	3	3	2867 N.M.I.	
40,000	-56.5	-55	2	4	5	-53	3	6	7	-52	3	5	6	-53	3	5	6	-53	3	5	6	3	4	2	2		
30,000	-48.5	-59	6	7	8	-55	10	11	12	-52	12	13	14	-54	10	12	13	-55	9	11	12	2	2	2	2		
20,000	-21.2	-12	9	11	12	-10	12	13	14	-6	15	16	17	-8	13	14	15	-9	12	14	15	2	2	2	2		
10,000	-4.6	5	9	11	12	7	12	13	14	11	16	17	18	8	13	14	14	8	12	14	15	2	2	2	2		
LEOPOLOVITSE TO MONROVIA																											
55,000	-56.5	-78	-21	-19	-18	-77	-19	-17	-16	-76	-19	-17	-16	-77	-21	-19	-18	-77	-20	-18	-17	3	3	3	3	1671 N.M.I.	
40,000	-56.5	-54	3	4	5	-52	5	7	8	-54	3	4	5	-52	5	6	7	-53	4	6	7	3	3	2	2		
30,000	-48.5	-53	12	13	14	-50	15	16	17	-52	12	13	14	-51	14	15	16	-51	13	15	15	2	2	2	2		
20,000	-21.2	-6	15	16	16	-5	14	16	16	-5	16	17	17	-6	16	17	17	-5	16	17	18	1	2	1	1		
10,000	-4.6	9	14	15	15	10	15	16	16	9	13	14	15	10	15	16	17	10	14	15	16	1	2	2	2		
LEOPOLOVITSE TO MUNICH																											
55,000	-56.5	-69	-13	-11	-9	-68	-12	-10	-9	-70	-14	-12	-11	-71	-14	-12	-11	-70	-13	-11	-10	3	3	3	3	3157 N.M.I.	
40,000	-56.5	-55	2	4	5	-54	3	5	7	-52	3	4	5	-54	3	4	5	-54	3	5	6	4	4	2	3		
30,000	-48.5	-41	4	6	6	-57	8	10	10	-53	12	14	14	-55	9	11	12	-56	8	11	12	2	2	2	2		
20,000	-21.2	-14	7	9	10	-11	14	15	15	-7	15	16	17	-9	12	13	14	-10	11	13	14	3	2	2	2		
10,000	-4.6	3	7	9	10	5	10	12	13	10	15	16	17	7	11	13	13	6	11	13	14	3	3	2	2		
LEOPOLOVITSE TO NAIROBI																											
55,000	-56.5	-78	-21	-19	-18	-77	-19	-17	-16	-75	-19	-16	-15	-77	-20	-18	-17	-77	-20	-18	-17	3	3	3	3	1301 N.M.I.	
40,000	-56.5	-53	4	5	6	-52	5	7	8	-53	4	5	6	-52	5	6	7	-52	4	6	7	2	3	2	2		
30,000	-48.5	-51	14	15	15	-50	15	16	17	-52	12	14	14	-50	14	16	16	-51	14	15	16	2	2	2	2		
20,000	-21.2	-5	17	17	18	-4	17	18	19	-5	16	17	18	-6	16	17	17	-5	16	18	18	1	2	2	1		
10,000	-4.6	10	15	16	16	10	14	15	16	9	13	14	15	10	15	16	17	10	14	15	16	2	2	2	2		
LEOPOLOVITSE TO NATAL																											
55,000	-56.5	-78	-21	-19	-18	-77	-19	-17	-16	-73	-17	-15	-14	-76	-19	-17	-16	-76	-19	-17	-15	3	3	3	3	3029 N.M.I.	
40,000	-56.5	-54	3	4	5	-52	4	6	8	-53	3	5	6	-53	4	5	6	-53	4	6	7	3	3	2	2		
30,000	-48.5	-52	13	14	15	-50	14	16	17	-52	12	14	14	-51	13	15	15	-51	13	15	16	2	2	2	2		
20,000	-21.2	-5	16	17	18	-4	16	18	18	-6	15	17	17	-6	16	17	17	-5	16	17	18	2	2	2	2		
10,000	-4.6	10	14	15	16	10	14	16	16	8	12	14	14	10	15	16	17	9	14	15	16	2	2	2	2		
LEOPOLOVITSE TO PARIS																											
55,000	-56.5	-69	-13	-10	-9	-68	-12	-10	-8	-70	-13	-11	-10	-70	-14	-12	-11	-69	-13	-11	-9	3	3	3	3	5272 N.M.I.	
40,000	-56.5	-55	2	4	5	-54	3	5	7	-52	3	4	5	-54	3	4	5	-54	3	5	6	4	4	2	3		
30,000	-48.5	-40	4	6	7	-57	8	9	10	-53	11	13	14	-55	9	11	12	-56	8	10	12	2	2	2	2		
20,000	-21.2	-14	7	9	10	-11	14	15	15	-7	14	16	16	-10													

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE				STANDARD DEVIATION				
		TEMPERATURE				STANDARD DEVIATION				
		JANUARY 50 050 075 085	APRIL 50 050 075 085	JULY 50 050 075 085	OCTOBER 50 050 075 085	ANNUAL 50 050 075 085	JAN 50 050 075 085	APR 50 050 075 085	JUL 50 050 075 085	OCT 50 050 075 085
LEOPOLDOVILLE TO RIO DE JANEIRO										
55,000	-56.5	-74 -20 -17 -16	-74 -19 -17 -16	-70 -15 -11 -10	-72 -15 -13 -12	-73 -17 -14 -12	4	3	4	3
40,000	-56.5	-53 4 6 7	-53 4 6 8	-52 5 6 7	-53 4 6 7	-53 4 6 7	5	4	5	3
30,000	-48.5	-52 15 14 15	-52 12 14 15	-34 11 13 13	-33 11 15 14	-33 12 14 15	2	3	2	3
20,000	-21.2	-5 14 17 18	-4 15 14 17	-8 13 15 16	-7 14 15 14	-7 15 16 17	2	2	2	2
10,000	-8.4	9 14 15 16	9 14 15 16	6 10 12 12	9 14 15 16	8 13 14 15	2	2	2	2
LEOPOLDOVILLE TO ROME										
55,000	-56.5	-71 -15 -12 -11	-70 -14 -12 -11	-72 -14 -14 -13	-72 -14 -14 -13	-71 -15 -13 -12	5	5	5	3
40,000	-56.5	-54 2 4 6	-53 3 4 7	-52 5 4 7	-53 3 5 6	-53 3 5 6	5	4	2	2
30,000	-48.5	-59 5 7 8	-35 9 11 12	-32 13 16 15	-34 10 12 12	-35 9 12 13	2	2	2	2
20,000	-21.2	-12 9 10 11	-10 11 13 14	-6 15 17 17	-8 13 14 14	-9 12 14 15	2	2	2	2
10,000	-8.4	4 9 10 11	7 11 13 14	11 15 17 17	8 12 14 14	7 12 14 15	2	2	2	2
LEOPOLDOVILLE TO SANTA MARIA										
55,000	-56.5	-75 -16 -14 -13	-72 -15 -13 -12	-73 -14 -15 -14	-73 -17 -15 -16	-73 -16 -14 -13	3	3	3	3
40,000	-56.5	-55 1 4 5	-56 3 5 7	-53 3 5 5	-53 3 5 6	-54 3 4 5	3	4	2	2
30,000	-48.5	-51 6 8 9	-34 10 12 12	-35 12 15 14	-34 11 12 13	-35 10 12 12	2	2	2	2
20,000	-21.2	-9 10 12 12	-9 12 16 14	-6 15 16 17	-7 14 15 15	-8 13 14 15	2	2	2	2
10,000	-8.4	4 11 12 13	7 12 15 14	11 15 16 17	8 15 14 15	8 13 14 15	2	2	2	2
LEOPOLDOVILLE TO STAMBEVILLE										
55,000	-56.5	-77 -21 -19 -18	-77 -21 -19 -18	-75 -19 -17 -16	-77 -20 -18 -18	-77 -20 -18 -17	3	3	3	3
40,000	-56.5	-53 3 5 6	-52 5 7 8	-53 4 5 4	-52 5 4 7	-52 4 4 7	2	3	2	2
30,000	-48.5	-51 13 14 15	-30 15 14 17	-32 12 16 14	-30 15 14 17	-31 14 15 16	2	2	2	2
20,000	-21.2	-5 14 17 18	-4 17 19 19	-5 14 17 18	-4 14 15 16	-5 16 18 18	1	2	2	1
10,000	-8.4	10 15 16 16	10 14 16 14	8 13 14 14	10 15 16 17	10 16 18 18	2	2	2	2
LEOPOLDOVILLE TO TELL AVIV-JAFFA										
55,000	-56.5	-74 -18 -14 -15	-74 -17 -15 -14	-75 -19 -17 -16	-75 -19 -17 -16	-74 -18 -16 -15	3	3	3	3
40,000	-56.5	-54 5 5 6	-55 4 4 7	-51 5 7 7	-51 4 5 6	-51 4 4 6	3	3	2	2
30,000	-48.5	-57 8 9 10	-33 12 15 14	-30 15 16 17	-32 12 14 14	-33 12 14 15	2	2	2	2
20,000	-21.2	-9 12 15 14	-8 14 15 14	-7 14 16 17	-7 14 15 16	-7 14 16 17	2	2	2	1
10,000	-8.4	7 12 15 14	8 13 14 15	11 16 17 17	10 14 15 16	9 14 15 14	2	2	2	2
LEOPOLDOVILLE TO TRIPOLI										
55,000	-56.5	-74 -17 -14 -15	-73 -17 -15 -14	-75 -18 -16 -15	-75 -18 -14 -15	-74 -18 -16 -14	3	3	3	3
40,000	-56.5	-54 5 5 6	-52 4 4 7	-52 4 4 6	-53 4 5 4	-53 4 5 4	3	3	2	2
30,000	-48.5	-57 7 9 9	-33 12 15 14	-31 14 15 16	-33 12 15 14	-33 11 13 14	2	2	2	2
20,000	-21.2	-10 11 12 13	-8 13 15 15	-5 14 17 18	-7 14 15 15	-7 16 15 16	2	2	2	1

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY				APRIL				JULY				OCTOBER			
		50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85
LIMA TO LONDON																	
55,000	-56.5	-70	-15	-11	-10	-69	-12	-10	-9	-66	-10	-8	-7	-70	-13	-11	-10
40,000	-56.5	-56	1	5	5	-55	1	4	5	-54	2	4	5	-55	2	4	5
30,000	-44.5	-39	5	7	8	-37	7	9	10	-35	9	11	12	-37	8	10	11
20,000	-21.2	-12	9	11	12	-11	10	12	13	-9	12	14	15	-11	11	12	13
10,000	-4.6	5	8	10	11	4	9	10	11	7	11	13	15	6	11	12	13
LIMA TO LOS ANGELES																	
55,000	-56.5	-76	-19	-17	-16	-75	-18	-16	-15	-73	-17	-15	-14	-76	-19	-18	-17
40,000	-56.5	-55	2	4	5	-54	2	4	5	-55	2	4	5	-55	2	4	5
30,000	-44.5	-36	9	10	11	-34	10	11	12	-33	12	13	14	-34	11	12	13
20,000	-21.2	-8	13	15	16	-7	14	15	16	-7	15	16	17	-7	14	15	16
10,000	-4.6	7	12	14	15	9	13	15	16	10	14	15	16	9	13	15	15
LIMA TO MADRID																	
55,000	-56.5	-72	-16	-14	-12	-72	-15	-13	-12	-70	-13	-11	-10	-72	-16	-14	-13
40,000	-56.5	-55	1	3	5	-55	2	4	6	-54	3	5	6	-55	2	4	5
30,000	-44.5	-37	7	9	10	-35	9	11	12	-34	11	12	13	-34	11	12	13
20,000	-21.2	-10	11	13	14	-9	12	14	15	-8	13	15	16	-8	12	14	15
10,000	-4.6	6	10	12	13	6	11	12	13	9	13	14	15	8	12	14	15
LIMA TO MEXICO CITY																	
55,000	-56.5	-78	-22	-20	-19	-77	-21	-19	-18	-76	-20	-18	-17	-77	-21	-19	-18
40,000	-56.5	-54	3	4	5	-53	3	5	6	-52	3	5	6	-54	3	4	5
30,000	-44.5	-35	11	13	15	-32	13	14	15	-32	13	14	15	-31	13	14	15
20,000	-21.2	-6	16	17	18	-5	16	17	18	-7	14	15	16	-6	15	16	17
10,000	-4.6	9	14	15	16	10	14	16	16	9	13	14	15	10	15	16	16
LIMA TO MIAMI																	
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-75	-19	-17	-16	-76	-19	-17	-16
40,000	-56.5	-54	3	4	5	-53	3	5	6	-52	3	5	6	-54	3	4	5
30,000	-44.5	-35	11	13	15	-32	13	14	15	-32	13	14	15	-31	13	14	15
20,000	-21.2	-6	15	17	18	-5	16	17	18	-7	14	15	16	-6	15	16	17
10,000	-4.6	9	13	15	15	9	13	15	15	9	13	15	15	10	14	15	16
LIMA TO NEW ORLEANS																	
55,000	-56.5	-77	-20	-18	-17	-76	-19	-17	-16	-75	-18	-16	-15	-76	-19	-17	-16
40,000	-56.5	-54	2	4	5	-53	3	5	6	-52	3	5	6	-54	2	4	5
30,000	-44.5	-34	10	12	12	-33	12	13	14	-32	12	13	14	-32	12	13	14
20,000	-21.2	-7	15	16	17	-6	15	17	17	-7	14	15	16	-6	15	16	17
10,000	-4.6	8	13	14	15	9	13	15	16	9	13	15	16	10	14	15	16
LIMA TO NEW YORK																	
55,000	-56.5	-75	-18	-16	-15	-73	-17	-15	-14	-71	-15	-13	-12	-75	-18	-16	-15
40,000	-56.5	-55	2	4	5	-54	3	5	6	-53	3	5	6	-54	2	4	5
30,000	-44.5	-36	9	10	11	-34	10	12	12	-33	12	13	14	-33	12	13	14
20,000	-21.2	-9	13	14	15	-8	13	15	16	-7	14	15	16	-8	13	15	16
10,000	-4.6	6	11	12	13	7	11	13	14	8	13	14	15	8	13	14	15
LIMA TO PANAMA																	
55,000	-56.5	-78	-22	-20	-19	-77	-21	-19	-18	-76	-20	-18	-17	-76	-20	-17	-16
40,000	-56.5	-54	3	5	6	-53	3	5	6	-52	3	5	6	-53	3	5	6
30,000	-44.5	-32	13	14	15	-31	14	15	16	-32	12	14	14	-31	13	15	15
20,000	-21.2	-5	17	18	18	-4	17	18	18	-7	14	15	15	-6	16	17	17
10,000	-4.6	10	14	15	16	9	14	15	16	9	13	15	15	10	15	16	16
LIMA TO QUITO																	
55,000	-56.5	-78	-21	-19	-18	-77	-21	-19	-18	-75	-19	-17	-16	-76	-19	-17	-15
40,000	-56.5	-53	3	5	6	-52	4	7	8	-54	3	5	6	-53	3	5	6
30,000	-44.5	-32	13	14	15	-31	14	15	16	-32	12	14	14	-31	13	15	15
20,000	-21.2	-5	17	18	19	-5	17	18	18	-6	15	15	15	-6	15	16	17
10,000	-4.6	10	14	15	16	9	14	15	16	8	13	14	15	10	14	15	16
LIMA TO RIO DE JANEIRO																	
55,000	-56.5	-76	-19	-16	-15	-75	-18	-16	-15	-69	-17	-10	-8	-70	-15	-11	-10
40,000	-56.5	-52	4	6	8	-52	4	7	8	-52	4	7	8	-54	3	5	6
30,000	-44.5	-32	12	14	15	-33	12	14	15	-32	10	12	13	-33	12	13	15
20,000	-21.2	-5	16	17	18	-7	15	16	17	-11	11	12	13	-7	14	15	16
10,000	-4.6	9	14	15	16	9	13	15	15	5	10	11	12	8	13	14	15
LIMA TO SAN FRANCISCO																	
55,000	-56.5	-75	-18	-16	-15	-73	-17	-15	-14	-73	-16	-14	-13	-75	-19	-17	-16
40,000	-56.5	-55	2	4	5	-55	2	4	5	-54	2	4	5	-54	2	4	5
30,000	-44.5	-36	8	10	10	-35	9	11	11	-33	12	13	14	-33	11	13	13
20,000	-21.2	-9	12	14	15	-8	13	15	16	-7	14	15	16	-8	13	15	16
10,000	-4.6	7	11	13	14	8	13	14	15	9	14	15	16	9	14	15	16
LIMA TO SAN JUAN																	
55,000	-56.5	-78	-21	-19	-18	-77	-21	-19	-18	-75	-16	-15	-14	-76	-20	-18	-17
40,000	-56.5	-54	3	5	6	-52	4	6	7	-55	2	3	4	-54	3	4	5
30,000	-44.5	-33	12	13	14	-31	14	15	16	-32	12	13	14	-31	13	15	15
20,000	-21.2	-5	16	17	18	-5	16	18	18	-7	14	15	15	-6	15	17	17
10,000	-4.6	9	14	15	16	9	14	15	16	9	13	15	15	10	14	15	16
LIMA TO SANTA MARIA																	
55,000	-56.5	-74	-18	-16	-15	-74	-17	-15	-14	-71	-16	-15	-11	-74	-17	-15	-14
40,000	-56.5	-55	2	4	5	-54	2	4	6	-54	2	4	4	-55	2	4	4
30,000	-44.5	-36	9	10	11	-34	11	12	13	-34	11	12	13	-33	12	13	14
20,000	-21.2	-9	15	16	17	-8	15	16	17	-8	14	15	16	-8	13	15	16
10,000	-4.6	7	11	13	14	7	12	13	14	8	13	14	15	9	13	14	15
LIMA TO SANTIAGO																	
55,000	-56.5	-72	-15	-15	-12	-72	-15	-13	-12	-66	-9	-7	-5	-69	-12	-9	-7
40,000	-56.5	-53	4	6	7	-54	3	5	7	-52	4	7	8	-54	3	5	6
30,000	-44.5	-34	10	12	13	-35	9	11	12	-38	7	9	10	-35	10	12	13
20,000	-21.2	-7	14	15	16	-9	12	14	15	-14	7	9	10	-9	12	14	15
10,000	-4.6	9	13	15	15	7	11	13	14	5	8	9	10	5	10	11	12

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET		ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION										
			JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN	APR	JUL	OCT				
			50-050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
LISBON TO LONDON																									
55,000	-56.5	-59	-2	1	5	-56	0	3	5	-55	1	4	5	-60	-3	-1	1	5	4	8	4	845 N.M.I.			
40,000	-56.5	-58	-2	2	5	-57	-1	3	5	-53	3	7	8	-56	0	3	5	6	4	5	5	4	6	5	5
30,000	-56.5	-48	-4	-1	0	-46	-1	1	5	-39	6	8	10	-42	2	5	6	4	4	3	4	4	4	3	4
20,000	-21.2	-23	-2	2	4	-20	1	4	5	-12	9	11	12	-16	5	8	9	5	4	3	4	5	4	3	4
10,000	-4.6	-6	-1	2	5	-3	1	4	5	4	9	11	12	-0	4	7	8	5	4	3	4	5	4	3	4
LISBON TO LOS ANGELES																									
55,000	-56.5	-58	-2	1	5	-55	1	4	5	-56	0	3	4	-59	-2	0	2	4	4	6	4	4931 N.M.I.			
40,000	-56.5	-55	1	4	8	-55	1	5	7	-53	4	4	8	-54	2	5	7	6	4	4	5	4	4	4	5
30,000	-56.5	-49	-5	-2	-1	-47	-5	-0	1	-39	6	8	10	-43	1	4	5	4	4	4	5	4	4	4	5
20,000	-21.2	-27	-4	-1	1	-25	-1	2	4	-12	9	13	15	-18	3	7	9	6	5	3	5	4	5	3	5
10,000	-4.6	-12	-8	-5	-1	-6	-2	2	4	4	9	11	12	-2	2	6	8	7	5	3	5	4	5	3	5
LISBON TO LOURENCO MARQUES																									
55,000	-56.5	-73	-17	-14	-15	-72	-14	-14	-12	-72	-15	-15	-12	-73	-16	-14	-15	3	1	3	3	4532 N.M.I.			
40,000	-56.5	-54	3	5	4	-53	4	4	7	-52	4	4	7	-53	4	5	6	3	4	2	2	4	4	2	2
30,000	-56.5	-56	9	10	11	-54	11	12	15	-53	11	13	16	-53	11	13	15	2	2	2	2	4	4	2	2
20,000	-21.2	-9	12	15	16	-8	15	16	15	-6	15	16	17	-8	14	15	15	2	2	2	2	4	4	2	2
10,000	-4.6	7	11	15	15	8	12	16	16	9	14	15	16	9	13	16	15	2	2	2	2	4	4	2	2
LISBON TO LUNNAB																									
55,000	-56.5	-75	-16	-14	-15	-72	-15	-15	-12	-73	-16	-15	-14	-73	-17	-15	-14	3	3	3	3	3118 N.M.I.			
40,000	-56.5	-55	2	4	5	-53	3	6	7	-53	3	5	6	-53	3	5	6	3	4	2	2	4	4	2	2
30,000	-56.5	-58	7	8	9	-54	10	12	15	-53	12	15	16	-54	11	12	15	2	2	2	2	4	4	2	2
20,000	-21.2	-11	10	12	12	-9	12	14	15	-6	15	16	17	-8	14	15	15	2	2	2	2	4	4	2	2
10,000	-4.6	6	10	12	12	7	12	15	16	11	14	17	17	8	13	16	15	2	2	2	2	4	4	2	2
LISBON TO MADRID																									
55,000	-56.5	-60	-1	0	2	-58	-2	1	3	-60	-4	-1	-0	-62	-5	-3	-2	5	4	4	4	277 N.M.I.			
40,000	-56.5	-58	-2	2	4	-58	-1	2	4	-53	3	6	7	-54	0	3	4	4	4	4	4	4	4	4	4
30,000	-56.5	-67	-2	0	1	-65	-0	2	4	-57	8	10	11	-61	4	6	8	3	4	3	3	4	4	3	3
20,000	-21.2	-20	1	4	5	-18	3	5	7	-10	11	13	14	-14	7	9	10	4	3	3	3	4	4	3	3
10,000	-4.6	-3	1	4	6	-1	4	6	8	8	15	15	16	2	6	8	10	4	3	3	3	4	4	3	3
LISBON TO MEXICO CITY																									
55,000	-56.5	-66	-9	-7	-5	-63	-7	-4	-3	-64	-8	-6	-5	-67	-11	-8	-7	3	3	3	3	4676 N.M.I.			
40,000	-56.5	-58	-1	2	3	-58	-1	2	4	-56	1	3	4	-56	1	3	4	3	4	3	3	4	4	3	3
30,000	-56.5	-63	2	4	5	-62	3	5	6	-55	9	11	12	-58	7	9	10	3	3	2	3	4	4	2	3
20,000	-21.2	-16	5	7	9	-15	6	9	10	-9	13	16	15	-11	10	12	13	4	3	2	3	4	4	2	3
10,000	-4.6	-1	4	7	8	1	6	8	9	7	12	15	16	5	9	11	12	4	4	2	3	4	4	2	3
LISBON TO MILAN																									
55,000	-56.5	-58	-2	1	3	-57	-0	3	4	-57	-1	1	3	-66	-4	-1	-0	5	4	4	4	891 N.M.I.			
40,000	-56.5	-58	-2	2	4	-58	-2	2	4	-53	3	6	7	-54	0	3	4	4	4	4	4	4	4	4	4
30,000	-56.5	-68	-5	-1	0	-66	-1	1	3	-58	7	9	10	-62	3	6	7	4	4	3	4	4	4	3	4
20,000	-21.2	-23	-1	2	3	-19	2	4	4	-11	10	12	13	-15	4	8	10	5	4	3	4	4	4	3	4
10,000	-4.6	-6	-1	2	4	-2	2	5	6	6	11	13	16	0	5	7	9	5	4	3	4	4	4	3	4
LISBON TO MONTREAL																									
55,000	-56.5	-58	-1	1	3	-55	1	4	5	-56	0	3	4	-59	-2	0	2	4	4	4	4	2826 N.M.I.			
40,000	-56.5	-56	0	4	7	-56	0	5	7	-54	3	6	7	-55	2	5	7	6	4	4	5	4	4	5	5
30,000	-56.5	-68	-5	-0	1	-66	-2	1	2	-58	6	9	10	-62	2	5	6	4	4	4	4	4	4	4	4
20,000	-21.2	-24	-5	1	3	-21	-0	3	5	-12	9	11	13	-14	5	8	10	6	5	3	5	4	4	3	5
10,000	-4.6	-10	-5	-1	1	-4	-1	2	4	3	8	10	11	-2	3	6	8	6	5	3	5	4	4	3	5
LISBON TO MOSCOW																									
55,000	-56.5	-57	-1	3	4	-56	2	5	6	-52	5	7	8	-58	-2	1	2	5	4	3	4	2101 N.M.I.			
40,000	-56.5	-58	-2	2	4	-56	0	4	4	-52	5	8	9	-54	1	4	5	5	4	5	4	4	5	4	4
30,000	-56.5	-51	-6	-5	-2	-67	-5	-0	1	-39	5	8	9	-63	1	4	5	4	4	4	4	4	4	4	4
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-13	8	10	11	-18	3	7	8	5	5	3	5	4	4	3	5
10,000	-4.6	-11	-4	-2	-0	-6	-1	2	4	5	7	9	10	-3	2	5	7	5	5	3	5	4	4	3	5
LISBON TO MUNICH																									
55,000	-56.5	-58	-1	2	4	-56	0	3	5	-56	0	3	4	-60	-3	-1	0	5	4	4	4	1062 N.M.I.			
40,000	-56.5	-58	-2	2	4	-58	-1	2	4	-53	3	6	8	-54	0	3	4	6	4	4	4	4	4	4	4
30,000	-56.5	-68	-4	-1	0	-66	-2	1	3	-58	6	9	10	-62	2	5	7	4	4	3	4	4	4	3	4
20,000	-21.2	-23	-2	1	3	-20	1	4	5	-12	10	12	13	-16	4	8	9	5	4	3	4	4	4	3	4
10,000	-4.6	-4	-2	1	3	-3	2	4	5	5	10	12	13	-0	5	7	8	5	4	3	4	4	4	3	4
LISBON TO QINZHOU																									
55,000	-56.5	-71	-15	-15	-12	-70	-16	-12	-11	-72	-16	-14	-13	-72	-16	-14	-13	3	3	3	3	3496 N.M.I.			
40,000	-56.5	-55	2	4	5	-53	3	6	7	-52	3	6	7	-53	3	5	6	3	4	2	2	4	4	2	2
30,000	-56.5	-59	4	7	8	-55	9	11	12	-52	13	14	15	-54	10	12	12	2	2	2	2	4	4	2	2
20,000	-21.2	-12	10	11	12	-10	12	13	16	-6	15	17	17	-8	15	16	15	2	2	2	2	4	4	2	2
10,000	-4.6	5	9	11	12	7	11	15	16	12	16	17	18	8	12	16	16	2	2	2	2	4	4	2	2
LISBON TO RAGLA																									
55,000	-56.5	-75	-16	-14	-15	-72	-16	-14	-15	-71	-15	-15	-12	-73	-17	-15	-14	3	3	3	3	3049 N.M.I.			
40,000	-56.5	-55	1	3	5	-55	2	4	5	-53	3	5	5	-54	2	4	5	4	4	2	2	4	4	2	2
30,000	-56.5	-58	7	8	9	-55	10	11	12	-54	11	12	13	-55	10	11	12	2	2	2	2	4	4	2	2
20,000	-21.2	-11	10	12	13	-9	12	15	16	-7	14	15	16	-9	14	15	16	2	2	2	2	4	4	2	2
10,000	-4.6	4	10	12	12	6	11	12	13	9	14	15	16	8	13	16	16	2	2	2	2	4	4	2	2
LISBON TO NEW DELHI																									
55,000	-56.5	-59	-5	0	2	-58	-1	1	3	-61	-5	-2	-1	-61	-5	-2	-1	5	4	4	4	4192 N.M.I.			
40,000	-56.5	-54	0	3	5	-54	1	4	6	-49	8	10	12	-54	1	3	5	5	4	4	4	4	4	4	4
30,000	-56.5	-68	-5	-1	1	-66	0	3	5	-53	12	14	15	-61	4	6	8	4	4	3	4	4	4	3	4
20,000	-21.2	-23	-2	1	3	-17	4	6	8	-8	13	16	17	-11	7	9	10	4	4	3	4	4	4	3	4
10,000	-4.6	-7	-2	1	2	-1	4	7	8	9	14	16	17	2	6	9	10	5	4	3	4	4	4	3	4
LISBON TO NEW ORLEANS																									
55,000	-56.5	-67	-4	-3	-2	-60	-3	-1	1	-62	-5	-3	-2	-64	-7	-5	-3	4	4	3	4	5915 N.M.I.			
40,000	-56.5	-58	-1	2	4	-58	-1	2	4	-55	2	4	5	-56	1	3	5	5	5	3	4	4	4	3	4
30,000	-56.5	-45	-0	2	3	-44																			

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	156 TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
LISBON TO NEW YORK																	
51,000	-56.5	-59	-1	0	2	-57	-0	2	6	-58	-2	1	2	-61	-4	-1	0
40,000	-56.5	-57	-1	3	5	-57	-1	3	5	-55	2	5	6	-55	1	6	6
30,000	-56.5	-57	-2	0	2	-65	-1	2	3	-37	7	9	11	-61	3	6	7
20,000	-71.2	-77	-1	5	5	-70	1	6	6	-11	10	12	13	-15	7	10	11
10,000	-6.6	-7	-2	1	5	-6	1	6	5	5	9	11	12	0	5	0	9
LISBON TO OSLO																	
51,000	-56.5	-58	-2	2	3	-55	2	5	6	-52	6	7	8	-58	-2	1	2
40,000	-56.5	-58	-2	2	6	-56	1	5	7	-52	5	8	10	-56	0	6	5
30,000	-56.5	-58	-2	2	6	-56	1	5	7	-52	5	8	10	-56	0	6	5
20,000	-71.2	-75	-6	-0	2	-67	-2	0	1	-60	5	7	8	-66	1	6	5
10,000	-6.6	-9	-6	-1	1	-5	-1	2	6	-16	6	10	11	-18	6	7	8
LISBON TO PANAMA																	
51,000	-56.5	-70	-15	-11	-10	-68	-12	-10	-9	-68	-11	-9	-9	-71	-16	-12	-11
40,000	-56.5	-60	0	5	6	-56	0	5	6	-55	2	5	6	-55	1	5	6
30,000	-56.5	-60	0	5	6	-56	0	5	6	-55	2	5	6	-55	1	5	6
20,000	-71.2	-15	9	10	11	-11	10	12	13	-9	13	16	15	-37	8	9	10
10,000	-6.6	5	6	10	11	6	9	10	11	8	12	16	16	5	10	12	13
LISBON TO PARIS																	
51,000	-56.5	-59	-2	1	5	-56	0	5	5	-56	0	5	6	-60	-5	-1	0
40,000	-56.5	-58	-2	2	6	-58	-1	5	6	-55	3	6	8	-56	0	5	5
30,000	-56.5	-64	-5	-1	0	-64	-1	1	3	-36	6	9	10	-62	2	5	7
20,000	-71.2	-25	-1	2	6	-20	2	6	6	-12	9	11	13	-16	6	8	10
10,000	-6.6	-6	-1	2	6	-5	2	6	6	5	10	12	13	0	5	7	9
LISBON TO PRAGUE																	
51,000	-56.5	-58	-1	2	6	-56	1	5	5	-55	1	6	5	-60	-5	-1	1
40,000	-56.5	-58	-2	2	6	-56	-1	5	5	-55	5	6	8	-56	0	5	6
30,000	-56.5	-69	-6	-2	-0	-66	-2	1	2	-58	6	8	10	-67	2	5	6
20,000	-71.2	-26	-5	1	2	-20	1	6	5	-12	9	11	12	-16	5	8	9
10,000	-6.6	-7	-5	1	5	-6	1	6	5	5	9	11	12	-0	6	7	8
LISBON TO RIO DE JANEIRO																	
51,000	-56.5	-76	-17	-15	-16	-75	-17	-15	-15	-71	-16	-12	-11	-75	-16	-16	-15
40,000	-56.5	-55	2	6	5	-56	2	5	6	-56	5	6	5	-56	5	6	5
30,000	-56.5	-56	8	10	11	-56	11	12	13	-55	11	13	16	-56	10	12	13
20,000	-71.2	-9	12	13	16	-7	16	15	16	-7	16	15	16	-8	13	15	15
10,000	-6.6	7	11	13	15	7	12	13	16	9	11	16	15	8	15	16	15
LISBON TO ROME																	
51,000	-56.5	-59	-2	1	5	-57	-1	2	6	-59	-5	-0	1	-61	-6	-2	-1
40,000	-56.5	-58	-1	5	5	-56	-1	2	6	-52	6	7	8	-56	0	5	6
30,000	-56.5	-67	-5	-1	1	-65	-1	2	3	-57	7	10	11	-61	5	6	7
20,000	-71.2	-27	-1	2	6	-19	2	5	6	-11	11	13	16	-15	6	9	10
10,000	-6.6	-5	-0	5	6	-1	5	6	7	8	12	16	15	1	6	8	9
LISBON TO SOL ISLAND																	
51,000	-56.5	-68	-11	-9	-7	-67	-10	-8	-7	-69	-12	-10	-9	-70	-15	-11	-10
40,000	-56.5	-57	-0	5	6	-56	0	5	5	-55	2	6	5	-55	2	6	5
30,000	-56.5	-67	5	6	5	-59	6	8	8	-55	10	11	12	-56	8	10	11
20,000	-71.2	-15	7	9	9	-15	9	10	11	-8	15	15	15	-9	12	13	16
10,000	-6.6	5	7	9	10	6	8	10	11	6	11	12	13	6	10	12	13
LISBON TO SAN FRANCISCO																	
51,000	-56.5	-57	-1	2	6	-56	2	5	6	-57	-1	2	3	-56	1	6	5
40,000	-56.5	-55	1	6	8	-55	2	6	8	-52	6	7	9	-56	2	6	8
30,000	-56.5	-50	-6	-5	-2	-68	-5	-1	1	-60	6	7	8	-66	-1	2	6
20,000	-71.2	-29	-8	-5	-1	-26	-5	1	5	-15	8	10	11	-20	2	5	7
10,000	-6.6	-16	-10	-5	-5	-8	-6	0	2	5	7	10	11	-6	0	6	6
LISBON TO SAN JUAN																	
51,000	-56.5	-67	-11	-8	-7	-66	-9	-7	-6	-66	-10	-8	-7	-69	-12	-10	-9
40,000	-56.5	-57	-1	2	6	-56	-1	2	6	-55	2	6	5	-56	1	5	6
30,000	-56.5	-67	5	5	6	-60	5	7	7	-55	9	11	11	-56	8	10	11
20,000	-71.2	-16	7	9	10	-15	8	10	11	-8	13	16	15	-9	12	13	16
10,000	-6.6	2	7	9	10	5	7	9	10	7	12	13	16	6	10	12	13
LISBON TO SANTO DOMINGO																	
51,000	-56.5	-61	-5	-2	0	-59	-5	0	2	-61	-5	-5	-1	-65	-6	-6	-5
40,000	-56.5	-59	-2	2	6	-58	-2	2	6	-55	5	6	7	-56	0	5	6
30,000	-56.5	-66	-1	1	2	-65	1	5	6	-56	8	10	11	-60	5	7	8
20,000	-71.2	-19	2	5	6	-17	6	7	8	-10	11	13	16	-15	9	11	12
10,000	-6.6	-2	5	5	7	-0	6	7	8	7	12	16	15	5	8	10	11
LISBON TO SANTIAGO																	
51,000	-56.5	-75	-16	-16	-13	-72	-16	-16	-12	-69	-15	-10	-9	-71	-15	-13	-12
40,000	-56.5	-54	2	6	6	-56	2	5	6	-55	6	5	6	-56	5	6	5
30,000	-56.5	-56	8	10	11	-56	10	12	13	-55	10	12	13	-56	11	13	16
20,000	-71.2	-9	12	16	15	-9	15	16	15	-9	15	16	15	-8	16	15	16
10,000	-6.6	7	12	13	16	7	11	13	16	7	12	13	16	8	12	16	15
LISBON TO SAO TOME IS.																	
51,000	-56.5	-72	-15	-15	-12	-70	-16	-12	-11	-75	-16	-16	-13	-75	-16	-16	-13
40,000	-56.5	-55	2	6	5	-55	5	6	7	-55	5	6	5	-55	5	6	5
30,000	-56.5	-59	5	7	8	-55	10	11	12	-55	12	15	16	-56	10	12	12
20,000	-71.2	-12	9	10	11	-10	11	13	16	-6	15	16	17	-9	15	16	15
10,000	-6.6	5	9	11	12	7	11	13	16	12	16	18	18	8	13	16	15
LISBON TO SEVILLE																	
51,000	-56.5	-60	-5	-0	2	-58	-2	1	2	-62	-5	-3	-2	-62	-5	-3	-2
40,000	-56.5	-58	-1	5	5	-57	-1	5	5	-52	6	7	8	-56	0	5	6
30,000	-56.5	-67	-2	0	1	-66	0	2	6	-36	8	10	11	-61	6	6	8
20,000	-71.2	-20	1	6	5	-18	6	6	7	-10	11	13	16	-16	7	9	10
10,000	-6.6	-5	1	6	6	-0	6	7	8	9	16	16	17	2	7	10	12

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50-050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN APR JUL OCT
LISBON TO SHANGHAI																	
55,000	-56.5	-56	1	4	4	5	6	8	-51	6	9	10	-56	1	3	5	5776 N.M.I.
40,000	-56.5	-57	-1	3	5	6	7	9	-49	7	11	12	-54	3	6	8	5
30,000	-56.5	-57	-1	3	5	6	7	9	-49	7	11	12	-54	3	6	8	5
20,000	-56.5	-57	-1	3	5	6	7	9	-49	7	11	12	-54	3	6	8	5
10,000	-56.5	-57	-1	3	5	6	7	9	-49	7	11	12	-54	3	6	8	5
LISBON TO STOCKHOLM																	
55,000	-56.5	-58	-1	2	4	5	6	8	-52	4	7	10	-58	-2	1	2	1618 N.M.I.
40,000	-56.5	-58	-2	2	4	5	6	8	-52	4	7	10	-58	-2	1	2	5
30,000	-56.5	-58	-2	2	4	5	6	8	-52	4	7	10	-58	-2	1	2	5
20,000	-56.5	-58	-2	2	4	5	6	8	-52	4	7	10	-58	-2	1	2	5
10,000	-56.5	-58	-2	2	4	5	6	8	-52	4	7	10	-58	-2	1	2	5
LISBON TO TEHRAN																	
55,000	-56.5	-58	-1	2	3	5	6	7	-51	-4	-2	-1	-61	-4	-2	-1	2861 N.M.I.
40,000	-56.5	-57	-0	3	5	6	7	9	-49	7	10	11	-56	0	3	5	5
30,000	-56.5	-57	-0	3	5	6	7	9	-49	7	10	11	-56	0	3	5	5
20,000	-56.5	-57	-0	3	5	6	7	9	-49	7	10	11	-56	0	3	5	5
10,000	-56.5	-57	-0	3	5	6	7	9	-49	7	10	11	-56	0	3	5	5
LISBON TO TEL AVIV-JAFFA																	
55,000	-56.5	-60	-4	-1	1	2	3	5	-64	-8	-5	-4	-62	-4	-4	-3	2171 N.M.I.
40,000	-56.5	-57	-0	3	5	6	7	9	-50	7	9	10	-56	0	3	5	5
30,000	-56.5	-57	-0	3	5	6	7	9	-50	7	9	10	-56	0	3	5	5
20,000	-56.5	-57	-0	3	5	6	7	9	-50	7	9	10	-56	0	3	5	5
10,000	-56.5	-57	-0	3	5	6	7	9	-50	7	9	10	-56	0	3	5	5
LISBON TO TRIPOLI																	
55,000	-56.5	-61	-4	-1	0	1	2	3	-64	-7	-5	-4	-63	-4	-4	-3	1162 N.M.I.
40,000	-56.5	-57	-1	3	5	6	7	9	-51	5	8	9	-56	0	3	5	5
30,000	-56.5	-57	-1	3	5	6	7	9	-51	5	8	9	-56	0	3	5	5
20,000	-56.5	-57	-1	3	5	6	7	9	-51	5	8	9	-56	0	3	5	5
10,000	-56.5	-57	-1	3	5	6	7	9	-51	5	8	9	-56	0	3	5	5
LISBON TO TUNIS																	
55,000	-56.5	-60	-3	0	2	3	4	5	-62	-5	-3	-2	-62	-5	-3	-2	923 N.M.I.
40,000	-56.5	-58	-1	3	5	6	7	9	-50	7	9	10	-56	0	3	5	5
30,000	-56.5	-58	-1	3	5	6	7	9	-50	7	9	10	-56	0	3	5	5
20,000	-56.5	-58	-1	3	5	6	7	9	-50	7	9	10	-56	0	3	5	5
10,000	-56.5	-58	-1	3	5	6	7	9	-50	7	9	10	-56	0	3	5	5
LISBON TO VIENNA																	
55,000	-56.5	-58	-1	2	4	5	6	8	-56	0	3	5	-60	-3	-1	0	1264 N.M.I.
40,000	-56.5	-58	-2	2	4	5	6	8	-56	0	3	5	-60	-3	-1	0	5
30,000	-56.5	-58	-2	2	4	5	6	8	-56	0	3	5	-60	-3	-1	0	5
20,000	-56.5	-58	-2	2	4	5	6	8	-56	0	3	5	-60	-3	-1	0	5
10,000	-56.5	-58	-2	2	4	5	6	8	-56	0	3	5	-60	-3	-1	0	5
LISBON TO WARSAW																	
55,000	-56.5	-57	-1	2	4	5	6	8	-55	1	4	5	-59	-3	-0	1	1484 N.M.I.
40,000	-56.5	-58	-2	2	4	5	6	8	-57	-1	3	5	-56	0	3	5	5
30,000	-56.5	-58	-2	2	4	5	6	8	-57	-1	3	5	-56	0	3	5	5
20,000	-56.5	-58	-2	2	4	5	6	8	-57	-1	3	5	-56	0	3	5	5
10,000	-56.5	-58	-2	2	4	5	6	8	-57	-1	3	5	-56	0	3	5	5
LISBON TO ZURICH																	
55,000	-56.5	-58	-2	2	4	5	6	8	-56	0	3	5	-60	-4	-1	0	930 N.M.I.
40,000	-56.5	-58	-2	2	4	5	6	8	-56	0	3	5	-60	-4	-1	0	5
30,000	-56.5	-58	-2	2	4	5	6	8	-56	0	3	5	-60	-4	-1	0	5
20,000	-56.5	-58	-2	2	4	5	6	8	-56	0	3	5	-60	-4	-1	0	5
10,000	-56.5	-58	-2	2	4	5	6	8	-56	0	3	5	-60	-4	-1	0	5
LIVINGSTONE TO LUSAKA																	
55,000	-56.5	-76	-20	-17	-16	-15	-14	-13	-69	-13	-11	-9	-72	-15	-13	-12	204 N.M.I.
40,000	-56.5	-52	5	7	8	9	10	11	-51	5	7	8	-52	4	6	7	4
30,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
20,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
10,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
LIVINGSTONE TO NAIROBI																	
55,000	-56.5	-77	-21	-18	-17	-16	-15	-14	-72	-16	-14	-13	-75	-18	-16	-15	1187 N.M.I.
40,000	-56.5	-52	4	6	7	8	9	10	-52	5	6	7	-52	4	6	7	5
30,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
20,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
10,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
LIVINGSTONE TO PIETERSBURG																	
55,000	-56.5	-74	-18	-15	-13	-12	-11	-10	-67	-10	-8	-6	-69	-13	-10	-9	415 N.M.I.
40,000	-56.5	-52	5	7	8	9	10	11	-51	5	7	8	-52	4	6	7	5
30,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
20,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
10,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
LIVINGSTONE TO WINDHOEK																	
55,000	-56.5	-75	-18	-16	-14	-13	-12	-11	-67	-10	-8	-7	-70	-13	-11	-9	570 N.M.I.
40,000	-56.5	-52	5	7	8	9	10	11	-51	5	7	8	-52	4	6	7	5
30,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
20,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
10,000	-56.5	-50	14	16	17	18	19	20	-43	11	13	14	-43	12	14	15	2
LONDON TO LOS ANGELES																	
55,000	-56.5	-57	-1	3	5	6	7	9	-51	5	7	9	-56	0	3	5	4727 N.M.I.
40,000	-56.5	-57	-1	3	5	6	7	9	-51	5	7	9	-56	0	3	5	5
30,000	-56.5	-57	-1	3	5	6	7	9	-51	5	7	9	-56	0	3	5	5
20,000	-56.5	-57	-1	3	5	6	7	9	-51	5	7	9	-56	0	3	5	5
10,000	-56.5	-57	-1	3	5	6	7	9	-51	5	7	9	-56	0	3	5	5

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
LONDON TO LYDIA																	
55,000	-56.5	-58	-1	2	3	-56	0	3	4	-58	-2	1	2	-58	-2	1	3
40,000	-56.5	-57	-1	3	5	-57	-0	4	5	-59	0	3	4	-55	2	5	7
30,000	-56.5	-50	-5	-3	-1	-46	-2	1	2	-36	9	11	12	-43	1	5	7
20,000	-21.2	-25	-3	-0	1	-20	1	4	5	-10	11	13	14	-18	3	7	9
10,000	-4.6	-9	-4	-1	1	-4	1	4	5	5	10	12	13	-2	3	6	8
LONDON TO MADRID																	
55,000	-56.5	-58	-2	2	3	-56	1	4	5	-55	2	4	6	-57	-0	3	4
40,000	-56.5	-58	-2	2	5	-57	-1	3	6	-53	4	7	8	-56	0	4	6
30,000	-44.5	-48	-4	-1	-0	-46	-2	1	2	-39	6	8	9	-43	2	5	6
20,000	-21.2	-23	-2	1	3	-20	1	4	5	-12	9	11	12	-18	3	6	8
10,000	-4.6	-7	-2	1	3	-4	1	4	5	4	9	11	12	-2	3	6	8
LONDON TO MALTA																	
55,000	-56.5	-57	-1	2	4	-56	1	3	5	-56	0	2	4	-57	-1	2	4
40,000	-56.5	-58	-1	3	5	-57	-1	3	5	-51	5	8	9	-56	0	3	4
30,000	-44.5	-49	-4	-2	-1	-46	-2	1	2	-38	6	9	10	-42	2	5	6
20,000	-21.2	-24	-3	0	2	-20	1	4	5	-12	10	12	13	-16	5	8	9
10,000	-4.6	-7	-3	1	2	-3	1	4	5	5	10	12	13	-0	4	7	8
LONDON TO MARSEILLES																	
55,000	-56.5	-57	-1	2	4	-55	2	4	6	-53	3	6	7	-56	0	4	5
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-52	4	7	9	-56	0	4	5
30,000	-44.5	-49	-5	-2	-1	-47	-2	0	2	-39	5	7	9	-43	1	4	4
20,000	-21.2	-25	-4	-0	2	-21	0	3	5	-13	4	10	12	-17	4	7	9
10,000	-4.6	-8	-4	-0	2	-5	-0	3	4	3	8	10	11	-1	3	6	8
LONDON TO MEXICO CITY																	
55,000	-56.5	-61	-5	-2	-1	-59	-2	0	2	-59	-2	0	1	-62	-6	-3	-2
40,000	-56.5	-56	1	5	7	-55	1	5	7	-53	3	6	7	-54	2	5	7
30,000	-44.5	-46	-1	1	2	-44	0	2	4	-38	7	9	10	-41	3	6	7
20,000	-21.2	-22	-1	3	5	-20	2	5	6	-11	10	12	13	-15	6	9	10
10,000	-4.6	-6	-3	1	2	-4	1	4	4	4	8	10	11	0	5	8	9
LONDON TO MILAN																	
55,000	-56.5	-57	-0	3	5	-54	2	5	6	-52	4	7	8	-56	-2	1	2
40,000	-56.5	-54	-2	2	4	-57	-0	4	6	-52	4	8	9	-54	0	3	5
30,000	-44.5	-50	-5	-3	-1	-47	-3	-0	1	-40	5	7	8	-43	1	4	5
20,000	-21.2	-26	-4	-1	1	-22	-0	3	4	-13	4	10	11	-17	4	7	8
10,000	-4.6	-9	-5	-1	1	-5	-1	2	3	2	7	9	10	-2	3	6	7
LONDON TO MONTREAL																	
55,000	-56.5	-56	0	3	5	-52	4	7	8	-51	6	9	10	-53	1	4	6
40,000	-56.5	-54	2	7	9	-53	4	8	10	-51	6	9	11	-53	3	7	9
30,000	-44.5	-50	-5	-2	-1	-48	-3	-1	1	-41	3	6	7	-45	-0	3	4
20,000	-21.2	-24	-8	-3	-0	-25	-4	-0	2	-15	6	9	10	-20	1	5	7
10,000	-4.6	-15	-10	-6	-3	-10	-5	-1	0	-0	4	7	8	-5	-1	3	5
LONDON TO MOSCOW																	
55,000	-56.5	-57	-0	3	5	-53	4	6	8	-48	9	11	12	-54	0	3	4
40,000	-56.5	-54	-2	1	3	-54	2	6	9	-50	6	10	12	-56	1	4	6
30,000	-44.5	-52	-8	-5	-4	-49	-4	-1	0	-41	3	6	8	-45	-1	2	4
20,000	-21.2	-24	-6	-2	-2	-24	-3	1	3	-15	6	9	10	-20	1	5	7
10,000	-4.6	-14	-9	-5	-3	-6	-4	-0	2	0	5	7	8	-6	-1	2	4
LONDON TO MUNICH																	
55,000	-56.5	-57	-0	3	5	-54	2	5	6	-51	5	8	9	-54	-1	1	3
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	8	10	-56	0	3	5
30,000	-44.5	-50	-6	-3	-2	-48	-3	-0	1	-40	4	7	8	-44	1	3	5
20,000	-21.2	-26	-5	-1	1	-22	-2	1	4	-14	7	10	11	-18	3	6	8
10,000	-4.6	-10	-6	-2	0	-6	-1	2	3	2	7	9	10	-2	2	5	7
LONDON TO NAIROBI																	
55,000	-56.5	-60	-11	-9	-8	-67	-10	-4	-7	-68	-12	-10	-9	-69	-13	-11	-10
40,000	-56.5	-55	1	4	5	-54	2	5	6	-51	6	7	8	-54	2	4	5
30,000	-44.5	-41	3	5	6	-38	7	8	9	-33	12	14	15	-36	8	10	11
20,000	-21.2	-15	4	8	9	-12	9	11	12	-7	14	16	16	-10	11	12	13
10,000	-4.6	1	6	8	9	4	4	10	11	9	14	15	16	6	10	12	13
LONDON TO NASSAU																	
55,000	-56.5	-61	-5	-2	-1	-59	-2	0	1	-58	-2	0	2	-62	-6	-3	-2
40,000	-56.5	-57	-1	3	5	-57	-0	4	6	-55	1	4	6	-55	1	4	5
30,000	-44.5	-46	-1	1	3	-46	0	3	4	-38	7	9	10	-40	4	7	8
20,000	-21.2	-20	1	4	6	-19	3	5	7	-11	10	12	13	-14	7	10	11
10,000	-4.6	-6	-1	3	4	-5	2	4	6	4	8	10	11	5	8	9	9
LONDON TO NATAL																	
55,000	-56.5	-69	-13	-11	-9	-68	-12	-10	-8	-68	-11	-9	-8	-70	-14	-12	-11
40,000	-56.5	-56	0	3	5	-56	1	4	6	-53	3	5	6	-54	2	4	5
30,000	-44.5	-40	4	6	7	-37	7	9	10	-35	10	11	12	-37	9	11	12
20,000	-21.2	-13	8	10	11	-12	4	11	12	-8	13	14	15	-9	12	13	14
10,000	-4.6	3	8	9	10	4	9	10	11	8	13	14	15	6	11	12	13
LONDON TO NEW YORK																	
55,000	-56.5	-57	-0	2	4	-54	3	5	7	-53	4	7	8	-57	-0	3	4
40,000	-56.5	-55	2	6	8	-54	2	7	9	-52	5	8	10	-54	3	6	8
30,000	-44.5	-49	-4	-2	0	-47	-3	0	1	-40	4	7	8	-44	1	4	5
20,000	-21.2	-27	-5	-1	1	-24	-2	1	3	-14	7	10	11	-19	3	6	8
10,000	-4.6	-13	-8	-4	-1	-8	-3	0	2	1	6	8	9	-4	1	4	6
LONDON TO NICOSIA																	
55,000	-56.5	-57	-0	3	4	-55	1	3	5	-56	0	2	4	-59	-3	-1	1
40,000	-56.5	-57	-1	3	4	-57	-0	4	6	-50	7	9	11	-56	0	3	4
30,000	-44.5	-50	-6	-3	-2	-47	-2	0	2	-37	7	10	11	-42	2	4	6
20,000	-21.2	-25	-4	-1	1	-21	0	3	5	-11	10	12	13	-16	5	7	9
10,000	-4.6	-10	-5	-2	-0	-4	0	3	5	4	9	11	12	-0	4	7	8

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET		ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
			JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
50 050 075 085				50 050 075 085				50 050 075 085				50 050 075 085				50 050 075 085										
LONDON TO OSLO																										
51,000	-56.5	-58	-1	2	4	-53	4	6	8	-48	9	11	12	-57	-0	3	4	-54	3	6	8	5	4	3	4	628 N.M.I.
40,000	-56.5	-59	-2	2	4	-54	3	7	10	-50	7	11	13	-54	1	4	6	-54	2	7	9	6	7	6	6	
30,000	-46.5	-51	-7	-4	-3	-49	-4	-1	-0	-42	5	5	7	-45	-1	2	4	-47	-2	1	3	4	4	4	4	
20,000	-21.2	-20	-7	-3	-1	-24	-3	0	2	-14	5	8	9	-20	-1	5	7	-22	-1	3	5	6	5	4	5	
10,000	-4.6	-12	-7	-4	-2	-8	-4	-1	1	-0	4	7	8	-5	-0	3	5	-6	-2	2	4	5	5	3	5	
LONDON TO PANAMA																										
51,000	-56.5	-64	-10	-7	-6	-64	-7	-5	-4	-63	-4	-4	-3	-67	-10	-8	-6	-65	-8	-4	-5	3	3	3	4	4541 N.M.I.
40,000	-56.5	-57	-0	3	5	-54	0	3	5	-55	2	4	5	-55	1	4	5	-56	1	3	4	5	5	3	4	
30,000	-46.5	-62	2	4	5	-41	4	6	7	-34	8	10	11	-38	7	9	10	-39	5	8	9	3	3	3	3	
20,000	-21.2	-16	5	8	9	-15	7	9	10	-10	12	13	14	-11	10	12	13	-13	8	11	12	4	4	2	3	
10,000	-4.6	-1	4	7	8	1	5	8	9	6	10	12	12	4	8	10	11	2	7	9	10	4	3	2	3	
LONDON TO PARIS																										
51,000	-56.5	-57	-1	3	4	-54	2	5	6	-51	5	8	9	-58	-1	1	3	-55	1	5	6	5	4	4	4	187 N.M.I.
40,000	-56.5	-58	-2	2	5	-54	1	5	8	-51	5	9	10	-54	0	3	5	-55	1	5	6	4	7	5	5	
30,000	-46.5	-50	-5	-3	-1	-47	-3	-0	1	-40	4	7	8	-44	1	3	5	-45	-1	3	4	4	4	4	4	
20,000	-21.2	-25	-4	-0	2	-22	-1	2	4	-14	7	9	11	-10	3	6	8	-20	1	5	7	6	5	3	5	
10,000	-4.6	-9	-4	-1	1	-6	-1	2	3	2	6	9	10	-2	3	6	7	-4	1	4	6	5	4	3	4	
LONDON TO PISA																										
51,000	-56.5	-57	-0	3	5	-55	2	4	6	-53	4	6	8	-59	-2	1	2	-56	1	4	6	5	4	4	4	640 N.M.I.
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-52	4	7	9	-54	0	3	5	-54	1	4	7	6	6	5	5	
30,000	-46.5	-50	-5	-3	-1	-47	-3	0	1	-40	5	7	9	-45	1	4	6	-45	-0	3	5	4	4	4	4	
20,000	-21.2	-24	-4	-1	1	-21	-0	3	4	-13	8	10	12	-17	4	7	9	-19	2	5	7	5	4	3	4	
10,000	-4.6	-9	-4	-1	1	-5	-1	2	4	3	8	10	11	-1	3	6	8	-3	1	5	7	5	4	3	4	
LONDON TO PRAGUE																										
51,000	-56.5	-57	-0	3	5	-54	3	5	7	-50	4	9	10	-58	-1	2	3	-55	2	5	7	5	4	4	4	544 N.M.I.
40,000	-56.5	-58	-2	2	4	-54	1	5	7	-51	5	9	11	-54	0	3	5	-55	1	5	8	6	6	5	5	
30,000	-46.5	-51	-4	-2	-2	-48	-3	-1	1	-43	4	6	8	-44	1	3	5	-44	-1	2	4	4	4	4	4	
20,000	-21.2	-27	-6	-2	0	-23	-1	2	3	-14	7	9	10	-10	3	6	8	-20	1	4	6	6	5	3	5	
10,000	-4.6	-11	-6	-3	-1	-6	-2	1	3	1	6	8	9	-3	2	5	7	-5	-0	3	5	6	4	3	5	
LONDON TO PRESTWICK																										
51,000	-56.5	-58	-1	2	4	-53	3	6	7	-49	7	10	11	-57	-1	2	4	-54	2	6	8	5	4	4	4	283 N.M.I.
40,000	-56.5	-58	-1	3	5	-54	2	7	9	-50	6	10	12	-56	1	4	6	-55	2	7	9	5	4	7	6	
30,000	-46.5	-50	-4	-3	-2	-47	-3	-0	1	-41	5	6	7	-44	0	3	5	-44	-1	2	4	4	4	4	4	
20,000	-21.2	-24	-5	-1	1	-23	-2	1	3	-15	6	8	10	-19	2	5	7	-21	0	4	6	4	5	3	5	
10,000	-4.6	-9	-5	-1	0	-7	-2	1	2	0	5	7	8	-3	1	4	6	-5	-0	3	5	5	4	3	5	
LONDON TO RIMINI																										
51,000	-56.5	-57	-0	3	5	-55	2	5	6	-52	4	6	8	-58	-2	1	2	-56	1	4	6	5	4	4	4	689 N.M.I.
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-52	4	8	9	-54	0	3	5	-54	1	5	7	4	6	5	5	
30,000	-46.5	-50	-4	-3	-1	-47	-3	-0	1	-40	5	7	9	-45	1	4	5	-45	-1	3	5	4	4	4	4	
20,000	-21.2	-24	-5	-1	1	-22	-0	3	4	-13	8	10	11	-17	4	7	8	-19	2	5	7	5	4	3	4	
10,000	-4.6	-9	-5	-1	1	-5	-1	2	4	3	7	10	11	-2	3	6	7	-3	1	5	7	5	4	3	4	
LONDON TO RIO DE JANEIRO																										
51,000	-56.5	-71	-15	-12	-11	-70	-14	-11	-10	-68	-11	-9	-8	-71	-14	-12	-11	-70	-13	-11	-9	4	3	3	3	4993 N.M.I.
40,000	-56.5	-55	1	4	5	-55	2	5	6	-53	3	5	6	-54	2	4	5	-54	2	4	5	4	4	3	3	
30,000	-46.5	-50	6	8	9	-46	8	10	11	-34	10	12	13	-35	10	11	12	-36	9	11	12	3	3	2	3	
20,000	-21.2	-12	10	11	12	-10	11	12	13	-8	13	14	15	-9	12	14	15	-10	11	13	14	3	3	2	2	
10,000	-4.6	4	9	11	12	5	10	11	12	8	12	14	14	7	12	13	14	6	11	12	13	3	3	2	2	
LONDON TO ROME																										
51,000	-56.5	-57	-0	3	5	-55	2	4	6	-53	3	5	7	-59	-2	0	2	-56	1	3	5	5	4	4	4	789 N.M.I.
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-52	4	7	9	-54	0	3	5	-54	1	4	6	4	4	4	4	
30,000	-46.5	-50	-5	-3	-1	-47	-2	0	2	-39	5	8	9	-43	2	4	6	-45	-0	3	5	4	4	4	4	
20,000	-21.2	-25	-4	-1	1	-21	0	3	4	-13	9	11	12	-17	4	7	9	-19	2	6	7	5	4	3	4	
10,000	-4.6	-9	-4	-1	1	-5	0	2	4	3	8	10	11	-1	3	6	8	-3	2	5	7	5	4	3	4	
LONDON TO SAN FRANCISCO																										
51,000	-56.5	-57	-1	3	5	-51	5	8	9	-50	7	9	10	-55	1	4	5	-53	3	6	8	6	4	3	4	6499 N.M.I.
40,000	-56.5	-58	-1	3	5	-52	4	9	11	-50	7	10	12	-55	4	7	9	-53	4	8	10	7	4	5	5	
30,000	-46.5	-53	-4	-4	-4	-49	-5	-2	-1	-43	2	4	6	-47	-2	1	2	-48	-3	0	2	4	4	4	4	
20,000	-21.2	-32	-11	-7	-5	-27	-6	-2	-0	-17	5	7	8	-23	-2	2	4	-25	-4	1	3	4	5	4	4	
10,000	-4.6	-18	-15	-9	-7	-12	-8	-4	-2	-1	4	6	8	-8	-4	0	2	-10	-5	-1	2	6	5	4	6	
LONDON TO SAN JUAN																										
51,000	-56.5	-64	-4	-5	-4	-62	-5	-3	-2	-61	-4	-2	-1	-65	-8	-4	-5	-63	-6	-4	-2	4	3	3	4	3432 N.M.I.
40,000	-56.5	-57	-1	3	5	-57	-1	3	5	-55	2	4	5	-54	1	3	5	-54	0	3	5	5	5	3	4	
30,000	-46.5	-46	1	3	4	-42	2	4	5	-37	7	9	10	-39	6	8	9	-41	4	7	8	5	5	3	4	
20,000	-21.2	-18	5	6	8	-14	5	8	9	-10	11	13	14	-12	9	11	12	-14	7	10	11	4	4	3	3	
10,000	-4.6	-2	5	6	7	-0	4	6	8	5	10	11	12	3	7	10	11	1	6	8	10	4	3	2	3	
LONDON TO SANTA MARIA																										
51,000	-56.5	-59	-3	0	2	-56	0	3	4	-54	1	3	5	-60	-4	-1	0	-58	-1	2	3	5	4	4	4	1342 N.M.I.
40,000	-56.5	-58	-2	2	4	-58	-1	3	5	-53	3	6	8	-54	0	3	5	-54	0	4	6	4	6	5	5	
30,000	-46.5	-47	-5	-1	1	-45	-1	2	3	-38	6	8	10	-42	3	5	7	-43	1	5	6	4	4	3	4	
20,000	-21.2	-22	-1	3	5	-20	2	5	6	-12	9	11	12	-15	6	9	10	-17	4	7	9	5	4	3	4	
10,000	-4.6	-5	-1	2	4	-3	2	4	6	4	8	10	11	0	5	7	9	-1	4	7	8	5	4	3	4	
LONDON TO SEATTLE																										
51,000	-56.5	-57	-1	3	5	-50	7	10	11	-47	10	12	13	-54	3	5	6	-52	5	8	9	6	4	3	4	4157 N.M.I.
40,000	-56.5	-56	1	5	7	-51	6	10	12	-48	8	12	13	-52	4	8	10	-52	5	9	11	6	4	3	4	
30,000	-46.5	-54	-10	-7	-5	-50	-6	-3	-1	-44	1	3	4	-48	-4	-1	1	-49	-5	-1	1	4	4	4	4	
20,000	-21.2	-34	-13	-9	-7	-29	-8	-5	-3	-19	3	5	7	-24	-4	-0	2	-27	-6	-1	1	4	6	4	4	
10,000	-4.6	-20	-15	-11	-9	-14	-10	-6	-4	-3	1	4	5	-11	-6	-2	-0	-12	-7	-4	-1	6	5	4	5	
LONDON TO SHANGHAI																										
51,000	-56.5	-54	1	4	6	-52	5	7	9	-49	8	10	11	-55	2	4	6	-53	4	7	9	5	4	4	4	

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL							
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
LONDON TO SHANNON																									
55,000	-56.5	-58	-1	2	4	-54	5	6	7	-50	6	9	10	-57	-1	2	4	-55	2	5	7	5	4	521 N.M.I.	
40,000	-56.5	-58	-1	3	5	-55	2	6	9	-51	6	10	12	-56	1	4	6	-55	2	6	9	7	7	6	5
30,000	-56.5	-50	-5	-5	-1	-47	-2	0	1	-41	4	6	8	-44	0	3	5	-45	-1	3	4	4	4	4	5
20,000	-21.2	-25	-4	-0	2	-23	-1	2	4	-15	7	9	10	-19	3	6	8	-20	1	4	6	6	5	5	5
10,000	-4.6	-9	-4	-1	1	-6	-2	1	3	1	5	8	9	-3	2	5	7	-4	0	4	5	5	4	5	5
LONDON TO SONOKESIHOME JORO																									
55,000	-56.5	-58	-1	5	5	-50	7	9	11	-46	10	13	14	-54	2	5	6	-52	5	8	10	6	4	1732 N.M.I.	
40,000	-56.5	-56	0	5	7	-51	6	10	13	-48	9	12	14	-53	4	8	10	-52	5	9	11	7	7	5	6
30,000	-56.5	-52	-8	-5	-4	-48	-4	-1	0	-44	1	5	5	-47	-2	1	2	-48	-3	0	2	4	4	4	5
20,000	-21.2	-30	-9	-5	-3	-28	-6	-3	-1	-18	3	5	7	-24	-2	1	3	-25	-4	0	2	6	6	4	6
10,000	-4.6	-14	-10	-6	-5	-12	-8	-4	-2	-3	1	4	5	-8	-4	-0	1	-10	-5	-1	1	5	5	5	5
LONDON TO STOCKHOLM																									
55,000	-56.5	-58	-1	2	4	-55	4	6	8	-48	5	11	12	-57	-0	3	4	-54	3	6	8	5	4	789 N.M.I.	
40,000	-56.5	-59	-2	2	4	-54	3	7	10	-50	7	11	13	-56	1	4	6	-55	2	7	9	6	7	6	5
30,000	-56.5	-52	-7	-5	-3	-49	-4	-2	-0	-42	3	5	7	-45	-1	2	3	-47	-2	1	3	4	4	4	5
20,000	-21.2	-29	-8	-4	-1	-24	-3	0	2	-16	6	8	9	-20	1	5	6	-22	-1	3	5	4	5	5	5
10,000	-4.6	-13	-8	-4	-2	-8	-4	-1	1	-0	4	7	8	-5	-1	3	4	-7	-2	2	3	6	5	5	5
LONDON TO TEHRAN																									
55,000	-56.5	-57	-0	3	5	-55	1	4	5	-55	2	4	5	-59	-2	0	2	-56	0	3	4	5	4	2382 N.M.I.	
40,000	-56.5	-57	-1	2	4	-55	1	5	6	-49	8	10	12	-56	0	3	5	-54	2	4	6	5	5	4	4
30,000	-56.5	-51	-4	-4	-2	-46	-2	1	2	-36	8	11	12	-43	2	4	6	-44	0	4	7	4	4	4	5
20,000	-21.2	-26	-5	-2	0	-21	1	4	5	-11	10	13	14	-17	4	7	9	-19	3	6	8	5	5	5	5
10,000	-4.6	-11	-6	-3	-1	-4	0	3	5	5	9	11	12	-1	4	6	8	-3	2	5	7	6	5	5	5
LONDON TO TEL AVIV-JAFFA																									
55,000	-56.5	-58	-1	2	4	-56	0	3	4	-58	-2	1	2	-60	-4	-1	0	-56	-2	1	3	4	4	1937 N.M.I.	
40,000	-56.5	-57	-1	3	5	-57	-0	4	5	-49	7	10	11	-54	0	3	4	-55	2	5	7	5	5	4	4
30,000	-56.5	-50	-5	-3	-1	-46	-2	1	2	-36	9	11	12	-42	2	5	6	-43	1	5	7	4	4	5	4
20,000	-21.2	-25	-3	-0	1	-20	1	4	5	-10	11	13	14	-14	5	8	9	-18	3	7	9	5	4	5	4
10,000	-4.6	-9	-4	-1	1	-4	1	4	5	5	10	12	13	0	5	7	9	-2	3	6	8	5	4	5	4
LONDON TO THULE																									
55,000	-56.5	-59	-3	1	3	-49	8	11	12	-45	12	14	15	-54	3	5	7	-52	5	8	10	6	4	2126 N.M.I.	
40,000	-56.5	-56	-1	3	5	-50	7	11	13	-46	10	14	15	-52	4	8	10	-51	5	9	12	6	6	5	5
30,000	-56.5	-55	-10	-7	-6	-50	-5	-2	-1	-49	-9	-2	4	-49	-4	-1	0	-50	-5	-1	0	4	4	4	5
20,000	-21.2	-52	-11	-7	-5	-51	-9	-6	-4	-20	1	4	5	-26	-5	-1	0	-27	-6	-2	0	6	5	4	5
10,000	-4.6	-17	-12	-9	-7	-15	-11	-7	-5	-5	-0	2	3	-11	-7	-3	-2	-12	-7	-4	-2	5	5	5	5
LONDON TO TOKYO																									
55,000	-56.5	-56	0	4	6	-50	7	9	11	-47	9	12	13	-53	3	6	7	-52	5	8	10	5	4	5175 N.M.I.	
40,000	-56.5	-57	-1	3	5	-50	6	10	12	-48	8	12	14	-52	4	8	10	-52	4	9	11	5	4	6	5
30,000	-56.5	-55	-10	-7	-6	-49	-5	-2	-0	-38	7	10	11	-47	-2	1	2	-47	-3	2	4	4	4	5	5
20,000	-21.2	-35	-14	-10	-8	-28	-7	-3	-1	-16	7	10	12	-24	-3	1	3	-25	-4	1	4	5	6	4	6
10,000	-4.6	-21	-14	-11	-11	-14	-9	-5	-3	1	6	8	9	-10	-6	-2	-0	-11	-6	-1	1	5	5	4	5
LONDON TO TORONTO																									
55,000	-56.5	-54	0	3	5	-53	4	7	8	-51	6	8	10	-55	1	4	5	-54	3	4	6	4	4	5060 N.M.I.	
40,000	-56.5	-54	3	7	9	-53	4	8	11	-51	6	9	11	-53	3	7	9	-53	4	8	10	4	7	5	6
30,000	-56.5	-50	-6	-5	-1	-48	-3	-1	1	-41	5	6	7	-45	-0	3	4	-46	-2	2	4	4	4	4	5
20,000	-21.2	-29	-10	-5	-1	-25	-4	-0	2	-15	6	9	10	-21	1	4	6	-22	-1	3	5	7	5	4	6
10,000	-4.6	-15	-10	-6	-4	-10	-5	-2	0	-0	4	7	8	-5	-1	3	5	-8	-3	1	3	7	5	5	5
LONDON TO TRINIDAD																									
55,000	-56.5	-58	-10	-7	-6	-65	-8	-6	-5	-63	-7	-5	-4	-67	-10	-8	-7	-65	-9	-6	-5	4	3	5	5
40,000	-56.5	-57	-0	3	5	-57	-0	1	4	-54	2	4	6	-55	1	3	5	-56	1	3	5	5	5	5	5
30,000	-56.5	-47	2	4	5	-40	4	6	7	-34	8	10	11	-37	7	9	10	-39	5	8	9	3	5	5	5
20,000	-21.2	-16	5	8	9	-14	7	9	10	-10	12	13	14	-11	10	12	13	-13	8	11	12	4	5	2	3
10,000	-4.6	0	5	7	8	1	6	8	9	6	10	12	13	4	9	11	12	3	7	10	11	4	5	2	3
LONDON TO TRIPOLI																									
55,000	-56.5	-58	-2	1	3	-57	-0	2	4	-58	-2	1	2	-60	-4	-2	-0	-58	-2	1	3	5	4	1276 N.M.I.	
40,000	-56.5	-57	-1	3	5	-57	-0	3	5	-51	5	8	9	-56	0	3	4	-56	1	5	6	6	6	4	4
30,000	-56.5	-48	-4	-1	-0	-46	-1	1	3	-37	7	9	11	-42	3	5	7	-43	1	5	6	4	4	5	4
20,000	-21.2	-23	-2	1	3	-19	2	4	5	-11	10	12	13	-15	6	8	9	-17	4	7	9	5	4	5	5
10,000	-4.6	-6	-2	1	3	-5	2	5	6	6	11	13	14	0	5	7	9	-1	4	7	9	5	4	5	5
LONDON TO TUNIS																									
55,000	-56.5	-58	-1	2	4	-56	1	3	5	-56	0	3	4	-60	-3	-1	1	-57	-1	2	4	5	4	988 N.M.I.	
40,000	-56.5	-56	-1	3	5	-57	-1	3	5	-52	5	7	9	-56	0	3	4	-56	1	4	6	6	6	4	4
30,000	-56.5	-49	-4	-2	-0	-48	-3	-1	2	-38	6	9	10	-42	2	5	6	-44	1	4	6	6	6	4	4
20,000	-21.2	-24	-3	0	2	-20	1	4	5	-12	9	11	13	-16	5	8	9	-18	3	7	8	5	4	5	5
10,000	-4.6	-7	-2	1	3	-5	1	4	5	5	10	12	13	-0	4	7	8	-1	3	7	8	5	4	5	5
LONDON TO VANCOUVER																									
55,000	-56.5	-57	-1	3	5	-49	7	10	11	-47	10	12	13	-54	3	5	7	-52	5	8	10	6	4	4090 N.M.I.	
40,000	-56.5	-56	0	5	7	-51	6	10	12	-48	8	12	14	-52	4	8	10	-52	5	9	11	6	6	5	5
30,000	-56.5	-56	-10	-7	-5	-50	-6	-3	-1	-46	0	3	4	-48	-4	-1	1	-49	-5	-1	1	4	4	4	5
20,000	-21.2	-34	-13	-9	-7	-30	-9	-5	-3	-19	2	5	6	-26	-5	-1	1	-27	-6	-2	1	6	6	4	6
10,000	-4.6	-20	-14	-11	-9	-15	-10	-7	-5	-4	1	4	5	-11	-6	-3	-1	-12	-8	-4	-1	6	5	4	6
LONDON TO VENICE																									
55,000	-56.5	-57	-0	3	5	-54	2	5	6	-52	5	7	8	-58	-2	1	2	-55	1	4	6	5	4	620 N.M.I.	
40,000	-56.5	-58	-2	2	4	-54	0	4	6	-52	5	8	10	-56	0	3	5	-56	1	5	7	6	4	5	5
30,000	-56.5	-50	-6	-3	-2	-47	-3	-0	1	-40	5	7	8	-43	1	4	5	-45	-1	3	5	4	4	4	5
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-15	8	10	11	-17	4	7	8	-20	2	5	7	5	4	5	4
10,000	-4.6	-10	-5	-1	1	-6	-1	2	3	2	7	9	10	-2	3	6	7	-4	1	4	6	5	4	5	4
LONDON TO VIENNA																									
55,000	-56.5	-56	0	3	5	-54	3	5	7	-51	6	8	9	-58	-1	1	3	-55	2	5	7	5	4	687 N.M.I.	
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	9	10	-56	0	3	5	-55	1	5	7	6	6	5	5
30,000	-56.5	-51	-6	-4	-2	-48	-3	-1	1	-40	4	7													

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION												
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT	
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085					
LONDON TO WARSAW																										
55,000	-56.5	-57	-0	1	5	-55	3	6	7	-69	7	9	11	-57	-1	2	3	-56	2	6	7		793 N.M.I.			
40,000	-56.5	-58	-2	2	4	-55	1	4	8	-51	4	9	11	-56	0	4	5	-55	1	6	8	5	4	5	5	
30,000	-56.5	-51	-7	-6	-5	-48	-4	-1	0	-41	4	4	8	-46	0	3	4	-44	-2	7	6	6	4	5	5	
20,000	-21.2	-28	-7	-5	-0	-23	-2	1	5	-14	7	9	10	-19	2	6	8	-21	0	6	6	4	5	5	5	
10,000	-6.6	-12	-7	-6	-1	-7	-5	0	2	1	6	8	9	-4	1	6	6	-6	-1	5	5	6	5	5	5	
LONDON TO WELLINGTON																										
55,000	-56.5	-45	-9	-6	-4	-60	-4	-1	0	-58	-2	1	2	-62	-5	-3	-2	-61	-5	-2	-0		10161 N.M.I.			
40,000	-56.5	-55	1	4	4	-52	5	8	10	-51	6	9	10	-53	4	4	8	-53	4	7	9	4	5	6	5	
30,000	-56.5	-45	-0	2	5	-63	2	4	5	-18	7	9	11	-62	5	5	7	-62	5	6	8	4	4	6	6	
20,000	-21.2	-22	-1	2	5	-20	1	4	5	-12	9	11	12	-18	5	4	7	-18	5	6	8	4	4	5	6	
10,000	-6.6	-8	-5	-1	1	-5	-1	2	5	5	7	9	10	-5	2	4	5	-5	1	4	4	4	4	5	6	
LONDON TO ZURICH																										
55,000	-56.5	-57	-0	3	5	-54	2	5	6	-51	5	8	9	-58	-2	1	3	-55	1	5	6	5	4	4	5	
40,000	-56.5	-58	-2	2	4	-56	0	5	7	-52	5	8	10	-54	0	5	5	-56	1	5	7	5	4	4	5	
30,000	-56.5	-50	-4	-3	-2	-67	-5	-0	1	-60	4	7	8	-64	1	4	5	-65	-5	5	5	4	4	4	5	
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-16	8	10	11	-18	5	7	8	-20	1	5	7	4	5	5	5	
10,000	-6.6	-10	-5	-1	1	-6	-1	2	5	2	7	9	10	-2	5	6	7	-4	1	4	6	5	6	5	6	
LOS ANGELES TO MADRID																										
55,000	-56.5	-58	-1	2	5	-55	2	4	6	-55	2	4	6	-58	-1	1	3	-56	0	5	5	5	4	4	5	
40,000	-56.5	-55	2	4	4	-55	2	4	6	-52	2	4	6	-54	2	4	6	-54	2	4	6	4	4	4	5	
30,000	-56.5	-50	-5	-3	-1	-68	-5	-1	1	-60	5	7	9	-64	1	5	5	-65	-1	5	5	4	4	4	5	
20,000	-21.2	-28	-7	-5	-0	-23	-2	1	5	-15	8	11	12	-19	2	6	8	-21	0	6	7	4	5	5	5	
10,000	-6.6	-15	-9	-5	-2	-7	-5	1	5	5	8	10	11	-4	1	5	7	-5	-1	5	6	6	5	5	5	
LOS ANGELES TO MEXICO CITY																										
55,000	-56.5	-69	-15	-10	-9	-68	-11	-9	-4	-71	-16	-15	-12	-72	-16	-16	-15	-70	-15	-11	-9	5	5	2	1	
40,000	-56.5	-56	0	5	5	-57	-1	2	5	-54	2	5	6	-55	2	5	6	-56	1	2	3	5	4	2	5	
30,000	-56.5	-42	5	5	6	-40	4	6	7	-35	11	15	15	-34	8	10	11	-38	7	9	10	5	2	2	5	
20,000	-21.2	-14	7	6	11	-15	4	11	12	-6	15	16	16	-9	12	16	15	-11	11	15	16	4	1	1	5	
10,000	-6.6	5	7	10	12	6	11	15	16	11	16	17	16	0	15	16	15	7	12	16	15	4	4	2	5	
LOS ANGELES TO PEKING																										
55,000	-56.5	-75	-18	-16	-15	-75	-16	-16	-15	-72	-15	-15	-12	-72	-15	-15	-12	-73	-16	-16	-15	5	5	5	5	
40,000	-56.5	-56	2	4	5	-55	2	4	5	-54	2	4	5	-54	2	4	5	-54	2	4	5	5	5	2	5	
30,000	-56.5	-55	9	11	12	-56	8	10	11	-56	9	10	11	-56	9	10	11	-56	9	11	12	5	5	2	5	
20,000	-21.2	-9	15	16	15	-10	11	15	16	-10	12	15	16	-9	12	15	16	-9	12	16	16	2	2	2	2	
10,000	-6.6	7	12	16	16	6	11	15	15	4	11	15	15	7	11	15	16	7	11	15	16	2	2	2	2	
LOS ANGELES TO MEXICO CITY																										
55,000	-56.5	-71	-16	-12	-11	-69	-15	-10	-9	-71	-15	-15	-15	-74	-17	-15	-16	-71	-15	-12	-11	5	5	2	1	
40,000	-56.5	-56	0	3	5	-57	-0	2	5	-55	2	5	6	-55	2	5	6	-57	1	2	5	4	4	2	1	
30,000	-56.5	-41	4	6	7	-39	5	7	7	-33	12	15	15	-35	9	11	12	-37	7	9	11	2	2	2	2	
20,000	-21.2	-11	8	10	12	-11	10	12	15	-6	15	16	16	-8	11	16	15	-10	11	15	16	4	5	1	2	
10,000	-6.6	4	8	11	12	7	12	16	15	11	16	17	17	4	15	15	16	8	12	16	15	4	5	1	2	
LOS ANGELES TO MIAMI																										
55,000	-56.5	-57	-1	1	5	-55	4	7	8	-51	5	7	9	-56	0	5	4	-54	2	5	7	5	4	1	6	
40,000	-56.5	-55	1	6	4	-55	3	4	10	-51	5	9	11	-55	5	7	9	-54	5	7	9	4	4	5	6	
30,000	-56.5	-52	-7	-5	-5	-66	-6	-1	-0	-61	5	6	7	-66	-1	2	5	-67	-2	1	5	4	4	5	6	
20,000	-21.2	-31	-9	-5	-5	-26	-5	-1	1	-15	6	8	10	-22	-0	5	5	-25	-2	2	4	4	5	6	6	
10,000	-6.6	-16	-11	-7	-5	-10	-6	-2	0	1	5	8	9	-6	-2	2	4	-8	-5	1	5	6	5	6	6	
LOS ANGELES TO OSLO																										
55,000	-56.5	-59	-2	2	4	-51	6	9	10	-49	7	9	10	-55	1	5	5	-54	5	6	7	6	4	5	1	
40,000	-56.5	-57	-0	4	6	-52	5	9	11	-46	8	11	12	-53	4	7	8	-52	4	8	10	6	4	6	6	
30,000	-56.5	-54	-10	-7	-5	-50	-5	-3	1	-45	7	8	9	-48	-3	-0	1	-46	-6	-1	1	6	4	5	6	
20,000	-21.2	-35	-12	-8	-6	-29	-8	-4	-2	-17	6	8	8	-24	-1	0	2	-26	-5	-1	2	4	5	4	5	
10,000	-6.6	-19	-16	-10	-8	-15	-9	-5	-3	-1	6	6	7	-9	-5	-1	1	-11	-6	-2	1	4	4	6	6	
LOS ANGELES TO PANAMA																										
55,000	-56.5	-75	-17	-15	-16	-72	-15	-15	-12	-72	-16	-16	-15	-75	-16	-17	-16	-71	-17	-16	-15	5	5	2	5	
40,000	-56.5	-55	1	5	5	-56	1	1	6	-55	1	1	1	-56	2	5	6	-55	1	5	6	5	5	2	2	
30,000	-56.5	-50	6	4	9	-57	9	9	10	-51	12	15	15	-56	11	12	11	-55	9	11	12	2	2	2	2	
20,000	-21.2	-11	11	11	16	-9	12	16	15	-6	15	16	16	-7	16	15	16	-8	15	16	15	5	2	1	2	
10,000	-6.6	5	10	12	11	4	15	16	16	11	15	16	17	9	16	15	16	8	11	16	15	5	1	1	2	
LOS ANGELES TO PAPEETE																										
55,000	-56.5	-78	-21	-19	-18	-76	-19	-17	-16	-74	-18	-16	-15	-75	-18	-16	-15	-75	-19	-17	-16	5	5	5	1	
40,000	-56.5	-55	2	4	6	-55	2	4	5	-55	2	5	6	-56	2	4	6	-55	2	4	6	1	5	2	2	
30,000	-56.5	-52	-7	-5	-5	-55	10	11	12	-51	11	12	15	-56	11	12	15	-56	10	12	11	2	2	2	2	
20,000	-21.2	-8	15	15	15	-9	15	16	15	-7	16	16	16	-7	16	16	16	-8	16	15	15	2	2	2	2	
10,000	-6.6	4	12	16	15	4	11	16	15	9	16	15	16	9	16	15	16	9	11	16	15	2	2	2	2	
LOS ANGELES TO PARIS																										
55,000	-56.5	-57	-1	3	5	-55	4	6	8	-51	5	7	9	-56	0	1	4	-54	2	5	7	5	4	5	6	
40,000	-56.5	-55	1	6	4	-55	3	4	10	-51	4	9	11	-55	5	7	9	-55	4	7	9	4	4	5	5	
30,000	-56.5	-52	-7	-5	-5	-68	-6	-1	-0	-61	1	6	7	-64	-1	2	5	-67	-2	1	5	4	4	6	6	
20,000	-21.2	-31	-10	-5	-3	-26	-5	-1	1	-15	4	8	10	-22	-0	5	5	-25	-2	2	4	4	5	6	6	
10,000	-6.6	-16	-11	-7	-5	-10	-6	-2	-0	1	6	8	9	-6	-2	2	4	-8	-1	1	1	4	5	6	6	
LOS ANGELES TO ROME																										
55,000	-56.5	-57	-1	3	5	-55	4	6	8	-51	5	7	9	-56	0	1	4	-54	2	5	6	5	4	5	6	
40,000	-56.5	-55	1	5	4	-55	3	4	10	-51	4	9	11	-55	1	6	8	-55	5	7	9	4	4	5	5	
30,000	-56.5	-52	-7	-6	-5	-68	-6	-1	-0	-61	5	6	7	-65	-1	2	5	-67	-2	1	5	4	4	6	6	
20,000	-21.2	-30	-9	-5	-5	-25	-6	-1	1	-15	6	9	10	-21	-0	4	5	-25	-2	2	5	4	5	6	6	
10,000	-6.6	-15	-11	-7	-6	-10	-5	-2	-0	1	6	8	9	-6	-1	2	4	-7	-5	1	4	4	5	6	6	
LOS ANGELES TO SAN JUAN																										
55,000	-56.5	-71	-16	-12	-11	-69	-12	-10	-9	-70	-16	-12	-12	-73	-17	-15	-16	-71	-16	-12	-11	5	5	2	5	
40,000	-56.5	-56	0	5	6	-57	-0	2	3	-55	1	2	5	-55	2	5	6	-56	1							

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
LOS ANGELES TO SANTA MARIA																	
55,000	-56.5	-60	-5	-0	1	-57	-1	2	5	-60	-5	-1	0	-62	-5	-0	1
40,000	-56.5	-56	0	5	7	-56	0	4	6	-56	2	5	6	-55	1	4	6
30,000	-56.5	-48	-5	-1	1	-46	-1	1	2	-57	8	10	11	-41	5	6	7
20,000	-71.2	-26	-2	1	5	-20	1	4	5	-10	11	15	16	-15	6	9	11
10,000	-4.6	-7	-4	-0	2	-4	0	4	5	6	11	15	16	1	5	8	10
LOS ANGELES TO SHANNON																	
55,000	-56.5	-57	-1	5	5	-55	4	6	8	-52	5	7	8	-56	0	5	4
40,000	-56.5	-55	2	6	9	-55	4	8	10	-51	6	9	10	-51	5	7	9
30,000	-56.5	-52	-7	-4	-5	-48	-4	-1	-0	-41	5	6	7	-46	-1	2	3
20,000	-21.2	-31	-10	-6	-5	-26	-5	-1	1	-15	6	9	10	-22	-0	5	5
10,000	-4.6	-16	-12	-7	-5	-10	-6	-2	0	1	6	8	10	-6	-2	2	4
LOS ANGELES TO STOCKHOLM																	
55,000	-56.5	-59	-2	1	5	-51	6	8	10	-49	8	10	11	-55	1	4	5
40,000	-56.5	-57	-1	4	6	-51	5	9	11	-49	8	11	12	-55	4	7	9
30,000	-56.5	-55	-10	-7	-6	-50	-6	-5	-1	-45	1	4	5	-48	-4	-1	1
20,000	-21.2	-36	-15	-9	-6	-29	-6	-5	-5	-18	4	6	7	-25	-4	-0	2
10,000	-4.6	-19	-15	-10	-8	-14	-9	-6	-4	-1	5	6	7	-10	-5	-2	0
LOS ANGELES TO TOKYO																	
55,000	-56.5	-56	2	6	8	-55	2	5	7	-56	0	5	4	-54	-1	2	3
40,000	-56.5	-52	5	9	11	-54	2	6	8	-51	5	8	10	-51	5	7	8
30,000	-56.5	-46	-2	1	5	-45	-0	2	5	-56	8	11	12	-41	4	6	8
20,000	-21.2	-24	-2	1	5	-21	-0	5	5	-10	11	15	15	-14	5	7	8
10,000	-4.6	-8	-4	-0	1	-7	-2	1	2	5	9	11	12	-5	2	4	6
LOS ANGELES TO VANCOUVER																	
55,000	-56.5	-60	-4	-1	1	-58	-1	1	5	-61	-4	-2	-1	-65	-6	-4	-2
40,000	-56.5	-56	-1	4	6	-57	-1	5	5	-56	2	4	6	-56	0	5	5
30,000	-56.5	-48	-5	-1	0	-46	-1	1	2	-58	7	9	10	-41	5	6	7
20,000	-21.2	-22	-1	5	5	-20	1	4	4	-10	11	15	16	-15	6	9	11
10,000	-4.6	-6	-2	7	5	-5	1	4	4	8	15	15	16	1	5	9	11
LOS ANGELES TO VIENNA																	
55,000	-56.5	-58	-1	2	4	-52	5	7	9	-50	7	9	10	-56	1	5	4
40,000	-56.5	-56	6	5	7	-52	4	4	10	-49	7	10	12	-55	5	7	9
30,000	-56.5	-55	-9	-6	-4	-49	-5	-2	-1	-42	2	5	6	-47	-2	1	2
20,000	-21.2	-32	-11	-7	-5	-27	-6	-2	-0	-16	5	7	9	-25	-2	2	4
10,000	-4.6	-17	-12	-8	-6	-12	-7	-5	-1	-0	4	7	8	-4	-5	1	5
LOS ANGELES TO WISNIPEC																	
55,000	-56.5	-60	-4	-1	1	-58	-2	1	2	-62	-5	-5	-2	-65	-6	-4	-2
40,000	-56.5	-56	1	5	7	-57	-1	5	5	-54	2	4	5	-56	1	4	5
30,000	-56.5	-49	-5	-2	-1	-47	-2	-0	1	-57	8	10	11	-42	5	5	6
20,000	-21.2	-25	-6	1	5	-20	1	4	5	-9	12	14	16	-15	6	9	10
10,000	-4.6	-9	-5	-0	2	-5	2	5	7	10	15	17	18	1	6	9	11
LOS ANGELES TO ZURICH																	
55,000	-56.5	-58	-1	5	5	-52	4	7	8	-51	6	8	9	-56	0	5	4
40,000	-56.5	-55	1	5	8	-55	4	4	10	-50	6	9	11	-55	5	7	9
30,000	-56.5	-52	-8	-5	-5	-49	-4	-2	-0	-42	5	5	7	-46	-1	1	5
20,000	-21.2	-31	-10	-6	-5	-26	-5	-1	1	-16	6	8	9	-22	-1	5	5
10,000	-4.6	-16	-11	-7	-5	-11	-6	-2	-0	1	5	8	9	-7	-2	2	4
CONRADO MARQUES TO LUANDA																	
55,000	-56.5	-75	-19	-16	-15	-74	-17	-15	-14	-68	-12	-10	-8	-71	-14	-12	-11
40,000	-56.5	-52	4	7	8	-52	5	7	8	-52	4	6	7	-52	4	6	7
30,000	-56.5	-51	14	15	16	-55	12	14	16	-54	10	12	15	-55	11	13	14
20,000	-21.2	-5	16	17	18	-7	14	16	18	-8	15	16	18	-7	14	16	18
10,000	-4.6	10	15	16	16	4	15	16	15	4	9	11	11	4	14	15	16
LUANDA TO LISBON																	
55,000	-56.5	-75	-16	-14	-15	-72	-15	-15	-14	-75	-17	-15	-14	-75	-16	-14	-15
40,000	-56.5	-55	2	4	5	-55	4	5	6	-55	5	5	6	-55	5	5	6
30,000	-56.5	-54	7	8	9	-54	10	12	15	-55	12	15	14	-54	11	12	15
20,000	-21.2	-11	16	17	18	-9	12	14	15	-6	15	16	17	-8	14	15	15
10,000	-4.6	6	10	12	12	7	12	15	14	11	16	17	17	4	15	16	15
LUANDA TO SAIGON																	
55,000	-56.5	-74	-14	-16	-15	-74	-17	-15	-14	-75	-19	-17	-16	-75	-14	-16	-15
40,000	-56.5	-54	5	4	5	-55	4	6	7	-51	4	5	6	-52	4	6	7
30,000	-56.5	-56	8	10	11	-55	12	15	16	-52	16	17	18	-51	12	14	15
20,000	-21.2	-9	12	14	15	-8	14	15	16	-4	17	18	19	-7	14	16	17
10,000	-4.6	7	12	15	14	8	15	16	15	15	17	18	19	9	14	15	16
MADRAS TO NEW DELHI																	
55,000	-56.5	-75	-18	-16	-15	-72	-15	-12	-11	-76	-19	-16	-15	-75	-18	-15	-15
40,000	-56.5	-56	1	4	6	-55	4	7	8	-49	7	11	12	-54	5	6	8
30,000	-56.5	-56	4	12	15	-54	10	15	15	-27	17	19	21	-52	12	15	16
20,000	-21.2	-10	11	15	14	-8	15	15	17	-5	18	20	21	-6	15	17	18
10,000	-4.6	6	10	12	15	10	14	16	17	12	17	18	19	4	15	16	15
MADRID TO MEXICO CITY																	
55,000	-56.5	-64	-8	-5	-4	-62	-5	-5	-2	-65	-7	-5	-5	-66	-10	-7	-6
40,000	-56.5	-58	-1	2	4	-57	-1	2	4	-55	1	5	5	-56	1	5	5
30,000	-56.5	-44	1	5	4	-45	2	4	5	-46	9	11	12	-59	6	8	9
20,000	-21.2	-18	4	7	8	-16	5	8	9	-9	12	14	15	-12	9	12	15
10,000	-4.6	-2	2	5	7	0	5	7	9	6	11	12	15	5	8	10	11
MILANO TO MILAN																	
55,000	-56.5	-58	-1	2	4	-56	0	5	5	-57	-0	2	5	-60	-4	-1	0
40,000	-56.5	-56	-2	2	4	-58	-2	2	4	-55	5	6	7	-57	-0	5	4
30,000	-56.5	-48	-4	1	0	-46	-2	1	5	-58	7	9	10	-42	5	5	7
20,000	-21.2	-25	-2	1	5	-20	2	4	5	-11	10	12	15	-16	6	8	9
10,000	-4.6	-6	-2	2	5	-5	2	4	6	6	10	12	14	0	5	7	8

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85
MADRID TO MOSCOW																	
55,000	-56.5	-57	-0	3	5	-54	2	5	6	-51	5	8	9	-58	-1	1	3
40,000	-56.5	-58	-2	2	4	-56	0	4	6	-52	5	8	10	-56	1	4	5
30,000	-56.5	-51	-6	-4	-2	-48	-3	-0	1	-40	5	7	9	-44	1	4	5
20,000	-21.2	-27	-6	-2	-0	-22	-1	2	4	-13	8	10	11	-18	3	6	8
10,000	-4.6	-11	-7	-3	-1	-6	-1	2	3	2	7	9	10	-3	2	5	6
MADRID TO MUNICH																	
55,000	-56.5	-58	-1	2	4	-56	1	3	5	-55	1	3	5	-60	-3	-1	1
40,000	-56.5	-58	-2	2	4	-58	-1	2	4	-53	3	6	8	-56	0	3	4
30,000	-56.5	-49	-4	-2	-0	-46	-2	1	2	-38	6	8	10	-42	2	5	6
20,000	-21.2	-24	-5	0	2	-20	1	4	5	-12	9	11	12	-16	5	8	9
10,000	-4.6	-7	-3	1	3	-4	1	4	5	5	9	12	13	-0	4	7	8
MADRID TO NAIROBI																	
55,000	-56.5	-71	-16	-12	-11	-70	-13	-11	-10	-72	-16	-14	-13	-72	-15	-14	-13
40,000	-56.5	-55	2	4	5	-54	3	5	7	-51	5	7	7	-54	3	5	5
30,000	-56.5	-59	5	7	8	-55	9	11	11	-52	13	15	15	-55	10	12	12
20,000	-21.2	-12	9	11	12	-10	11	13	14	-6	15	17	17	-9	13	14	14
10,000	-4.6	6	9	11	12	7	11	13	14	11	16	17	18	8	12	13	14
MADRID TO NEW DELHI																	
55,000	-56.5	-59	-3	1	2	-58	-1	1	3	-61	-4	-2	-1	-60	-3	-0	1
40,000	-56.5	-56	0	3	5	-56	1	4	6	-49	8	11	12	-54	1	4	5
30,000	-56.5	-48	-6	-1	0	-44	0	3	5	-33	12	14	16	-41	4	6	8
20,000	-21.2	-7	1	3	3	-17	4	7	8	-8	14	16	17	-15	6	9	10
10,000	-4.6	-7	-3	1	2	-1	4	7	8	9	14	16	17	2	6	9	10
MADRID TO NEW ORLEANS																	
55,000	-56.5	-61	-5	-2	-1	-59	-2	0	2	-60	-4	-1	-0	-63	-6	-4	-2
40,000	-56.5	-56	-1	3	5	-58	-1	3	4	-55	2	4	5	-56	1	4	5
30,000	-56.5	-46	-1	1	3	-44	0	2	4	-37	8	10	11	-40	4	7	8
20,000	-21.2	-20	1	4	5	-18	3	6	7	-10	13	15	16	-14	8	10	12
10,000	-4.6	-5	-1	3	5	-2	2	5	7	5	10	12	13	1	6	9	10
MADRID TO NEW YORK																	
55,000	-56.5	-59	-2	1	2	-58	0	3	4	-57	-1	2	3	-60	-3	-1	1
40,000	-56.5	-57	-0	4	6	-57	-0	4	6	-54	2	5	7	-55	1	4	6
30,000	-56.5	-47	-5	0	1	-46	-1	1	3	-38	7	9	10	-42	5	5	7
20,000	-21.2	-25	1	2	4	-20	1	4	5	-11	10	12	13	-15	6	9	10
10,000	-4.6	-8	0	3	5	-5	0	3	5	4	9	10	12	-1	4	7	8
MADRID TO OSLO																	
55,000	-56.5	-58	-1	2	4	-58	2	5	6	-52	5	7	8	-58	-2	1	2
40,000	-56.5	-58	-2	2	4	-56	1	5	7	-51	5	8	10	-56	0	4	5
30,000	-56.5	-50	-3	-1	-1	-47	-1	0	1	-40	4	7	8	-44	1	3	5
20,000	-21.2	-26	-5	-1	1	-22	-1	2	4	-14	7	10	11	-18	3	6	8
10,000	-4.6	-9	-3	-1	1	-6	-1	2	3	2	7	9	10	-5	2	5	6
MADRID TO PANAMA																	
55,000	-56.5	-69	-12	-10	-8	-67	-11	-9	-7	-67	-10	-8	-7	-70	-13	-11	-10
40,000	-56.5	-56	0	3	4	-57	-0	2	4	-55	2	3	4	-55	1	3	4
30,000	-56.5	-41	4	6	7	-39	6	8	8	-35	9	11	12	-38	9	11	12
20,000	-21.2	-15	6	10	11	-12	9	11	12	-8	13	14	15	-9	12	14	14
10,000	-4.6	1	7	9	10	3	8	10	11	8	12	13	14	6	11	12	13
MADRID TO PARIS																	
55,000	-56.5	-58	-2	2	3	-56	1	3	5	-56	1	3	5	-60	-3	-1	1
40,000	-56.5	-58	-2	2	3	-58	-1	3	5	-53	3	6	8	-56	0	3	5
30,000	-56.5	-48	-8	-1	0	-46	-2	1	2	-38	6	8	10	-42	2	5	6
20,000	-21.2	-23	-2	1	3	-20	1	4	5	-12	9	11	12	-16	5	8	9
10,000	-4.6	-6	-2	1	3	-5	1	4	5	5	9	11	13	-0	4	7	8
MADRID TO RIO DE JANEIRO																	
55,000	-56.5	-73	-17	-14	-13	-73	-16	-14	-13	-71	-16	-12	-11	-72	-16	-14	-13
40,000	-56.5	-55	2	4	5	-54	2	5	7	-53	4	5	6	-54	3	4	5
30,000	-56.5	-47	8	10	10	-46	10	12	13	-33	11	13	13	-34	11	12	13
20,000	-21.2	-10	12	15	16	-7	14	15	16	-7	14	15	16	-8	14	15	16
10,000	-4.6	6	11	12	13	7	12	13	14	9	13	15	15	8	13	14	15
MADRID TO ROMA																	
55,000	-56.5	-58	-2	2	4	-57	-0	2	4	-59	-2	0	1	-61	-4	-2	-1
40,000	-56.5	-58	-1	3	5	-58	-1	2	4	-52	4	7	8	-56	0	3	4
30,000	-56.5	-48	-5	-1	0	-46	-1	1	3	-37	7	9	11	-41	3	6	7
20,000	-21.2	-25	-2	2	3	-19	2	4	6	-11	10	12	13	-15	6	8	10
10,000	-4.6	-6	-1	2	4	-2	3	5	7	7	12	14	15	1	5	7	9
MADRID TO SALT LAKE																	
55,000	-56.5	-67	-10	-8	-6	-66	-9	-7	-6	-68	-12	-10	-9	-69	-12	-10	-9
40,000	-56.5	-57	-0	3	4	-56	0	3	5	-52	4	6	7	-55	1	3	4
30,000	-56.5	-42	2	4	5	-39	5	7	8	-35	10	11	12	-37	8	9	10
20,000	-21.2	-15	6	8	9	-13	8	10	11	-8	13	14	15	-10	11	13	14
10,000	-4.6	2	6	8	9	3	8	10	11	10	15	16	17	6	10	12	13
MADRID TO SAN FRANCISCO																	
55,000	-56.5	-57	-1	3	4	-53	3	6	7	-52	4	6	8	-57	-0	2	4
40,000	-56.5	-55	1	4	6	-54	2	7	9	-52	5	8	10	-54	3	6	8
30,000	-56.5	-45	-6	-4	-2	-48	-4	-1	0	-41	4	6	8	-45	-0	2	4
20,000	-21.2	-30	-8	-4	-2	-25	-3	0	2	-14	7	9	11	-21	1	4	6
10,000	-4.6	-15	-10	-6	-4	-9	-4	-1	1	2	6	9	10	-5	-1	3	5
MADRID TO SAN JUAN																	
55,000	-56.5	-66	-10	-7	-6	-65	-8	-6	-5	-65	-9	-7	-6	-68	-11	-9	-8
40,000	-56.5	-57	-1	2	4	-56	-1	2	3	-55	2	4	5	-56	1	3	4
30,000	-56.5	-47	2	4	5	-40	4	6	7	-36	9	10	11	-37	8	10	11
20,000	-21.2	-15	6	8	9	-14	8	10	11	-9	13	14	15	-10	11	13	14
10,000	-4.6	1	6	8	9	2	7	9	10	7	12	13	14	5	10	12	12

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

HEIGHT IN FEET		TEMP.		ENROUTE TEMPERATURE AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																STANDARD DEVIATION					
15A		JANUARY				APRIL				JULY				OCTOBER				ANNUAL							
TEMP.		50 050 075 085				50 050 075 085				50 050 075 085				50 050 075 085				50 050 075 085				JAN APR JUL OCT			
MAURITIO 10 SANTA MARIA																						1050 N.M.I.			
51,000	-50.5	-60	-4	-1	1	-52	-2	1	2	-61	-4	-2	-0	-62	-6	-3	-2	-60	-4	-1	1	5	4	3	3
40,000	-50.5	-59	-2	2	4	-50	-2	2	4	-53	3	6	7	-56	0	3	4	-57	-0	3	5	6	5	4	4
30,000	-48.5	-56	-2	1	2	-46	1	3	4	-47	4	10	11	-40	4	7	8	-42	3	6	7	3	3	3	3
20,000	-21.2	-20	1	4	6	-17	6	6	7	-10	11	13	14	-13	8	10	11	-15	6	9	10	4	4	3	3
10,000	-4.6	-3	2	5	6	-1	6	6	8	7	12	14	15	2	7	9	10	2	6	9	11	4	4	3	3
MAURITIO 10 STOCKHOLM																						1604 N.M.I.			
51,000	-50.5	-58	-1	2	4	-54	2	5	6	-51	5	7	9	-58	-2	1	2	-55	1	4	6	5	4	3	3
40,000	-50.5	-58	-2	2	4	-56	1	5	7	-52	5	8	10	-56	0	3	5	-56	1	5	7	6	6	5	4
30,000	-48.5	-50	-6	-3	-2	-48	-1	-1	1	-40	4	7	8	-46	1	5	5	-46	-1	2	4	4	4	3	3
20,000	-21.2	-24	-5	-2	0	-22	-1	2	3	-14	7	10	11	-18	3	6	8	-20	1	5	6	6	4	3	3
10,000	-4.6	-10	-6	-2	0	-6	-1	2	1	2	7	9	10	-3	2	5	6	-4	0	4	6	5	4	3	3
MAURITIO 10 TEHRAN																						2566 N.M.I.			
51,000	-50.5	-54	-1	2	4	-57	-0	2	1	-61	-4	-2	-1	-61	-4	-2	-0	-59	-2	0	2	5	4	3	3
40,000	-50.5	-57	-0	1	5	-57	-0	1	5	-49	8	10	11	-56	0	3	4	-55	2	5	7	5	5	3	3
30,000	-48.5	-49	-5	-2	-1	-45	-1	2	1	-34	10	13	14	-42	3	5	7	-43	2	6	8	4	4	3	3
20,000	-21.2	-24	-3	0	2	-19	2	5	6	-9	12	14	15	-15	4	8	9	-17	4	8	10	4	4	3	3
10,000	-4.6	-8	-1	0	2	-2	3	5	7	8	12	14	15	1	6	8	10	-0	4	8	10	5	4	3	3
MAURITIO 10 TEL AVIV-JAFFA																						1913 N.M.I.			
51,000	-50.5	-60	-3	-0	1	-50	-2	1	2	-64	-7	-5	-4	-62	-6	-4	-2	-61	-4	-2	-0	4	4	3	3
40,000	-50.5	-56	0	1	5	-57	-1	3	5	-49	7	9	11	-56	0	2	4	-55	2	5	7	5	5	3	3
30,000	-48.5	-56	-3	-1	1	-45	-0	2	3	-34	11	14	15	-41	4	6	7								

*D--DIFFERENCE BETWEEN INDICATED PER CNT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

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THE BOEING COMPANY
TRANSPORT DIVISION

NO. D6-7177

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION														
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT			
		50	050	D75	085	50	050	D75	085	50	050	D75	085	50	050	D75	085	50	050	D75	085							
MANAGUA TO SAN JOSE																												
55,000	-56.5	-78	-21	-19	-18	-77	-20	-18	-18	-74	-18	-16	-15	-78	-22	-20	-19	-77	-20	-18	-17	294 N.M.I.						
40,000	-56.5	-54	3	4	5	-53	3	4	5	-56	1	2	3	-54	3	4	4	-54	2	4	5	3	3	2	3			
30,000	-44.5	-34	10	11	12	-33	12	13	14	-33	12	13	13	-32	13	14	15	-33	12	13	14	2	2	2	2			
20,000	-21.2	-7	15	16	17	-5	16	17	18	-7	15	15	16	-6	16	17	17	-6	15	16	17	2	2	1	1			
10,000	-4.6	8	13	14	15	10	14	16	16	9	14	15	15	10	15	16	16	9	14	15	16	2	2	1	1			
MANAGUA TO SAN SALVADOR																												
55,000	-56.5	-76	-20	-18	-17	-75	-19	-17	-16	-73	-16	-15	-14	-77	-21	-19	-18	-75	-19	-17	-16	977 N.M.I.						
40,000	-56.5	-54	2	4	5	-54	3	4	5	-56	0	2	2	-54	2	4	4	-55	2	3	4	5	3	3	2	3		
30,000	-44.5	-35	9	10	11	-34	11	12	12	-33	11	12	13	-32	12	13	14	-34	11	12	13	2	2	1	2			
20,000	-21.2	-8	14	15	16	-7	15	16	17	-7	15	15	16	-6	15	16	17	-7	15	16	16	2	2	1	2			
10,000	-4.6	7	12	13	14	8	13	14	15	9	14	14	15	9	14	15	15	8	13	14	15	2	2	1	1			
MANAGUA TO TEGUCIGALPA																												
55,000	-56.5	-77	-21	-19	-18	-77	-20	-18	-17	-74	-17	-16	-15	-78	-22	-20	-19	-77	-20	-18	-17	131 N.M.I.						
40,000	-56.5	-54	3	4	5	-53	3	5	5	-56	1	2	3	-54	3	4	4	-54	2	4	5	3	3	2	3			
30,000	-44.5	-34	10	11	12	-32	12	13	14	-33	12	13	13	-32	13	14	15	-33	12	13	14	2	2	2	2			
20,000	-21.2	-7	15	16	17	-5	16	17	18	-7	15	15	16	-6	16	17	17	-6	15	16	17	2	2	1	1			
10,000	-4.6	8	13	14	15	9	14	15	16	9	14	15	15	10	15	16	16	9	14	15	16	2	2	1	1			
MANAGUA TO SAO PAULO																												
55,000	-56.5	-76	-20	-17	-16	-75	-19	-17	-15	-76	-13	-11	-9	-72	-15	-13	-12	-73	-17	-14	-12	1455 N.M.I.						
40,000	-56.5	-53	4	6	7	-52	5	7	9	-52	4	6	7	-54	3	5	6	-53	4	6	8	4	3	4	5			
30,000	-44.5	-32	13	14	15	-31	13	15	16	-33	11	13	14	-32	13	15	16	-32	13	14	16	2	3	3	3			
20,000	-21.2	-5	16	18	19	-6	16	17	18	-9	12	13	14	-7	15	16	17	-7	15	16	17	2	2	2	2			
10,000	-4.6	10	14	16	16	9	14	16	16	6	11	12	13	9	14	15	16	9	13	15	16	2	2	2	2			
MANILA TO MAHUPUR																												
55,000	-56.5	-75	-18	-16	-15	-75	-17	-16	-15	-76	-19	-16	-15	-74	-18	-15	-14	-75	-18	-15	-14	3097 N.M.I.						
40,000	-56.5	-55	2	4	5	-52	4	7	8	-51	6	8	10	-54	3	5	7	-53	4	7	8	3	4	4	4			
30,000	-44.5	-34	10	12	14	-33	12	14	15	-28	17	18	19	-31	13	15	16	-32	13	15	17	3	3	3	4			
20,000	-21.2	-9	12	14	15	-7	14	16	17	-5	14	16	17	-6	15	17	18	-6	15	17	18	3	3	2	3			
10,000	-4.6	6	11	12	13	10	14	16	17	12	17	18	18	8	13	15	15	9	14	15	16	3	2	2	2			
MANILA TO MUKDEN																												
55,000	-56.5	-67	-10	-7	-5	-68	-12	-9	-7	-68	-12	-9	-7	-67	-11	-8	-6	-68	-11	-8	-6	1639 N.M.I.						
40,000	-56.5	-52	4	7	8	-53	4	7	8	-49	7	10	11	-52	4	7	8	-52	5	8	9	5	4	5	4			
30,000	-44.5	-37	7	9	11	-36	8	11	12	-28	16	18	20	-33	12	14	15	-34	11	14	16	3	4	4	4			
20,000	-21.2	-16	5	8	9	-11	10	12	14	-4	17	19	19	-10	11	14	15	-10	11	14	15	3	3	3	3			
10,000	-4.6	-2	2	5	6	5	7	10	11	11	15	17	18	5	10	12	13	4	9	11	13	3	3	2	3			
MANILA TO NANKING																												
55,000	-56.5	-73	-16	-13	-11	-73	-17	-14	-13	-72	-16	-13	-11	-71	-14	-12	-10	-72	-16	-13	-11	1063 N.M.I.						
40,000	-56.5	-53	4	6	7	-52	4	6	7	-51	6	8	9	-52	4	6	7	-52	4	7	8	4	4	4	4			
30,000	-44.5	-33	11	13	14	-33	12	14	15	-29	16	17	18	-30	14	16	17	-31	13	15	17	3	3	3	3			
20,000	-21.2	-10	11	13	14	-7	14	15	16	-7	14	16	17	-7	14	16	17	-7	14	16	17	3	3	2	3			
10,000	-4.6	5	8	10	11	7	11	13	14	11	16	17	17	8	12	14	15	7	12	14	15	3	2	2	2			
MANILA TO NEW DELHI																												
55,000	-56.5	-74	-17	-15	-14	-72	-16	-13	-12	-75	-18	-15	-14	-72	-16	-13	-12	-73	-17	-14	-13	2574 N.M.I.						
40,000	-56.5	-54	2	4	5	-52	4	6	8	-51	6	8	9	-54	3	5	6	-53	4	6	8	4	4	4	4			
30,000	-44.5	-35	10	12	13	-33	11	13	15	-28	17	18	19	-32	13	15	16	-32	13	15	16	3	3	3	4			
20,000	-21.2	-10	11	13	14	-7	14	16	17	-5	14	16	17	-6	15	16	17	-7	14	16	18	3	3	2	3			
10,000	-4.6	5	9	11	12	9	13	15	16	12	16	17	18	8	13	14	15	8	13	15	16	3	3	2	2			
MANILA TO OKINAWA																												
55,000	-56.5	-75	-19	-16	-15	-74	-19	-16	-15	-74	-18	-15	-13	-75	-16	-14	-12	-74	-18	-15	-14	805 N.M.I.						
40,000	-56.5	-53	4	6	7	-52	4	6	7	-52	5	7	8	-53	4	6	7	-52	4	6	8	4	4	4	4			
30,000	-44.5	-31	14	15	16	-32	13	14	15	-30	15	16	17	-30	14	16	17	-31	14	16	17	2	3	3	3			
20,000	-21.2	-8	14	15	16	-6	15	17	18	-4	17	18	19	-6	15	17	18	-6	15	17	18	2	2	2	2			
10,000	-4.6	6	11	12	13	9	14	15	16	11	16	17	17	10	14	15	16	9	14	15	16	2	2	1	2			
MANILA TO PEIPING																												
55,000	-56.5	-68	-12	-8	-7	-69	-13	-10	-9	-69	-13	-10	-8	-68	-12	-9	-7	-69	-12	-9	-7	1525 N.M.I.						
40,000	-56.5	-52	4	6	7	-52	4	7	8	-49	7	9	11	-52	4	7	8	-52	5	8	9	5	4	5	4			
30,000	-44.5	-37	8	10	11	-35	9	11	13	-28	16	18	19	-32	12	14	15	-33	11	14	16	3	4	3	4			
20,000	-21.2	-14	7	9	10	-10	11	13	14	-4	17	19	19	-9	12	14	15	-10	12	14	16	3	3	3	3			
10,000	-4.6	-1	4	6	7	4	8	10	11	11	16	17	18	5	10	12	13	5	9	12	13	3	3	2	3			
MANILA TO PORT MORESBY																												
55,000	-56.5	-82	-25	-23	-22	-80	-24	-22	-21	-78	-22	-20	-19	-80	-23	-22	-21	-80	-24	-21	-20	2118 N.M.I.						
40,000	-56.5	-54	3	4	4	-52	5	6	7	-54	2	3	4	-54	2	4	4	-54	3	5	6	5	5	3	3			
30,000	-44.5	-31	14	15	16	-31	13	15	15	-31	13	14	15	-31	13	14	15	-31	13	15	15	2	2	2	2			
20,000	-21.2	-4	17	18	18	-5	16	17	18	-5	16	17	17	-6	16	17	17	-5	16	17	18	1	2	1	1			
10,000	-4.6	10	15	16	16	10	15	16	17	10	14	15	16	10	15	16	16	10	15	16	16	1	2	1	1			
MANILA TO RANGOON																												
55,000	-56.5	-79	-22	-20	-19	-78	-21	-19	-18	-78	-21	-18	-17	-77	-21	-19	-17	-78	-21	-19	-18	1443 N.M.I.						
40,000	-56.5	-55	2	3	4	-52	5	6	7	-53	3	4	5	-54	2	4	5	-54	3	5	6	5	5	4	5			
30,000	-44.5	-31	13	14	15	-30	14	16	17	-30	15	16	16	-31	14	15	16	-30	14	15	16	2	2	2	2			
20,000	-21.2	-6	15	17	17	-4	17	18	19	-4	17	18	18	-6	16	17	17	-5	16	18	18	2	2	1	2			
10,000	-4.6	8	13	14	15	10	15	16	17	11	15	16	16	9	14	15	16	10	14	15	16	2	2	1	2			
MANILA TO SAN FRANCISCO																												
55,000	-56.5	-60	-4	-1	1	-60	-5	-0	2	-60	-4	-1	0	-62	-5	-3	-1	-61	-4	-1	1	6058 N.M.I.						
40,000	-56.5	-51	5	9	11	-54	2	6	8	-52	5	8	9	-53	4	6	8	-53	4	8	10	5	5	4	4			
30,000	-44.5	-31	4	6	8	-41	4	6	7	-34	10	12	14	-37	8	10	11	-38	6	9	11	4	4	4	4			
20,000	-21.2	-19	3	5	7	-16	5	8	9	-8	13	15	16	-13	8	11	12	-14	7	10	12	4	4	3	4			
10,000	-4.6	-4	1	3	5	-2	3	5	7	6	11	13	14	1	6	8	9	0	5	8	10	4	4	3	3			
MANILA TO SINGAPORE																												
55,000	-56.5	-82	-25	-23	-22	-80	-24	-22																				

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50 D50	075	D85	50 D50	075	D85	50 D50	075	D85	50 D50	075	D85	50 D50	075	D85	JAN APR JUL OCT
MANILA TO TAIPEI																	
55,000	-56.5	-76	-20	-17	-16	-76	-20	-17	-16	-75	-18	-16	-14	-75	-19	-16	634 N.M.I.
40,000	-56.5	-53	4	5	6	-52	4	6	7	-52	4	6	7	-52	4	6	4
30,000	-44.5	-31	13	15	16	-31	13	15	16	-30	14	16	17	-31	14	16	3
20,000	-21.2	-7	14	15	16	-6	16	17	18	-6	15	17	18	-6	15	17	2
10,000	-4.6	7	11	13	14	9	14	15	16	11	16	17	17	9	14	15	2
MANILA TO TOKYO																	
55,000	-56.5	-70	-14	-11	-10	-71	-14	-11	-10	-70	-14	-11	-9	-70	-14	-11	1616 N.M.I.
40,000	-56.5	-51	5	8	9	-53	3	6	7	-51	4	8	10	-52	5	7	4
30,000	-44.5	-33	11	13	15	-34	11	13	14	-29	16	17	19	-30	14	16	3
20,000	-21.2	-12	10	11	12	-8	15	15	16	-4	17	18	19	-7	14	16	2
10,000	-4.6	2	6	8	9	6	11	13	14	11	16	17	17	8	13	14	2
MARACAIBO TO MIAMI																	
55,000	-56.5	-76	-20	-18	-17	-75	-19	-17	-16	-72	-16	-14	-14	-75	-19	-17	1032 N.M.I.
40,000	-56.5	-54	2	4	5	-54	3	4	5	-56	0	2	2	-54	2	4	3
30,000	-44.5	-35	9	10	11	-34	11	12	13	-33	11	12	13	-34	11	12	2
20,000	-21.2	-8	13	15	16	-7	14	16	16	-7	14	15	16	-6	15	16	2
10,000	-4.6	7	12	13	14	8	12	14	15	9	14	15	15	8	13	14	1
MARACAIBO TO NEW ORLEANS																	
55,000	-56.5	-75	-19	-17	-16	-74	-17	-16	-15	-72	-16	-14	-14	-74	-18	-16	1541 N.M.I.
40,000	-56.5	-55	1	3	4	-54	2	4	5	-56	0	2	2	-54	2	4	3
30,000	-44.5	-36	8	10	10	-35	10	11	12	-33	12	13	14	-34	10	12	2
20,000	-21.2	-9	13	14	15	-8	14	15	16	-7	15	16	17	-6	15	16	2
10,000	-4.6	7	11	13	14	8	12	14	15	9	14	15	15	8	13	14	2
MARSEILLES TO MUNICH																	
55,000	-56.5	-56	0	3	5	-55	1	4	6	-54	3	5	6	-59	-3	-0	392 N.M.I.
40,000	-56.5	-58	-2	2	4	-58	-1	3	5	-53	4	7	8	-56	0	3	4
30,000	-44.5	-50	-5	-3	-1	-47	-2	0	2	-39	6	8	9	-45	2	5	4
20,000	-21.2	-26	-4	-1	1	-21	0	3	4	-12	9	11	12	-17	5	7	4
10,000	-4.6	-9	-4	-1	1	-5	-0	2	4	4	8	11	12	-1	4	6	3
MARSEILLES TO OSLO																	
55,000	-56.5	-57	-1	3	4	-54	3	5	7	-50	6	8	10	-58	-1	1	1009 N.M.I.
40,000	-56.5	-58	-2	2	4	-55	1	5	8	-51	5	9	11	-56	0	4	4
30,000	-44.5	-51	-6	-4	-2	-48	-4	-1	0	-41	4	6	8	-44	0	3	5
20,000	-21.2	-28	-6	-2	0	-23	-2	1	3	-14	7	9	10	-19	3	6	4
10,000	-4.6	-11	-7	-3	-1	-7	-2	1	2	1	6	8	9	-4	1	4	3
MARSEILLES TO PARIS																	
55,000	-56.5	-57	-1	3	4	-55	1	4	5	-54	2	5	6	-59	-3	-0	352 N.M.I.
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	4	7	8	-56	0	3	4
30,000	-44.5	-49	-5	-2	-1	-47	-2	0	2	-39	6	8	9	-45	2	5	4
20,000	-21.2	-25	-4	-0	2	-21	0	3	5	-12	9	11	12	-17	5	7	4
10,000	-4.6	-8	-3	0	2	-4	0	3	4	4	8	10	12	-1	4	6	3
MARSEILLES TO PRAGUE																	
55,000	-56.5	-56	0	4	5	-55	2	4	6	-53	3	6	7	-59	-2	0	547 N.M.I.
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-52	4	7	8	-56	0	3	4
30,000	-44.5	-50	-6	-3	-2	-47	-3	-0	1	-39	5	8	9	-45	2	4	4
20,000	-21.2	-26	-5	-1	1	-21	-0	3	4	-13	9	11	12	-17	4	7	4
10,000	-4.6	-10	-5	-1	1	-5	-1	2	4	3	8	10	11	-1	3	6	3
MARSEILLES TO ROME																	
55,000	-56.5	-57	-0	3	5	-56	0	3	4	-57	-1	2	3	-60	-4	-1	340 N.M.I.
40,000	-56.5	-58	-1	2	4	-58	-1	2	4	-52	4	7	8	-56	0	3	4
30,000	-44.5	-49	-4	-2	0	-48	-2	1	2	-39	7	9	10	-42	3	5	4
20,000	-21.2	-24	-3	0	2	-20	1	4	5	-11	10	12	13	-16	6	8	4
10,000	-4.6	-7	-2	1	3	-3	1	4	5	6	10	12	14	-0	5	7	3
MARSEILLES TO SANTA MARIA																	
55,000	-56.5	-60	-3	0	2	-58	-1	2	3	-59	-3	-0	1	-61	-5	-2	1436 N.M.I.
40,000	-56.5	-58	-2	2	4	-58	-2	2	4	-54	3	6	7	-56	0	3	4
30,000	-44.5	-47	-2	0	1	-45	-0	2	4	-37	7	10	11	-41	4	6	4
20,000	-21.2	-21	0	3	5	-18	3	5	7	-11	10	12	13	-14	7	9	3
10,000	-4.6	-4	1	4	5	-1	5	6	7	6	11	13	14	2	6	8	3
MARSEILLES TO SHANNON																	
55,000	-56.5	-58	-1	2	4	-55	2	4	6	-53	4	6	8	-59	-2	1	792 N.M.I.
40,000	-56.5	-58	-2	3	5	-57	-0	4	6	-52	4	8	9	-56	0	3	4
30,000	-44.5	-49	-5	-2	-1	-47	-2	0	2	-40	5	7	9	-43	1	4	4
20,000	-21.2	-24	-3	0	2	-21	-0	3	5	-13	8	10	11	-17	4	7	4
10,000	-4.6	-8	-3	0	2	-5	-0	3	4	3	7	9	11	-1	3	6	3
MARSEILLES TO STOCKHOLM																	
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-50	6	9	10	-58	-1	2	1079 N.M.I.
40,000	-56.5	-59	-2	2	4	-55	1	5	7	-51	5	9	10	-56	0	4	4
30,000	-44.5	-51	-7	-4	-3	-48	-4	-1	0	-41	4	6	8	-44	0	3	5
20,000	-21.2	-28	-7	-3	-1	-23	-2	1	3	-14	7	9	10	-19	3	6	4
10,000	-4.6	-12	-7	-3	-1	-7	-3	1	2	2	6	8	9	-4	1	4	3
MARSEILLES TO TEMERAN																	
55,000	-56.5	-57	-1	2	4	-56	0	3	4	-60	-3	-1	0	-60	-4	-1	2154 N.M.I.
40,000	-56.5	-57	-0	3	5	-56	0	4	5	-49	8	10	12	-56	0	3	4
30,000	-44.5	-50	-5	-3	-1	-46	-1	1	3	-34	10	13	14	-42	3	5	4
20,000	-21.2	-25	-4	-1	1	-19	2	5	6	-9	12	14	15	-16	6	8	4
10,000	-4.6	-9	-4	-1	1	-3	2	5	6	7	11	14	15	1	6	8	3
MARSEILLES TO TEL AVIV-JAFFA																	
55,000	-56.5	-59	-2	1	2	-58	-1	1	2	-63	-6	-4	-3	-62	-5	-3	1555 N.M.I.
40,000	-56.5	-56	0	3	5	-57	-1	3	5	-49	8	10	11	-56	0	2	4
30,000	-44.5	-48	-4	-2	0	-45	-1	2	3	-34	11	13	14	-41	4	6	4
20,000	-21.2	-23	-2	1	3	-19	2	5	6	-9	13	14	15	-15	7	9	3
10,000	-4.6	-7	-2	1	2	-2	3	5	7	8	12	14	15	2	7	9	3

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	50 050 075 DBS	
MARSEILLES TO VIENNA																	
55,000	-56.5	-56	0	4	5	-55	1	4	6	-54	5	5	7	-53	1	5	552 N.M.I.
40,000	-56.5	-56	-2	2	4	-57	-1	5	5	-53	4	7	8	-50	0	5	5
30,000	-64.5	-50	-6	-3	-2	-47	-3	0	2	-39	6	8	9	-45	2	4	5
20,000	-71.2	-26	-5	-1	1	-27	0	5	4	-12	9	11	12	-17	5	7	5
10,000	-4.6	-9	-5	-1	1	-5	-1	2	4	4	8	10	12	-1	5	6	5
MARSEILLES TO WARSAN																	
55,000	-56.5	-56	0	4	5	-54	2	5	6	-52	5	7	8	-50	1	4	821 N.M.I.
40,000	-56.5	-56	-2	2	4	-57	-0	5	5	-52	5	8	9	-50	0	5	5
30,000	-64.5	-51	-6	-4	-2	-48	-5	-0	1	-40	5	7	9	-45	1	4	5
20,000	-71.2	-27	-6	-2	-6	-22	-1	2	4	-15	4	10	11	-17	4	7	5
10,000	-4.6	-11	-6	-2	-1	-6	-1	2	5	5	7	9	11	-2	2	5	5
MARSEILLES TO ZURICH																	
55,000	-56.5	-57	-0	5	5	-55	1	4	5	-54	2	5	6	-53	0	5	280 N.M.I.
40,000	-56.5	-56	-2	2	4	-58	-1	2	4	-53	5	6	8	-50	0	5	5
30,000	-64.5	-50	-5	-2	-1	-47	-2	0	2	-39	6	8	9	-45	2	5	5
20,000	-71.2	-25	-4	-1	1	-21	0	5	5	-12	9	11	12	-16	5	7	5
10,000	-4.6	-8	-4	-0	2	-5	0	5	4	4	9	11	12	-1	4	6	5
MAURITIUS TO NAIROBI																	
55,000	-56.5	-77	-20	-14	-17	-76	-20	-17	-16	-72	-15	-15	-12	-75	-18	-14	1672 N.M.I.
40,000	-56.5	-52	4	6	7	-52	4	6	7	-52	5	6	7	-53	4	6	5
30,000	-64.5	-30	15	16	17	-31	15	15	16	-32	12	13	14	-32	12	15	5
20,000	-71.2	-5	17	17	18	-6	16	16	17	-6	15	16	16	-6	16	16	1
10,000	-4.6	10	14	15	15	10	14	15	16	7	12	15	16	9	15	15	1
MAURITIUS TO PERIM																	
55,000	-56.5	-68	-12	-9	-8	-64	-11	-7	-7	-65	-7	-4	-3	-65	-9	-6	5176 N.M.I.
40,000	-56.5	-55	2	5	6	-56	1	5	6	-52	4	7	8	-54	5	7	5
30,000	-64.5	-35	10	12	13	-36	6	8	9	-34	6	9	10	-34	7	9	5
20,000	-71.2	-9	17	16	16	-12	9	10	11	-15	9	11	12	-12	9	11	5
10,000	-4.6	6	11	12	13	4	9	10	11	1	6	8	9	2	7	9	5
MEDAN TO MENADO																	
55,000	-56.5	-45	-24	-24	-23	-40	-24	-22	-21	-44	-22	-20	-19	-40	-24	-22	1577 N.M.I.
40,000	-56.5	-55	2	5	6	-52	5	6	7	-54	2	5	6	-54	5	6	5
30,000	-64.5	-31	14	15	15	-30	14	15	16	-31	14	15	15	-31	14	15	2
20,000	-71.2	-5	17	17	18	-5	17	17	18	-5	16	17	17	-5	16	17	1
10,000	-4.6	10	14	15	15	10	15	16	16	9	14	15	15	10	14	15	1
MEDAN TO PADANG																	
55,000	-56.5	-42	-24	-24	-23	-40	-24	-22	-21	-40	-24	-22	-21	-40	-24	-21	265 N.M.I.
40,000	-56.5	-55	2	5	6	-52	5	6	7	-54	2	5	6	-54	5	6	5
30,000	-64.5	-31	14	15	15	-30	14	15	16	-31	14	15	16	-31	14	15	2
20,000	-71.2	-5	17	17	18	-5	16	17	18	-5	16	17	17	-5	16	17	1
10,000	-4.6	10	14	15	15	10	15	15	16	9	14	15	15	9	14	15	1
MEDAN TO TAPANARA																	
55,000	-56.5	-42	-24	-24	-23	-40	-24	-22	-21	-40	-24	-22	-21	-40	-24	-22	1151 N.M.I.
40,000	-56.5	-55	2	5	6	-52	5	6	7	-54	2	5	6	-54	5	6	5
30,000	-64.5	-31	14	15	15	-30	14	15	16	-31	14	15	16	-31	14	15	2
20,000	-71.2	-5	17	17	18	-5	16	17	18	-5	16	17	17	-5	16	17	1
10,000	-4.6	10	14	15	15	10	15	16	16	9	14	15	15	10	14	15	1
MELBOURNE TO NAIROBI																	
55,000	-56.5	-70	-15	-11	-10	-64	-12	-9	-8	-65	-8	-6	-5	-67	-10	-8	2086 N.M.I.
40,000	-56.5	-54	2	4	6	-54	2	4	6	-54	5	5	7	-54	2	5	5
30,000	-64.5	-36	8	11	12	-32	6	8	9	-31	5	7	8	-31	5	8	5
20,000	-71.2	-10	12	11	14	-15	8	10	11	-17	5	7	8	-15	8	10	5
10,000	-4.6	7	11	11	14	5	8	10	11	-1	4	6	7	2	6	8	5
MELBOURNE TO PERIM																	
55,000	-56.5	-65	-6	-4	-2	-62	-6	-5	-2	-54	-2	0	2	-61	-4	-1	1460 N.M.I.
40,000	-56.5	-55	2	4	6	-57	-0	2	4	-54	5	7	9	-55	2	4	5
30,000	-64.5	-39	5	8	9	-45	1	5	6	-46	2	5	6	-45	2	6	5
20,000	-71.2	-12	9	11	12	-17	4	6	8	-22	1	5	5	-18	5	6	5
10,000	-4.6	4	9	11	12	0	5	7	8	-5	0	2	5	-2	5	6	5
MELBOURNE TO SEATTLE																	
55,000	-56.5	-72	-15	-15	-12	-64	-15	-11	-9	-64	-12	-10	-9	-70	-14	-11	7109 N.M.I.
40,000	-56.5	-54	5	5	7	-55	2	4	6	-54	2	4	6	-54	2	5	5
30,000	-64.5	-37	8	10	11	-37	7	9	10	-36	8	10	11	-37	8	10	5
20,000	-71.2	-10	11	15	16	-12	10	12	15	-10	12	15	16	-10	11	15	5
10,000	-4.6	5	10	12	15	4	9	11	12	6	10	12	15	5	10	12	5
MELBOURNE TO SYDNEY																	
55,000	-56.5	-65	-7	-4	-3	-62	-5	-5	-1	-58	-2	1	2	-60	-4	-1	561 N.M.I.
40,000	-56.5	-56	1	5	5	-56	0	5	5	-54	5	5	7	-55	2	6	5
30,000	-64.5	-39	5	8	9	-46	0	5	6	-48	-5	-1	0	-46	1	4	5
20,000	-71.2	-12	9	11	12	-14	5	6	7	-25	-2	1	2	-14	5	6	5
10,000	-4.6	4	9	11	12	-1	5	5	7	-5	-1	1	5	-2	2	5	5
MELBOURNE TO TOKYO																	
55,000	-56.5	-76	-14	-17	-16	-74	-17	-15	-14	-75	-16	-14	-13	-74	-17	-15	4406 N.M.I.
40,000	-56.5	-52	4	6	7	-55	5	5	7	-55	5	5	6	-55	5	5	5
30,000	-64.5	-32	12	14	15	-34	10	12	15	-35	11	15	16	-35	11	15	5
20,000	-71.2	-8	14	15	16	-4	15	15	16	-4	15	16	15	-4	15	16	2
10,000	-4.6	7	12	15	16	7	12	15	16	7	12	15	16	7	12	15	2
MELBOURNE TO WELLINGTON																	
55,000	-56.5	-61	-4	-2	-0	-54	-5	-0	1	-56	1	5	4	-54	-1	2	1595 N.M.I.
40,000	-56.5	-56	0	5	5	-54	0	5	5	-54	2	5	7	-55	2	6	5
30,000	-64.5	-41	5	6	7	-46	-1	1	2	-47	-2	0	2	-46	-2	2	5
20,000	-71.2	-15	7	9	10	-20	2	4	6	-25	-5	-1	1	-21	0	5	5
10,000	-4.6	2	7	9	10	-5	2	4	5	-7	-5	-0	1	-6	1	5	5

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE										STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
MENADO TO PADANG																									
51,000	-56.5	-84	-26	-24	-25	-80	-24	-22	-21	-78	-22	-20	-19	-80	-24	-22	-21	-80	-24	-22	-21	5	5	3	3
40,000	-56.5	-55	2	5	4	-52	5	6	7	-54	2	5	4	-54	5	4	5	-54	5	4	5	2	2	1	2
30,000	-44.5	-11	14	15	15	-10	14	15	16	-11	15	15	15	-12	15	14	14	-11	14	15	15	2	2	2	1
20,000	-21.2	-5	17	17	18	-5	16	17	17	-5	16	16	17	-6	16	17	17	-5	16	17	17	1	1	1	1
10,000	-4.6	10	14	15	15	10	15	16	16	9	14	14	15	10	14	15	15	10	14	15	16	1	1	1	1
MENADO TO TARAKAN																									
51,000	-56.5	-84	-26	-24	-25	-80	-24	-22	-21	-78	-22	-20	-19	-80	-24	-22	-21	-81	-24	-22	-20	5	5	3	3
40,000	-56.5	-54	2	5	4	-52	5	6	7	-54	2	5	4	-54	5	4	5	-54	5	4	5	2	2	2	2
30,000	-44.5	-11	14	15	16	-10	14	15	16	-11	14	15	15	-11	15	14	14	-11	14	15	15	2	2	2	1
20,000	-21.2	-5	17	17	18	-5	16	17	17	-5	16	17	17	-5	16	17	17	-5	16	17	17	1	1	1	1
10,000	-4.6	10	15	15	16	11	15	16	17	9	14	15	15	10	15	15	16	10	15	16	16	1	1	1	1
MENADO TO SANTIAGO																									
51,000	-56.5	-64	-8	-5	-4	-64	-7	-5	-5	-58	-2	1	5	-59	-5	0	2	-61	-5	-1	0	4	4	4	4
40,000	-56.5	-34	5	6	8	-36	1	4	5	-52	5	8	9	-54	5	6	7	-54	5	6	8	5	5	4	4
30,000	-44.5	-19	5	8	9	-19	5	7	9	-45	-0	2	4	-49	6	8	10	-40	4	7	8	4	5	4	4
20,000	-21.2	-11	10	12	14	-14	7	9	10	-21	0	3	4	-12	9	12	15	-15	7	9	11	5	5	5	4
10,000	-4.6	7	12	14	15	2	7	9	10	-2	2	4	5	1	5	7	8	2	6	9	11	5	5	5	5
MENADO TO MANILA																									
51,000	-56.5	-75	-18	-17	-16	-75	-16	-14	-15	-72	-15	-14	-15	-77	-20	-18	-17	-74	-17	-16	-15	5	5	2	3
40,000	-56.5	-50	1	2	3	-50	2	3	4	-50	0	1	1	-54	2	3	4	-55	1	5	5	2	2	1	2
30,000	-44.5	-17	7	9	9	-16	8	10	10	-15	12	13	13	-14	11	14	15	-15	10	11	12	2	2	1	2
20,000	-21.2	-4	12	14	14	-4	11	14	14	-6	15	16	16	-6	15	16	17	-8	14	15	16	2	2	1	2
10,000	-4.6	6	11	13	14	7	12	14	15	9	14	15	15	8	13	15	16	8	13	15	16	2	2	1	2
MENADO TO NEW ORLEANS																									
51,000	-56.5	-75	-17	-15	-16	-71	-15	-14	-15	-72	-15	-14	-15	-76	-20	-17	-16	-75	-17	-14	-15	5	5	2	3
40,000	-56.5	-57	-2	2	3	-55	1	1	2	-56	0	1	2	-55	2	3	4	-56	1	2	3	5	5	1	2
30,000	-44.5	-18	6	8	8	-17	7	9	9	-15	12	13	13	-16	11	12	13	-15	9	11	11	2	2	1	2
20,000	-21.2	-10	11	13	14	-10	12	14	14	-8	15	16	16	-7	14	16	16	-8	15	14	15	5	5	1	2
10,000	-4.6	5	10	12	13	7	12	14	15	9	14	15	15	9	13	15	15	8	12	13	14	5	5	1	2
MENADO TO LAMPA																									
51,000	-56.5	-74	-18	-16	-15	-72	-16	-14	-15	-72	-15	-14	-15	-76	-20	-18	-16	-74	-17	-15	-14	5	5	2	3
40,000	-56.5	-50	0	2	3	-50	1	1	2	-57	-2	1	1	-56	2	3	4	-56	1	2	3	2	5	1	2
30,000	-44.5	-16	7	9	9	-17	8	10	10	-15	12	13	13	-16	11	12	13	-15	9	11	12	2	2	1	2
20,000	-21.2	-10	12	14	14	-9	12	14	15	-8	15	16	16	-8	15	16	16	-8	15	14	15	2	2	1	2
10,000	-4.6	6	11	12	13	7	12	14	14	9	14	15	15	9	13	15	15	8	12	13	14	2	2	1	2
MENADO CITY TO MANILA																									
51,000	-56.5	-75	-17	-17	-16	-75	-16	-15	-16	-72	-16	-15	-16	-77	-21	-18	-17	-74	-18	-16	-15	5	5	2	3
40,000	-56.5	-50	0	2	3	-50	2	3	4	-50	0	1	2	-54	2	3	4	-55	1	5	5	2	2	1	2
30,000	-44.5	-17	7	9	9	-16	8	10	10	-15	12	13	13	-16	11	13	13	-15	10	11	12	2	2	1	2
20,000	-21.2	-9	12	14	14	-8	13	15	15	-6	15	16	16	-6	15	16	17	-8	14	15	15	2	2	1	2
10,000	-4.6	7	11	13	14	8	13	15	15	9	14	15	15	9	14	15	16	8	13	14	16	2	5	1	2
MENADO CITY TO MONTREAL																									
51,000	-56.5	-67	-11	-9	-7	-65	-9	-6	-5	-67	-11	-9	-8	-70	-15	-11	-10	-67	-11	-8	-7	5	4	5	4
40,000	-56.5	-57	-2	0	1	-57	-2	0	1	-55	7	5	4	-55	2	4	5	-56	1	5	5	4	4	2	5
30,000	-44.5	-17	7	9	9	-16	8	10	10	-15	12	13	13	-16	11	12	13	-17	7	9	10	5	5	2	5
20,000	-21.2	-12	5	7	7	-16	7	9	10	-8	14	15	16	-10	11	14	16	-12	9	11	12	4	5	2	5
10,000	-4.6	-2	5	6	7	2	7	9	11	8	13	14	14	6	10	12	13	5	8	10	12	4	4	2	5
MENADO CITY TO NASSAU																									
51,000	-56.5	-75	-17	-15	-16	-75	-17	-15	-16	-72	-16	-15	-16	-77	-21	-18	-17	-74	-18	-16	-15	5	5	2	3
40,000	-56.5	-50	1	2	3	-50	2	3	4	-50	0	1	2	-54	2	3	4	-55	1	5	5	2	2	1	2
30,000	-44.5	-17	7	9	9	-16	8	10	10	-15	12	13	13	-16	11	13	14	-15	10	11	12	2	2	1	2
20,000	-21.2	-9	12	14	14	-8	13	15	15	-6	15	16	16	-6	15	16	17	-7	14	15	16	2	2	1	2
10,000	-4.6	7	11	13	14	8	13	15	15	9	14	15	15	9	14	15	15	8	13	14	15	2	5	1	2
MENADO CITY TO NEW ORLEANS																									
51,000	-56.5	-74	-17	-15	-16	-71	-15	-14	-15	-72	-16	-14	-16	-76	-20	-18	-17	-75	-17	-15	-15	5	5	2	3
40,000	-56.5	-57	-2	2	3	-50	1	2	3	-50	1	2	2	-55	2	3	4	-56	1	2	3	5	5	2	2
30,000	-44.5	-16	6	8	8	-17	7	9	9	-15	12	13	13	-16	11	12	13	-15	9	11	12	2	2	1	2
20,000	-21.2	-11	11	12	12	-9	12	13	14	-8	15	16	16	-7	14	15	16	-8	15	14	15	5	5	1	2
10,000	-4.6	6	10	12	13	8	13	15	16	10	14	15	16	9	14	15	16	8	13	14	15	5	5	1	2
MENADO CITY TO NEW YORK																									
51,000	-56.5	-69	-15	-11	-10	-67	-11	-9	-8	-69	-15	-11	-10	-72	-15	-13	-12	-69	-15	-10	-9	5	5	5	5
40,000	-56.5	-57	-1	2	3	-57	-2	0	2	-55	1	2	3	-55	1	3	4	-56	0	2	4	4	4	2	5
30,000	-44.5	-16	5	6	6	-16	5	6	7	-15	11	12	13	-16	10	10	11	-16	8	7	9	5	5	2	5
20,000	-21.2	-11	7	9	11	-12	9	11	12	-7	14	15	16	-9	12	14	15	-11	11	12	15	5	5	2	5
10,000	-4.6	1	6	8	9	4	8	11	12	7	11	13	14	7	11	13	14	5	10	11	12	4	4	2	5
MENADO CITY TO PASADENA																									
51,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-74	-17	-16	-15	-78	-22	-20	-19	-76	-20	-18	-17	5	5	2	3
40,000	-56.5	-54	2	4	5	-54	5	6	7	-56	1	2	3	-54	5	4	4	-54	2	4	4	2	2	2	2
30,000	-44.5	-15	10	11	12	-15	11	13	13	-13	12	14	14	-12	13	14	14	-15	11	13	14	2	2	2	2
20,000	-21.2	-7	14	16	16	-6	14	17	17	-7	15	16	16	-6	15	16	17	-6	15	16	17	2	2	1	1
10,000	-4.6	8	13	15	16	10	14	16	16	10	14	15	15	10	15	16	16	9	14	15	16	2	2	1	1
MENADO CITY TO PARIS																									
51,000	-56.5	-82	-5	-3	-1	-59	-2	0	1	-59	-3	-0	1	-61	-4	-4	-2	-61	-4	-1	0	4	4	5	4
40,000	-56.5	-56	1	4	6	-55	1	5	7	-55	3	6	7	-55	2	5	6	-55	2	5	6	4	5	4	4
30,000	-44.5	-16	1	2	2	-14	0	2	4	-13	7	9	10	-11	4	6	8	-12	2	6	7	4	5	4	4
20,000	-21.2	-21	-0	3	5	-19	2	5	7	-11	10	12	13	-15	6	9	11	-17	5	8	9	4	5	4	4
10,000	-4.6	-7	-2	1	4	-3	1	4	6	4	9	10	11	1	5	8	9	-1	5	6	8	5	4	3	4

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURE																	STANDARD DEVIATION								
HEIGHT IN FEET	ISA TEMP.	JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
MEXICO CITY TO OUITO																									
55,000	-56.5	-78	-21	-20	-19	-77	-20	-19	-18	-74	-18	-16	-15	-78	-22	-20	-19	-77	-20	-18	-17	1687 N.M.I.			
40,000	-56.5	-54	2	4	5	-53	3	5	6	-55	1	2	3	-54	2	4	5	-54	2	4	5	3 3 2 3			
30,000	-56.5	-34	11	12	12	-32	12	13	14	-32	12	13	14	-31	13	14	15	-32	12	13	14	2 2 2 2			
20,000	-51.2	-6	15	16	17	-5	16	17	18	-7	15	15	16	-6	16	16	17	-6	15	17	17	2 2 1 1			
10,000	-6.6	9	13	15	15	10	14	16	16	9	14	15	16	10	15	16	16	10	14	15	16	2 2 1 1			
MEXICO CITY TO RIO DE JANEIRO																									
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-72	-16	-15	-12	-75	-19	-17	-16	-75	-19	-16	-15	4337 N.M.I.			
40,000	-56.5	-53	3	5	6	-52	4	6	7	-54	3	4	5	-54	3	4	5	-53	3	5	6	3 3 2 2			
30,000	-56.5	-33	12	13	14	-32	13	14	15	-33	12	13	14	-32	13	14	15	-32	12	14	15	3 3 2 2			
20,000	-51.2	-5	16	17	18	-5	16	17	18	-8	15	16	15	-6	15	16	17	-6	15	16	17	2 2 2 2			
10,000	-6.6	9	14	15	16	10	14	16	16	8	13	14	14	10	14	16	16	9	14	15	16	2 2 2 2			
MEXICO CITY TO ST. LOUIS																									
55,000	-56.5	-70	-14	-12	-10	-68	-11	-9	-8	-70	-14	-12	-11	-73	-17	-14	-13	-70	-14	-11	-10	1246 N.M.I.			
40,000	-56.5	-57	-2	2	4	-57	-1	2	3	-55	2	3	4	-55	1	3	4	-56	1	2	3	4 3 2 3			
30,000	-56.5	-40	4	6	6	-39	5	7	7	-33	12	13	14	-36	9	10	11	-37	7	9	11	2 2 2 3			
20,000	-51.2	-14	7	9	11	-12	10	12	13	-6	15	16	16	-9	13	14	15	-10	11	13	14	3 3 1 2			
10,000	-6.6	2	7	9	10	6	10	13	14	10	14	15	16	8	12	14	15	6	11	13	14	3 3 1 2			
MEXICO CITY TO SAN ANTONIO																									
55,000	-56.5	-73	-17	-15	-14	-71	-15	-13	-12	-72	-16	-15	-14	-74	-20	-18	-17	-73	-17	-14	-13	607 N.M.I.			
40,000	-56.5	-50	0	2	4	-54	0	2	3	-55	1	2	3	-55	2	3	4	-56	1	2	3	3 3 2 3			
30,000	-56.5	-38	6	7	8	-38	7	8	9	-32	12	13	14	-34	10	12	13	-36	9	11	12	2 2 1 2			
20,000	-51.2	-11	10	12	13	-10	12	13	14	-6	15	16	16	-7	14	15	16	-8	13	14	15	3 2 1 2			
10,000	-6.6	6	10	12	13	9	13	15	17	10	15	16	16	9	14	15	16	9	13	14	15	3 3 1 2			
MEXICO CITY TO SAN DIEGO																									
55,000	-56.5	-71	-15	-13	-12	-70	-13	-11	-10	-72	-15	-14	-13	-74	-18	-16	-15	-72	-15	-13	-11	1257 N.M.I.			
40,000	-56.5	-54	0	3	5	-57	-2	2	3	-55	2	3	4	-55	2	3	4	-56	1	3	4	4 3 2 2			
30,000	-56.5	-40	4	6	7	-39	5	7	8	-33	12	13	14	-35	9	11	12	-37	8	10	11	7 2 2 2			
20,000	-51.2	-13	8	11	12	-11	10	12	13	-6	15	16	16	-8	13	15	15	-10	12	13	14	5 5 1 2			
10,000	-6.6	4	9	11	12	7	12	14	15	11	16	17	17	9	13	15	16	8	12	14	15	4 5 1 2			
MEXICO CITY TO SAN FRANCISCO																									
55,000	-56.5	-69	-15	-10	-9	-67	-11	-9	-7	-70	-14	-12	-11	-72	-16	-14	-12	-70	-15	-11	-9	1635 N.M.I.			
40,000	-56.5	-57	-2	3	5	-57	-1	2	3	-55	2	3	4	-55	1	3	4	-56	1	2	3	5 4 2 3			
30,000	-56.5	-42	5	5	6	-40	6	6	7	-33	11	12	13	-36	8	10	11	-38	7	9	10	3 2 2 3			
20,000	-51.2	-14	7	9	11	-13	9	11	12	-6	15	16	16	-9	12	14	15	-11	11	13	14	4 3 1 3			
10,000	-6.6	5	7	10	12	6	10	13	14	11	16	17	18	8	12	14	15	7	11	13	15	4 4 2 3			
MEXICO CITY TO SAN JUAN																									
55,000	-56.5	-76	-20	-14	-17	-75	-19	-17	-16	-73	-16	-15	-14	-77	-21	-19	-18	-75	-19	-17	-16	1076 N.M.I.			
40,000	-56.5	-55	2	5	6	-55	2	5	6	-54	0	1	2	-54	2	4	5	-55	2	3	4	3 3 2 3			
30,000	-56.5	-36	9	10	11	-35	10	11	12	-33	12	13	14	-32	12	13	14	-34	11	12	13	2 2 1 2			
20,000	-51.2	-8	13	15	15	-7	14	16	16	-7	15	16	16	-6	15	16	17	-7	14	16	16	2 2 1 2			
10,000	-6.6	7	12	14	15	8	13	15	15	9	14	15	15	9	14	15	15	8	13	14	15	2 2 1 1			
MEXICO CITY TO SAN SALVADOR																									
55,000	-56.5	-75	-19	-17	-16	-73	-17	-15	-14	-72	-16	-15	-14	-77	-21	-19	-17	-75	-18	-16	-15	1395 N.M.I.			
40,000	-56.5	-56	1	2	3	-55	2	3	4	-54	0	1	2	-54	2	3	4	-55	1	3	5	3 3 2 3			
30,000	-56.5	-37	8	9	10	-36	9	10	11	-33	12	13	14	-35	10	11	12	-37	10	11	12	2 2 1 2			
20,000	-51.2	-9	12	14	15	-8	13	15	16	-6	15	16	16	-6	15	16	17	-7	14	15	16	2 2 1 2			
10,000	-6.6	7	12	14	15	8	13	15	15	9	14	15	15	9	14	15	15	8	13	14	15	2 2 1 1			
MEXICO CITY TO SANTIAGO																									
55,000	-56.5	-76	-19	-17	-16	-75	-19	-17	-16	-73	-16	-15	-14	-77	-21	-19	-18	-76	-17	-14	-13	3567 N.M.I.			
40,000	-56.5	-56	1	2	3	-54	3	5	6	-54	3	4	5	-54	2	4	5	-54	3	5	6	3 3 3 2			
30,000	-56.5	-36	11	12	13	-33	11	13	13	-33	10	12	12	-33	12	13	14	-34	11	13	14	2 2 2 2			
20,000	-51.2	-6	15	16	17	-7	14	16	16	-10	13	15	15	-7	14	15	16	-8	14	15	16	2 2 2 2			
10,000	-6.6	9	13	15	15	8	13	14	15	5	10	11	12	8	13	14	14	8	12	14	15	2 2 2 2			
MEXICO CITY TO SEATTLE																									
55,000	-56.5	-86	-10	-7	-6	-84	-8	-5	-4	-87	-12	-10	-9	-89	-12	-10	-9	-87	-10	-7	-6	2027 N.M.I.			
40,000	-56.5	-57	-2	4	6	-57	-1	2	4	-55	2	3	4	-56	1	3	4	-56	1	3	4	4 3 3 3			
30,000	-56.5	-44	0	2	3	-43	2	4	5	-34	10	11	12	-38	6	8	9	-40	5	7	8	5 4 2 3			
20,000	-51.2	-18	5	7	8	-15	6	8	10	-7	14	15	16	-11	10	12	13	-13	8	11	12	3 3 2 3			
10,000	-6.6	-1	5	6	8	5	8	10	12	11	16	17	18	5	10	12	14	4	9	12	13	5 3 2 3			
MEXICO CITY TO TAMPA																									
55,000	-56.5	-81	-24	-22	-21	-79	-22	-20	-19	-75	-18	-17	-16	-77	-20	-18	-17	-76	-21	-19	-18	3713 N.M.I.			
40,000	-56.5	-56	2	4	5	-54	2	4	5	-55	2	3	4	-54	2	4	4	-54	2	4	5	3 3 2 2			
30,000	-56.5	-33	11	13	13	-33	12	13	14	-33	11	13	13	-32	12	14	14	-33	12	13	14	2 2 2 2			
20,000	-51.2	-6	15	16	17	-6	15	16	17	-7	14	15	16	-6	15	16	17	-6	15	16	17	2 2 1 1			
10,000	-6.6	4	14	15	15	10	15	16	16	9	14	15	15	10	14	15	16	9	14	15	16	1 2 2 1			
MEXICO CITY TO TEGUCIGALPA																									
55,000	-56.5	-77	-20	-19	-18	-76	-19	-17	-16	-74	-17	-16	-15	-78	-22	-20	-19	-76	-20	-18	-17	753 N.M.I.			
40,000	-56.5	-55	2	3	4	-55	2	3	4	-54	1	2	3	-54	2	3	4	-55	2	3	4	3 3 2 3			
30,000	-56.5	-34	9	10	11	-34	10	11	12	-33	12	13	13	-32	12	14	14	-34	11	12	13	2 2 2 2			
20,000	-51.2	-8	14	15	16	-8	15	16	17	-6	15	16	17	-6	15	16	17	-6	15	16	17	2 2 1 2			
10,000	-6.6	8	13	14	15	10	14	16	17	10	14	15	15	10	15	16	16	9	14	15	16	2 2 1 1			
MEXICO CITY TO IDRONIO																									
55,000	-56.5	-68	-12	-9	-8	-68	-9	-7	-6	-68	-12	-10	-9	-71	-14	-12	-11	-68	-12	-9	-7	1753 N.M.I.			
40,000	-56.5	-57	-2	4	6	-57	-2	4	6	-55	2	3	4	-55	1	3	5	-56	1	2	3	4 4 2 3			
30,000	-56.5	-42	5	5	6	-41	6	6	7	-34	11	12	13	-37	8	9	11	-38	6	9	10	3 3 2 3			
20,000	-51.2	-14	8	9	10	-13	8	10	11	-7	14	15	16	-10	11	13	14	-12	10	12	13	4 3 2 3			
10,000	-6.6	-2	8	9	10	5	8	10	12	9	13	14	15	6	11	13	14	4	9	11	12	4 4 2 3			
MEXICO CITY TO TRINIDAD																									
55,000	-56.5	-77	-21	-19	-18	-76	-20	-18	-17	-73	-17	-15	-15	-78	-21	-19	-18	-76	-20	-18	-17	2245 N.M.I.			
40,000	-56.5	-54	2	4	5	-53	3	4	5	-54	1	2	3	-54	3	4	4	-54	2	4	5	3 3 2 3			
30,000	-56.5	-35	10	11	12	-35	12	13	13	-33	12	13	13	-32	13	14	14	-33	11	13	13	2 2 2 2			
20,000	-51.2																								

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085				
MEXICO CITY TO VANCOUVER																	
51,000	-56.5	-66	-9	-7	-5	-63	-7	-5	-3	-66	-10	-8	-7	-66	-9	-7	-5
40,000	-56.5	-56	0	4	6	-57	-1	2	4	-55	2	4	5	-56	1	3	4
30,000	-44.5	-45	-0	2	3	-43	2	3	4	-35	10	11	12	-38	6	8	9
20,000	-21.2	-18	3	6	8	-16	5	8	9	-8	13	15	15	-12	9	12	13
10,000	-4.6	-2	2	6	8	2	7	10	11	11	15	17	17	5	9	12	13
MEXICO CITY TO WASHINGTON, D.C.																	
51,000	-56.5	-70	-14	-12	-11	-68	-11	-9	-8	-70	-15	-12	-11	-70	-14	-11	-10
40,000	-56.5	-57	-1	2	3	-57	-0	2	3	-55	1	2	3	-56	0	2	3
30,000	-44.5	-40	4	6	7	-39	5	7	8	-33	11	13	13	-36	9	11	12
20,000	-21.2	-13	8	10	11	-12	9	11	12	-7	14	15	16	-9	13	14	15
10,000	-4.6	2	7	9	10	5	9	12	13	9	13	14	15	7	12	14	14
MIAMI TO MONTREAL																	
51,000	-56.5	-66	-9	-7	-5	-63	-6	-4	-3	-65	-9	-7	-5	-68	-11	-8	-7
40,000	-56.5	-57	-1	2	3	-57	-0	2	3	-55	1	3	4	-56	0	2	3
30,000	-44.5	-44	1	3	4	-42	2	4	5	-35	10	11	12	-38	6	9	10
20,000	-21.2	-18	4	6	8	-16	5	8	9	-8	13	14	15	-11	10	12	13
10,000	-4.6	-4	1	4	6	-1	4	7	8	7	11	13	13	4	9	11	12
MIAMI TO MOSCOW																	
51,000	-56.5	-74	-17	-16	-15	-71	-15	-13	-12	-71	-14	-13	-12	-73	-14	-13	-14
40,000	-56.5	-56	1	2	3	-55	1	3	4	-57	-0	1	2	-56	1	2	3
30,000	-44.5	-34	7	8	9	-37	8	9	10	-33	11	12	13	-35	9	11	11
20,000	-21.2	-10	11	13	14	-9	12	14	14	-7	14	15	16	-8	13	15	16
10,000	-4.6	6	10	12	13	4	11	12	13	9	13	14	14	8	13	14	15
MIAMI TO OTTAWA																	
51,000	-56.5	-66	-9	-7	-5	-63	-7	-4	-3	-65	-9	-7	-5	-68	-11	-8	-7
40,000	-56.5	-57	-1	2	3	-57	-0	2	3	-55	1	3	4	-56	0	2	3
30,000	-44.5	-44	1	3	4	-42	2	4	5	-35	10	11	12	-38	6	9	10
20,000	-21.2	-18	4	6	8	-16	5	8	9	-8	13	14	15	-11	10	12	13
10,000	-4.6	-4	1	4	6	-1	4	7	8	7	11	13	13	4	9	11	12
MIAMI TO PANAMA CITY																	
51,000	-56.5	-74	-20	-18	-17	-75	-19	-17	-16	-75	-14	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	2	4	4	-53	3	5	5	-54	1	2	2	-54	2	4	4
30,000	-44.5	-35	9	11	11	-34	11	12	13	-33	12	13	14	-33	11	12	13
20,000	-21.2	-8	14	15	16	-7	15	16	17	-7	15	16	17	-7	15	16	17
10,000	-4.6	8	12	13	14	8	13	14	15	9	14	15	15	8	13	14	15
MIAMI TO PORT AU PRINCE																	
51,000	-56.5	-75	-19	-17	-16	-74	-17	-15	-14	-74	-20	-18	-16	-74	-18	-16	-15
40,000	-56.5	-55	2	3	4	-55	2	3	4	-54	0	1	2	-55	1	3	4
30,000	-44.5	-37	8	9	10	-35	9	10	11	-33	11	12	13	-33	10	12	12
20,000	-21.2	-9	12	14	15	-8	13	15	15	-7	14	15	16	-7	14	15	16
10,000	-4.6	7	11	13	13	7	12	13	14	9	13	14	14	8	12	13	14
MIAMI TO PORT OF SPAIN																	
51,000	-56.5	-74	-20	-18	-17	-74	-19	-17	-16	-72	-16	-14	-14	-77	-20	-18	-17
40,000	-56.5	-54	2	4	5	-54	2	4	5	-54	1	2	2	-54	2	4	4
30,000	-44.5	-35	9	11	11	-34	11	12	13	-32	12	13	14	-32	12	13	14
20,000	-21.2	-8	13	15	15	-7	14	15	16	-6	15	16	17	-7	14	16	16
10,000	-4.6	7	12	13	14	8	12	14	14	9	14	15	15	8	13	14	15
MIAMI TO QUITO																	
51,000	-56.5	-77	-21	-19	-18	-74	-19	-18	-17	-73	-17	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	2	4	5	-53	4	5	6	-54	1	2	3	-54	2	4	5
30,000	-44.5	-34	10	12	12	-32	12	13	14	-33	12	13	14	-33	12	13	14
20,000	-21.2	-7	15	16	17	-6	15	17	17	-6	15	16	17	-6	15	16	17
10,000	-4.6	8	13	14	15	9	13	15	15	9	14	15	15	10	14	15	16
MIAMI TO RIO DE JANEIRO																	
51,000	-56.5	-77	-21	-18	-17	-74	-20	-18	-17	-71	-15	-13	-12	-75	-18	-16	-14
40,000	-56.5	-54	3	5	6	-52	4	6	7	-54	2	4	5	-54	3	5	6
30,000	-44.5	-33	11	13	14	-32	13	14	15	-31	13	15	15	-32	12	14	15
20,000	-21.2	-4	16	17	18	-6	16	17	18	-6	15	16	17	-6	15	16	17
10,000	-4.6	9	14	15	16	9	14	15	16	8	13	14	14	10	14	15	16
MIAMI TO SAN JOSE																	
51,000	-56.5	-76	-20	-18	-17	-74	-14	-16	-15	-73	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-55	1	3	4	-54	2	4	4	-54	0	1	2	-55	2	3	4
30,000	-44.5	-36	8	10	10	-35	10	11	12	-33	12	13	13	-34	10	12	13
20,000	-21.2	-8	13	15	15	-7	14	15	16	-7	15	16	17	-7	14	16	16
10,000	-4.6	7	12	13	14	8	13	14	15	9	14	15	15	9	13	14	15
MIAMI TO SAN JUAN																	
51,000	-56.5	-75	-19	-17	-16	-74	-17	-15	-14	-71	-15	-14	-13	-74	-17	-16	-15
40,000	-56.5	-55	2	3	4	-55	2	3	4	-54	0	1	2	-55	1	3	4
30,000	-44.5	-37	8	9	10	-35	9	10	11	-34	11	12	12	-35	10	11	12
20,000	-21.2	-9	12	14	14	-8	13	15	15	-7	14	15	16	-6	15	16	17
10,000	-4.6	6	11	12	13	7	11	13	14	9	13	14	14	8	12	13	14
MIAMI TO SANTA MARIA																	
51,000	-56.5	-67	-10	-8	-7	-64	-8	-6	-4	-65	-9	-7	-6	-66	-10	-7	-6
40,000	-56.5	-58	-1	2	3	-58	-1	1	3	-56	1	2	3	-57	-0	2	3
30,000	-44.5	-42	2	4	5	-41	3	5	6	-35	9	11	12	-37	8	10	11
20,000	-21.2	-15	6	8	10	-14	7	9	11	-8	13	14	15	-10	11	13	14
10,000	-4.6	1	5	8	9	1	6	8	9	7	11	13	13	6	10	12	13
MIAMI TO SANTIAGO																	
51,000	-56.5	-75	-19	-17	-16	-75	-18	-16	-15	-70	-14	-12	-11	-73	-17	-14	-13
40,000	-56.5	-54	3	5	6	-53	3	6	7	-54	3	4	5	-54	3	5	6
30,000	-44.5	-34	11	12	13	-33	12	13	14	-33	12	13	14	-33	11	13	14
20,000	-21.2	-6	15	16	17	-7	15	16	17	-10	14	16	16	-7	14	15	16
10,000	-4.6	9	13	15	15	8	13	14	15	7	11	13	13	8	12	14	15

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHTS IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION															
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT				
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085								
MIAMI TO SANTO DOMINGO																													
55,000	-56.5	-75	-19	-17	-14	-74	-17	-15	-14	-71	-15	-14	-13	-76	-20	-17	-16	-74	-18	-16	-15								757 N.H.I.
40,000	-56.5	-55	2	3	4	-55	2	3	4	-56	0	1	2	-54	2	4	4	-55	1	3	4	3	3	2	2	2	2	2	
30,000	-66.5	-57	8	9	10	-55	9	11	11	-53	11	12	12	-53	12	13	14	-55	10	12	12	2	2	2	1	2	2		
20,000	-71.2	-9	12	14	15	-8	13	15	15	-7	14	15	16	-6	15	16	17	-7	14	15	16	2	2	2	1	2	2		
10,000	-6.6	6	11	13	13	7	11	13	14	9	13	14	14	9	13	14	15	8	12	13	14	2	2	2	1	2	2		
MIAMI TO SAO PAULO																													
55,000	-56.5	-77	-20	-18	-17	-76	-19	-18	-16	-71	-15	-13	-12	-75	-18	-16	-15	-75	-18	-16	-14	3	3	3	3	3	3	3	3550 N.H.I.
40,000	-56.5	-54	5	5	6	-52	4	6	7	-54	2	4	5	-54	3	4	5	-53	3	5	6	3	3	2	2	2	2		
30,000	-66.5	-53	11	13	14	-52	13	14	15	-53	12	13	14	-51	13	14	15	-52	12	14	15	2	2	2	2	2	2		
20,000	-71.2	-6	16	17	18	-6	16	17	18	-8	15	16	15	-6	15	16	17	-6	15	16	17	2	2	2	2	2	2		
10,000	-6.6	9	14	15	16	9	14	15	16	8	13	14	14	10	14	15	16	9	13	15	15	2	2	2	2	2	2		
MIAMI TO TEGUCIGALPA																													
55,000	-56.5	-74	-20	-18	-17	-74	-18	-16	-15	-72	-16	-15	-14	-77	-21	-19	-18	-75	-19	-17	-16	3	3	3	2	3	3		806 N.H.I.
40,000	-56.5	-55	2	3	4	-54	2	4	5	-54	0	1	2	-54	2	4	4	-55	2	3	4	2	2	2	1	2	2		
30,000	-66.5	-54	8	10	10	-55	10	11	12	-53	12	13	13	-52	12	13	14	-55	10	12	13	2	2	2	1	2	2		
20,000	-71.2	-4	55	15	15	-7	14	15	16	-7	15	15	16	-6	15	16	17	-7	14	15	16	2	2	2	1	2	2		
10,000	-6.6	7	52	13	14	8	13	14	14	9	14	14	15	9	14	15	15	8	13	14	15	2	2	2	1	2	2		
MIAMI TO TRINIDAD																													
55,000	-56.5	-76	-20	-18	-17	-76	-19	-17	-16	-72	-16	-14	-14	-77	-20	-18	-17	-75	-19	-17	-16	3	3	3	2	3	3		1609 N.H.I.
40,000	-56.5	-54	2	4	5	-54	2	4	5	-56	1	2	2	-54	2	4	4	-55	2	3	4	3	3	2	2	2	2		
30,000	-66.5	-55	9	11	11	-54	11	12	13	-53	11	12	13	-52	12	13	14	-54	11	12	13	2	2	2	1	2	2		
20,000	-71.2	-8	15	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17	-7	14	15	16	2	2	2	1	2	2		
10,000	-6.6	7	12	13	14	8	12	14	14	9	13	14	15	9	14	15	15	8	13	14	15	2	2	2	1	2	2		
MIAMI TO WEST END																													
55,000	-56.5	-75	-17	-15	-14	-71	-16	-12	-11	-70	-14	-13	-12	-75	-18	-16	-15	-72	-16	-14	-13	3	3	3	2	3	3		89 N.H.I.
40,000	-56.5	-56	0	2	3	-55	1	3	4	-57	-0	1	1	-55	2	3	4	-56	1	2	3	4	3	3	2	2	2		
30,000	-66.5	-58	4	8	9	-57	8	9	10	-55	11	12	13	-54	11	12	13	-56	9	10	11	2	2	2	1	2	2		
20,000	-71.2	-10	11	13	14	-10	12	13	14	-7	14	15	16	-7	15	16	17	-8	13	15	15	2	2	2	1	2	2		
10,000	-6.6	5	10	11	12	6	10	12	13	9	13	14	14	8	13	14	15	7	12	13	13	2	2	2	1	2	2		
MIDWAY TO SAN FRANCISCO																													
55,000	-56.5	-63	-4	-3	-2	-59	-2	0	2	-61	-5	-2	-1	-64	-8	-5	-4	-62	-5	-2	-0	4	4	3	3	4	4		2788 N.H.I.
40,000	-56.5	-54	3	7	9	-57	-0	3	5	-54	3	5	6	-55	2	5	6	-55	2	4	6	4	4	3	3	4	4		
30,000	-66.5	-62	2	5	7	-61	5	5	6	-56	8	10	11	-59	6	8	9	-60	5	8	9	4	5	3	3	4	4		
20,000	-71.2	-14	5	8	10	-16	5	8	9	-9	12	14	15	-12	9	12	13	-13	8	11	12	4	4	3	3	4	4		
10,000	-6.6	-1	6	7	8	-1	4	7	8	7	11	13	14	5	8	10	11	2	7	9	11	4	4	2	2	4	4		
MIDWAY TO TORONTO																													
55,000	-56.5	-61	-5	-2	-0	-60	-4	-0	1	-63	-6	-3	-2	-64	-8	-5	-3	-62	-6	-2	-0	4	5	4	4	4	4		7210 N.H.I.
40,000	-56.5	-49	7	11	13	-55	1	5	7	-51	5	8	9	-53	3	6	7	-52	4	8	11	5	5	4	4	4	4		
30,000	-66.5	-49	5	8	10	-58	7	9	11	-52	15	15	16	-53	11	14	15	-54	9	12	14	5	4	3	4	4	4		
20,000	-71.2	-17	4	6	8	-12	9	12	13	-6	15	17	17	-9	13	15	16	-11	10	13	14	4	4	3	4	4	4		
10,000	-6.6	-5	1	4	5	1	6	8	10	8	13	14	15	6	10	12	13	3	7	10	12	4	4	2	3	4	4		
MILAN TO MOSCOW																													
55,000	-56.5	-56	1	4	6	-55	3	6	7	-49	7	9	11	-57	-0	2	4	-54	3	6	7	5	4	3	4	4		1239 N.H.I.	
40,000	-56.5	-59	-2	1	3	-55	1	5	6	-51	4	9	10	-56	1	4	5	-55	1	5	7	5	4	3	4	4			
30,000	-66.5	-52	-8	-5	-4	-48	-4	-1	1	-40	4	7	9	-44	0	3	6	-46	-2	2	4	4	4	3	4	4			
20,000	-71.2	-28	-7	-3	-1	-23	-2	2	3	-14	7	10	11	-19	2	4	7	-21	0	4	6	4	5	3	4	4			
10,000	-6.6	-15	-9	-5	-3	-7	-3	1	3	1	6	8	9	-4	0	4	6	-6	-1	2	4	4	5	3	4	4			
MILAN TO MUNICH																													
55,000	-56.5	-56	1	4	6	-55	2	4	6	-55	4	6	7	-59	-2	0	2	-56	1	4	5	5	4	3	4	4		194 N.H.I.	
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-53	4	7	9	-54	0	3	4	-54	0	4	6	5	4	3	4	4			
30,000	-66.5	-50	-6	-3	-2	-47	-5	-0	1	-39	5	8	9	-43	2	4	6	-45	-0	3	5	5	4	3	4	4			
20,000	-71.2	-24	-5	-2	0	-21	-0	2	4	-13	9	11	12	-17	4	7	9	-19	2	5	7	5	4	3	4	4			
10,000	-6.6	-10	-5	-2	0	-6	-1	2	3	3	8	10	11	-1	3	6	8	-5	1	5	7	5	4	3	4	4			
MILAN TO NEW DELHI																													
55,000	-56.5	-59	-2	1	2	-57	-1	2	3	-59	-3	-0	1	-60	-4	-1	0	-59	-2	0	2	4	4	3	4	4		3324 N.H.I.	
40,000	-56.5	-54	0	3	5	-55	1	5	7	-48	8	11	13	-55	1	4	5	-54	3	7	9	5	5	4	4	4			
30,000	-66.5	-49	-4	-1	0	-46	0	3	5	-33	12	14	16	-41	4	6	8	-42	3	7	10	4	4	3	4	4			
20,000	-71.2	-26	-3	0	2	-18	4	7	8	-8	15	16	17	-15	6	9	10	-16	5	9	11	5	4	3	4	4			
10,000	-6.6	-9	-4	-1	1	-1	3	6	8	8	15	15	16	1	6	8	10	-0	4	8	10	5	4	3	4	4			
MILAN TO NEW YORK																													
55,000	-56.5	-57	-1	2	4	-54	2	5	6	-54	3	6	7	-58	-1	2	3	-56	1	4	5	4	4	3	4	4		3460 N.H.I.	
40,000	-56.5	-56	1	5	7	-55	1	6	8	-53	4	7	9	-55	2	5	7	-55	2	4	8	4	4	3	4	4			
30,000	-66.5	-49	-4	-1	0	-47	-2	0	2	-40	5	8	9	-43	1	4	6	-45	-0	4	6	4	4	3	4	4			
20,000	-71.2	-25	-4	-0	2	-42	-1	2	4	-13	8	10	12	-18	4	7	9	-20	2	5	7	4	4	3	4	4			
10,000	-6.6	-11	-6	-2	0	-7	-2	1	3	2	7	9	10	-3	2	5	7	-5	-0	4	5	4	5	3	4	4			
MILAN TO OSLO																													
55,000	-56.5	-57	-0	3	5	-55	3	6	7	-49	7	9	10	-57	-1	2	3	-54	2	5	7	5	4	3	4	4		859 N.H.I.	
40,000	-56.5	-59	-2	2	4	-55	2	4	6	-51	6	9	11	-56	0	4	5	-55	1	6	8	4	4	3	4	4			
30,000	-66.5	-51	-7	4	-3	-49	-4	-1	0	-41	3	6	7	-45	-0	3	4	-46	-2	2	4	4	4	3	4	4			
20,000	-71.2	-28	-7	-3	-1	-23	-2	1	2	-15	7	9	10	-19	2	5	7	-21	-0	4	6	4	4	3	4	4			
10,000	-6.6	-12	-8	-4	-2	-7	-3	0	2	1	6	8	9	-4	0	4	5	-6	-1	2	4	4	5	3	4	4			
MILAN TO PARIS																													
55,000	-56.5																												

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	50 050 D75 D85	
MILAN TO ROME																	
55,000	-56.5	-56	0	4	5	-56	1	5	5	-56	1	5	5	-56	-1	1	285 N.M.I.
40,000	-56.5	-56	-1	2	4	-56	-1	2	4	-56	0	5	4	-56	0	4	5
30,000	-56.5	-56	-1	2	4	-56	-1	2	4	-56	0	5	4	-56	0	4	5
20,000	-56.5	-56	-1	2	4	-56	-1	2	4	-56	0	5	4	-56	0	4	5
10,000	-56.5	-56	-1	2	4	-56	-1	2	4	-56	0	5	4	-56	0	4	5
MILAN TO SAN FRANCISCO																	
55,000	-56.5	-57	-1	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5151 N.M.I.
40,000	-56.5	-56	1	5	7	-57	4	8	10	-57	7	10	12	-57	5	7	5
30,000	-56.5	-56	1	5	7	-57	4	8	10	-57	7	10	12	-57	5	7	5
20,000	-56.5	-56	1	5	7	-57	4	8	10	-57	7	10	12	-57	5	7	5
10,000	-56.5	-56	1	5	7	-57	4	8	10	-57	7	10	12	-57	5	7	5
MILAN TO SANTA MARIA																	
55,000	-56.5	-57	-1	0	2	-57	-1	2	4	-57	-1	2	4	-57	-2	1	1599 N.M.I.
40,000	-56.5	-56	-2	2	4	-57	-2	2	4	-57	-2	2	4	-57	-2	1	5
30,000	-56.5	-56	-2	2	4	-57	-2	2	4	-57	-2	2	4	-57	-2	1	5
20,000	-56.5	-56	-2	2	4	-57	-2	2	4	-57	-2	2	4	-57	-2	1	5
10,000	-56.5	-56	-2	2	4	-57	-2	2	4	-57	-2	2	4	-57	-2	1	5
MILAN TO SHANNON																	
55,000	-56.5	-57	-1	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	408 N.M.I.
40,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
30,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
20,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
10,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
MILAN TO STOCKHOLM																	
55,000	-56.5	-57	-0	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	703 N.M.I.
40,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
30,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
20,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
10,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
MILAN TO TENERIFE																	
55,000	-56.5	-57	-0	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	2005 N.M.I.
40,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
30,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
20,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
10,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
MILAN TO TEL AVIV-JAFFA																	
55,000	-56.5	-57	-1	1	1	-57	-1	2	5	-57	-1	2	5	-57	-1	2	1402 N.M.I.
40,000	-56.5	-56	-2	1	1	-57	-1	2	5	-57	-1	2	5	-57	-1	2	5
30,000	-56.5	-56	-2	1	1	-57	-1	2	5	-57	-1	2	5	-57	-1	2	5
20,000	-56.5	-56	-2	1	1	-57	-1	2	5	-57	-1	2	5	-57	-1	2	5
10,000	-56.5	-56	-2	1	1	-57	-1	2	5	-57	-1	2	5	-57	-1	2	5
MILAN TO NAPOLI																	
55,000	-56.5	-57	-1	1	1	-57	-1	2	5	-57	-1	2	5	-57	-1	2	405 N.M.I.
40,000	-56.5	-56	-2	1	1	-57	-1	2	5	-57	-1	2	5	-57	-1	2	5
30,000	-56.5	-56	-2	1	1	-57	-1	2	5	-57	-1	2	5	-57	-1	2	5
20,000	-56.5	-56	-2	1	1	-57	-1	2	5	-57	-1	2	5	-57	-1	2	5
10,000	-56.5	-56	-2	1	1	-57	-1	2	5	-57	-1	2	5	-57	-1	2	5
MILAN TO LORIS																	
55,000	-56.5	-57	-1	2	4	-57	-0	2	4	-57	-2	0	1	-57	-1	1	551 N.M.I.
40,000	-56.5	-56	-2	1	5	-57	-1	1	5	-57	-2	0	1	-57	-1	1	5
30,000	-56.5	-56	-2	1	5	-57	-1	1	5	-57	-2	0	1	-57	-1	1	5
20,000	-56.5	-56	-2	1	5	-57	-1	1	5	-57	-2	0	1	-57	-1	1	5
10,000	-56.5	-56	-2	1	5	-57	-1	1	5	-57	-2	0	1	-57	-1	1	5
MILAN TO VIENNA																	
55,000	-56.5	-56	-1	4	5	-56	-2	4	6	-56	-2	0	2	-56	-1	4	555 N.M.I.
40,000	-56.5	-56	-2	4	5	-57	-1	4	5	-57	-2	0	2	-57	-1	4	5
30,000	-56.5	-56	-2	4	5	-57	-1	4	5	-57	-2	0	2	-57	-1	4	5
20,000	-56.5	-56	-2	4	5	-57	-1	4	5	-57	-2	0	2	-57	-1	4	5
10,000	-56.5	-56	-2	4	5	-57	-1	4	5	-57	-2	0	2	-57	-1	4	5
MILAN TO KARSAK																	
55,000	-56.5	-56	-1	4	6	-56	-2	5	6	-56	-2	5	6	-56	-2	5	621 N.M.I.
40,000	-56.5	-56	-2	4	6	-56	-2	5	6	-56	-2	5	6	-56	-2	5	6
30,000	-56.5	-56	-2	4	6	-56	-2	5	6	-56	-2	5	6	-56	-2	5	6
20,000	-56.5	-56	-2	4	6	-56	-2	5	6	-56	-2	5	6	-56	-2	5	6
10,000	-56.5	-56	-2	4	6	-56	-2	5	6	-56	-2	5	6	-56	-2	5	6
MILAN TO ZURICH																	
55,000	-56.5	-56	0	4	5	-56	-2	5	6	-56	-2	0	2	-56	-1	4	109 N.M.I.
40,000	-56.5	-56	-2	4	5	-56	-2	5	6	-56	-2	0	2	-56	-1	4	5
30,000	-56.5	-56	-2	4	5	-56	-2	5	6	-56	-2	0	2	-56	-1	4	5
20,000	-56.5	-56	-2	4	5	-56	-2	5	6	-56	-2	0	2	-56	-1	4	5
10,000	-56.5	-56	-2	4	5	-56	-2	5	6	-56	-2	0	2	-56	-1	4	5
MINNEAPOLIS TO WINNIPEG																	
55,000	-56.5	-57	-1	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	562 N.M.I.
40,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
30,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
20,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
10,000	-56.5	-56	-2	5	5	-57	5	8	9	-57	7	9	10	-57	5	6	5
MONTEGO BAY TO NASSAU																	
55,000	-56.5	-57	-1	16	16	-57	-1	15	15	-57	-1	14	14	-57	-1	15	594 N.M.I.
40,000	-56.5	-56	-2	5	4	-56	-2	5	4	-56	-2	5	4	-56	-2	5	5
30,000	-56.5	-56	-2	5	4	-56	-2	5	4	-56	-2	5	4	-56	-2	5	5
20,000	-56.5	-56	-2	5	4	-56	-2	5	4	-56	-2	5	4	-56	-2	5	5
10,000	-56.5	-56	-2	5	4	-56	-2	5	4	-56	-2	5	4	-56	-2	5	5

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION													
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT		
		50	050	D/5	DBS	50	050	D/5	DBS	50	050	D/5	DBS	50	050	D/5	DBS	50	050	D/5	DBS						
MONTIGO BAY TO NEW OREANS																											
55,000	-56.5	-74	-10	-16	-15	-72	-16	-16	-15	-71	-15	-16	-15	-70	-16	-17	-16	-73	-17	-15	-16	3	3	2	3	988 N.M.I.	
40,000	-56.5	-56	1	7	3	-55	1	3	6	-56	0	1	2	-55	2	3	4	-55	1	3	5	2	2	1	2		
30,000	-56.5	-58	7	13	9	-56	6	9	10	-55	12	12	15	-53	11	12	15	-55	9	11	12	2	2	1	2		
20,000	-21.2	-10	11	15	16	-9	12	16	15	-7	15	15	16	-7	15	16	16	-8	15	16	15	2	2	1	2		
10,000	-6.6	6	10	12	15	7	11	15	16	9	16	16	15	9	15	16	15	-8	12	15	15	2	3	1	2		
MONTIGO BAY TO NEW YORK																											
55,000	-56.5	-70	-16	-12	-10	-68	-11	-9	-8	-68	-12	-10	-9	-72	-15	-15	-12	-69	-15	-11	-9	3	3	2	4	1365 N.M.I.	
40,000	-56.5	-57	-0	2	6	-57	-6	2	6	-56	1	2	2	-55	2	3	6	-56	0	3	6	3	3	2	3		
30,000	-56.5	-60	6	6	7	-59	6	7	8	-56	11	12	15	-55	9	11	12	-57	7	9	10	3	3	2	3		
20,000	-21.2	-15	8	10	11	-12	9	11	12	-7	16	15	16	-9	15	16	15	-10	11	15	16	3	3	2	2		
10,000	-6.6	2	6	8	10	5	8	10	11	8	12	15	16	6	11	15	16	5	9	11	12	3	3	1	2		
MONTIGO BAY TO TORONTO																											
55,000	-56.5	-69	-12	-10	-9	-67	-10	-8	-7	-68	-11	-9	-8	-71	-16	-12	-11	-68	-12	-9	-8	3	3	3	4	1515 N.M.I.	
40,000	-56.5	-57	-0	2	6	-56	0	3	6	-56	1	2	3	-55	1	3	5	-56	1	3	6	4	4	2	3		
30,000	-56.5	-61	5	5	6	-60	5	6	7	-56	10	12	12	-54	8	10	11	-54	7	9	10	3	3	2	3		
20,000	-21.2	-16	7	9	10	-15	8	10	12	-8	16	15	15	-9	12	16	15	-11	10	12	15	3	3	2	3		
10,000	-6.6	0	5	7	8	2	7	9	10	8	12	15	16	6	10	12	15	6	8	10	11	4	3	2	3		
MONTIGNEY TO MOSCOW																											
55,000	-56.5	-75	-17	-15	-16	-71	-15	-15	-12	-71	-15	-16	-15	-76	-19	-17	-16	-73	-16	-16	-15	3	3	2	3	1255 N.M.I.	
40,000	-56.5	-56	0	2	3	-55	1	3	6	-56	0	1	2	-55	2	3	6	-56	1	2	3	3	3	1	2		
30,000	-56.5	-58	6	8	8	-57	7	9	9	-53	12	15	15	-56	11	12	15	-56	9	11	11	2	2	1	2		
20,000	-21.2	-11	11	15	16	-10	11	15	16	-6	15	16	16	-7	16	16	16	-8	15	16	15	3	2	1	2		
10,000	-6.6	5	10	12	15	7	12	16	15	9	16	15	15	9	15	15	15	8	12	15	15	3	3	1	2		
MONTIVIDEO TO PORTO BELGAE																											
55,000	-56.5	-65	-9	-6	-5	-64	-8	-5	-4	-59	-7	1	2	-60	-5	-0	1	-62	-5	-2	-0	4	4	6	6	500 N.M.I.	
40,000	-56.5	-53	1	6	8	-55	1	5	6	-52	5	8	9	-56	5	6	7	-55	3	6	8	5	5	6	6		
30,000	-56.5	-54	6	8	10	-56	6	8	10	-66	1	5	6	-59	6	9	10	-60	5	7	9	4	4	6	6		
20,000	-21.2	-11	11	15	16	-15	8	10	12	-19	2	5	6	-15	9	11	12	-16	7	10	12	3	3	3	4		
10,000	-6.6	8	12	16	15	6	9	11	12	-1	5	5	6	2	7	9	10	1	8	11	12	3	3	3	3		
MONTIVIDEO TO RIO DE JANEIRO																											
55,000	-56.5	-68	-12	-9	-8	-67	-11	-8	-7	-61	-5	-2	-0	-62	-6	-3	-2	-65	-8	-5	-3	4	4	6	6	986 N.M.I.	
40,000	-56.5	-65	4	7	8	-56	2	5	7	-52	5	7	7	-56	3	5	7	-53	3	6	8	6	5	6	6		
30,000	-56.5	-57	8	10	11	-57	8	10	11	-61	3	6	7	-57	7	10	11	-58	7	9	10	3	3	6	6		
20,000	-21.2	-8	15	15	16	-12	10	12	15	-16	5	7	8	-11	10	12	15	-12	9	12	16	3	3	3	3		
10,000	-6.6	8	15	15	16	6	11	12	16	1	5	7	8	6	9	11	12	5	9	12	15	3	3	3	3		
MONTIVIDEO TO SAO PAULO																											
55,000	-56.5	-68	-12	-9	-7	-67	-11	-8	-7	-61	-5	-2	0	-62	-6	-3	-2	-65	-8	-6	-3	4	4	6	6	852 N.M.I.	
40,000	-56.5	-55	6	7	8	-56	2	5	7	-52	5	7	7	-56	3	5	7	-53	3	6	8	6	5	6	6		
30,000	-56.5	-57	8	10	11	-57	7	10	11	-62	3	5	7	-57	7	10	11	-58	7	9	10	3	3	6	6		
20,000	-21.2	-8	15	15	16	-12	9	12	15	-16	5	7	8	-11	10	12	15	-12	9	12	16	3	3	3	3		
10,000	-6.6	8	15	15	16	6	10	12	15	1	5	7	8	6	9	11	12	5	9	12	15	3	3	3	3		
MONTIVIDEO TO TRINIDAD																											
55,000	-56.5	-75	-16	-16	-15	-74	-16	-15	-16	-69	-12	-10	-8	-71	-16	-12	-11	-72	-16	-15	-11	3	3	6	3	2765 N.M.I.	
40,000	-56.5	-55	3	6	7	-55	6	6	8	-55	6	5	6	-56	5	5	6	-55	3	6	7	3	6	3	3		
30,000	-56.5	-55	11	15	16	-52	12	16	17	-55	10	11	12	-53	12	16	15	-53	11	15	16	2	3	3	3		
20,000	-21.2	-6	15	16	17	-6	15	16	17	-11	10	12	15	-7	16	15	16	-8	16	16	17	2	2	2	2		
10,000	-6.6	9	16	15	16	9	15	15	15	6	10	12	12	4	15	16	15	8	15	16	15	2	2	2	2		
MONTREAL TO MOSCOW																											
55,000	-56.5	-57	-1	5	6	-50	6	9	11	-67	10	12	15	-56	5	5	7	-52	6	8	9	5	4	5	6	5799 N.M.I.	
40,000	-56.5	-56	1	5	7	-51	6	10	12	-69	8	11	15	-52	6	8	10	-52	5	9	11	6	6	5	6		
30,000	-56.5	-55	9	6	8	-50	5	9	10	-65	1	4	6	-67	-5	0	2	-68	-6	0	2	6	6	6	6		
20,000	-21.2	-5	15	11	-7	-5	-20	-7	-3	-18	6	6	8	-26	-5	1	3	-26	-6	-0	2	6	6	6	6		
10,000	-6.6	-16	-15	-9	-7	-15	-9	-5	-3	-5	2	6	6	-9	-6	-1	1	-11	-6	-2	0	6	6	5	6		
MONTREAL TO MOSCOW																											
55,000	-56.5	-66	-9	-7	-6	-65	-7	-6	-5	-65	-9	-7	-6	-68	-11	-9	-7	-66	-9	-6	-5	3	3	3	4	1258 N.M.I.	
40,000	-56.5	-57	-0	3	6	-57	-0	3	6	-55	1	3	6	-55	1	4	5	-56	0	3	6	4	6	2	3		
30,000	-56.5	-61	1	5	6	-62	2	6	6	-55	10	11	12	-58	7	9	10	-60	5	8	9	3	3	6	6		
20,000	-21.2	-17	6	7	8	-16	6	8	9	-8	15	16	15	-11	10	12	15	-15	8	11	12	6	6	2	3		
10,000	-6.6	-5	1	6	6	-1	6	7	8	7	11	15	15	6	9	11	12	2	6	9	10	6	6	2	3		
MONTREAL TO NEW ORLEANS																											
55,000	-56.5	-66	-7	-5	-5	-61	-5	-2	-1	-66	-8	-6	-6	-66	-10	-7	-5	-66	-7	-6	-5	4	4	3	6	1210 N.M.I.	
40,000	-56.5	-57	-0	1	5	-57	-1	3	5	-56	2	6	5	-55	1	6	5	-56	1	3	6	5	5	5	5		
30,000	-56.5	-55	0	2	3	-55	1	3	6	-55	1	3	6	-59	5	7	9	-61	6	7	8	3	3	5	5		
20,000	-21.2	-20	1	6	6	-17	6	7	8	-9	15	16	15	-12	9	11	15	-15	7	10	11	6	6	2	6		
10,000	-6.6	-6	-1	2	6	-2	5	6	7	7	11	15	16	3	8	11	12	1	5	8	10	5	6	2	6		
MONTREAL TO NEW YORK																											
55,000	-56.5	-59	-2	1	2	-57	-0	2	6	-59	-3	-0	1	-61	-5	-1	0	-59	-2	1	2	4	4	6	5	290 N.M.I.	
40,000	-56.5	-56	1	5	7	-55	1	5	7	-56	3	5	6	-55	2	5	7	-55	2	6	6	6	6	3	5		
30,000	-56.5	-56	4	-1	0	-57	-2	0	2	-57	7	10	11	-62	3	5	7	-63	1	5	7	6	6	3	5		
20,000	-21.2	-25	-6	0	2	-22	-1	2	4	-11	10	15	16	-16	5	9	10	-18	5	7	9	5	5	3	5		
10,000	-6.6	-12	-8	-3	-1	-7	-3	1	5	8	9	11	12	-0	8	8	10	-6	1	6	6	6	5	1	5		
MONTREAL TO OSLO																											
55,000	-56.5	-57	-0	5	5	-51	6	9	10	-68	9	11	12	-56	2	5	7	-52	6	7	9	5	4	5	6	2967 N.M.I.	
40,000	-56.5	-56	2	6	9	-51	6	10	15	-69	7	11	15	-52	6	8	10	-52	5	9	11	6	6	3	6		
30,000	-56.5	-52	-6	-5	-3	-69	-6	-2	-0	-65	1	6	6	-67	-2	1	3	-68	-3	1	3	6	6	6	6		
20,000	-21.2	-32	-11	-6	-6	-78	-6	-3	-1	-17	6	7	8	-25	-2	2	6	-25	-6	1	3	6	6	6	6		
10,000	-6.6	-17	-15	-8	-6	-15	-8	-6	-2																		

-0- DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
MONTREAL TO PHILADELPHIA																	
53,000	-56.5	-59	-3	0	2	-57	-1	2	3	-60	-5	-1	1	-61	-5	-2	-0
40,000	-56.5	-56	1	5	7	-55	1	5	7	-54	5	5	6	-55	2	5	7
30,000	-44.5	-48	-4	-1	0	-46	-2	0	2	-37	8	10	11	-42	3	5	7
20,000	-21.2	-24	-3	0	2	-22	-0	3	4	-11	11	13	14	-15	6	9	11
10,000	-4.6	-12	-7	-3	-0	-7	-2	1	3	5	9	11	12	-0	4	8	10
MONTREAL TO PRESTWICK																	
53,000	-56.5	-56	0	3	5	-52	5	7	9	-50	7	9	11	-55	2	5	8
40,000	-56.5	-54	3	7	10	-52	4	9	11	-50	6	10	12	-53	4	8	10
30,000	-44.5	-50	-6	-3	-1	-48	-4	-1	1	-42	2	5	7	-45	-1	2	4
20,000	-21.2	-30	-9	-4	-2	-26	-5	-1	1	-16	6	8	10	-21	-0	4	6
10,000	-4.6	-16	-11	-7	-4	-11	-6	-3	-1	-1	4	6	7	-6	-2	2	4
MONTREAL TO ROME																	
53,000	-56.5	-57	-0	3	4	-54	3	5	7	-53	4	7	8	-57	-0	2	4
40,000	-56.5	-55	1	5	8	-55	2	6	8	-52	5	8	10	-54	2	6	8
30,000	-44.5	-49	-5	-2	-0	-47	-3	-0	1	-40	4	7	8	-46	1	4	5
20,000	-21.2	-27	-6	-1	1	-23	-2	1	3	-14	7	10	11	-19	3	6	8
10,000	-4.6	-12	-8	-3	-1	-7	-3	0	2	1	6	8	9	-4	1	4	6
MONTREAL TO ST. LOUIS																	
53,000	-56.5	-60	-3	-0	1	-58	-1	1	3	-61	-4	-2	-0	-62	-6	-3	-1
40,000	-56.5	-56	1	5	7	-56	0	4	6	-54	3	5	6	-55	1	5	6
30,000	-44.5	-48	-4	-1	0	-46	-2	1	2	-36	8	10	11	-42	3	5	7
20,000	-21.2	-25	-4	-0	2	-21	1	4	5	-10	11	13	14	-15	6	9	11
10,000	-4.6	-11	-7	-2	-0	-6	-1	2	4	5	10	12	13	1	5	9	10
MONTREAL TO SAN FRANCISCO																	
53,000	-56.5	-59	-3	0	2	-57	-1	2	3	-60	-4	-1	-0	-61	-5	-2	-1
40,000	-56.5	-56	1	5	8	-56	0	4	6	-54	2	5	6	-56	1	4	6
30,000	-44.5	-49	-5	-1	-1	-47	-2	-0	1	-37	7	10	11	-42	2	5	6
20,000	-21.2	-26	-5	-1	2	-21	0	3	4	-10	11	13	14	-16	5	8	10
10,000	-4.6	-11	-7	-2	0	-5	-0	3	5	8	12	15	16	0	5	9	11
MONTREAL TO SANTA MARIA																	
53,000	-56.5	-59	-2	0	2	-56	0	3	4	-58	-2	1	2	-60	-4	-1	1
40,000	-56.5	-57	-0	4	6	-56	0	4	6	-54	2	5	6	-55	1	5	6
30,000	-44.5	-47	-2	0	2	-46	-1	1	3	-38	7	9	11	-41	3	6	7
20,000	-21.2	-23	-1	2	4	-21	1	4	5	-11	10	12	13	-15	6	9	11
10,000	-4.6	-8	-4	0	2	-5	-0	3	4	4	9	10	11	-0	5	7	9
MONTREAL TO SEATTLE																	
53,000	-56.5	-57	-0	3	5	-54	2	5	6	-55	2	4	5	-58	-2	1	2
40,000	-56.5	-55	2	6	8	-55	2	6	8	-53	3	6	8	-55	2	5	7
30,000	-44.5	-52	-7	-5	-3	-49	-4	-2	-1	-19	5	8	9	-44	0	3	4
20,000	-21.2	-30	-9	-5	-2	-26	-3	0	2	-13	8	11	12	-20	2	5	7
10,000	-4.6	-17	-12	-7	-4	-9	-4	-0	2	4	8	11	12	-4	1	5	7
MONTREAL TO SHANNON																	
53,000	-56.5	-56	0	3	5	-52	4	7	8	-51	6	9	10	-55	1	4	6
40,000	-56.5	-54	3	7	10	-53	4	8	11	-51	5	9	11	-53	3	7	9
30,000	-44.5	-50	-5	-2	-1	-48	-3	-1	1	-47	3	6	8	-45	-0	3	4
20,000	-21.2	-29	-8	-1	-1	-25	-4	-0	2	-15	6	9	10	-20	1	5	7
10,000	-4.6	-15	-10	-6	-4	-10	-5	-2	0	-0	4	7	8	-6	-1	3	5
MONTREAL TO STOCKHOLM																	
53,000	-56.5	-57	-1	1	5	-50	6	9	10	-48	9	11	12	-54	3	5	7
40,000	-56.5	-55	2	6	8	-51	6	10	11	-49	8	11	13	-52	4	8	10
30,000	-44.5	-52	-8	-5	-3	-49	-5	-2	-0	-43	1	4	6	-47	-2	1	2
20,000	-21.2	-32	-11	-7	-4	-28	-7	-3	-1	-17	4	7	8	-24	-2	2	4
10,000	-4.6	-17	-13	-9	-6	-13	-8	-5	-3	-2	2	5	6	-9	-4	-0	2
MONTREAL TO TAMPA																	
53,000	-56.5	-65	-8	-6	-4	-67	-6	-5	-2	-65	-8	-6	-5	-67	-10	-8	-6
40,000	-56.5	-57	-1	2	4	-57	-0	3	4	-55	2	4	5	-55	1	4	5
30,000	-44.5	-44	0	2	4	-43	2	4	5	-35	10	11	12	-39	6	8	9
20,000	-21.2	-19	3	5	7	-17	5	7	9	-9	13	14	15	-12	9	12	13
10,000	-4.6	-5	-0	3	5	-1	3	6	8	7	11	13	15	3	8	11	12
MONTREAL TO TRINIDAD																	
53,000	-56.5	-70	-13	-11	-10	-68	-12	-10	-9	-68	-11	-9	-8	-71	-15	-12	-11
40,000	-56.5	-56	1	4	5	-56	1	3	4	-56	1	2	3	-55	2	4	5
30,000	-44.5	-40	4	6	7	-39	6	8	8	-35	10	11	12	-35	9	11	12
20,000	-21.2	-13	8	10	11	-12	9	11	12	-8	11	13	14	-9	12	14	15
10,000	-4.6	1	6	8	9	3	7	9	10	7	12	13	14	6	10	12	13
MONTREAL TO VANCOUVER																	
53,000	-56.5	-56	0	3	5	-54	3	5	7	-54	3	5	6	-57	-1	2	3
40,000	-56.5	-55	2	6	8	-54	2	6	8	-53	4	7	8	-55	2	5	7
30,000	-44.5	-52	-8	-5	-3	-49	-5	-2	-1	-40	5	7	9	-45	-0	2	4
20,000	-21.2	-31	-10	-5	-3	-25	-3	0	2	-11	8	10	11	-20	1	5	7
10,000	-4.6	-18	-13	-8	-5	-9	-5	-1	1	3	7	10	11	-4	0	4	7
MONTREAL TO VIENNA																	
53,000	-56.5	-56	0	3	5	-52	4	7	8	-50	7	9	10	-56	1	4	5
40,000	-56.5	-55	2	6	8	-53	4	8	10	-51	6	9	11	-54	3	7	9
30,000	-44.5	-50	-6	-3	-1	-48	-3	-1	1	-42	3	6	7	-45	-0	3	4
20,000	-21.2	-29	-8	-3	-1	-25	-4	-0	2	-15	6	9	10	-21	1	4	6
10,000	-4.6	-14	-10	-6	-3	-10	-5	-2	0	-0	4	7	8	-5	-1	3	5
MONTREAL TO WARSAW																	
53,000	-56.5	-57	-0	3	5	-52	5	8	9	-49	8	10	12	-55	2	4	6
40,000	-56.5	-55	2	6	8	-52	5	9	12	-50	7	10	12	-53	3	7	9
30,000	-44.5	-51	-7	-4	-2	-48	-4	-1	0	-42	2	5	6	-46	-1	2	3
20,000	-21.2	-30	-9	-5	-3	-26	-5	-1	1	-16	5	8	9	-22	-1	3	5
10,000	-4.6	-16	-11	-7	-5	-11	-6	-3	-1	-1	3	6	7	-7	-2	1	3

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																						
HEIGHT IN FEET	150 TEMP.	ENROUTE TEMPERATURE										STANDARD DEVIATION										
		JANUARY		APRIL		JULY		OCTOBER		ANNUAL		JAN	APR	JUL	OCT							
		50-050	D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85											
MONTREAL TO WASHINGTON, D.C.																						
55,000	-56.5	-60	-3 -0	1	-58	-1	2	3	-60	-4	-1	0	-62	-5	-2	-1	425 N.M.I.					
40,000	-56.5	-56	0 6	6	-54	1	5	7	-54	3	5	6	-55	2	5	6	4 4 3 5					
30,000	-48.5	-48	-5 -1	1	-46	-2	1	2	-37	8	10	11	-62	3	6	7	4 4 3 4					
20,000	-21.2	-24	-5	1	3	-21	0	5	5	-10	11	15	16	-15	6	9	11	5 5 3 5				
10,000	-6.6	-11	-6 -2	0	-6	-2	2	5	5	9	11	12	0	5	8	10	-5	2	5	7	6 5 3 5	
MONTREAL TO WINNIPEG																						
55,000	-56.5	-57	-0	5	5	-54	2	5	6	-54	2	5	6	-57	-1	2	3	-56	1	6	5	981 N.M.I.
40,000	-56.5	-54	5	7	9	-50	5	7	9	-52	4	7	8	-54	3	6	8	-55	3	6	8	4 4 4 5
30,000	-48.5	-52	-8	-5	-3	-49	-4	-2	-1	-19	5	8	9	-45	-0	2	4	-46	-2	2	4	4 4 4 4
20,000	-21.2	-12	-10	-6	-4	-25	-6	-1	1	-15	8	11	12	-20	1	5	7	-22	-1	5	6	4 5 4 6
10,000	-6.6	-19	-14	-9	-7	-10	-6	-2	0	2	6	9	11	-6	0	5	7	-8	-5	1	6	7 6 4 6
MONTREAL TO ZURICH																						
55,000	-56.5	-57	-0	5	5	-55	4	8	8	-51	5	8	10	-56	1	5	5	-54	2	6	7	5254 N.M.I.
40,000	-56.5	-55	2	6	8	-54	5	7	10	-51	5	7	11	-54	3	6	8	-55	3	7	9	4 4 4 6
30,000	-48.5	-50	-5	-2	-1	-48	-5	-0	1	-41	5	6	6	-46	0	5	6	-46	-1	2	4	4 4 4 4
20,000	-21.2	-28	-7	0	2	-24	-5	0	2	-15	7	9	11	-20	1	5	7	-22	-1	5	6	5 4 4 5
10,000	-6.6	-14	-9	-5	-2	-9	-4	-1	1	0	5	7	8	-5	-0	5	5	-7	-2	2	4	6 5 3 5
MOSCOW TO MUNICH																						
55,000	-56.5	-56	1	4	6	-55	5	6	7	-49	8	10	11	-56	0	5	6	-55	3	6	8	1051 N.M.I.
40,000	-56.5	-54	-2	1	3	-55	2	5	7	-50	6	9	11	-56	1	4	6	-55	2	6	8	5 5 5 4
30,000	-48.5	-55	-6	-5	-4	-48	-6	-1	1	-40	4	7	8	-44	0	5	6	-46	-2	2	4	4 4 4 4
20,000	-21.2	-24	-4	-4	-2	-25	-2	1	5	-16	7	9	11	-19	2	5	7	-21	-0	6	6	4 5 3 5
10,000	-6.6	-14	-10	-6	-4	-8	-5	0	2	1	5	7	8	-5	-0	5	5	-6	-2	2	4	6 5 3 5
MOSCOW TO NEW YORK																						
55,000	-56.5	-57	-1	5	5	-51	5	8	10	-48	6	10	12	-55	2	5	6	-55	4	7	9	4057 N.M.I.
40,000	-56.5	-54	1	5	7	-51	5	9	12	-46	7	10	12	-53	4	7	10	-52	4	8	10	4 4 5 6
30,000	-48.5	-52	-4	-5	-5	-49	-6	-2	0	-42	2	5	6	-46	-2	1	3	-46	-5	1	3	4 4 4 4
20,000	-21.2	-31	-10	-6	-4	-27	-6	-2	0	-17	5	7	9	-25	-1	5	5	-26	-5	1	5	6 6 4 6
10,000	-6.6	-17	-12	-8	-6	-12	-7	-4	-2	-2	5	5	6	-6	-5	1	5	-9	-5	-1	1	6 5 3 5
MOSCOW TO OSL0																						
55,000	-56.5	-57	-1	2	4	-52	4	7	8	-48	10	12	15	-55	1	4	5	-55	4	7	9	878 N.M.I.
40,000	-56.5	-54	-5	1	2	-54	5	7	8	-46	7	11	12	-55	2	5	7	-54	2	7	9	5 4 5 5
30,000	-48.5	-54	-6	-6	-5	-50	-5	-2	0	-42	5	6	6	-46	-2	1	3	-46	-5	1	3	4 4 4 4
20,000	-21.2	-31	-10	-6	-4	-26	-6	-1	1	-16	5	8	8	-22	-0	4	6	-25	-2	7	6	6 6 4 6
10,000	-6.6	-16	-12	-8	-5	-10	-6	-2	0	-7	4	6	7	-7	-2	2	3	-8	-6	-0	2	6 6 3 5
MOSCOW TO PARIS																						
55,000	-56.5	-56	0	5	5	-55	5	6	7	-49	8	10	11	-57	-0	5	6	-56	5	6	8	1524 N.M.I.
40,000	-56.5	-54	-2	1	3	-55	2	6	8	-50	6	9	11	-56	1	6	6	-55	2	6	8	5 4 5 4
30,000	-48.5	-52	-4	-5	-4	-48	-6	-1	0	-41	4	7	8	-45	-0	5	6	-47	-2	2	4	4 4 4 4
20,000	-21.2	-29	-8	-4	-1	-25	-2	1	5	-16	7	9	10	-19	2	5	7	-22	-0	5	5	6 5 3 5
10,000	-6.6	-14	-9	-5	-5	-9	-5	0	2	1	5	7	8	-5	-0	5	5	-6	-2	2	4	6 5 3 5
MOSCOW TO PRAGUE																						
55,000	-56.5	-56	1	4	6	-55	4	6	7	-48	6	11	12	-54	0	5	6	-54	5	7	8	980 N.M.I.
40,000	-56.5	-54	-2	1	3	-55	2	5	7	-50	6	9	11	-55	1	6	6	-55	2	6	8	5 5 5 5
30,000	-48.5	-55	-6	-6	-5	-49	-6	-1	1	-41	4	7	8	-45	-0	2	4	-47	-2	2	4	4 4 4 4
20,000	-21.2	-29	-8	-4	-2	-26	-2	1	5	-16	7	9	10	-20	1	5	7	-22	-1	5	5	6 5 3 5
10,000	-6.6	-15	-10	-6	-4	-8	-5	0	2	0	5	7	8	-5	-1	5	5	-7	-2	1	5	6 5 3 5
MOSCOW TO ROME																						
55,000	-56.5	-56	1	4	6	-54	5	5	7	-51	6	8	9	-57	-1	2	3	-54	2	5	7	1264 N.M.I.
40,000	-56.5	-54	-2	2	3	-54	1	6	8	-50	6	9	11	-56	1	6	5	-55	2	5	7	5 5 6 6
30,000	-48.5	-52	-7	-5	-5	-48	-5	-0	1	-46	5	8	9	-46	1	5	5	-46	-1	5	5	4 4 4 4
20,000	-21.2	-27	-7	-5	-5	-22	-1	2	4	-15	8	10	11	-18	5	6	8	-20	1	6	6	5 5 3 5
10,000	-6.6	-16	-8	-5	-5	-6	-2	1	1	2	7	9	10	-5	1	6	6	-5	-1	5	5	5 5 3 5
MOSCOW TO SHANNON																						
55,000	-56.5	-57	-1	5	5	-55	4	6	8	-47	9	11	12	-56	0	5	5	-55	5	7	8	1602 N.M.I.
40,000	-56.5	-54	-2	2	4	-54	5	7	9	-50	7	10	12	-55	1	5	7	-56	2	7	9	5 4 5 5
30,000	-48.5	-52	-8	-5	-4	-48	-6	-1	0	-41	5	6	7	-45	-1	2	3	-47	-2	1	3	4 4 4 4
20,000	-21.2	-24	-6	-4	-2	-26	-5	0	2	-15	6	8	10	-20	1	5	6	-22	-1	5	5	6 5 4 5
10,000	-6.6	-15	-9	-5	-5	-9	-5	0	1	-6	4	6	8	-6	-1	2	4	-7	-2	1	5	6 5 3 5
MOSCOW TO STOCKHOLM																						
55,000	-56.5	-57	-1	3	4	-52	4	7	8	-48	10	12	15	-55	2	4	5	-51	4	7	9	658 N.M.I.
40,000	-56.5	-54	-5	0	2	-54	5	7	9	-49	7	10	12	-55	2	5	7	-54	2	6	9	5 4 5 5
30,000	-48.5	-54	-9	-7	-5	-49	-5	-2	0	-41	5	6	6	-46	-2	1	3	-46	-5	1	3	4 5 5 5
20,000	-21.2	-31	-10	-6	-4	-25	-6	-0	2	-15	8	10	11	-22	-0	6	6	-25	-2	2	4	6 6 4 6
10,000	-6.6	-17	-12	-8	-6	-10	-5	-2	1	-1	6	6	7	-7	-2	2	3	-9	-4	-0	2	6 6 3 5
MOSCOW TO TENERIFE																						
55,000	-56.5	-56	0	1	5	-54	2	5	6	-54	4	5	6	-57	-1	2	3	-50	1	6	5	1545 N.M.I.
40,000	-56.5	-57	-1	2	4	-55	2	5	7	-48	9	11	15	-55	2	6	6	-54	3	7	9	4 5 4 6
30,000	-48.5	-51	-7	-6	-5	-45	-0	2	6	-35	10	15	16	-45	2	6	6	-45	1	6	8	4 4 4 6
20,000	-21.2	-27	-6	-2	0	-20	2	5	7	-10	12	14	15	-18	5	6	8	-16	5	7	9	5 5 3 5
10,000	-6.6	-12	-7	-5	-5	-6	1	4	6	5	10	12	15	-2	5	6	8	-5	1	5	8	6 5 3 5
MOSCOW TO VIENNA																						
55,000	-56.5	-56	1	4	6	-55	5	6	7	-48	8	10	11	-56	0	5	6	-55	5	6	8	897 N.M.I.
40,000	-56.5	-54	-2	1	3	-55	2	5	7	-50	6	9	11	-55	1	6	6	-55	2	6	8	5 4 5 6
30,000	-48.5	-55	-8	-6	-5	-48	-4	-5	1	-40	4	7	9	-44	0	5	6	-46	-2	2	4	4 4 4 4
20,000	-21.2	-29	-8	-4	-2	-25	-2	1	5	-16	7	9	11	-19	2	5	7	-21	-0	4	6	4 5 3 5
10,000	-6.6	-16	-10	-6	-4	-8	-5	1	2	1	5	7	8	-5	-0	5	5	-7	-2	2	4	6 5 3 5
MOSCOW TO WARSAW																						
55,000	-56.5	-56	1	4	6	-55	4	6	8	-47	9	11	12	-56	1	5	5	-55	4	7	9	671 N.M.I.
40,000	-56.5	-54	-2	1	3	-54	2	6	7	-50	7	10	11	-55	2	5	6	-55	2	6	8	5 5 4 5
30,000	-48.5	-55	-9	-6	-5	-48	-6	-1	1	-40	4	7	8	-45	-0	2	4	-47	-2	2	4	4 4 4 4
20,000	-21.2	-30	-8	-4	-2	-24	-5	1	5	-14	7	9	10	-20	1	5	7	-22	-1	5	5	6 6 4 6
10,000	-6.6	-15	-11	-7	-5	-8	-6	0	2	0	5	7	8	-6	-1	2	4	-7	-5	1	5	6 6 3 5

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	JAN	APR	JUL	OCT
MUSKOW TO ZURICH																	
51,000	-56.5	-56	1	6	-55	3	6	7	-49	8	10	11	-57	-0	2	6	1177 N.M.I.
40,000	-56.5	-59	-2	1	-55	1	5	7	-51	6	9	11	-56	1	4	6	5
30,000	-56.5	-52	-8	-5	-48	-6	-1	1	-40	6	7	8	-46	-2	2	4	5
20,000	-56.5	-29	-7	-4	-23	-2	1	1	-14	7	9	11	-19	2	5	7	5
10,000	-4.6	-14	-9	-5	-1	-5	0	2	1	6	8	9	-5	0	5	5	5
MOUNT ISA TO SYDNEY																	
51,000	-56.5	-22	-16	-14	-12	-11	-11	-9	-67	-10	-8	-7	-66	-10	-7	-6	1010 N.M.I.
40,000	-56.5	-51	5	6	7	-54	2	6	-54	1	5	6	-54	5	6	7	5
30,000	-56.5	-15	10	12	14	-54	6	8	-40	6	7	8	-40	5	7	8	5
20,000	-21.2	-9	12	14	15	-12	9	11	-16	5	7	8	-14	7	9	10	5
10,000	-4.6	7	12	14	15	1	7	9	-0	6	6	8	2	7	9	10	5
MUSKOW TO HANKING																	
51,000	-56.5	-56	1	6	-59	-2	1	2	-61	-6	-1	1	-59	-2	2	6	420 N.M.I.
40,000	-56.5	-52	5	6	-51	6	7	9	-47	10	15	16	-52	5	8	10	5
30,000	-56.5	-44	-1	2	-42	4	6	7	-27	17	20	22	-37	7	10	12	5
20,000	-21.2	-23	-5	-1	-18	5	6	8	-4	17	19	20	-15	6	9	11	5
10,000	-4.6	-12	-8	-5	-4	0	5	5	10	15	17	18	-1	4	7	9	5
MUSKOW TO PEIPING																	
51,000	-56.5	-51	5	9	-55	2	6	6	-57	-0	3	5	-57	-1	5	6	347 N.M.I.
40,000	-56.5	-51	6	7	-52	6	8	10	-46	11	16	16	-51	5	8	10	5
30,000	-56.5	-45	-5	-2	-46	-1	2	4	-28	17	20	22	-40	6	7	9	5
20,000	-21.2	-10	-9	-6	-22	-0	3	5	-4	17	19	20	-18	5	7	9	5
10,000	-4.6	-17	-12	-9	-7	-2	1	5	-10	14	17	18	-5	1	5	6	5
MUSKOW TO SEOUL																	
51,000	-56.5	-52	5	6	-56	0	5	5	-54	-2	2	4	-54	-1	2	3	294 N.M.I.
40,000	-56.5	-52	5	6	-51	6	7	9	-46	10	15	15	-51	5	8	10	5
30,000	-56.5	-49	-6	-1	-44	0	6	6	-26	17	20	22	-39	5	9	10	5
20,000	-21.2	-10	-9	-5	-21	-0	6	6	-4	17	19	20	-17	6	8	10	5
10,000	-4.6	-16	-12	-8	-6	-2	2	6	13	15	17	18	-5	2	5	7	5
MUSKOW TO SHANGHAI																	
51,000	-56.5	-56	0	6	-59	-3	0	2	-61	-5	-1	1	-61	-6	-1	1	617 N.M.I.
40,000	-56.5	-52	5	6	-51	6	7	9	-47	10	15	16	-52	5	8	10	5
30,000	-56.5	-45	-1	2	-42	5	6	8	-27	17	20	22	-37	6	11	12	5
20,000	-21.2	-25	-6	-1	-18	5	7	8	-4	17	19	20	-15	6	10	11	5
10,000	-4.6	-12	-7	-4	-5	-6	1	5	11	15	17	18	-0	6	7	9	5
MUSKOW TO TAIPEI																	
51,000	-56.5	-61	-6	-1	-61	-6	-6	-2	-64	-8	-6	-2	-61	-7	-5	-2	1005 N.M.I.
40,000	-56.5	-52	5	6	-51	6	7	9	-47	10	15	16	-52	5	8	9	5
30,000	-56.5	-41	5	6	-39	5	6	10	-27	17	20	21	-34	10	15	16	5
20,000	-21.2	-21	0	5	-15	7	9	11	-4	17	19	20	-12	9	12	15	5
10,000	-4.6	-4	-6	-1	-1	5	6	8	11	15	17	18	2	7	9	11	5
MUSKOW TO TOKYO																	
51,000	-56.5	-51	6	7	-57	-0	5	6	-59	-5	1	3	-59	-2	1	3	847 N.M.I.
40,000	-56.5	-51	6	7	-51	5	7	9	-47	9	12	16	-51	5	8	10	5
30,000	-56.5	-47	-2	1	-45	2	5	7	-28	17	20	22	-37	7	10	12	5
20,000	-21.2	-28	-7	-6	-19	2	5	7	-4	17	19	20	-15	6	9	11	5
10,000	-4.6	-15	-11	-7	-5	-1	5	6	10	15	17	18	-1	5	7	9	5
MUSKOW TO WFO																	
51,000	-56.5	-57	-0	5	-56	1	5	7	-52	6	7	8	-57	-1	2	6	5501 N.M.I.
40,000	-56.5	-55	1	6	-54	2	7	9	-52	5	6	10	-54	2	6	8	5
30,000	-56.5	-49	-5	-2	-47	-1	-0	1	-40	6	7	8	-45	-1	5	5	5
20,000	-21.2	-28	-5	-1	-23	-2	1	5	-16	7	10	11	-21	1	5	7	5
10,000	-4.6	-12	-8	-5	-4	-5	0	2	1	6	8	9	-5	1	5	6	5
MUSKOW TO USLU																	
51,000	-56.5	-57	-0	5	-51	5	6	7	-49	8	10	11	-57	-0	2	6	707 N.M.I.
40,000	-56.5	-59	-2	2	-54	2	6	8	-50	6	10	12	-56	0	6	6	5
30,000	-56.5	-52	-7	-5	-49	-6	-2	-0	-41	5	6	7	-45	-0	2	6	5
20,000	-21.2	-29	-8	-6	-24	-1	0	2	-15	6	10	12	-20	2	5	7	5
10,000	-4.6	-15	-8	-5	-7	-8	-1	-0	0	5	7	8	-5	-0	5	5	5
MUSKOW TO PARIS																	
51,000	-56.5	-56	0	5	-54	2	5	6	-52	5	7	8	-54	-2	1	2	571 N.M.I.
40,000	-56.5	-50	-2	2	-47	-0	6	6	-42	6	8	9	-46	0	5	5	5
30,000	-56.5	-40	-6	-1	-37	-1	-0	1	-40	5	7	8	-41	1	4	5	5
20,000	-21.2	-26	-5	-1	-22	-1	2	4	-14	8	10	11	-17	6	7	8	5
10,000	-4.6	-10	-5	-2	-6	-1	2	5	2	7	9	10	-2	5	6	7	5
MUSKOW TO PRAGUE																	
51,000	-56.5	-56	1	6	-54	2	5	6	-51	5	8	9	-54	-1	1	2	156 N.M.I.
40,000	-56.5	-54	-2	2	-54	0	6	6	-52	5	8	10	-56	0	5	5	5
30,000	-56.5	-51	-7	-6	-48	-5	-1	1	-40	6	7	8	-46	-1	2	4	5
20,000	-21.2	-27	-6	-2	-22	-1	2	5	-15	8	10	11	-18	5	6	8	5
10,000	-4.6	-12	-7	-5	-6	-2	1	5	2	7	9	10	-2	2	5	7	5
MUSKOW TO ROME																	
51,000	-56.5	-56	0	6	-55	1	6	5	-54	2	6	6	-59	-3	-0	1	382 N.M.I.
40,000	-56.5	-58	-1	2	-57	-1	5	6	-52	6	7	9	-56	0	5	6	5
30,000	-56.5	-50	-6	-5	-47	-2	0	2	-39	6	8	10	-45	2	5	6	5
20,000	-21.2	-26	-5	-1	-21	0	5	6	-12	9	11	12	-16	5	7	9	5
10,000	-4.6	-9	-5	-1	-5	-0	5	6	6	9	11	12	-1	6	6	8	5
MUSKOW TO SHANNON																	
51,000	-56.5	-57	-1	5	-56	5	5	7	-51	6	8	10	-54	-1	1	3	651 N.M.I.
40,000	-56.5	-54	-2	5	-54	1	5	8	-51	5	9	11	-56	0	6	8	5
30,000	-56.5	-50	-6	-5	-47	-3	-0	1	-41	6	7	8	-46	1	5	5	5
20,000	-21.2	-26	-5	-1	-22	-1	2	4	-14	7	9	11	-18	5	6	8	5
10,000	-4.6	-10	-5	-1	-6	-1	1	5	2	6	8	10	-2	2	5	7	5

*D-DIFFERENCE BETWEEN INDICATED PLR CLNT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
MUNICH TO TEHERAN																	
55,000	-56.5	-57	-0	3	4	-56	1	3	4	-57	-1	2	3	-57	-1	2	3
40,000	-56.5	-57	-0	3	4	-56	1	3	4	-57	-1	2	3	-57	-1	2	3
30,000	-56.5	-57	-0	3	4	-56	1	3	4	-57	-1	2	3	-57	-1	2	3
20,000	-56.5	-57	-0	3	4	-56	1	3	4	-57	-1	2	3	-57	-1	2	3
10,000	-56.5	-57	-0	3	4	-56	1	3	4	-57	-1	2	3	-57	-1	2	3
MUNICH TO TEL AVIV-JAFFA																	
55,000	-56.5	-58	-1	2	3	-57	-0	2	3	-60	-4	-2	-0	-59	-2	0	2
40,000	-56.5	-57	-0	3	5	-57	-0	3	5	-49	0	10	11	-56	0	3	4
30,000	-56.5	-57	-0	3	5	-57	-0	3	5	-49	0	10	11	-56	0	3	4
20,000	-56.5	-57	-0	3	5	-57	-0	3	5	-49	0	10	11	-56	0	3	4
10,000	-56.5	-57	-0	3	5	-57	-0	3	5	-49	0	10	11	-56	0	3	4
MUNICH TO VIENNA																	
55,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
40,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
30,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
20,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
10,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
MUNICH TO WARSAW																	
55,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
40,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
30,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
20,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
10,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
MUNICH TO ZAGREB																	
55,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
40,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
30,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
20,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
10,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
MUNICH TO ZURICH																	
55,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
40,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
30,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
20,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
10,000	-56.5	-56	1	4	4	-56	2	5	6	-52	5	7	8	-50	-2	1	2
NAGPUR TO NEW DELHI																	
55,000	-56.5	-72	-15	-15	-12	-67	-12	-9	-8	-74	-18	-15	-13	-75	-17	-14	-12
40,000	-56.5	-65	-7	5	7	-55	-3	7	8	-61	-8	12	14	-54	-3	6	8
30,000	-56.5	-58	7	10	12	-46	9	12	14	-37	10	20	22	-33	12	14	16
20,000	-56.5	-51	9	11	12	-39	12	14	16	-29	14	16	17	-23	14	16	17
10,000	-56.5	-44	8	10	11	-32	13	15	17	-22	15	17	19	-16	15	17	19
NAIROBI TO PARIS																	
55,000	-56.5	-69	-12	-10	-9	-68	-11	-9	-8	-69	-13	-11	-10	-69	-12	-10	-9
40,000	-56.5	-55	2	4	5	-56	2	5	6	-51	4	7	8	-54	2	4	5
30,000	-56.5	-41	4	5	6	-37	7	9	10	-32	12	14	15	-34	9	10	11
20,000	-56.5	-26	7	9	10	-22	9	11	12	-17	15	16	17	-10	11	13	14
10,000	-56.5	-10	7	9	10	-6	9	11	12	-1	14	16	17	4	11	13	14
NAIROBI TO ROME																	
55,000	-56.5	-71	-14	-12	-11	-70	-13	-11	-10	-72	-16	-14	-13	-72	-16	-14	-13
40,000	-56.5	-56	2	4	5	-56	2	5	6	-51	4	7	8	-54	2	4	5
30,000	-56.5	-41	4	5	6	-37	7	9	10	-32	12	14	15	-34	9	10	11
20,000	-56.5	-26	7	9	10	-22	9	11	12	-17	15	16	17	-10	11	13	14
10,000	-56.5	-10	7	9	10	-6	9	11	12	-1	14	16	17	4	11	13	14
NAIROBI TO SALISBURY																	
55,000	-56.5	-77	-21	-18	-17	-76	-20	-17	-16	-78	-24	-21	-20	-75	-23	-20	-19
40,000	-56.5	-52	5	6	7	-52	5	7	8	-52	5	7	8	-52	5	7	8
30,000	-56.5	-30	15	16	16	-31	14	15	16	-32	13	14	15	-31	13	14	15
20,000	-56.5	-15	17	17	18	-16	16	17	18	-17	15	16	17	-16	15	16	17
10,000	-56.5	10	16	15	16	9	16	15	16	7	12	13	14	10	16	15	16
NAIROBI TO TANANARIVE																	
55,000	-56.5	-71	-21	-18	-17	-76	-20	-17	-16	-78	-24	-21	-20	-75	-23	-20	-19
40,000	-56.5	-52	5	6	7	-52	5	7	8	-52	5	7	8	-52	5	7	8
30,000	-56.5	-30	15	16	16	-31	14	15	16	-32	13	14	15	-31	13	14	15
20,000	-56.5	-15	17	17	18	-16	16	17	18	-17	15	16	17	-16	15	16	17
10,000	-56.5	10	16	15	16	9	16	15	16	7	12	13	14	10	16	15	16
NAIROBI TO TEHERAN																	
55,000	-56.5	-74	-17	-15	-14	-73	-17	-15	-14	-76	-20	-18	-17	-75	-19	-17	-16
40,000	-56.5	-54	3	4	5	-52	4	6	7	-50	7	8	9	-53	5	6	7
30,000	-56.5	-36	8	10	11	-36	11	13	14	-28	16	18	19	-33	12	14	15
20,000	-56.5	-21	12	13	14	-21	12	13	14	-14	17	19	20	-17	16	18	19
10,000	-56.5	-6	11	12	13	-6	11	12	13	14	18	20	20	9	13	15	15
NAIROBI TO TEL AVIV-JAFFA																	
55,000	-56.5	-74	-17	-15	-14	-73	-17	-15	-14	-76	-20	-18	-17	-75	-19	-17	-16
40,000	-56.5	-54	3	4	5	-52	4	6	7	-50	7	8	9	-53	5	6	7
30,000	-56.5	-36	8	10	11	-36	11	13	14	-28	16	18	19	-33	12	14	15
20,000	-56.5	-21	12	13	14	-21	12	13	14	-14	17	19	20	-17	16	18	19
10,000	-56.5	-6	11	12	13	-6	11	12	13	14	18	20	20	9	13	15	15
NAIROBI TO IRAPOLI																	
55,000	-56.5	-74	-17	-15	-14	-73	-17	-15	-14	-76	-20	-18	-17	-75	-19	-17	-16
40,000	-56.5	-54	3	4	5	-52	4	6	7	-50	7	8	9	-53	5	6	7
30,000	-56.5	-36	8	10	11	-36	11	13	14	-28	16	18	19	-33	12	14	15
20,000	-56.5	-21	12	13	14	-21	12	13	14	-14	17	19	20	-17	16	18	19
10,000	-56.5	-6	11	12	13	-6	11	12	13	14	18	20	20	9	13	15	15

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
NAIROBI TO LUNIS																	
51,000	-56.5	-72	-16	-14	-11	-71	-15	-11	-12	-74	-17	-15	-14	-73	-16	-14	-13
40,000	-56.5	-54	3	4	5	-53	1	6	7	-51	6	7	8	-53	1	5	6
30,000	-56.5	-38	6	8	8	-38	10	12	12	-30	14	16	16	-34	10	13	14
20,000	-21.2	-11	10	12	13	-9	12	14	14	-5	16	17	18	-8	13	15	16
10,000	-4.6	5	10	12	12	7	12	13	14	11	16	17	18	8	13	15	16
NAIROBI TO VIENNA																	
51,000	-56.5	-69	-12	-10	-9	-68	-11	-9	-8	-70	-14	-12	-11	-69	-13	-11	-9
40,000	-56.5	-55	2	4	5	-54	2	5	6	-50	5	8	9	-53	3	6	7
30,000	-56.5	-41	4	5	6	-37	7	9	10	-31	11	15	16	-36	9	11	12
20,000	-21.2	-14	7	9	10	-12	10	11	12	-6	15	16	17	-10	11	13	14
10,000	-4.6	2	6	8	9	4	9	11	12	10	15	16	17	6	10	12	14
NAIROBI TO ZURICH																	
51,000	-56.5	-69	-12	-10	-9	-68	-12	-9	-8	-70	-14	-12	-11	-69	-13	-11	-9
40,000	-56.5	-55	2	4	5	-54	2	5	6	-51	6	7	8	-54	3	5	6
30,000	-56.5	-41	4	5	6	-37	7	9	10	-32	11	15	15	-36	9	11	12
20,000	-21.2	-14	7	9	10	-11	10	11	12	-6	15	16	17	-10	11	13	14
10,000	-4.6	2	7	9	10	5	9	11	12	10	15	16	17	7	11	13	15
NAIROBI TO SYDNEY																	
51,000	-56.5	-72	-15	-13	-12	-71	-14	-11	-10	-67	-10	-8	-7	-66	-12	-10	-8
40,000	-56.5	-54	3	5	6	-54	3	5	6	-54	3	5	6	-54	3	5	6
30,000	-56.5	-35	9	11	13	-37	7	9	11	-40	5	7	9	-39	5	7	9
20,000	-21.2	-9	12	14	15	-12	10	11	12	-15	6	8	9	-14	8	9	10
10,000	-4.6	7	12	14	15	5	7	11	12	1	5	7	8	4	7	9	10
NAIROBI TO LAM-EL																	
51,000	-56.5	-78	-22	-20	-19	-77	-20	-14	-14	-73	-16	-14	-13	-75	-18	-16	-14
40,000	-56.5	-54	1	3	4	-53	1	3	4	-54	2	4	5	-54	1	3	4
30,000	-56.5	-32	11	14	15	-33	12	13	14	-35	10	12	13	-33	11	13	14
20,000	-21.2	-6	15	16	17	-7	14	15	16	-8	13	14	15	-7	14	15	16
10,000	-4.6	10	14	15	16	10	14	15	16	7	11	13	14	8	13	14	15
NAIROBI TO ROME																	
51,000	-56.5	-57	-9	3	5	-56	0	3	4	-56	-2	0	2	-56	-1	1	3
40,000	-56.5	-37	-1	1	3	-34	-1	2	3	-30	6	7	8	-35	1	3	4
30,000	-56.5	-23	3	4	5	-26	2	3	4	-27	7	10	11	-26	3	4	5
20,000	-21.2	-7	6	7	8	-7	6	7	8	-11	11	12	13	-15	6	8	9
10,000	-4.6	7	11	12	13	-1	7	8	9	6	11	13	14	0	5	7	8
NAIROBI TO NEW ORLEANS																	
51,000	-56.5	-72	-16	-14	-13	-73	-15	-11	-10	-70	-14	-11	-12	-72	-15	-13	-12
40,000	-56.5	-57	-2	2	3	-56	0	2	3	-55	2	3	4	-56	0	2	3
30,000	-56.5	-34	6	7	8	-38	7	8	9	-31	11	12	13	-36	9	10	11
20,000	-21.2	-11	10	12	13	-10	11	12	13	-7	14	15	16	-9	12	14	15
10,000	-4.6	4	9	11	12	6	10	12	13	4	11	14	15	7	11	13	15
NAIROBI TO NEW YORK																	
51,000	-56.5	-69	-11	-9	-8	-65	-9	-7	-5	-67	-10	-9	-8	-68	-11	-8	-7
40,000	-56.5	-57	-1	2	3	-57	-1	2	3	-56	1	2	3	-56	0	2	3
30,000	-56.5	-42	1	3	4	-41	4	5	6	-36	10	12	13	-37	8	10	11
20,000	-21.2	-15	6	7	8	-14	6	8	9	-8	14	15	16	-11	10	12	13
10,000	-4.6	0	7	8	9	1	6	8	9	7	12	13	14	5	10	12	13
NAIROBI TO NEW ORLEANS																	
51,000	-56.5	-76	-20	-18	-17	-74	-14	-14	-13	-72	-16	-14	-13	-74	-18	-16	-15
40,000	-56.5	-55	2	4	5	-54	1	3	4	-55	1	3	4	-54	2	4	5
30,000	-56.5	-35	10	11	12	-33	12	13	14	-32	11	13	14	-31	12	13	14
20,000	-21.2	-7	14	15	16	-7	13	14	15	-6	13	14	15	-7	13	14	15
10,000	-4.6	8	12	14	15	8	13	14	15	9	14	15	16	9	13	14	15
NAIROBI TO NEW YORK																	
51,000	-56.5	-74	-17	-15	-14	-73	-16	-14	-13	-70	-14	-12	-11	-73	-16	-14	-13
40,000	-56.5	-55	1	3	4	-55	1	3	4	-54	2	3	4	-55	2	3	4
30,000	-56.5	-37	8	9	10	-35	9	11	12	-34	11	13	14	-33	10	12	13
20,000	-21.2	-10	11	13	14	-9	12	14	15	-7	14	15	16	-8	13	14	15
10,000	-4.6	5	10	12	13	6	10	12	13	8	13	14	15	7	11	13	14
NAIROBI TO PANAMA																	
51,000	-56.5	-78	-22	-20	-19	-74	-21	-19	-18	-73	-16	-14	-13	-74	-20	-17	-16
40,000	-56.5	-54	2	4	5	-52	5	7	8	-54	3	5	6	-53	3	5	6
30,000	-56.5	-32	12	13	14	-30	13	14	15	-32	13	14	15	-31	13	14	15
20,000	-21.2	-5	17	18	19	-4	17	18	19	-7	16	17	18	-5	16	17	18
10,000	-4.6	10	14	16	16	10	15	16	17	9	15	16	17	10	14	16	16
NAIROBI TO PARIS																	
51,000	-56.5	-76	-15	-11	-10	-69	-12	-10	-9	-68	-12	-10	-9	-69	-13	-11	-9
40,000	-56.5	-56	0	1	3	-55	1	3	4	-54	2	4	5	-55	2	4	5
30,000	-56.5	-40	5	6	7	-37	8	9	10	-36	10	12	12	-37	8	10	11
20,000	-21.2	-11	11	13	14	-11	10	11	12	-8	13	14	15	-10	11	13	14
10,000	-4.6	1	11	13	14	4	9	11	12	9	13	15	15	7	11	13	15
NAIROBI TO GUATEMALA																	
51,000	-56.5	-75	-22	-20	-18	-77	-21	-19	-18	-72	-16	-14	-12	-76	-19	-17	-15
40,000	-56.5	-54	3	4	5	-52	5	7	8	-54	3	5	6	-53	3	5	6
30,000	-56.5	-32	11	14	15	-30	13	14	15	-32	13	14	15	-31	14	15	16
20,000	-21.2	-4	17	18	19	-6	17	18	19	-8	16	17	18	-5	16	17	18
10,000	-4.6	10	15	16	16	10	15	16	17	9	15	16	17	10	14	16	16
NAIROBI TO KECIFE																	
51,000	-56.5	-78	-21	-19	-18	-74	-21	-19	-18	-71	-15	-12	-11	-75	-18	-16	-14
40,000	-56.5	-54	2	4	5	-52	4	7	8	-53	3	5	6	-53	3	5	6
30,000	-56.5	-32	11	14	15	-30	14	16	17	-32	13	14	15	-31	13	14	15
20,000	-21.2	-5	16	18	19	-4	17	18	19	-6	16	17	18	-5	16	17	18
10,000	-4.6	10	14	16	16	10	14	16	16	8	12	14	14	10	14	15	16

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION											
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
NATAL TO RIO DE JANEIRO																									
51,000	-56.5	-77	-20	-17	-16	-76	-19	-17	-16	-69	-13	-10	-9	-71	-15	-13	-12	-73	-17	-13	-12	4	3	4	3
40,000	-56.5	-53	4	6	7	-52	4	7	8	-52	4	6	7	-53	3	5	6	-54	4	6	7	3	4	3	3
30,000	-66.5	-32	13	14	15	-32	13	15	16	-33	12	13	14	-32	12	14	15	-32	12	14	15	2	3	3	3
20,000	-71.2	-5	14	18	19	-6	15	17	17	-9	11	14	15	-7	14	16	17	-7	15	16	17	2	2	2	2
10,000	-4.6	9	14	15	16	9	14	16	16	6	11	12	13	9	14	15	16	9	13	15	16	2	2	2	2
NATAL TO ROME																									
51,000	-56.5	-71	-15	-12	-11	-70	-16	-12	-11	-71	-16	-12	-11	-72	-16	-14	-13	-71	-15	-12	-11	3	3	3	3
40,000	-56.5	-55	1	4	5	-55	2	5	6	-51	4	5	6	-54	3	4	5	-54	2	4	5	4	4	2	2
30,000	-66.5	-19	5	7	8	-16	9	10	11	-16	11	12	13	-35	10	11	12	-34	9	11	12	2	2	2	2
20,000	-71.2	-12	9	10	11	-10	11	12	13	-7	14	15	16	-8	13	14	15	-10	12	13	14	2	2	2	2
10,000	-4.6	4	9	10	11	6	10	12	13	10	15	16	17	7	12	13	14	7	11	11	14	2	2	2	2
NATAL TO SRI LANKA																									
51,000	-56.5	-78	-21	-19	-18	-74	-21	-19	-18	-74	-17	-15	-14	-77	-21	-19	-18	-73	-20	-18	-16	3	3	3	3
40,000	-56.5	-54	2	4	5	-51	1	3	4	-54	3	4	5	-53	4	5	6	-54	3	4	5	3	4	2	2
30,000	-66.5	-11	11	12	13	-11	14	15	16	-12	12	13	14	-11	11	15	15	-12	13	14	15	2	2	2	2
20,000	-71.2	-7	14	15	16	-6	15	16	17	-6	15	16	17	-6	16	17	17	-6	15	16	17	2	2	1	2
10,000	-4.6	9	14	14	15	9	13	15	15	9	14	15	15	10	15	16	16	9	14	15	16	1	2	1	2
NATAL TO SANTA MONICA																									
51,000	-56.5	-74	-17	-15	-14	-73	-17	-15	-14	-72	-15	-13	-12	-74	-18	-16	-15	-71	-17	-14	-13	3	3	3	3
40,000	-56.5	-55	1	3	5	-55	1	4	5	-54	3	4	5	-54	3	4	5	-55	2	4	4	3	4	2	2
30,000	-66.5	-17	8	9	10	-14	10	12	12	-14	11	12	13	-13	11	13	14	-14	10	12	13	2	2	2	2
20,000	-71.2	-10	11	11	14	-9	12	14	15	-7	14	15	16	-7	14	15	16	-8	13	14	15	2	2	2	2
10,000	-4.6	6	11	12	13	6	11	12	13	9	13	14	15	9	13	14	15	8	12	13	14	2	2	2	2
NATAL TO SAO PAULO																									
51,000	-56.5	-76	-20	-17	-16	-76	-19	-17	-16	-69	-13	-10	-9	-71	-15	-13	-11	-73	-17	-13	-11	4	3	4	3
40,000	-56.5	-53	4	6	7	-52	4	7	8	-52	4	6	7	-51	3	5	6	-51	4	6	7	3	4	3	3
30,000	-66.5	-32	12	14	15	-32	11	14	15	-31	11	11	14	-32	12	14	15	-32	12	14	15	3	3	3	1
20,000	-71.2	-5	14	14	19	-6	15	16	17	-9	12	14	15	-7	14	16	17	-7	14	16	17	2	2	2	2
10,000	-4.6	9	14	15	16	9	14	15	16	6	11	12	13	9	14	15	16	9	11	15	16	2	2	2	2
NATAL TO ZURICH																									
51,000	-56.5	-70	-13	-11	-10	-69	-12	-10	-9	-69	-12	-10	-9	-71	-14	-12	-11	-70	-13	-11	-10	4	3	3	1
40,000	-56.5	-54	1	3	5	-55	1	4	6	-53	3	5	6	-54	2	4	5	-55	2	4	5	4	4	2	3
30,000	-66.5	-40	5	6	7	-37	8	9	10	-34	10	12	13	-35	9	11	12	-37	8	10	11	3	2	2	3
20,000	-71.2	-11	8	10	11	-11	10	12	12	-8	13	15	15	-9	12	14	14	-10	11	13	14	3	2	2	2
10,000	-4.6	5	8	10	11	5	9	11	12	9	14	15	16	7	11	13	13	6	10	12	14	3	3	2	2
NEW DELHI TO AGART																									
51,000	-56.5	-59	-3	-0	1	-56	-2	1	2	-61	-6	-4	-2	-62	-5	-3	-1	-61	-4	-1	0	4	5	4	4
40,000	-56.5	-54	1	4	5	-55	1	5	6	-67	9	12	13	-55	1	4	5	-64	3	7	9	5	5	4	4
30,000	-66.5	-44	3	4	5	-44	1	4	5	-51	11	16	17	-40	4	7	8	-41	4	8	11	4	4	4	4
20,000	-71.2	-25	2	1	1	-17	4	7	9	-6	15	17	18	-14	7	9	11	-15	6	10	12	4	4	3	4
10,000	-4.6	-7	3	1	2	-0	4	7	9	10	15	17	18	2	7	10	11	1	6	10	12	5	4	3	4
NEW DELHI TO SINGAPORE																									
51,000	-56.5	-76	-21	-19	-18	-74	-16	-16	-14	-77	-20	-18	-16	-78	-21	-19	-18	-77	-20	-17	-16	3	3	4	3
40,000	-56.5	-54	1	3	4	-52	4	6	6	-52	5	7	8	-54	2	4	4	-53	1	4	7	3	3	3	1
30,000	-66.5	-34	11	13	14	-32	13	15	16	-29	16	17	18	-32	13	14	15	-11	13	15	16	3	3	2	1
20,000	-71.2	-8	14	15	16	-6	15	17	17	-4	17	18	19	-6	15	17	17	-6	15	17	18	2	2	2	2
10,000	-4.6	6	12	14	14	10	14	16	16	11	15	16	17	9	13	14	15	9	14	15	15	2	2	1	2
NEW DELHI TO THIRUVAN																									
51,000	-56.5	-64	-8	-5	-4	-61	-6	-4	-2	-70	-13	-10	-9	-64	-9	-6	-5	-66	-9	-6	-4	4	4	4	4
40,000	-56.5	-54	2	5	7	-54	2	6	8	-67	10	13	14	-54	2	5	7	-52	4	8	10	5	5	4	4
30,000	-66.5	-43	1	4	6	-40	4	7	9	-27	14	20	22	-37	7	10	11	-37	8	12	15	4	5	4	4
20,000	-71.2	-19	2	5	6	-11	8	11	12	-2	19	21	22	-12	10	12	13	-12	10	14	16	4	4	3	1
10,000	-4.6	-1	2	5	6	4	9	11	13	15	20	21	22	6	10	13	14	6	10	14	16	4	4	3	3
NEW DELHI TO TEL AVIV-JERUSALEM																									
51,000	-56.5	-65	-9	-6	-5	-64	-7	-5	-3	-71	-14	-12	-10	-67	-10	-8	-6	-67	-10	-7	-5	4	4	4	4
40,000	-56.5	-54	2	5	7	-54	2	6	7	-67	10	13	14	-55	2	5	6	-52	4	8	10	4	5	4	4
30,000	-66.5	-43	1	4	6	-40	4	7	9	-26	18	20	22	-17	8	10	11	-17	8	12	14	4	4	3	4
20,000	-71.2	-16	1	5	7	-15	8	10	11	-2	19	21	22	-11	10	12	13	-11	10	14	16	4	4	3	3
10,000	-4.6	-2	5	5	7	5	9	11	13	15	20	21	22	6	11	13	14	6	11	14	16	4	3	2	3
NEW DELHI TO TRIPOLI																									
51,000	-56.5	-63	-6	-4	-2	-61	-5	-2	-1	-69	-11	-10	-9	-65	-8	-6	-4	-64	-8	-5	-3	4	3	4	4
40,000	-56.5	-55	2	5	6	-55	1	5	7	-67	10	12	13	-55	1	4	5	-53	3	7	9	5	5	3	4
30,000	-66.5	-45	-1	2	5	-42	2	5	6	-28	16	19	20	-19	6	8	9	-39	6	10	13	4	4	3	3
20,000	-71.2	-20	1	4	5	-15	6	8	10	-4	17	19	20	-12	9	11	12	-13	8	12	14	4	4	3	3
10,000	-4.6	-4	1	3	5	2	7	9	11	13	17	19	20	5	10	12	13	4	9	12	14	4	4	1	3
NEW DELHI TO TUNIS																									
51,000	-56.5	-61	-4	-1	0	-60	-3	-1	1	-66	-9	-7	-6	-63	-7	-4	-1	-62	-6	-3	-1	4	4	4	4
40,000	-56.5	-55	1	4	6	-55	1	5	6	-67	9	12	13	-54	1	4	5	-53	3	7	9	5	5	4	4
30,000	-66.5	-47	-2	0	2	-41	2	4	6	-30	15	17	18	-40	5	7	9	-40	5	9	11	4	4	4	4
20,000	-71.2	-22	-0	2	4	-16	5	8	9	-5	16	18	19	-13	8	10	11	-14	7	11	13	4	4	3	3
10,000	-4.6	-6	-1	2	3	1	6	8		11	16	18	19	4	8	11	12	1	7	11	13	4	4	3	3
NEW ORLEANS TO PANAMA																									
51,000	-56.5	-74	-19	-17	-16	-74	-18	-16	-15	-72	-16	-15	-14	-77	-20	-18	-17	-75	-18	-16	-15	3	3	2	3
40,000	-56.5	-55	1	3	4	-54	2	4	5	-54	1	2	2	-54	2	4	4	-55	2	3	4	2	2	2	3
30,000	-66.5	-36	8	10	10	-15	10	11	12	-13	12	13	13	-33	12	13	14	-14	10	12	13	2	2	1	2
20,000	-71.2	-8	13	14	15	-7	14	15	16	-7	15	15	16	-6	15	16	17	-7	14	15	16	2	2	1	2
10,000	-4.6	7	12	13	14	8	12	14	15	9	14	15	15	9	14	15	16	8	13	14	15	2	2	1	2
NEW ORLEANS TO PORT-RO-PRINCE																									
51,000	-56.5	-74	-18	-16	-1																				

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION					
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN	APR	JUL
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085
NEW ORLEANS TO PORT OF SPAIN																			
55,000	-56.5	-75 -19 -17 -16	-74 -18 -16 -15	-72 -15 -14 -13	-76 -20 -18 -17	-74 -18 -16 -15	3	5	2	3	1976 N.M.I.								
40,000	-56.5	-55 2 3 4	-55 2 4 4	-56 1 2 2	-54 2 4 4	-55 2 3 4	5	2	2	2									
30,000	-44.5	-36 8 10 10	-35 10 11 12	-31 11 12 13	-33 12 13 14	-34 10 12 13	2	2	1	2									
20,000	-21.2	-9 12 14 15	-8 13 15 15	-7 15 15 16	-6 15 16 17	-7 14 15 16	2	2	1	2									
10,000	-4.6	7 11 13 13	7 12 13 14	9 14 14 15	9 13 14 15	8 13 14 14	2	2	1	2									
NEW ORLEANS TO QUITO																			
55,000	-56.5	-76 -20 -18 -17	-75 -19 -17 -16	-73 -16 -15 -14	-77 -21 -19 -18	-75 -19 -17 -16	3	5	2	3	1915 N.M.I.								
40,000	-56.5	-55 2 3 4	-55 3 5 5	-56 1 2 3	-54 2 4 4	-55 2 4 5	2	2	2	2									
30,000	-44.5	-35 10 11 11	-35 11 12 13	-33 12 13 14	-32 12 14 14	-33 11 13 13	2	2	2	2									
20,000	-21.2	-7 14 15 16	-6 15 16 17	-7 15 15 16	-6 15 16 17	-7 15 16 17	2	2	1	2									
10,000	-4.6	8 12 14 14	9 13 15 15	9 14 15 15	10 14 15 16	9 13 15 15	2	2	1	5									
NEW ORLEANS TO RIO DE JANEIRO																			
55,000	-56.5	-77 -20 -18 -17	-75 -19 -17 -16	-71 -15 -13 -12	-75 -18 -16 -15	-75 -18 -16 -14	3	5	3	3	1455 N.M.I.								
40,000	-56.5	-54 3 4 5	-53 4 6 7	-54 2 4 4	-54 3 4 5	-54 3 5 6	5	5	2	2									
30,000	-44.5	-34 11 12 13	-32 12 14 15	-33 12 13 14	-32 13 14 15	-33 12 14 15	2	2	2	2									
20,000	-21.2	-6 15 16 17	-6 15 17 17	-8 13 15 15	-6 15 16 17	-6 15 16 17	2	2	2	2									
10,000	-4.6	9 13 15 15	9 14 15 16	8 13 14 14	10 14 15 16	9 13 15 15	2	2	2	2									
NEW ORLEANS TO SAN JUAN																			
55,000	-56.5	-74 -17 -16 -15	-72 -16 -14 -13	-71 -14 -13 -13	-75 -19 -17 -16	-73 -17 -15 -14	3	5	2	3	1478 N.M.I.								
40,000	-56.5	-56 1 3 4	-55 1 3 4	-56 0 3 2	-55 2 3 4	-55 1 3 5	5	5	2	2									
30,000	-44.5	-38 7 8 9	-36 8 10 10	-35 11 12 13	-34 13 12 11	-35 9 11 11	2	2	1	2									
20,000	-21.2	-10 11 11 14	-9 12 14 15	-7 15 15 16	-7 15 16 16	-8 11 15 15	2	2	1	2									
10,000	-4.6	6 10 12 13	6 11 13 13	9 13 14 14	8 13 14 15	7 12 13 13	2	2	1	2									
NEW ORLEANS TO SANTA MARIA																			
55,000	-56.5	-64 -8 -6 -5	-62 -5 -3 -2	-64 -8 -6 -5	-66 -10 -7 -6	-64 -8 -5 -3	4	4	5	4	3215 N.M.I.								
40,000	-56.5	-58 -2 2 3	-58 -2 1 1	-56 1 3 4	-56 1 1 4	-57 -0 2 3	5	5	3	4									
30,000	-44.5	-44 1 5 6	-43 2 4 5	-35 9 11 12	-34 7 9 10	-40 5 7 9	5	5	3	5									
20,000	-21.2	-17 4 7 8	-16 5 8 9	-9 13 14 15	-15 10 12 13	-15 8 10 12	4	4	2	1									
10,000	-4.6	-2 5 6 7	-3 6 7 8	7 11 13 13	4 9 11 12	2 7 9 10	4	4	2	3									
NEW ORLEANS TO SANTIAGO																			
55,000	-56.5	-75 -19 -17 -15	-74 -16 -16 -15	-71 -14 -12 -11	-73 -17 -15 -13	-73 -17 -14 -13	3	5	3	3	3955 N.M.I.								
40,000	-56.5	-54 3 5 6	-53 5 5 6	-54 2 4 5	-54 2 4 5	-54 3 5 6	5	5	2	2									
30,000	-44.5	-34 10 12 13	-34 11 12 13	-34 10 12 13	-33 12 11 14	-34 11 13 13	2	2	2	2									
20,000	-21.2	-7 14 16 17	-7 14 16 16	-9 12 13 14	-7 14 16 16	-8 14 15 16	2	2	2	2									
10,000	-4.6	4 13 14 15	4 13 14 15	7 12 13 13	8 13 14 15	8 12 14 15	2	2	2	2									
NEW ORLEANS TO SAO PAULO																			
55,000	-56.5	-77 -20 -18 -17	-75 -19 -17 -16	-71 -15 -11 -12	-75 -18 -16 -15	-75 -18 -16 -14	3	5	3	3	4005 N.M.I.								
40,000	-56.5	-54 3 4 5	-53 4 6 7	-54 2 4 4	-54 1 4 5	-54 3 5 6	5	5	2	2									
30,000	-44.5	-34 11 12 13	-32 12 14 15	-33 12 13 14	-32 13 14 15	-33 12 13 14	2	2	2	2									
20,000	-21.2	-6 15 16 17	-6 15 17 17	-8 13 14 15	-6 15 16 17	-7 15 16 17	2	2	2	2									
10,000	-4.6	9 13 15 15	9 14 15 16	8 13 14 14	9 14 15 16	9 13 15 15	2	2	2	2									
NEW ORLEANS TO VANCOUVER																			
55,000	-56.5	-62 -5 -3 -1	-60 -3 -1 1	-63 -6 -4 -3	-65 -8 -6 -4	-67 -6 -3 -1	4	4	5	4	1899 N.M.I.								
40,000	-56.5	-56 0 4 6	-57 -1 2 4	-54 2 4 5	-56 1 1 5	-56 0 3 4	6	5	3	4									
30,000	-44.5	-47 -5 -0 1	-45 -0 2 3	-36 9 10 11	-41 4 6 7	-42 2 5 7	5	5	2	3									
20,000	-21.2	-27 -1 5 5	-18 3 6 7	-9 12 14 15	-14 7 10 11	-16 5 8 10	6	4	2	6									
10,000	-4.6	-7 -2 2 4	-1 4 7 9	9 14 16 16	2 7 10 12	1 6 9 11	6	5	3	5									
NEW YORK TO OSLO																			
55,000	-56.5	-57 -0 3 5	-52 5 8 9	-50 7 9 11	-55 1 4 6	-54 3 6 8	5	4	4	4	3186 N.M.I.								
40,000	-56.5	-54 2 4 9	-52 5 9 12	-50 7 10 12	-55 4 8 10	-52 4 8 10	6	7	5	6									
30,000	-44.5	-51 -6 -1 2	-44 -4 -1 0	-42 5 8 7	-46 -1 2 1	-47 -2 1 3	4	4	4	4									
20,000	-21.2	-36 -9 -5 -2	-26 -5 -2 0	-16 5 8 9	-22 -0 3 5	-24 -2 2 4	6	5	4	6									
10,000	-4.6	-16 -11 -7 -5	-11 -7 -3 -1	-5 4 6 7	-7 -2 2 4	-9 -4 -0 2	6	5	3	5									
NEW YORK TO PANAMA CITY																			
55,000	-56.5	-72 -16 -14 -13	-70 -14 -12 -11	-70 -15 -12 -11	-74 -17 -15 -14	-73 -15 -13 -12	3	5	2	3	1916 N.M.I.								
40,000	-56.5	-56 1 1 4	-55 1 3 4	-56 1 2 3	-55 2 4 4	-55 1 3 4	5	5	2	2									
30,000	-44.5	-36 6 8 9	-37 8 9 10	-34 11 12 13	-34 10 12 13	-34 9 10 11	2	2	2	2									
20,000	-21.2	-11 10 12 13	-10 11 13 14	-7 14 15 16	-8 13 15 16	-9 12 14 14	5	5	1	2									
10,000	-4.6	4 8 10 11	5 9 11 12	8 13 14 14	7 12 13 14	6 11 12 13	5	5	1	2									
NEW YORK TO PARIS																			
55,000	-56.5	-57 -1 2 4	-54 2 5 6	-53 1 6 7	-57 -1 2 4	-55 1 4 6	4	4	6	4	3164 N.M.I.								
40,000	-56.5	-55 1 5 8	-55 2 6 9	-52 4 7 9	-54 2 6 8	-54 2 6 8	6	7	5	5									
30,000	-44.5	-49 -4 -1 0	-47 -2 0 2	-40 5 7 9	-43 1 4 5	-45 -0 3 5	4	4	4	4									
20,000	-21.2	-26 -5 -0 2	-23 -2 2 4	-11 8 10 12	-14 5 7 9	-20 1 5 7	6	5	4	5									
10,000	-4.6	-12 -7 -3 -1	-7 -3 1 2	1 6 8 9	-5 1 5 7	-5 -1 1 5	6	5	3	5									
NEW YORK TO PORT OF SPAIN																			
55,000	-56.5	-72 -15 -13 -12	-70 -14 -12 -11	-69 -12 -11 -10	-71 -16 -14 -13	-71 -14 -12 -11	3	5	2	3	1919 N.M.I.								
40,000	-56.5	-56 1 3 5	-56 2 5 4	-56 1 2 3	-55 2 4 4	-56 1 3 4	4	5	2	2									
30,000	-44.5	-39 6 8 9	-37 7 9 10	-34 10 12 12	-34 10 12 11	-36 8 10 11	3	2	2	2									
20,000	-21.2	-12 10 11 12	-11 11 12 13	-7 14 15 16	-8 11 15 15	-9 12 13 14	5	5	2	2									
10,000	-4.6	5 8 10 11	6 9 11 12	8 12 13 14	7 11 13 14	6 10 12 13	5	5	2	2									
NEW YORK TO PRAGUE																			
55,000	-56.5	-57 -0 3 4	-53 3 6 7	-51 5 8 9	-57 -0 3 4	-54 2 5 7	4	4	4	4	3536 N.M.I.								
40,000	-56.5	-55 1 6 8	-54 3 7 10	-51 5 9 10	-54 2 6 8	-54 3 7 9	6	7	5	6									
30,000	-44.5	-50 -5 -2 -1	-47 -1 -0 1	-41 4 6 8	-44 0 1 5	-45 -1 3 5	4	4	4	4									
20,000	-21.2	-27 -6 -2 1	-24 -3 1 1	-14 7 9 11	-19 2 6 7	-21 -0 4 6	6	5	4	5									
10,000	-4.6	-13 -8 -4 -2	-8 -4 -0 1	1 5 7 9	-4 0 4 6	-6 -2 2 4	6	5	3	5									
NEW YORK TO PRESNICK																			
55,000	-56.5	-57 -0 3 4	-51 4 6 8	-52 5 7 9	-56 0 3 5	-54 2 5 7	4	4	4	4	2785 N.M.I.								
40,000	-56.5	-54 2 7 9	-51 3 8 10	-51 5 9 10	-53 3 7 9	-53 4 7 9	7	7	5	6									
30,000	-44.5	-49 -5 -2 -0	-47 -1 -0 1	-41 4 6 8	-44 0 3 5	-46 -1 3 5	4	4	4	4									
20,000	-21.2	-24 -7 -2 0	-23 -3 0 2	-15 7 9 11	-20 2 5 7	-22 -0 4 6	7	5	4	5									
10,000	-4.6	-14 -9 -5 -3	-9 -5 -1 1	0 5 7 9	-5 -0 1 5	-7 -2 1 4	6	5	3	5									

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY				APRIL				JULY				OCTOBER			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085
NEW YORK TO QUITO																	
55,000	-56.5	-74	-17	-15	-16	-72	-16	-16	-13	-71	-16	-13	-12	-74	-18	-16	-15
40,000	-56.5	-55	1	3	6	-55	2	6	5	-56	1	2	3	-55	2	6	6
30,000	-66.5	-37	7	9	10	-35	9	11	11	-33	11	12	13	-36	11	12	13
20,000	-21.2	-10	11	13	16	-9	12	16	15	-7	16	15	16	-7	16	15	16
10,000	-6.6	5	10	11	12	6	10	12	15	8	13	16	15	8	13	16	15
NEW YORK TO RIO DE JANEIRO																	
55,000	-56.5	-75	-18	-16	-15	-74	-17	-15	-16	-70	-13	-11	-10	-73	-17	-15	-16
40,000	-56.5	-56	2	6	5	-56	2	5	6	-56	2	6	6	-56	2	5	6
30,000	-66.5	-35	9	11	12	-36	11	12	13	-33	11	13	13	-36	11	12	13
20,000	-21.2	-8	13	15	16	-8	13	15	16	-8	13	15	15	-7	16	16	16
10,000	-6.6	7	11	13	16	7	12	15	16	8	12	15	16	8	13	16	16
NEW YORK TO ROME																	
55,000	-56.5	-57	-1	2	6	-55	2	6	6	-58	-2	1	3	-56	0	3	5
40,000	-56.5	-56	0	6	7	-56	1	5	7	-53	3	7	8	-55	1	5	7
30,000	-66.5	-48	-6	-1	0	-47	-2	1	2	-39	5	8	9	-43	2	6	6
20,000	-21.2	-25	-1	0	5	-22	-1	3	6	-13	9	11	12	-17	6	7	9
10,000	-6.6	-10	-6	-1	1	-6	-1	2	6	3	7	9	10	-2	5	6	7
NEW YORK TO ST. CROIX																	
55,000	-56.5	-70	-16	-11	-10	-68	-12	-10	-9	-68	-11	-10	-9	-71	-15	-13	-11
40,000	-56.5	-56	0	1	6	-57	-0	2	3	-56	1	2	3	-55	2	3	6
30,000	-66.5	-40	6	6	7	-39	6	7	8	-36	10	11	12	-35	9	11	12
20,000	-21.2	-15	8	10	11	-12	9	11	12	-7	16	15	16	-9	12	16	16
10,000	-6.6	2	6	9	10	1	8	10	11	8	12	15	16	6	11	12	15
NEW YORK TO SAN JUAN																	
55,000	-56.5	-70	-15	-11	-10	-68	-11	-9	-8	-68	-11	-10	-9	-71	-15	-12	-11
40,000	-56.5	-56	0	1	6	-57	-0	2	3	-56	1	2	3	-55	2	3	6
30,000	-66.5	-40	6	6	7	-39	6	7	8	-36	10	11	12	-35	9	11	12
20,000	-21.2	-15	8	10	11	-12	9	11	12	-7	16	15	16	-9	12	16	16
10,000	-6.6	2	6	9	10	1	8	10	11	8	12	15	16	6	11	12	15
NEW YORK TO SANTA MARIA																	
55,000	-56.5	-61	-4	-2	-0	-58	-2	1	2	-61	-4	-2	-1	-62	-6	-3	-1
40,000	-56.5	-58	-1	1	5	-57	-1	3	5	-55	1	6	5	-56	0	3	6
30,000	-66.5	-46	-1	1	5	-45	-0	2	5	-37	8	10	11	-40	5	7	9
20,000	-21.2	-20	1	6	6	-19	2	5	7	-10	11	15	16	-13	8	11	12
10,000	-6.6	-6	-1	3	6	-5	1	6	6	5	10	12	12	2	6	9	10
NEW YORK TO SANTIAGO																	
55,000	-56.5	-74	-17	-15	-16	-73	-16	-16	-13	-69	-13	-11	-10	-72	-16	-13	-12
40,000	-56.5	-56	2	6	6	-56	3	5	6	-56	2	6	5	-56	2	5	6
30,000	-66.5	-35	9	11	12	-36	11	12	13	-36	10	12	12	-33	11	13	16
20,000	-21.2	-8	13	15	16	-8	13	15	16	-9	12	15	16	-7	16	15	16
10,000	-6.6	7	11	13	16	7	11	13	16	7	11	13	15	8	12	15	16
NEW YORK TO SANJO DOMINGO																	
55,000	-56.5	-70	-15	-11	-10	-68	-11	-9	-8	-68	-11	-10	-9	-71	-15	-11	-10
40,000	-56.5	-56	0	1	6	-57	-0	2	3	-56	0	2	2	-55	2	3	6
30,000	-66.5	-40	6	6	7	-39	6	7	8	-36	10	12	12	-35	9	11	12
20,000	-21.2	-15	8	10	11	-12	9	11	12	-7	16	15	16	-9	12	16	16
10,000	-6.6	2	6	9	10	1	8	10	11	8	12	15	16	6	11	12	15
NEW YORK TO SAO PAULO																	
55,000	-56.5	-75	-18	-16	-15	-74	-17	-15	-16	-70	-13	-11	-10	-73	-17	-15	-16
40,000	-56.5	-56	2	6	5	-56	3	5	6	-56	2	6	5	-56	2	5	6
30,000	-66.5	-35	9	11	12	-36	11	12	13	-33	11	13	13	-36	11	13	13
20,000	-21.2	-8	13	15	16	-8	13	15	16	-9	12	15	16	-7	16	15	16
10,000	-6.6	7	11	13	16	7	12	15	16	8	13	16	15	8	13	16	15
NEW YORK TO SHANNON																	
55,000	-56.5	-57	-0	2	6	-56	3	5	7	-53	6	8	8	-57	-0	3	6
40,000	-56.5	-56	2	6	9	-56	3	7	9	-52	6	8	9	-56	3	6	8
30,000	-66.5	-49	-6	-1	0	-47	-3	0	1	-40	6	7	9	-46	1	6	5
20,000	-21.2	-27	-5	-1	1	-26	-2	1	3	-16	7	10	11	-19	5	6	8
10,000	-6.6	-15	-8	-4	-2	-8	-3	-0	2	1	6	8	9	-6	1	6	6
NEW YORK TO STOCKHOLM																	
55,000	-56.5	-57	-1	1	6	-51	5	8	9	-49	7	10	11	-55	2	6	6
40,000	-56.5	-55	2	6	8	-51	5	9	12	-50	7	10	12	-53	6	7	10
30,000	-66.5	-51	-7	-4	-2	-49	-6	-1	0	-42	2	5	6	-46	-1	2	3
20,000	-21.2	-11	-9	-5	-1	-27	-6	-2	0	-16	5	8	9	-22	-1	3	5
10,000	-6.6	-16	-11	-7	-5	-11	-7	-3	-1	-1	5	8	7	-7	-2	1	3
NEW YORK TO ILL GOIN-JAFFA																	
55,000	-56.5	-57	-1	2	6	-55	1	6	5	-56	1	5	5	-59	-2	1	2
40,000	-56.5	-56	1	5	7	-56	1	5	7	-51	5	8	10	-55	1	5	6
30,000	-66.5	-49	-6	-2	-0	-46	-2	1	2	-38	6	9	10	-43	2	6	6
20,000	-21.2	-25	-6	-0	2	-22	-0	3	6	-12	9	11	13	-17	6	7	9
10,000	-6.6	-10	-6	-2	0	-6	-1	2	6	3	8	10	11	-2	5	6	8
NEW YORK TO TOKYO																	
55,000	-56.5	-56	2	6	8	-50	7	9	11	-50	7	9	10	-53	3	6	7
40,000	-56.5	-55	2	6	8	-51	6	9	11	-49	7	11	13	-52	5	8	9
30,000	-66.5	-50	-9	-7	-5	-57	-6	-3	-2	-40	6	7	8	-48	-3	-1	1
20,000	-21.2	-16	-13	-9	-7	-29	-8	-6	-2	-15	6	9	10	-25	-6	-1	1
10,000	-6.6	-21	-16	-12	-10	-15	-10	-6	-5	-0	5	7	8	-10	-6	-2	-0
NEW YORK TO TRINIDAD																	
55,000	-56.5	-72	-15	-13	-12	-70	-16	-12	-11	-69	-12	-11	-10	-73	-16	-16	-13
40,000	-56.5	-56	1	3	5	-56	0	3	6	-56	1	2	3	-55	2	6	6
30,000	-66.5	-39	6	8	9	-37	7	9	10	-36	10	12	12	-36	10	12	13
20,000	-21.2	-12	10	11	12	-11	11	12	13	-7	16	15	16	-8	13	15	16
10,000	-6.6	3	8	10	11	4	9	11	12	8	12	15	16	7	11	13	16

*D-DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
NEW YORK TO VANCOUVER																	
55,000	-56.5	-58	-1	2	4	-55	1	4	5	-57	-0	2	4	-59	-3	-0	1
40,000	-56.5	-55	1	5	8	-55	1	5	7	-53	3	6	7	-55	1	4	6
30,000	-56.5	-51	-6	-4	-2	-48	-3	-1	0	-38	6	8	10	-44	1	3	5
20,000	-71.2	-28	-7	-3	-1	-23	-2	2	3	-12	9	12	13	-18	5	6	8
10,000	-4.6	-15	-10	-5	-2	-7	-3	1	3	5	9	12	13	-2	2	6	8
NEW YORK TO VIENNA																	
55,000	-56.5	-57	-0	3	4	-53	3	6	7	-52	5	7	9	-57	-0	3	4
40,000	-56.5	-55	1	5	8	-54	2	7	9	-52	5	8	10	-54	2	6	8
30,000	-64.5	-49	-5	-2	-1	-47	-3	-0	1	-41	4	7	8	-46	1	3	5
20,000	-71.2	-27	-6	-2	1	-24	-2	1	3	-16	7	10	11	-19	2	6	8
10,000	-4.6	-13	-8	-4	-2	-8	-3	-0	2	1	5	8	9	-4	1	4	6
NEW YORK TO WARSAW																	
55,000	-56.5	-57	-0	3	4	-53	4	7	8	-50	6	9	10	-56	1	3	5
40,000	-56.5	-55	1	6	8	-53	4	8	11	-51	6	9	11	-54	3	6	8
30,000	-64.5	-50	-6	-3	-1	-48	-3	-1	1	-41	3	6	7	-45	-0	3	4
20,000	-71.2	-29	-8	-3	-1	-25	-4	-0	2	-15	6	9	10	-20	1	5	7
10,000	-4.6	-16	-10	-5	-3	-10	-5	-2	0	-0	4	7	8	-5	-1	3	5
NEW YORK TO WINNIPEG																	
55,000	-56.5	-58	-1	2	3	-56	1	3	5	-57	-1	2	3	-59	-3	-0	1
40,000	-56.5	-55	2	6	8	-55	2	6	8	-53	3	6	7	-55	2	5	7
30,000	-64.5	-50	-6	-3	-2	-48	-3	-1	0	-38	6	8	10	-44	1	3	5
20,000	-71.2	-28	-7	-3	-1	-23	-2	2	3	-12	9	12	13	-18	5	6	8
10,000	-4.6	-15	-11	-6	-4	-8	-5	0	2	4	8	11	12	-2	2	6	8
NEW YORK TO ZURICH																	
55,000	-56.5	-57	-1	2	4	-54	2	5	6	-53	3	6	8	-57	-1	2	4
40,000	-56.5	-55	1	5	8	-55	2	6	9	-52	4	7	9	-54	2	6	8
30,000	-64.5	-49	-5	-1	0	-47	-2	0	2	-40	5	7	9	-45	1	4	6
20,000	-71.2	-28	-5	-1	0	-23	-2	2	4	-15	6	9	10	-19	2	6	8
10,000	-4.6	-12	-7	-3	-1	-7	-3	1	2	2	6	8	9	-5	1	3	5
NICOSIA TO ROME																	
55,000	-56.5	-58	-1	2	3	-57	-1	2	3	-62	-4	-4	-3	-61	-5	-3	-1
40,000	-56.5	-56	0	3	5	-57	-1	3	5	-60	-4	10	12	-56	0	2	4
30,000	-64.5	-49	-5	-2	-1	-46	-1	1	3	-38	10	15	16	-41	3	5	7
20,000	-71.2	-24	-2	0	2	-19	2	5	6	-9	12	14	15	-15	6	8	9
10,000	-4.6	-6	-3	-0	1	-2	2	5	7	7	12	14	15	2	6	8	10
NICOSIA TO TEL AVIV-JAFFA																	
55,000	-56.5	-62	-6	-3	-2	-61	-6	-2	-1	-70	-15	-11	-10	-64	-8	-6	-4
40,000	-56.5	-55	2	4	6	-56	1	4	6	-67	-10	12	13	-56	1	3	5
30,000	-64.5	-47	-2	0	1	-43	1	4	5	-24	17	19	20	-40	5	7	8
20,000	-71.2	-26	1	3	5	-17	4	7	8	-5	17	18	19	-13	4	10	11
10,000	-4.6	-5	0	2	4	1	5	8	9	11	16	17	18	5	10	12	13
OMALA TO SEATTLE																	
55,000	-56.5	-55	4	7	9	-51	6	9	10	-44	8	10	11	-53	4	7	8
40,000	-56.5	-54	2	7	9	-52	5	8	10	-51	6	9	11	-52	4	7	9
30,000	-64.5	-51	-7	-4	-3	-50	-6	-3	-2	-43	1	4	5	-44	-3	-1	1
20,000	-71.2	-30	-9	-6	-2	-28	-7	-3	-2	-16	5	7	9	-25	-4	-0	1
10,000	-4.6	-14	-10	-5	-3	-12	-8	-5	-4	-1	4	6	7	-9	-4	-1	0
OMALA TO SYDNEY																	
55,000	-56.5	-63	-6	-4	-2	-61	-5	-2	-1	-57	-1	2	3	-56	0	2	1
40,000	-56.5	-56	0	3	5	-56	1	4	6	-54	2	6	7	-53	4	7	9
30,000	-64.5	-40	4	6	8	-45	-0	3	4	-49	-5	-2	-1	-44	-1	1	3
20,000	-71.2	-14	8	10	11	-16	5	8	9	-24	-2	0	1	-20	1	4	5
10,000	-4.6	3	8	10	11	-1	5	8	9	-6	-1	1	2	-3	2	4	6
OSAKA TO OSARA																	
55,000	-56.5	-64	-8	-6	-2	-66	-9	-5	-4	-68	-10	-7	-5	-66	-9	-6	-4
40,000	-56.5	-50	4	9	11	-54	3	6	7	-49	8	11	12	-52	5	7	9
30,000	-64.5	-36	8	11	12	-46	6	11	12	-29	17	19	20	-31	14	16	17
20,000	-71.2	-16	5	7	9	-11	10	13	14	-6	17	19	20	-8	13	15	17
10,000	-4.6	-4	1	3	5	2	7	9	11	11	16	17	18	6	11	13	14
OSAKA TO TAIPEI																	
55,000	-56.5	-71	-15	-11	-9	-72	-15	-12	-10	-71	-14	-11	-9	-69	-15	-10	-8
40,000	-56.5	-52	5	7	8	-54	4	6	7	-50	7	9	11	-52	5	7	8
30,000	-64.5	-32	12	14	15	-33	11	13	14	-28	14	16	17	-30	15	17	18
20,000	-71.2	-10	11	13	14	-8	14	15	16	-4	17	18	19	-6	15	17	18
10,000	-4.6	2	7	8	10	6	11	13	14	11	16	17	18	8	13	14	15
OSAKA TO TOKYO																	
55,000	-56.5	-64	-7	-4	-2	-65	-9	-5	-4	-66	-10	-6	-4	-65	-9	-5	-3
40,000	-56.5	-50	7	10	11	-54	3	6	7	-49	8	10	12	-52	5	7	9
30,000	-64.5	-37	8	11	12	-46	6	11	12	-28	17	19	20	-31	14	16	17
20,000	-71.2	-17	4	7	8	-11	10	13	14	-6	17	19	20	-8	13	15	17
10,000	-4.6	-4	0	3	4	2	7	9	11	11	15	17	18	6	11	13	14
OSAKA TO TOKYO																	
55,000	-56.5	-57	-1	3	5	-61	-4	-1	1	-63	-6	-3	-1	-62	-6	-2	-0
40,000	-56.5	-49	8	11	13	-54	2	6	8	-48	8	11	12	-52	5	8	9
30,000	-64.5	-42	3	6	8	-38	6	9	11	-24	17	20	21	-33	11	14	15
20,000	-71.2	-23	-2	1	3	-15	6	10	11	-4	17	19	20	-10	11	13	15
10,000	-4.6	-9	-5	-1	1	-1	4	6	8	10	15	17	18	5	8	10	12
OSLO TO PARIS																	
55,000	-56.5	-58	-1	2	4	-54	3	6	7	-49	8	10	11	-57	-0	2	4
40,000	-56.5	-59	-2	2	4	-54	2	7	9	-50	6	10	12	-56	0	4	6
30,000	-64.5	-51	-7	-4	-3	-49	-4	-1	-0	-42	3	6	7	-45	-1	2	4
20,000	-71.2	-28	-7	-3	-1	-24	-3	1	2	-15	6	8	10	-20	2	5	7
10,000	-4.6	-12	-7	-4	-2	-8	-3	-0	2	0	5	7	8	-5	0	3	5

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
OSLO TO REYKJAVIK																					
55,000	-56.5	-58	-2	2	6	-50	6	9	11	-46	11	13	14	-55	2	5	6	-52	4	8	10
40,000	-56.5	-58	-1	3	6	-50	6	11	13	-47	9	13	15	-54	3	7	9	-52	4	9	11
30,000	-46.5	-53	-9	-6	-4	-47	-5	-2	-0	-44	0	3	5	-47	-3	0	2	-48	-4	-0	2
20,000	-21.2	-31	-10	-6	-4	-28	-7	-5	-1	-19	2	5	7	-23	-7	2	4	-25	-4	0	2
10,000	-4.6	-14	-10	-6	-5	-12	-7	-4	-2	-5	2	4	5	-8	-5	0	2	-9	-5	-1	1
OSLO TO ROME																					
55,000	-56.5	-57	-0	3	5	-54	3	5	7	-51	6	8	9	-58	-1	1	3	-55	2	5	6
40,000	-56.5	-58	-2	2	6	-55	1	5	7	-51	6	9	11	-56	0	3	5	-55	1	5	8
30,000	-46.5	-51	-7	-4	-5	-48	-4	-1	0	-40	4	7	8	-44	0	3	5	-46	-1	2	4
20,000	-21.2	-28	-7	-5	-1	-25	-2	1	3	-14	7	9	11	-18	3	6	8	-21	0	4	6
10,000	-4.6	-12	-7	-5	-1	-7	-2	1	2	-2	6	9	10	-4	1	4	6	-5	-1	3	5
OSLO TO SEATTLE																					
55,000	-56.5	-59	-2	2	6	-48	8	11	12	-45	11	13	14	-53	3	5	7	-51	5	8	10
40,000	-56.5	-57	-1	3	5	-50	6	10	12	-47	9	13	14	-52	4	8	9	-52	5	9	11
30,000	-46.5	-56	-11	-9	-7	-51	-7	-4	-2	-45	-0	2	3	-50	-5	-3	-1	-51	-6	-3	-1
20,000	-21.2	-36	-15	-11	-9	-52	-11	-7	-5	-20	1	4	5	-28	-7	-3	-1	-29	-8	-3	-1
10,000	-4.6	-22	-17	-15	-11	-17	-12	-9	-7	-4	0	3	4	-13	-8	-5	-3	-14	-9	-5	-3
OSLO TO STOCKHOLM																					
55,000	-56.5	-58	-2	1	3	-52	6	7	9	-46	10	12	13	-54	1	3	5	-53	3	7	9
40,000	-56.5	-59	-3	1	3	-53	6	8	10	-48	8	11	13	-55	1	5	7	-54	2	7	10
30,000	-46.5	-53	-9	-6	-5	-50	-6	-3	-2	-43	2	5	6	-47	-2	1	2	-48	-4	0	2
20,000	-21.2	-31	-10	-6	-4	-26	-5	-2	0	-17	5	7	8	-22	-1	1	3	-24	-3	1	3
10,000	-4.6	-16	-11	-7	-5	-10	-6	-2	-1	-1	6	6	7	-6	-2	2	3	-8	-4	-0	2
OSLO TO TOKYO																					
55,000	-56.5	-56	1	6	6	-50	7	10	11	-47	10	12	13	-53	6	6	8	-51	5	9	10
40,000	-56.5	-57	-1	3	5	-50	7	11	13	-48	9	12	14	-52	5	8	10	-52	5	9	12
30,000	-46.5	-55	-11	-8	-6	-49	-5	-2	-0	-37	7	10	12	-47	-3	0	2	-47	-3	2	5
20,000	-21.2	-36	-16	-11	-9	-29	-7	-4	-2	-14	8	10	12	-25	-3	0	2	-26	-4	1	4
10,000	-4.6	-22	-18	-14	-12	-14	-10	-6	-4	1	6	8	10	-11	-6	-3	-1	-12	-7	-2	1
OSLO TO WARSZAWA																					
55,000	-56.5	-57	-1	3	5	-53	6	6	8	-47	9	11	12	-54	0	3	4	-53	3	6	8
40,000	-56.5	-59	-2	1	3	-54	5	7	9	-50	7	10	12	-56	1	4	6	-55	2	6	9
30,000	-46.5	-53	-9	-6	-5	-50	-5	-3	-1	-42	3	5	7	-46	-1	2	3	-47	-3	1	3
20,000	-21.2	-30	-9	-5	-3	-25	-4	-0	1	-15	6	8	9	-20	1	4	6	-25	-2	2	4
10,000	-4.6	-15	-10	-6	-4	-9	-5	-1	0	-0	6	7	8	-6	-2	2	4	-8	-3	1	3
OSLO TO ZURICH																					
55,000	-56.5	-57	-1	3	5	-51	5	6	7	-49	8	10	11	-57	-1	2	3	-54	2	6	7
40,000	-56.5	-59	-2	2	6	-53	2	6	8	-50	6	10	12	-54	0	4	6	-55	2	6	8
30,000	-46.5	-52	-7	-4	-1	-49	-6	-2	-0	-41	3	6	7	-45	-0	2	4	-47	-2	1	3
20,000	-21.2	-29	-7	-5	-1	-24	-1	0	2	-15	6	9	10	-19	2	5	7	-22	-0	3	5
10,000	-4.6	-15	-8	-4	-2	-8	-5	-0	2	1	5	7	9	-5	0	3	5	-6	-1	2	4
OTTAWA TO ST. LOUIS																					
55,000	-56.5	-60	-3	-0	1	-54	-1	1	3	-41	-4	-2	-1	-62	-6	-3	-1	-60	-4	-1	1
40,000	-56.5	-58	1	4	7	-56	0	4	6	-54	3	5	6	-55	1	4	6	-55	1	4	5
30,000	-46.5	-56	-6	-1	0	-46	-2	1	2	-36	4	10	12	-42	3	5	7	-41	1	5	7
20,000	-21.2	-25	-6	-1	2	-20	1	4	5	-10	11	15	16	-15	6	9	11	-14	4	7	9
10,000	-4.6	-11	-6	-2	-0	-5	-1	3	5	5	10	12	13	1	5	9	11	-5	2	6	8
OTTAWA TO WASHINGTON, D.C.																					
55,000	-56.5	-60	-5	-0	1	-54	-1	2	3	-60	-4	-1	0	-62	-6	-3	-1	-60	-3	-0	1
40,000	-56.5	-58	0	4	6	-56	1	5	7	-54	3	5	6	-55	2	5	6	-55	1	4	5
30,000	-46.5	-58	-5	-1	1	-46	-2	1	2	-37	8	10	11	-41	3	6	7	-43	2	5	7
20,000	-21.2	-24	-5	1	3	-21	0	3	5	-10	11	15	16	-15	6	9	11	-14	4	7	9
10,000	-4.6	-11	-6	-2	0	-6	-2	2	4	5	9	11	12	0	5	9	10	-5	2	5	7
PANGLOSS TO TANANARIVE																					
55,000	-56.5	-43	-26	-24	-23	-40	-24	-22	-21	-74	-22	-20	-19	-40	-24	-22	-21	-80	-24	-22	-20
40,000	-56.5	-55	2	3	6	-52	5	6	7	-54	7	8	9	-51	2	3	4	-54	3	4	5
30,000	-46.5	-51	14	15	15	-50	14	15	16	-51	14	15	15	-52	13	14	14	-51	14	15	15
20,000	-21.2	-5	17	17	18	-5	16	17	18	-5	16	17	17	-5	16	17	17	-5	16	17	17
10,000	-4.6	10	14	15	15	10	15	16	16	9	14	15	15	10	14	15	15	10	14	15	16
PANAMA CITY TO QUITO																					
55,000	-56.5	-74	-22	-20	-19	-77	-21	-19	-14	-74	-17	-16	-15	-78	-21	-20	-19	-77	-20	-18	-17
40,000	-56.5	-54	5	4	5	-52	5	6	7	-55	2	3	4	-54	2	4	4	-54	3	5	6
30,000	-46.5	-52	12	13	14	-50	14	15	16	-52	12	14	14	-51	13	14	15	-51	13	14	15
20,000	-21.2	-5	16	14	14	-4	17	18	19	-7	15	16	16	-6	16	17	17	-5	16	17	18
10,000	-4.6	9	14	15	16	10	14	15	16	9	14	15	16	10	15	16	16	10	15	16	16
PANAMA TO RIO DE JANEIRO																					
55,000	-56.5	-77	-21	-19	-17	-76	-20	-18	-17	-71	-15	-12	-11	-74	-17	-15	-14	-75	-18	-15	-14
40,000	-56.5	-53	5	5	6	-52	5	7	8	-53	3	5	6	-54	3	4	5	-53	4	6	7
30,000	-46.5	-52	13	14	15	-51	14	15	16	-53	12	13	14	-51	13	15	16	-52	13	15	16
20,000	-21.2	-5	17	18	19	-5	16	18	18	-9	15	16	15	-6	15	16	17	-6	15	17	18
10,000	-4.6	10	14	16	16	10	14	16	16	7	12	13	14	10	14	16	16	9	14	15	16
PANAMA TO SAN FRANCISCO																					
55,000	-56.5	-72	-15	-13	-12	-70	-14	-12	-11	-71	-15	-13	-12	-74	-14	-12	-11	-72	-15	-13	-12
40,000	-56.5	-56	1	3	5	-56	1	3	4	-55	1	3	5	-55	2	3	4	-55	1	3	4
30,000	-46.5	-59	5	7	8	-58	7	8	9	-53	12	13	14	-55	10	11	12	-56	8	10	11
20,000	-21.2	-12	9	12	13	-10	11	13	14	-6	15	16	16	-8	15	16	16	-9	12	14	14
10,000	-4.6	6	9	11	12	7	11	14	15	11	15	16	17	8	15	15	15	8	12	14	15
PANAMA CITY TO SAN JOSE																					
55,000	-56.5	-78	-21	-19	-18	-77	-20	-19	-18	-74	-17	-16	-15	-78	-22	-20	-19	-77	-20	-18	-17
40,000	-56.5	-54	5	4	5	-53	4	5	6	-55	1	2	3	-54	3	4	5	-54	3	4	5
30,000	-46.5	-54	11	12	12	-52	13	14	14	-53	12	13	13	-51	13	14	15	-52	12	13	14
20,000	-21.2	-6	15	16	17	-5	16	17	18	-7	15	16	16	-6	16	17	17	-6	15	17	17
10,000	-4.6	9	13	14	15	9	14	15	16	9	14	15	15	10	15	16	16	9	14	15	16

*0--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
PANAMA TO SAN JUAN																	
55,000	-56.5	-77	-21	-19	-18	-77	-21	-19	-18	-73	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-54	3	4	5	-53	4	5	6	-56	1	2	3	-54	2	4	5
30,000	-44.5	-34	11	12	13	-32	12	14	14	-33	13	14	14	-33	12	13	14
20,000	-21.2	-7	14	16	16	-6	15	17	17	-7	14	15	16	-6	15	16	17
10,000	-4.6	8	13	14	15	9	13	15	15	9	14	15	15	9	13	15	15
PANAMA TO SANTA MARIA																	
55,000	-56.5	-71	-15	-13	-12	-70	-14	-12	-11	-69	-12	-11	-10	-71	-14	-12	-11
40,000	-56.5	-56	1	3	4	-56	0	3	4	-55	1	3	3	-56	1	3	4
30,000	-44.5	-39	6	8	9	-37	8	9	10	-35	10	11	12	-36	8	10	11
20,000	-21.2	-11	10	12	12	-10	11	13	14	-8	13	15	16	-9	12	13	14
10,000	-4.6	5	9	11	12	5	9	11	12	8	12	14	14	6	11	12	13
PANAMA TO SANTIAGO																	
55,000	-56.5	-75	-18	-16	-15	-74	-18	-16	-15	-70	-13	-11	-10	-73	-16	-13	-12
40,000	-56.5	-53	3	5	7	-53	4	6	7	-53	3	5	6	-53	3	6	7
30,000	-44.5	-33	11	13	14	-33	12	13	14	-33	12	13	14	-33	11	13	14
20,000	-21.2	-6	15	17	17	-7	16	18	17	-11	10	12	12	-7	14	15	16
10,000	-4.6	9	14	15	16	8	13	14	15	6	10	12	13	8	12	14	15
PAPEETE TO SAN FRANCISCO																	
55,000	-56.5	-77	-20	-18	-17	-74	-18	-16	-15	-73	-17	-15	-14	-75	-18	-16	-15
40,000	-56.5	-55	2	4	6	-55	1	4	5	-54	2	4	5	-55	2	4	5
30,000	-44.5	-36	9	11	11	-35	9	11	11	-34	10	12	13	-35	10	11	12
20,000	-21.2	-9	12	14	15	-9	12	14	15	-7	14	15	16	-8	13	15	16
10,000	-4.6	7	12	13	14	7	12	13	14	9	13	15	15	8	13	14	15
PARIS TO RIO DE JANEIRO																	
55,000	-56.5	-71	-15	-12	-11	-70	-14	-12	-11	-69	-12	-10	-9	-71	-14	-11	-10
40,000	-56.5	-55	1	4	5	-55	2	5	6	-54	4	5	6	-54	2	4	5
30,000	-44.5	-38	7	8	9	-36	9	10	11	-34	10	12	13	-35	10	12	13
20,000	-21.2	-11	10	12	13	-10	11	13	14	-8	13	15	15	-9	13	15	16
10,000	-4.6	5	9	11	12	6	10	12	13	8	13	15	15	7	12	13	14
PARIS TO ROME																	
55,000	-56.5	-57	-0	3	5	-55	1	4	5	-54	2	5	6	-54	0	3	4
40,000	-56.5	-58	-2	2	4	-58	-1	3	5	-53	4	7	8	-54	0	3	4
30,000	-44.5	-50	-5	-2	-1	-47	-2	0	2	-39	6	4	9	-43	2	5	6
20,000	-21.2	-25	-4	-1	1	-21	0	3	5	-12	9	11	12	-14	5	7	9
10,000	-4.6	-8	-4	-0	2	-5	0	3	4	4	9	11	12	-1	4	6	8
PARIS TO SAN FRANCISCO																	
55,000	-56.5	-57	-1	3	5	-51	5	8	9	-50	7	9	10	-53	1	4	5
40,000	-56.5	-56	1	5	8	-52	4	8	11	-50	7	10	12	-53	3	7	9
30,000	-44.5	-53	-8	-5	-4	-49	-5	-2	-0	-42	2	5	7	-47	-2	1	2
20,000	-21.2	-32	-11	-7	-4	-27	-6	-2	-0	-17	5	7	9	-23	-2	2	4
10,000	-4.6	-17	-15	-4	-6	-12	-7	-4	-2	-1	4	6	8	-8	-3	0	2
PARIS TO SANTA MARIA																	
55,000	-56.5	-59	-3	0	2	-57	-0	3	4	-57	-0	2	4	-58	-2	1	3
40,000	-56.5	-59	-2	2	4	-58	-1	3	5	-54	3	6	9	-57	-0	3	5
30,000	-44.5	-47	-3	-0	1	-45	-1	2	1	-36	7	9	10	-42	3	5	7
20,000	-21.2	-22	-0	3	5	-19	2	5	6	-12	10	12	13	-15	6	9	10
10,000	-4.6	-5	-0	3	4	-5	2	5	6	4	9	11	12	1	5	8	9
PARIS TO SEATTLE																	
55,000	-56.5	-57	-1	3	5	-50	7	9	11	-47	9	12	13	-54	2	5	6
40,000	-56.5	-56	0	5	7	-51	5	10	12	-48	8	11	13	-52	4	8	9
30,000	-44.5	-54	-9	-7	-5	-50	-5	-3	-1	-44	1	5	5	-46	-3	-0	1
20,000	-21.2	-34	-13	-9	-6	-29	-8	-4	-2	-16	3	5	7	-25	-4	-0	2
10,000	-4.6	-19	-15	-11	-8	-14	-9	-6	-4	-3	2	4	5	-10	-6	-2	-0
PARIS TO ZURICH																	
55,000	-56.5	-57	-0	3	5	-55	2	5	6	-52	4	7	8	-54	-2	1	2
40,000	-56.5	-58	-2	2	4	-57	-0	4	6	-52	4	7	9	-54	0	3	5
30,000	-44.5	-50	-5	-3	-1	-47	-3	-0	1	-40	5	7	9	-43	1	4	5
20,000	-21.2	-26	-5	-1	1	-22	-0	3	4	-13	8	10	11	-17	4	1	8
10,000	-4.6	-9	-5	-1	1	-5	-1	2	4	3	7	9	11	-2	3	6	7
PERIM TO RIO DE JANEIRO																	
55,000	-56.5	-50	7	10	11	-57	-0	2	4	-62	-6	-3	-2	-54	-2	2	4
40,000	-56.5	-49	7	11	12	-53	3	7	9	-61	-4	-1	1	-54	-2	2	4
30,000	-44.5	-45	-1	2	4	-47	-3	-0	1	-54	-9	-7	-5	-51	-6	-4	-2
20,000	-21.2	-21	-0	3	5	-26	-5	-1	1	-10	-9	-6	-5	-27	-6	-3	-1
10,000	-4.6	-7	-2	1	3	-10	-5	-2	0	-16	-11	-8	-7	-12	-7	-4	-2
PERIM TO SINGAPORE																	
55,000	-56.5	-79	-22	-20	-19	-76	-19	-17	-16	-74	-18	-16	-15	-75	-18	-16	-15
40,000	-56.5	-54	7	4	5	-53	5	5	5	-54	5	5	5	-54	5	5	5
30,000	-44.5	-32	12	14	15	-34	11	12	13	-34	11	12	13	-35	10	11	12
20,000	-21.2	-6	15	16	17	-6	15	15	15	-9	12	13	14	-8	13	15	15
10,000	-4.6	9	14	15	15	8	12	14	14	6	10	12	12	7	11	13	13
PERIM TO SYDNEY																	
55,000	-56.5	-65	-4	-6	-4	-63	-7	-4	-3	-60	-5	-1	0	-62	-5	-3	-1
40,000	-56.5	-55	2	4	6	-54	0	3	4	-54	3	5	7	-54	2	6	7
30,000	-44.5	-38	6	8	10	-42	2	4	5	-45	-1	2	3	-43	1	3	5
20,000	-21.2	-11	10	12	13	-16	5	7	8	-22	-0	2	3	-17	4	6	7
10,000	-4.6	5	10	12	13	1	5	7	8	-4	0	3	4	-1	4	6	7
PERIM TO TOKYO																	
55,000	-56.5	-77	-20	-18	-17	-75	-18	-16	-15	-74	-17	-15	-14	-75	-18	-16	-14
40,000	-56.5	-53	4	5	6	-53	3	5	6	-53	3	5	6	-53	3	5	6
30,000	-44.5	-32	13	14	15	-33	11	13	14	-32	13	14	15	-32	12	14	15
20,000	-21.2	-7	14	15	16	-7	14	15	16	-7	14	15	16	-7	14	15	16
10,000	-4.6	8	12	13	14	8	13	14	15	8	13	14	15	8	13	14	15

00--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL			
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
PESHAWAR TO RAHAPINDI																					
55,000	-56.5	-65	-7	-4	-2	-62	-5	-3	-1	-67	-10	-7	-5	-64	-7	-4	-3	4	4	82	N.M.I.
40,000	-56.5	-55	2	5	7	-54	2	6	8	-47	10	15	16	-54	3	6	7	5	5	5	5
30,000	-44.5	-45	-1	2	4	-42	5	6	8	-27	17	20	22	-38	7	10	11	5	5	5	5
20,000	-21.2	-20	1	4	5	-14	8	11	12	-5	18	20	21	-12	9	11	15	4	5	4	4
10,000	-4.6	-4	1	5	5	4	8	11	12	14	19	21	22	4	9	15	15	4	4	5	4
PHILADELPHIA TO VANCOUVER																					
55,000	-56.5	-58	-1	2	3	-56	1	5	5	-57	-1	2	3	-60	-3	-1	1	5	4	2087	N.M.I.
40,000	-56.5	-55	1	5	7	-54	1	5	7	-54	1	5	7	-54	1	5	6	6	4	3	4
30,000	-44.5	-51	-6	-5	-2	-48	-5	-1	0	-38	6	9	10	-45	1	4	6	6	4	3	4
20,000	-21.2	-28	-7	-2	-0	-22	-1	2	4	-11	10	12	13	-18	3	7	8	6	5	3	4
10,000	-4.6	-14	-9	-4	-2	-7	-2	1	3	5	10	12	13	-2	5	7	9	7	5	3	6
PITTSBURGH TO VANCOUVER																					
55,000	-56.5	-58	-1	2	3	-56	1	5	5	-57	-1	2	3	-60	-3	-1	1	5	4	1688	N.M.I.
40,000	-56.5	-55	1	5	7	-54	1	5	7	-54	1	5	7	-54	1	5	6	6	4	3	4
30,000	-44.5	-50	-6	-5	-2	-48	-5	-1	0	-38	6	9	10	-45	1	4	6	6	4	3	4
20,000	-21.2	-24	-7	-2	0	-22	-1	2	4	-11	10	12	13	-14	3	7	8	6	5	3	4
10,000	-4.6	-15	-9	-4	-1	-6	-2	2	4	5	10	12	14	-2	5	7	9	7	5	3	6
POINT A PILLAI TO ST. MARTEN																					
55,000	-56.5	-76	-20	-18	-17	-77	-20	-19	-18	-77	-16	-14	-14	-77	-20	-18	-17	3	3	140	N.M.I.
40,000	-56.5	-54	5	5	6	-54	2	4	5	-54	1	2	3	-54	3	4	6	3	2	2	3
30,000	-44.5	-55	10	11	12	-55	11	12	13	-54	11	12	13	-52	12	13	14	3	2	2	2
20,000	-21.2	-8	15	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17	2	2	1	2
10,000	-4.6	7	12	15	16	8	13	16	16	9	15	16	15	9	15	16	15	2	2	1	1
PORT-AU-PRINCE TO SAN JUAN																					
55,000	-56.5	-76	-20	-18	-17	-76	-19	-18	-17	-77	-16	-14	-14	-77	-20	-18	-17	3	3	560	N.M.I.
40,000	-56.5	-54	5	5	6	-54	2	4	5	-54	1	2	3	-54	3	4	6	3	2	2	3
30,000	-44.5	-55	9	11	11	-54	11	12	12	-54	11	12	12	-52	12	13	14	3	2	2	2
20,000	-21.2	-8	15	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17	2	2	1	2
10,000	-4.6	7	12	15	16	8	12	16	16	9	15	16	15	9	15	16	15	2	2	1	1
PORT MANSOUR TO SYDNEY																					
55,000	-56.5	-76	-19	-17	-16	-74	-17	-15	-15	-71	-15	-15	-12	-71	-15	-12	-11	3	3	1485	N.M.I.
40,000	-56.5	-51	4	5	6	-55	1	5	6	-54	2	4	5	-54	2	5	6	3	3	3	3
30,000	-44.5	-55	11	11	16	-55	9	11	12	-57	8	10	11	-56	8	10	11	3	3	3	3
20,000	-21.2	-7	14	16	17	-10	12	13	14	-12	9	11	12	-11	10	12	13	3	3	3	2
10,000	-4.6	6	13	16	15	5	10	11	12	1	8	10	11	5	9	11	12	2	2	3	2
PORT MANSOUR TO TOWNSVILLE																					
55,000	-56.5	-76	-20	-22	-21	-74	-22	-20	-19	-77	-21	-19	-18	-76	-21	-19	-18	3	3	585	N.M.I.
40,000	-56.5	-55	4	5	6	-55	4	5	6	-55	2	4	5	-54	3	5	6	2	3	2	3
30,000	-44.5	-51	15	15	16	-52	12	14	15	-51	12	14	15	-52	12	14	15	2	2	2	3
20,000	-21.2	-4	17	18	19	-6	15	17	17	-7	16	18	18	-6	15	17	17	2	2	2	2
10,000	-4.6	10	16	16	16	8	15	16	15	8	15	16	15	8	15	16	15	2	2	2	2
PORTO ALLEGRE TO SAO PAULO																					
55,000	-56.5	-76	-16	-11	-10	-64	-15	-10	-9	-65	-6	-5	-2	-64	-7	-5	-1	4	4	455	N.M.I.
40,000	-56.5	-57	4	7	9	-54	5	6	8	-52	5	7	9	-54	5	7	9	4	4	4	4
30,000	-44.5	-55	9	11	15	-54	9	11	12	-60	5	7	8	-54	8	11	12	3	3	3	3
20,000	-21.2	-7	14	17	18	-11	11	15	16	-14	7	9	10	-10	11	15	16	3	3	3	3
10,000	-4.6	9	15	15	16	7	11	11	16	2	6	8	9	6	10	12	13	3	3	2	3
PRAGUE TO HOME																					
55,000	-56.5	-56	0	4	6	-55	2	4	6	-54	5	5	7	-59	-2	0	1	5	5	505	N.M.I.
40,000	-56.5	-54	-1	2	4	-57	-1	3	5	-52	5	8	9	-54	0	3	4	5	5	4	6
30,000	-44.5	-50	-4	-5	-2	-47	-5	-0	1	-59	6	8	9	-65	2	4	6	4	4	4	6
20,000	-21.2	-26	-5	-2	0	-21	-0	3	4	-12	9	11	12	-17	4	7	9	4	4	4	6
10,000	-4.6	-10	-5	-2	-0	-5	-1	2	4	6	8	10	11	-1	5	7	9	5	4	5	6
PRAGUE TO SANTA MARIA																					
55,000	-56.5	-59	-2	1	5	-56	0	3	5	-56	1	3	5	-60	-5	-1	0	5	4	1861	N.M.I.
40,000	-56.5	-54	-2	2	4	-54	-1	1	5	-55	1	4	6	-57	-0	3	5	6	4	4	6
30,000	-44.5	-48	-4	-1	0	-46	-1	1	5	-50	4	5	6	-46	1	4	6	6	4	4	6
20,000	-21.2	-25	-2	2	4	-20	1	4	6	-12	9	11	12	-14	6	8	10	5	4	3	6
10,000	-4.6	-4	-2	1	5	-1	1	4	5	4	9	11	12	-0	5	7	9	5	4	3	6
PRAGUE TO SHANNON																					
55,000	-56.5	-57	-0	5	5	-54	1	4	7	-50	7	9	10	-57	-1	2	3	5	4	878	N.M.I.
40,000	-56.5	-54	-2	2	5	-55	1	4	8	-51	6	9	11	-56	0	4	6	6	4	5	5
30,000	-44.5	-50	-4	-5	-2	-48	-5	-1	5	-45	6	8	9	-44	0	5	5	6	4	5	5
20,000	-21.2	-24	-5	-1	1	-14	7	9	10	-19	5	6	8	-21	1	2	4	6	4	5	5
10,000	-4.6	-10	-4	-2	-0	-7	-2	1	5	1	6	8	9	-5	2	5	6	5	4	5	5
PRAGUE TO STOCKHOLM																					
55,000	-56.5	-57	-0	5	5	-55	4	6	8	-48	9	11	12	-57	-0	5	6	5	4	584	N.M.I.
40,000	-56.5	-54	-2	1	5	-54	2	4	8	-50	6	10	12	-54	1	4	6	5	4	5	6
30,000	-44.5	-52	-4	-5	-2	-49	-5	-2	-1	-41	5	6	7	-45	-1	2	3	6	4	5	6
20,000	-21.2	-10	-4	-4	-2	-25	-5	-0	2	-15	6	8	10	-20	5	7	9	6	5	3	6
10,000	-4.6	-14	-10	-6	-5	-9	-4	-1	1	0	5	7	8	-6	-1	2	4	6	5	3	5
PRAGUE TO TEHRAN																					
55,000	-56.5	-57	-0	5	6	-55	1	1	5	-54	0	3	4	-59	-2	0	1	5	4	1818	N.M.I.
40,000	-56.5	-57	-1	1	6	-55	1	4	6	-48	8	11	12	-56	0	3	4	6	4	1	4
30,000	-44.5	-51	-6	-4	-2	-46	-1	1	7	-35	9	12	13	-42	2	4	6	6	4	3	4
20,000	-21.2	-24	-5	-1	0	-20	1	4	6	-10	15	16	15	-17	5	7	9	6	5	3	4
10,000	-4.6	-11	-6	-5	-1	-4	1	4	6	6	10	12	13	-1	4	7	9	5	5	3	4
PRAGUE TO TEL AVIV-JAFFA																					
55,000	-56.5	-58	-1	2	3	-56	0	2	4	-59	-5	-1	1	-60	-4	-2	-0	4	3	1422	N.M.I.
40,000	-56.5	-57	-0	5	5	-56	0	4	5	-48	8	10	12	-54	0	3	4	6	5	3	4
30,000	-44.5	-50	-5	-3	-2	-46	-1	1	7	-35	10	12	13	-42	3	5	6	6	5	3	4
20,000	-21.2	-25	-5	-0	1	-20	1	4	5	-10	11	13	14	-16	6	8	9	6	4	3	4
10,000	-4.6	-9	-5	-2	-0	-5	1	4	6	6	10	12	13	1	5	8	9	6	4	3	4

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE FLIGHTS																			STANDARD DEVIATION						
HEIGHTS IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085				
PRAGUE TO VIENNA																									
55,000	-56.5	-56	1	4	6	-56	2	5	6	-51	6	8	9	-58	-1	1	3	-55	2	5	7	5	4	3	4
40,000	-56.5	-58	-2	2	4	-56	1	4	6	-51	5	8	10	-56	0	3	5	-55	1	5	7	5	5	4	4
30,000	-56.5	-51	-7	-6	-3	-48	-4	-1	0	-40	4	7	8	-46	1	4	5	-46	-1	2	4	4	4	4	4
20,000	-71.2	-27	-6	-2	-0	-23	-1	2	3	-13	8	10	11	-18	3	6	8	-20	1	4	6	6	4	3	5
10,000	-4.6	-12	-8	-4	-2	-7	-2	1	3	2	7	9	10	-3	2	5	7	-5	-0	3	5	6	5	3	5
PRAGUE TO WARSAW																									
55,000	-56.5	-56	1	4	6	-56	3	5	7	-49	7	9	11	-57	-1	2	3	-54	2	6	7	5	4	3	4
40,000	-56.5	-58	-2	2	3	-55	1	5	7	-51	6	9	10	-56	0	3	5	-55	1	5	7	5	5	5	4
30,000	-56.5	-52	-7	-5	-3	-49	-6	-2	-0	-41	4	7	8	-46	0	3	4	-46	-2	2	4	4	4	4	4
20,000	-71.2	-28	-7	-3	-1	-23	-2	1	3	-14	7	9	10	-19	3	6	8	-21	0	4	6	4	5	3	5
10,000	-4.6	-15	-9	-5	-3	-8	-3	0	2	1	6	8	9	-4	1	4	6	-6	-1	2	4	6	5	3	5
PRAGUE TO ZURICH																									
55,000	-56.5	-56	1	4	6	-56	2	5	6	-51	5	7	9	-58	-2	1	2	-55	2	5	6	5	4	3	4
40,000	-56.5	-58	-2	2	4	-56	0	4	6	-52	5	8	9	-56	0	3	5	-56	1	5	7	5	5	5	4
30,000	-56.5	-51	-6	-4	-2	-48	-3	-1	1	-40	5	7	8	-43	1	4	5	-46	-1	3	5	4	4	4	4
20,000	-71.2	-27	-6	-2	-0	-22	-1	2	3	-13	8	10	11	-18	4	7	8	-20	1	5	7	4	4	3	5
10,000	-4.6	-11	-7	-3	-1	-6	-2	1	3	2	7	9	10	-2	2	5	7	-4	0	4	6	6	4	3	5
PUNTA ARENAS TO SANTIAGO																									
55,000	-56.5	-55	1	4	5	-58	-1	1	3	-57	-0	3	4	-55	1	5	7	-56	0	4	6	4	4	4	5
40,000	-56.5	-53	4	7	9	-56	1	4	6	-55	2	5	7	-55	2	5	7	-54	-1	2	4	4	3	4	4
30,000	-56.5	-45	2	5	6	-44	1	3	5	-50	-6	-3	-2	-45	-0	2	4	-45	-1	2	4	4	3	4	4
20,000	-71.2	-17	5	7	9	-20	2	4	6	-26	-4	-2	-0	-19	2	5	7	-20	1	5	6	4	4	4	4
10,000	-4.6	1	6	8	10	-3	1	4	5	-8	-3	-1	0	-5	-0	2	3	-4	1	4	6	4	4	3	4
QUITO TO RIO DE JANEIRO																									
55,000	-56.5	-77	-20	-14	-17	-76	-19	-17	-16	-70	-14	-12	-10	-72	-16	-14	-13	-74	-17	-14	-13	4	3	4	5
40,000	-56.5	-55	4	6	7	-52	5	7	8	-53	4	5	6	-54	3	4	5	-52	4	6	8	3	4	3	5
30,000	-56.5	-52	15	14	15	-51	15	15	16	-53	12	13	14	-52	13	14	15	-52	13	14	15	2	3	3	2
20,000	-71.2	-5	16	14	14	-5	16	17	18	-9	12	13	14	-6	15	14	17	-9	15	16	17	2	2	2	2
10,000	-4.6	10	14	14	16	9	14	15	16	7	11	13	14	9	14	15	16	9	13	15	16	2	2	2	2
HANOI TO SINGAPORE																									
55,000	-56.5	-81	-25	-23	-22	-74	-22	-20	-19	-70	-22	-20	-18	-69	-24	-22	-21	-74	-25	-23	-22	3	3	3	3
40,000	-56.5	-55	1	3	4	-54	3	6	7	-54	2	4	4	-54	2	5	4	-54	3	4	5	2	2	2	2
30,000	-56.5	-51	15	14	15	-50	15	16	17	-50	14	15	16	-51	14	15	16	-51	14	15	16	2	2	1	2
20,000	-71.2	-5	16	17	18	-6	17	18	19	-5	17	17	18	-6	16	17	17	-5	16	18	18	2	2	1	2
10,000	-4.6	9	14	15	15	10	15	16	16	10	14	15	15	9	14	15	15	10	14	15	16	2	2	1	1
KUALA LUMPUR TO SELATAN																									
55,000	-56.5	-65	-7	-6	-2	-62	-5	-5	-1	-67	-10	-7	-5	-64	-7	-5	-3	-64	-7	-6	-3	4	4	5	4
40,000	-56.5	-55	4	5	7	-54	2	4	6	-57	10	13	14	-54	5	6	7	-52	4	6	8	5	5	5	5
30,000	-56.5	-51	15	14	15	-52	15	16	17	-52	17	20	22	-54	7	10	11	-54	7	11	14	4	5	4	5
20,000	-71.2	-20	1	4	5	-14	6	11	12	-1	18	20	21	-12	9	11	13	-12	9	13	15	4	4	5	4
10,000	-4.6	4	1	5	5	4	6	11	12	16	19	21	22	4	9	12	13	5	9	13	15	4	4	5	4
ACRIFE TO RIO DE JANEIRO																									
55,000	-56.5	-76	-20	-17	-16	-76	-19	-17	-15	-69	-15	-10	-9	-71	-14	-12	-11	-73	-17	-15	-11	4	5	4	5
40,000	-56.5	-55	4	5	7	-52	4	7	8	-52	5	6	7	-55	5	5	6	-55	4	6	7	5	4	5	5
30,000	-56.5	-52	15	14	15	-52	12	14	15	-53	11	13	14	-53	12	14	15	-52	12	14	15	5	5	5	5
20,000	-71.2	-5	16	14	14	-6	15	16	17	-9	12	14	15	-7	14	14	16	-7	14	16	17	2	2	2	2
10,000	-4.6	9	14	15	16	9	14	15	16	6	11	12	13	9	14	15	16	9	13	15	16	2	2	2	2
ACRIFE TO SAO PAULO																									
55,000	-56.5	-76	-20	-17	-16	-75	-19	-16	-15	-69	-12	-10	-8	-75	-14	-12	-13	-73	-16	-13	-11	4	5	4	5
40,000	-56.5	-55	4	6	7	-52	4	7	8	-52	5	6	7	-53	5	5	6	-53	4	6	7	5	4	5	5
30,000	-56.5	-52	12	14	15	-52	12	14	15	-53	11	13	14	-53	12	14	15	-53	12	14	15	3	3	3	3
20,000	-71.2	-5	16	14	14	-6	15	16	17	-9	12	14	15	-7	14	14	16	-7	14	16	17	2	2	2	2
10,000	-4.6	9	14	15	16	9	14	15	16	6	10	12	13	9	14	15	16	8	13	15	16	2	2	2	2
RIO DE JANEIRO TO HOME																									
55,000	-56.5	-72	-16	-14	-12	-72	-15	-13	-12	-71	-14	-12	-11	-72	-15	-13	-12	-72	-15	-13	-12	4	5	3	3
40,000	-56.5	-55	2	4	4	-54	3	5	7	-52	4	6	6	-54	3	4	5	-54	3	5	6	4	4	2	3
30,000	-56.5	-57	7	9	10	-55	10	11	12	-53	11	13	14	-54	10	12	13	-55	10	11	12	2	2	2	2
20,000	-71.2	-11	11	12	13	-9	12	13	14	-7	14	15	16	-8	13	14	15	-9	12	14	15	2	2	2	2
10,000	-4.6	6	10	12	12	7	11	13	14	50	14	15	16	6	12	14	15	7	12	14	15	2	2	2	2
RIO DE JANEIRO TO SAL ISLAND																									
55,000	-56.5	-77	-21	-19	-17	-77	-20	-18	-17	-72	-15	-13	-12	-75	-18	-16	-15	-75	-19	-16	-14	3	3	3	3
40,000	-56.5	-54	3	5	6	-53	4	6	7	-53	3	5	6	-53	3	5	6	-53	3	6	7	3	4	2	2
30,000	-56.5	-53	12	13	14	-51	13	15	16	-53	12	13	14	-52	13	14	15	-52	12	14	15	2	2	2	2
20,000	-71.2	-6	15	16	17	-6	15	16	17	-7	14	15	16	-6	15	16	17	-6	15	16	17	2	2	2	2
10,000	-4.6	9	14	15	15	9	14	15	16	8	12	14	14	10	14	16	16	9	14	15	16	2	2	2	2
RIO DE JANEIRO TO SAN FRANCISCO																									
55,000	-56.5	-74	-18	-16	-15	-73	-17	-15	-14	-71	-15	-13	-12	-74	-18	-16	-14	-73	-17	-14	-13	3	3	3	3
40,000	-56.5	-54	2	4	5	-54	3	5	6	-54	2	4	5	-54	2	4	5	-54	2	5	6	3	3	2	2
30,000	-56.5	-56	9	10	11	-54	10	12	12	-53	12	13	14	-53	12	13	14	-54	11	12	13	2	2	2	2
20,000	-71.2	-8	13	15	16	-8	14	15	16	-7	14	15	15	-7	14	16	16	-8	14	15	16	3	2	2	2
10,000	-4.6	7	12	13	14	8	13	15	16	9	14	15	16	9	14	15	16	8	13	14	15	3	3	2	2
RIO DE JANEIRO TO SAN JUAN																									
55,000	-56.5	-77	-21	-19	-18	-77	-20	-18	-17	-71	-15	-13	-11	-74	-18	-16	-15	-75	-18	-16	-14	3	3	3	3
40,000	-56.5	-55	3	5	6	-52	4	6	8	-54	3	4	5	-54	3	4	5	-53	3	6	7	3	3	2	2
30,000	-56.5	-52	12	13	14	-51	13	15	16	-53	12	13	14	-51	13	15	16	-52	13	14	15	2	2	2	2
20,000	-71.2	-5	16	17	18	-5	16	17	18	-8	15	16	17	-6	15	16	17	-6	15	17	17	2	2	2	2
10,000	-4.6	9	14	15	16	10	14	16	16	8	12	14	14	10	14	16	16	9	14	15	16	2	2	2	2
RIO DE JANEIRO TO SANTIAGO																									
55,000	-56.5	-69	-12	-9	-8	-68																			

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																STANDARD DEVIATION								
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT	
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085					
RIO DE JANEIRO TO SAO PAULO																										
55,000	-50.5	-75	-17	-16	-12	-72	-16	-15	-12	-65	-9	-6	-5	-67	-10	-8	-6	-69	-11	-9	-7	4	4	4	4	194 N.M.I.
40,000	-40.5	-52	5	7	9	-53	8	6	8	-52	5	7	8	-54	5	5	7	-52	4	6	8	4	4	5	4	
30,000	-40.5	-53	11	15	16	-55	10	12	15	-57	8	10	11	-55	10	12	15	-55	10	12	15	5	5	5	5	
20,000	-21.2	-6	15	17	18	-9	12	14	15	-12	9	11	12	-9	12	14	15	-9	12	15	16	5	5	5	5	
10,000	-4.6	9	14	15	16	8	13	14	15	8	10	11	12	7	12	14	15	7	12	14	15	2	5	2	5	
RIO DE JANEIRO TO SEATTLE																										
55,000	-50.5	-72	-16	-16	-12	-71	-16	-12	-11	-69	-13	-11	-10	-72	-15	-13	-12	-71	-15	-12	-11	5	5	5	5	5978 N.M.I.
40,000	-40.5	-55	2	6	6	-54	2	5	6	-54	2	5	6	-55	2	5	6	-54	2	6	6	6	4	2	5	
30,000	-40.5	-58	7	9	9	-56	4	10	11	-56	11	12	15	-56	10	12	15	-55	9	11	12	2	2	2	2	
20,000	-21.2	-11	10	12	15	-10	12	15	16	-8	15	16	15	-8	15	16	15	-9	12	15	16	5	5	2	2	
10,000	-4.6	6	9	11	12	5	11	15	16	9	15	15	15	8	12	14	15	7	11	15	16	5	5	2	5	
RIO DE JANEIRO TO LONDON																										
55,000	-50.5	-77	-21	-19	-17	-77	-20	-18	-17	-71	-16	-12	-11	-74	-17	-15	-14	-75	-18	-15	-14	5	5	5	5	2270 N.M.I.
40,000	-40.5	-55	5	5	6	-52	5	7	8	-55	5	5	6	-54	5	5	6	-55	5	6	7	5	5	5	5	
30,000	-40.5	-52	12	14	15	-51	14	15	16	-52	12	14	15	-51	14	15	16	-52	15	16	17	2	2	2	2	
20,000	-21.2	-5	14	16	17	-5	14	16	17	-8	15	16	15	-6	15	16	17	-6	15	17	16	2	2	2	2	
10,000	-4.6	10	14	16	16	10	14	16	16	8	12	15	16	10	14	16	16	9	14	15	16	2	2	2	2	
ROME TO SAN FRANCISCO																										
55,000	-50.5	-57	-1	5	5	-52	5	7	9	-50	7	9	10	-56	1	5	5	-56	5	6	7	6	5	5	5	5450 N.M.I.
40,000	-40.5	-50	0	5	7	-55	6	8	10	-50	7	10	11	-55	5	7	8	-55	5	7	9	6	6	5	5	
30,000	-40.5	-55	4	5	6	-60	4	5	6	-62	2	5	6	-64	-2	1	5	-66	-5	0	2	6	6	5	5	
20,000	-21.2	-51	-10	-6	-6	-27	-5	-2	0	-16	5	7	9	-25	-1	2	6	-26	-5	1	5	6	5	5	5	
10,000	-4.6	-17	-12	-6	-6	-11	-7	-5	-1	-0	6	7	8	-7	-5	1	5	-9	-6	-0	2	6	5	5	5	
ROME TO SANTA MARIA																										
55,000	-50.5	-54	-5	0	2	-50	-1	2	5	-54	-5	-1	1	-61	-5	-5	-1	-50	-5	0	2	5	4	5	5	1761 N.M.I.
40,000	-40.5	-50	-2	2	4	-50	-2	2	4	-55	0	5	6	-50	0	5	6	-50	0	5	7	5	4	5	5	
30,000	-40.5	-47	-2	0	1	-45	-0	2	5	-57	0	10	11	-61	6	6	8	-62	2	5	7	5	4	5	5	
20,000	-21.2	-21	0	5	5	-10	5	5	5	-11	11	12	15	-16	7	2	10	-16	5	8	10	6	4	5	5	
10,000	-4.6	-4	1	5	5	-1	5	6	7	7	12	15	16	2	6	8	10	1	5	8	10	6	4	5	5	
ROME TO SHANGHAI																										
55,000	-50.5	-55	2	5	7	-55	5	6	7	-52	5	6	9	-56	0	5	5	-56	5	6	7	5	4	5	5	6919 N.M.I.
40,000	-40.5	-50	0	5	5	-55	4	7	8	-60	9	12	15	-65	5	8	8	-65	8	8	10	5	5	5	5	
30,000	-40.5	-51	-7	-6	-5	-65	-2	2	5	-56	10	15	15	-65	1	6	6	-66	1	6	8	5	5	5	5	
20,000	-21.2	-20	-7	-5	-1	-21	-0	5	5	-10	11	15	15	-16	2	6	7	-20	2	6	8	5	5	5	5	
10,000	-4.6	-16	-6	-5	-5	-6	-1	2	6	5	9	12	15	-4	0	6	5	-5	-0	6	6	6	5	5	5	
ROME TO SHANNON																										
55,000	-50.5	-57	-1	5	5	-55	2	6	6	-55	5	6	7	-54	-2	0	2	-56	1	6	7	5	4	5	5	1086 N.M.I.
40,000	-40.5	-50	-2	5	5	-57	-0	6	6	-52	4	8	9	-56	0	5	5	-56	0	5	7	6	4	5	5	
30,000	-40.5	-49	-5	-2	-1	-57	-2	0	2	-50	5	7	9	-65	1	6	6	-65	-0	5	7	6	4	5	5	
20,000	-21.2	-25	-6	-0	2	-21	-0	5	6	-15	6	10	12	-17	6	7	9	-19	2	6	7	5	4	5	5	
10,000	-4.6	-6	-6	-0	2	-5	-0	2	6	5	8	10	11	-1	5	6	7	-5	2	5	7	5	4	5	5	
ROME TO STOCKHOLM																										
55,000	-50.5	-56	0	5	5	-56	5	5	7	-51	6	8	9	-58	-1	1	5	-55	2	5	7	5	4	5	5	1098 N.M.I.
40,000	-40.5	-50	-2	2	4	-56	1	5	7	-51	6	8	11	-56	0	5	5	-55	1	5	7	5	4	5	5	
30,000	-40.5	-52	-7	-6	-5	-60	-6	-1	0	-60	6	7	9	-66	0	5	5	-66	-2	2	6	5	4	5	5	
20,000	-21.2	-20	-7	-5	-1	-25	-2	1	5	-16	7	10	11	-19	5	6	7	-21	0	6	8	6	5	5	5	
10,000	-4.6	-12	-6	-6	-2	-7	-5	0	2	2	6	9	10	-6	1	6	6	-5	-1	5	5	6	5	5	5	
ROME TO TEHRAN																										
55,000	-50.5	-50	-1	2	5	-57	-0	2	5	-61	-5	-5	-1	-61	-6	-2	-0	-54	-5	0	2	4	5	5	5	1455 N.M.I.
40,000	-40.5	-50	0	5	5	-56	0	6	6	-60	9	11	12	-56	0	5	5	-56	2	6	8	5	5	5	5	
30,000	-40.5	-50	-5	-5	-1	-65	-1	2	5	-55	12	14	15	-61	5	5	7	-62	2	6	8	5	5	5	5	
20,000	-21.2	-26	-5	-0	1	-19	2	5	6	-6	15	15	16	-15	6	8	9	-17	5	8	10	6	4	5	5	
10,000	-4.6	-9	-6	-1	1	-2	5	5	7	6	12	14	15	2	6	8	10	-0	6	8	10	5	4	5	5	
ROME TO TEL AVIV-JERUSALEM																										
55,000	-50.5	-59	-5	0	2	-58	-2	1	2	-66	-6	-6	-6	-62	-6	-5	-2	-61	-6	-2	-0	4	4	5	5	1216 N.M.I.
40,000	-40.5	-56	0	5	5	-57	-1	5	5	-60	9	11	12	-56	0	2	6	-56	2	6	7	5	5	5	5	
30,000	-40.5	-56	-6	-6	-2	-60	-6	0	2	5	12	14	15	-61	6	6	7	-62	5	7	9	5	5	5	5	
20,000	-21.2	-25	-1	1	5	-16	5	5	7	-8	15	15	16	-16	7	6	10	-16	5	9	11	6	4	5	5	
10,000	-4.6	-7	-2	1	2	-1	5	6	7	8	15	16	15	5	7	9	10	1	5	9	10	6	4	5	5	
ROME TO TRIPOLI																										
55,000	-50.5	-59	-5	0	2	-58	-2	1	2	-65	-6	-6	-5	-62	-6	-5	-2	-61	-6	-1	0	4	4	5	5	500 N.M.I.
40,000	-40.5	-56	0	5	5	-57	-0	5	5	-60	7	9	10	-56	0	2	6	-55	2	5	7	5	5	5	5	
30,000	-40.5	-57	-5	-1	0	-65	-0	2	5	-55	9	11	15	-61	6	6	7	-62	2	6	8	5	5	5	5	
20,000	-21.2	-22	-1	2	6	-19	5	6	7	-8	12	14	15	-16	7	9	10	-16	6	9	10	6	5	2	5	
10,000	-4.6	-5	-1	2	5	-1	6	6	8	9	15	15	16	2	7	9	10	1	6	9	11	6	4	5	5	
ROME TO TUNIS																										
55,000	-50.5	-58	-1	2	4	-57	-1	2	5	-61	-6	-2	-1	-61	-5	-2	-1	-54	-5	0	2	5	4	5	5	517 N.M.I.
40,000	-40.5	-57	-0	5	5	-57	-1	5	5	-60	6	9	10	-56	0	2	6	-55	1	5	6	5	5	5	5	
30,000	-40.5	-58	-5	-1	0	-66	-1	1	5	-56	8	10	11	-61	5	6	7	-65	2	5	7	5	4	5	5	
20,000	-21.2	-25	-2	1	5	-19	5	5	6	-10	11	15	16	-15	6	8	9	-17	5	8	9	6	5	5	5	
10,000	-4.6	-6	-1	2	5	-1	5	6	7	8	12	14	15	1	6	8	9	0	5	8	10	6	4	5	5	
ROME TO VIENNA																										
55,000	-50.5	-50	0	4	6	-55	1	4	5	-54	2	5	6	-59	-5	-0	1	-56	0	5	5	5	4	5	5	415 N.M.I.
40,000	-40.5	-58	-1	2	4	-57	-1	5	5	-51	5	8	9	-56	0	5	6	-56	1	4	6	5	4	5	5	
30,000	-40.5	-50	-6	-5	-2	-67	-5	0	1	-39	6	8	10	-45	2	5	6	-45	-0	5	5	4	4	5	5	
20,000	-21.2	-26	-5	-1	0	-21	0	5	6	-12	9	11	12	-17	5	7	9	-19	2	6	8	5	4	5	5	
10,000	-4.6	-10	-5	-2	-0	-5	-0	2	6	4	8	11	12	-1	5	6	8	-5	2	5	7	5	4	5	5	
ROME TO WARSAW																										

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85	50 D50 D75 D85
ROME TO ZURICH																	
55,000	-56.5	-56	0	4	5	-55	1	4	5	-55	2	4	5	-56	0	3	4
40,000	-56.5	-58	-1	2	4	-58	-1	2	4	-58	0	3	4	-58	0	4	6
30,000	-54.5	-50	-5	-5	-1	-47	-2	0	2	-38	6	8	10	-42	2	5	6
20,000	-21.2	-26	-4	-1	1	-21	1	5	5	-12	9	11	12	-16	5	7	9
10,000	-4.6	-9	-4	-1	1	-5	-0	5	4	4	9	11	12	-1	4	6	8
ST. CROIX TO ST. THOMAS																	
55,000	-56.5	-76	-20	-18	-17	-76	-20	-18	-17	-72	-16	-14	-14	-77	-20	-18	-17
40,000	-56.5	-54	5	4	5	-54	2	4	4	-56	1	2	2	-54	5	4	4
30,000	-54.5	-55	9	11	12	-54	11	12	15	-54	11	12	12	-52	12	15	14
20,000	-21.2	-8	15	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	7	12	15	14	4	12	14	14	9	15	14	15	8	15	14	14
ST. CROIX TO SAN JUAN																	
55,000	-56.5	-76	-20	-18	-17	-76	-20	-18	-17	-72	-16	-14	-14	-77	-20	-18	-17
40,000	-56.5	-54	5	4	5	-54	2	4	4	-56	1	2	2	-54	5	4	4
30,000	-54.5	-55	9	11	12	-54	11	12	15	-54	11	12	12	-52	12	15	14
20,000	-21.2	-8	15	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	7	12	15	14	4	12	14	14	9	15	14	15	8	15	14	14
ST. KITES TO ST. MAARTEN																	
55,000	-56.5	-76	-20	-18	-17	-76	-20	-18	-17	-72	-16	-14	-14	-77	-20	-18	-17
40,000	-56.5	-54	5	4	5	-54	2	4	4	-56	1	2	2	-54	5	4	4
30,000	-54.5	-55	9	11	12	-54	11	12	15	-54	11	12	12	-52	12	15	14
20,000	-21.2	-8	15	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	7	12	15	14	4	12	14	14	9	15	14	15	8	15	14	14
ST. KITES TO ST. THOMAS																	
55,000	-56.5	-76	-20	-18	-17	-76	-20	-18	-17	-72	-16	-14	-14	-77	-20	-18	-17
40,000	-56.5	-54	5	4	5	-54	2	4	4	-56	1	2	2	-54	5	4	4
30,000	-54.5	-55	9	11	12	-54	11	12	15	-54	11	12	12	-52	12	15	14
20,000	-21.2	-8	15	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	7	12	15	14	4	12	14	14	9	15	14	15	8	15	14	14
ST. KITES TO SAN JUAN																	
55,000	-56.5	-76	-20	-18	-17	-76	-20	-18	-17	-72	-16	-14	-14	-77	-20	-18	-17
40,000	-56.5	-54	5	4	5	-54	2	4	4	-56	1	2	2	-54	5	4	4
30,000	-54.5	-55	9	11	12	-54	11	12	15	-54	11	12	12	-52	12	15	14
20,000	-21.2	-8	15	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	7	12	15	14	4	12	14	14	9	15	14	15	8	15	14	14
ST. MAARTEN TO ST. THOMAS																	
55,000	-56.5	-76	-20	-18	-17	-76	-20	-18	-17	-72	-16	-14	-14	-77	-20	-18	-17
40,000	-56.5	-54	5	4	5	-54	2	4	4	-56	1	2	2	-54	5	4	4
30,000	-54.5	-55	9	11	12	-54	11	12	15	-54	11	12	12	-52	12	15	14
20,000	-21.2	-8	15	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	7	12	15	14	4	12	14	14	9	15	14	15	8	15	14	14
ST. MAARTEN TO SAN JUAN																	
55,000	-56.5	-76	-20	-18	-17	-76	-20	-18	-17	-72	-16	-14	-14	-77	-20	-18	-17
40,000	-56.5	-54	5	4	5	-54	2	4	4	-56	1	2	2	-54	5	4	4
30,000	-54.5	-55	9	11	12	-54	11	12	15	-54	11	12	12	-52	12	15	14
20,000	-21.2	-8	15	15	15	-7	14	15	16	-7	14	15	16	-6	15	16	17
10,000	-4.6	7	12	15	14	4	12	14	14	9	15	14	15	8	15	14	14
SAL ISLAND TO SAN JUAN																	
55,000	-56.5	-75	-19	-17	-16	-75	-19	-17	-16	-75	-16	-15	-14	-76	-20	-18	-17
40,000	-56.5	-54	2	4	5	-55	1	5	5	-55	2	5	4	-54	5	4	5
30,000	-54.5	-56	9	10	11	-54	10	11	12	-54	10	12	12	-51	12	15	14
20,000	-21.2	-9	12	15	14	-8	15	14	15	-7	14	15	16	-6	15	16	17
10,000	-4.6	7	11	15	15	7	12	15	14	9	15	14	15	8	12	14	14
SAN FRANCISCO TO SUMMITTOWN JORD																	
55,000	-56.5	-57	-1	5	5	-52	5	8	9	-51	6	8	9	-54	5	5	7
40,000	-56.5	-56	1	5	7	-55	4	8	10	-50	6	9	11	-55	4	7	9
30,000	-54.5	-54	-9	-6	-5	-50	-5	-5	-1	-42	2	4	6	-47	-1	0	2
20,000	-21.2	-14	-15	-9	-6	-24	-7	-5	-1	-16	-5	7	8	-24	-5	1	5
10,000	-4.6	-20	-16	-11	-9	-15	-8	-5	-5	0	5	7	8	-9	-5	-1	2
SAN FRANCISCO TO TAMIH																	
55,000	-56.5	-76	-20	-18	-17	-74	-18	-16	-15	-75	-17	-15	-14	-74	-17	-15	-14
40,000	-56.5	-55	2	4	6	-55	1	4	5	-54	2	4	5	-54	2	4	5
30,000	-54.5	-56	9	10	11	-55	9	11	11	-54	10	12	15	-55	10	11	12
20,000	-21.2	-9	12	14	15	-9	12	14	15	-7	14	15	16	-8	15	15	15
10,000	-4.6	7	12	15	14	7	12	14	14	9	15	15	15	8	15	14	15
SAN FRANCISCO TO TOKYO																	
55,000	-56.5	-55	4	7	9	-54	5	6	8	-55	2	4	5	-57	-0	3	4
40,000	-56.5	-52	5	9	12	-54	2	7	9	-51	4	7	9	-52	4	7	9
30,000	-54.5	-46	-2	1	5	-45	-1	2	5	-37	8	11	12	-41	5	6	7
20,000	-21.2	-24	-5	0	2	-22	-1	5	5	-11	11	15	14	-19	2	6	8
10,000	-4.6	-9	-5	-1	0	-4	-5	-0	1	4	9	11	12	-4	1	4	5
SAN FRANCISCO TO TONKIN																	
55,000	-56.5	-60	-4	-1	1	-58	-2	1	2	-62	-5	-3	-2	-63	-6	-4	-2
40,000	-56.5	-58	0	5	7	-57	-1	5	5	-54	2	4	5	-58	1	4	5
30,000	-54.5	-49	-4	-2	1	-46	-2	0	2	-36	8	10	11	-42	5	5	6
20,000	-21.2	-25	-1	1	3	-20	1	4	5	-9	12	14	15	-15	6	9	11
10,000	-4.6	-9	-5	-1	2	-1	1	5	7	9	14	16	17	-1	6	10	11
SAN FRANCISCO TO VANCOUVER																	
55,000	-56.5	-59	-5	0	2	-57	-0	5	4	-58	-2	0	1	-61	-5	-2	-1
40,000	-56.5	-57	-1	4	6	-57	-0	4	6	-56	1	4	5	-56	0	5	5
30,000	-54.5	-48	-4	-1	0	-46	-1	1	2	-39	6	8	9	-42	5	5	6
20,000	-21.2	-23	-2	2	5	-21	0	5	5	-11	10	12	13	-16	5	8	10
10,000	-4.6	-8	-5	1	3	-5	-0	5	5	7	11	15	14	-0	4	8	9

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	
SAN FRANCISCO TO WHITEHORSE																	
55,000	-56.5	-56	0	3	5	-54	3	6	7	-54	3	5	6	-57	-1	2	3
40,000	-56.5	-56	1	5	8	-55	2	6	8	-55	2	5	7	-54	2	5	7
30,000	-56.5	-56	1	5	8	-55	2	6	8	-55	2	5	7	-54	2	5	7
20,000	-56.5	-56	1	5	8	-55	2	6	8	-55	2	5	7	-54	2	5	7
10,000	-56.5	-56	1	5	8	-55	2	6	8	-55	2	5	7	-54	2	5	7
SAN FRANCISCO TO WINNIPEG																	
55,000	-56.5	-59	-3	1	2	-57	-0	2	4	-59	-3	-1	0	-61	-5	-2	-1
40,000	-56.5	-56	0	5	7	-57	-0	5	5	-54	2	5	6	-56	0	4	5
30,000	-56.5	-56	0	5	7	-57	-0	5	5	-54	2	5	6	-56	0	4	5
20,000	-56.5	-56	0	5	7	-57	-0	5	5	-54	2	5	6	-56	0	4	5
10,000	-56.5	-56	0	5	7	-57	-0	5	5	-54	2	5	6	-56	0	4	5
SAN JUAN TO SANTA MARIA																	
55,000	-56.5	-69	-15	-10	-9	-68	-11	-9	-8	-67	-11	-9	-8	-71	-14	-12	-11
40,000	-56.5	-57	-0	5	6	-57	-1	2	3	-55	1	5	4	-55	1	5	4
30,000	-56.5	-57	-0	5	6	-57	-1	2	3	-55	1	5	4	-55	1	5	4
20,000	-56.5	-57	-0	5	6	-57	-1	2	3	-55	1	5	4	-55	1	5	4
10,000	-56.5	-57	-0	5	6	-57	-1	2	3	-55	1	5	4	-55	1	5	4
SAN JUAN TO SANTIAGO																	
55,000	-56.5	-75	-19	-17	-16	-75	-18	-16	-15	-70	-15	-11	-10	-72	-16	-14	-12
40,000	-56.5	-55	3	5	6	-55	4	6	7	-55	3	5	6	-54	3	4	5
30,000	-56.5	-55	3	5	6	-55	4	6	7	-55	3	5	6	-54	3	4	5
20,000	-56.5	-55	3	5	6	-55	4	6	7	-55	3	5	6	-54	3	4	5
10,000	-56.5	-55	3	5	6	-55	4	6	7	-55	3	5	6	-54	3	4	5
SANTA MARIA TO ZURICH																	
55,000	-56.5	-59	-3	1	2	-57	-0	2	4	-59	-3	-1	0	-61	-5	-2	-1
40,000	-56.5	-58	-2	2	4	-58	-2	2	4	-54	3	6	7	-57	-0	3	4
30,000	-56.5	-58	-2	2	4	-58	-2	2	4	-54	3	6	7	-57	-0	3	4
20,000	-56.5	-58	-2	2	4	-58	-2	2	4	-54	3	6	7	-57	-0	3	4
10,000	-56.5	-58	-2	2	4	-58	-2	2	4	-54	3	6	7	-57	-0	3	4
SAN SALVADOR TO TEGUIGUALPA																	
55,000	-56.5	-74	-20	-18	-17	-75	-18	-17	-16	-72	-16	-15	-14	-77	-21	-19	-18
40,000	-56.5	-55	2	3	4	-54	2	3	4	-56	0	1	2	-54	2	3	4
30,000	-56.5	-55	2	3	4	-54	2	3	4	-56	0	1	2	-54	2	3	4
20,000	-56.5	-55	2	3	4	-54	2	3	4	-56	0	1	2	-54	2	3	4
10,000	-56.5	-55	2	3	4	-54	2	3	4	-56	0	1	2	-54	2	3	4
SANTIAGO TO SAO PAULO																	
55,000	-56.5	-68	-12	-9	-8	-67	-11	-8	-7	-61	-5	-2	-0	-62	-6	-3	-2
40,000	-56.5	-53	4	7	8	-54	2	5	7	-52	5	7	9	-54	3	5	7
30,000	-56.5	-53	4	7	8	-54	2	5	7	-52	5	7	9	-54	3	5	7
20,000	-56.5	-53	4	7	8	-54	2	5	7	-52	5	7	9	-54	3	5	7
10,000	-56.5	-53	4	7	8	-54	2	5	7	-52	5	7	9	-54	3	5	7
SANTIAGO TO INHILL																	
55,000	-56.5	-67	-11	-8	-7	-67	-11	-8	-7	-62	-6	-3	-2	-61	-5	-2	-0
40,000	-56.5	-54	2	5	7	-54	1	4	5	-52	4	7	8	-54	3	5	7
30,000	-56.5	-54	2	5	7	-54	1	4	5	-52	4	7	8	-54	3	5	7
20,000	-56.5	-54	2	5	7	-54	1	4	5	-52	4	7	8	-54	3	5	7
10,000	-56.5	-54	2	5	7	-54	1	4	5	-52	4	7	8	-54	3	5	7
SANTIAGO TO USHUAIA																	
55,000	-56.5	-54	2	5	6	-57	-1	2	3	-57	-1	2	3	-55	1	5	7
40,000	-56.5	-52	4	8	10	-55	1	5	7	-55	2	5	7	-55	2	5	7
30,000	-56.5	-52	4	8	10	-55	1	5	7	-55	2	5	7	-55	2	5	7
20,000	-56.5	-52	4	8	10	-55	1	5	7	-55	2	5	7	-55	2	5	7
10,000	-56.5	-52	4	8	10	-55	1	5	7	-55	2	5	7	-55	2	5	7
SAPPORO TO TOKYO																	
55,000	-56.5	-52	4	8	10	-57	-0	3	5	-60	-4	0	2	-59	-2	1	3
40,000	-56.5	-49	7	11	13	-54	3	6	8	-60	0	11	13	-57	5	8	10
30,000	-56.5	-49	7	11	13	-54	3	6	8	-60	0	11	13	-57	5	8	10
20,000	-56.5	-49	7	11	13	-54	3	6	8	-60	0	11	13	-57	5	8	10
10,000	-56.5	-49	7	11	13	-54	3	6	8	-60	0	11	13	-57	5	8	10
SEATTLE TO SHELBY																	
55,000	-56.5	-50	6	10	12	-51	4	9	10	-50	7	9	10	-52	4	7	8
40,000	-56.5	-53	4	8	10	-52	5	9	11	-51	5	9	11	-52	4	8	10
30,000	-56.5	-53	4	8	10	-52	5	9	11	-51	5	9	11	-52	4	8	10
20,000	-56.5	-53	4	8	10	-52	5	9	11	-51	5	9	11	-52	4	8	10
10,000	-56.5	-53	4	8	10	-52	5	9	11	-51	5	9	11	-52	4	8	10
SEATTLE TO STOCKHOLM																	
55,000	-56.5	-59	-2	1	3	-49	0	11	12	-45	11	15	16	-51	5	8	10
40,000	-56.5	-58	-1	1	5	-50	7	10	12	-47	10	15	16	-52	4	8	9
30,000	-56.5	-58	-1	1	5	-50	7	10	12	-47	10	15	16	-52	4	8	9
20,000	-56.5	-58	-1	1	5	-50	7	10	12	-47	10	15	16	-52	4	8	9
10,000	-56.5	-58	-1	1	5	-50	7	10	12	-47	10	15	16	-52	4	8	9
SEATTLE TO TOKYO																	
55,000	-56.5	-50	6	10	12	-52	5	9	10	-52	4	7	8	-54	3	6	7
40,000	-56.5	-52	5	9	11	-52	4	8	10	-50	6	10	11	-52	4	8	10
30,000	-56.5	-52	5	9	11	-52	4	8	10	-50	6	10	11	-52	4	8	10
20,000	-56.5	-52	5	9	11	-52	4	8	10	-50	6	10	11	-52	4	8	10
10,000	-56.5	-52	5	9	11	-52	4	8	10	-50	6	10	11	-52	4	8	10
SEATTLE TO TORONTO																	
55,000	-56.5	-57	-1	2	4	-55	1	4	5	-57	-0	2	4	-59	-3	-0	1
40,000	-56.5	-55	1	6	8	-55	1	5	7	-54	3	6	7	-56	1	4	6
30,000	-56.5	-55	1	6	8	-55	1	5	7	-54	3	6	7	-56	1	4	6
20,000	-56.5	-55	1	6	8	-55	1	5	7	-54	3	6	7	-56	1	4	6
10,000	-56.5	-55	1	6	8	-55	1	5	7	-54	3	6	7	-56	1	4	6

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE												STANDARD DEVIATION			
		JANUARY			APRIL			JULY			OCTOBER			ANNUAL			JAN APR JUL OCT
		50 050 075 085			50 050 075 085			50 050 075 085			50 050 075 085			50 050 075 085			
SEATTLE TO VANCOUVER																	
55,000	-56.5	-57	-0	5	5	-56	5	5	7	-56	5	5	6	-56	1	6	5
40,000	-56.5	-56	0	5	7	-55	1	5	8	-55	1	6	6	-55	1	5	7
30,000	-56.5	-50	-6	-3	-2	-48	-5	-1	0	-46	1	5	5	-46	-1	2	6
20,000	-21.2	-27	-6	-1	2	-23	-2	1	5	-15	8	10	11	-20	2	5	7
10,000	-6.6	-12	-7	-5	-0	-8	-5	0	2	5	8	10	11	-6	1	6	6
SEATTLE TO MINNEAPOLIS																	
55,000	-56.5	-57	-0	5	5	-56	2	5	6	-56	2	6	5	-56	1	6	5
40,000	-56.5	-55	1	5	8	-55	1	5	7	-55	1	6	6	-55	2	5	7
30,000	-56.5	-52	-7	-5	-3	-49	-4	-2	-1	-40	5	7	8	-46	-2	2	6
20,000	-21.2	-30	-9	-6	-1	-25	-2	1	5	-15	8	10	11	-20	1	5	7
10,000	-6.6	-16	-11	-9	-5	-8	-3	1	5	6	9	12	13	-6	1	5	7
SEOUL TO TAIPEI																	
55,000	-56.5	-63	-7	-3	-1	-65	-9	-6	-6	-66	-10	-6	-6	-65	-9	-5	-3
40,000	-56.5	-51	5	8	9	-55	5	6	8	-48	8	11	12	-52	5	7	9
30,000	-56.5	-39	6	8	10	-47	7	10	12	-37	17	20	21	-33	12	16	16
20,000	-21.2	-18	5	6	7	-15	7	11	15	-4	17	19	20	-10	11	15	15
10,000	-6.6	-6	-1	2	5	1	5	8	9	11	16	17	18	4	9	11	12
SEOUL TO TOKYO																	
55,000	-56.5	-55	1	5	7	-59	-5	1	2	-61	-5	-1	1	-59	-5	2	4
40,000	-56.5	-50	7	10	12	-56	5	6	8	-47	9	12	13	-51	6	9	11
30,000	-56.5	-46	0	5	5	-40	6	7	9	-27	17	20	22	-35	9	12	14
20,000	-21.2	-25	-4	-1	1	-17	6	8	9	-6	17	19	20	-13	8	11	13
10,000	-6.6	-12	-6	-4	-2	-5	1	6	6	10	15	17	18	1	6	8	10
SHANGHAI TO TOKYO																	
55,000	-56.5	-60	-5	0	5	-63	-6	-5	-1	-66	-8	-6	-2	-63	-7	-3	-1
40,000	-56.5	-50	7	10	11	-56	5	6	8	-48	9	11	13	-52	5	8	9
30,000	-56.5	-47	4	7	9	-50	6	9	11	-27	17	20	21	-33	11	14	15
20,000	-21.2	-21	0	5	5	-16	7	10	12	-4	17	19	20	-11	11	15	15
10,000	-6.6	-4	-6	-0	1	-1	6	8	9	11	15	17	18	5	8	10	12
SHENYANG TO TOKYO																	
55,000	-56.5	-50	7	10	12	-55	6	7	8	-55	7	9	10	-55	5	7	10
40,000	-56.5	-50	7	10	12	-55	6	8	10	-49	7	10	12	-52	5	8	10
30,000	-56.5	-49	-4	-1	0	-46	-1	2	5	-36	11	14	16	-42	5	6	7
20,000	-21.2	-28	-7	-4	-2	-27	-1	2	5	-9	12	15	16	-20	2	5	7
10,000	-6.6	-10	-6	-6	-6	-9	-6	-1	1	5	10	12	13	-5	-1	2	4
SHENYANG TO VANCOUVER																	
55,000	-56.5	-50	7	11	15	-50	6	9	10	-49	7	9	11	-50	6	9	10
40,000	-56.5	-55	4	8	10	-52	5	9	11	-51	6	9	11	-52	5	8	10
30,000	-56.5	-50	-6	-5	-2	-49	-5	-2	-1	-42	5	5	7	-47	-5	1	3
20,000	-21.2	-28	-7	-5	-1	-28	-7	-5	-1	-15	6	9	10	-25	-5	0	2
10,000	-6.6	-15	-8	-5	-2	-15	-8	-5	-6	-0	6	8	8	-9	-6	-1	0
SHENYANG TO WHITTEMORE																	
55,000	-56.5	-49	6	12	14	-49	8	10	12	-49	9	11	12	-50	6	9	10
40,000	-56.5	-55	4	8	10	-50	6	10	12	-50	7	10	12	-52	5	8	10
30,000	-56.5	-52	-7	-5	-5	-51	-7	-4	-5	-45	2	5	6	-50	-5	-2	-1
20,000	-21.2	-31	-9	-5	-5	-36	-9	-5	-5	-16	5	7	9	-27	-6	-2	-1
10,000	-6.6	-15	-11	-6	-6	-15	-10	-7	-6	-1	1	5	7	-11	-7	-4	-2
SINGAPORE TO SOERABAYA																	
55,000	-56.5	-45	-26	-24	-25	-40	-24	-22	-21	-70	-22	-20	-19	-80	-24	-22	-21
40,000	-56.5	-54	2	5	6	-52	5	6	7	-56	2	5	6	-56	3	6	5
30,000	-56.5	-51	14	15	15	-51	14	15	15	-51	15	16	15	-52	15	16	16
20,000	-21.2	-5	17	17	16	-5	16	17	17	-5	16	17	17	-5	16	17	17
10,000	-6.6	10	14	15	15	10	15	15	16	2	15	16	15	9	14	15	15
SINGAPORE TO SYDNEY																	
55,000	-56.5	-78	-21	-19	-16	-75	-19	-16	-15	-75	-17	-16	-15	-75	-18	-16	-15
40,000	-56.5	-56	5	5	6	-55	5	5	6	-56	5	5	6	-56	5	5	6
30,000	-56.5	-51	12	15	16	-54	10	12	12	-56	9	11	12	-55	10	12	13
20,000	-21.2	-7	14	16	16	-9	11	14	15	-11	11	12	15	-9	12	14	15
10,000	-6.6	9	14	15	16	7	12	11	16	5	9	11	12	6	11	12	11
SINGAPORE TO TAIPEI																	
55,000	-56.5	-79	-25	-20	-19	-78	-22	-20	-19	-77	-21	-18	-17	-78	-21	-19	-17
40,000	-56.5	-56	7	6	5	-52	5	6	7	-55	5	5	5	-55	5	5	6
30,000	-56.5	-51	15	15	15	-50	14	15	16	-50	14	15	16	-51	14	15	16
20,000	-21.2	-6	15	16	17	-5	16	16	16	-5	16	17	17	-5	16	17	17
10,000	-6.6	6	15	16	15	10	16	15	16	10	15	16	16	9	16	15	15
SINGAPORE TO TANANARIVE																	
55,000	-56.5	-80	-25	-21	-20	-77	-20	-18	-17	-76	-18	-16	-15	-77	-20	-18	-16
40,000	-56.5	-55	5	5	6	-52	5	5	6	-54	5	5	6	-55	5	5	6
30,000	-56.5	-50	14	15	16	-51	15	16	15	-52	15	16	15	-52	15	16	15
20,000	-21.2	-5	16	17	18	-6	15	16	17	-7	15	16	16	-6	15	16	17
10,000	-6.6	9	16	15	15	9	16	15	15	7	15	16	15	9	15	16	15
SINGAPORE TO TOKYO																	
55,000	-56.5	-76	-14	-15	-16	-76	-14	-15	-16	-75	-17	-16	-15	-76	-17	-15	-15
40,000	-56.5	-55	6	6	7	-52	6	6	7	-52	5	7	8	-55	6	6	7
30,000	-56.5	-53	12	14	15	-52	12	14	15	-52	15	17	17	-51	14	15	16
20,000	-21.2	-9	12	15	16	-7	16	16	17	-6	15	16	17	-7	16	16	17
10,000	-6.6	6	12	11	11	7	12	11	16	11	15	16	17	8	12	11	15
SUNDRESTRÖM JOMO TO MINNEAPOLIS																	
55,000	-56.5	-57	-0	4	6	-59	7	10	11	-67	9	11	13	-55	6	6	7
40,000	-56.5	-55	2	6	8	-50	6	10	12	-48	8	11	13	-51	5	9	11
30,000	-56.5	-55	-11	-8	-7	-51	-7	-6	-2	-46	1	5	5	-49	-5	-2	0
20,000	-21.2	-38	-17	-15	-11	-41	-10	-6	-4	-40	2	5	7	-27	-6	-2	1
10,000	-6.6	-25	-20	-16	-14	-17	-12	-8	-6	-4	1	6	5	-15	-8	-6	-1

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE										STANDARD DEVIATION														
		JANUARY		APRIL		JULY		OCTOBER		ANNUAL		JAN	APR	JUL	OCT											
		50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085	50 050 075 085																	
SPLIT TO ZAGREB																										
55,000	-56.5	-56	1	4	6	-55	1	4	5	-54	2	5	6	-59	-3	-0	1	-56	0	3	5	5	4	3	4	125 N.M.I.
40,000	-56.5	-58	-1	2	6	-57	-1	3	6	-51	6	8	10	-56	0	3	4	-56	1	5	6	5	4	3	4	
30,000	-44.5	-51	-6	-4	-2	-67	-3	0	1	-38	6	9	10	-63	2	5	6	-45	-0	3	5	4	4	3	4	
20,000	-21.2	-26	-5	-2	0	-21	0	3	4	-12	9	11	12	-17	5	7	9	-19	2	6	7	5	4	3	4	
10,000	-6.6	-10	-6	-3	-1	-5	-1	2	4	6	8	10	12	-1	3	6	7	-3	1	5	7	5	4	3	4	
STANLEYVILLE TO LAMONOHIVE																										
55,000	-56.5	-77	-20	-18	-17	-76	-20	-17	-16	-72	-16	-14	-13	-75	-18	-16	-15	-75	-19	-16	-15	3	4	3	3	1748 N.M.I.
40,000	-56.5	-52	4	6	7	-52	5	7	8	-52	5	6	7	-52	4	6	7	-52	4	6	7	3	3	2	2	
30,000	-44.5	-30	14	16	16	-31	14	15	16	-25	12	13	14	-32	13	14	15	-31	13	15	15	2	2	2	2	
20,000	-21.2	-5	17	17	18	-5	16	17	18	-6	15	17	17	-6	15	16	17	-5	16	17	17	1	2	2	2	
10,000	-6.6	10	14	15	16	9	14	15	16	7	12	13	14	10	14	15	16	9	14	15	15	1	2	2	2	
STANLEYVILLE TO LUNIS																										
55,000	-56.5	-72	-16	-14	-13	-71	-15	-13	-12	-74	-17	-15	-14	-73	-17	-15	-14	-72	-16	-14	-13	3	3	3	3	2332 N.M.I.
40,000	-56.5	-54	2	4	6	-53	3	6	7	-51	5	7	7	-53	3	5	6	-53	4	5	6	3	3	2	2	
30,000	-44.5	-34	6	7	8	-34	10	11	12	-31	14	15	16	-34	11	12	13	-34	10	12	13	2	2	2	2	
20,000	-21.2	-12	10	11	12	-6	12	13	14	-5	16	17	18	-8	13	14	15	-9	13	14	15	2	2	2	2	
10,000	-6.6	5	10	11	12	7	12	13	14	12	16	17	18	8	13	14	15	8	13	15	16	2	2	2	2	
STOCKHOLM TO TEL AVIV-JAFFA																										
55,000	-56.5	-57	-1	2	4	-55	1	4	5	-55	1	3	5	-59	-2	0	1	-57	-0	2	4	4	3	3	3	1793 N.M.I.
40,000	-56.5	-57	-1	2	4	-55	1	5	7	-49	4	11	12	-56	1	3	5	-54	2	6	8	5	5	4	4	
30,000	-44.5	-51	-7	-4	-1	-67	-3	-0	1	-37	8	10	12	-63	2	4	5	-64	0	4	6	5	4	4	4	
20,000	-21.2	-24	-5	-2	-0	-22	-0	3	5	-11	10	12	13	-17	4	7	8	-19	2	6	8	4	4	3	3	
10,000	-6.6	-11	-7	-3	-2	-5	-0	3	4	6	9	10	11	-2	3	6	7	-19	1	5	6	5	5	3	3	
STOCKHOLM TO LONDON																										
55,000	-56.5	-55	1	5	7	-50	7	10	11	-47	9	12	13	-53	4	6	8	-51	5	9	10	5	4	4	4	4407 N.M.I.
40,000	-56.5	-57	-0	1	3	-50	6	10	13	-48	8	12	14	-52	5	8	10	-52	5	9	11	5	4	4	4	
30,000	-44.5	-55	-10	-4	-6	-46	-3	-1	0	-37	8	11	13	-47	-2	1	2	-47	-2	3	6	4	5	5	5	
20,000	-21.2	-35	-14	-11	-9	-28	-7	-3	-1	-13	8	11	13	-24	-3	1	3	-25	-6	1	4	4	5	5	5	
10,000	-6.6	-22	-17	-16	-12	-14	-9	-5	-1	2	6	6	10	-10	-6	-2	-0	-11	-7	-1	1	6	6	4	5	
STOCKHOLM TO VIENNA																										
55,000	-56.5	-57	-0	1	3	-51	3	6	7	-48	8	10	11	-57	-0	2	4	-54	3	6	8	5	4	3	3	644 N.M.I.
40,000	-56.5	-59	-2	1	1	-54	2	6	6	-50	6	10	11	-56	1	4	5	-55	2	6	8	5	4	3	3	
30,000	-44.5	-52	-8	-5	-4	-49	-3	-2	-1	-41	3	6	7	-45	-0	2	4	-47	-2	1	3	5	4	3	3	
20,000	-21.2	-26	-8	-6	-2	-24	-3	0	2	-15	6	6	10	-20	2	5	7	-22	-1	3	5	6	5	3	3	
10,000	-6.6	-16	-10	-6	-1	-6	-4	-1	1	1	5	7	8	-5	-1	1	5	-7	-2	1	3	6	5	3	3	
STOCKHOLM TO WARSAW																										
55,000	-56.5	-57	-0	1	3	-53	4	6	8	-47	9	11	12	-56	0	3	4	-53	3	7	8	5	4	3	3	460 N.M.I.
40,000	-56.5	-59	-2	1	3	-54	1	6	9	-50	7	10	12	-56	1	4	6	-55	2	6	8	5	4	3	3	
30,000	-44.5	-53	-8	-6	-4	-50	-3	-3	-1	-41	3	6	7	-46	-1	2	3	-47	-3	1	3	5	4	3	3	
20,000	-21.2	-10	-9	-5	-3	-25	-4	-0	1	-15	6	6	10	-20	1	4	6	-23	-2	2	4	4	5	3	3	
10,000	-6.6	-15	-11	-6	-4	-9	-5	-1	0	-0	5	7	8	-6	-2	2	4	-8	-3	1	3	6	5	3	3	
STOCKHOLM TO ZURICH																										
55,000	-56.5	-57	-0	1	3	-53	3	6	7	-49	8	10	11	-57	-0	2	3	-54	3	6	8	5	4	3	3	803 N.M.I.
40,000	-56.5	-59	-2	2	4	-55	2	6	8	-51	6	10	11	-56	0	4	6	-55	1	6	8	5	4	3	3	
30,000	-44.5	-52	-7	-3	-1	-49	-4	-2	-0	-41	3	6	7	-45	-0	2	4	-47	-2	1	3	5	4	3	3	
20,000	-21.2	-26	-8	-6	-2	-24	-1	0	2	-15	6	6	10	-19	2	5	7	-22	-1	3	5	6	5	3	3	
10,000	-6.6	-11	-6	-3	-2	-4	-3	-0	1	1	5	7	8	-5	-0	3	5	-6	-2	2	4	6	5	3	3	
SYDNEY TO LONDON																										
55,000	-56.5	-70	-11	-11	-10	-69	-11	-10	-9	-64	-8	-4	-4	-63	-7	-5	-3	-67	-10	-7	-6	4	4	3	3	3301 N.M.I.
40,000	-56.5	-55	2	4	6	-54	2	4	6	-54	1	5	6	-54	2	5	7	-54	2	5	6	4	3	3	3	
30,000	-44.5	-38	8	10	11	-36	6	8	10	-41	3	6	7	-41	4	6	7	-36	5	8	9	3	4	3	3	
20,000	-21.2	-10	11	13	13	-13	9	11	12	-16	5	7	8	-15	7	8	10	-13	8	10	11	3	3	3	3	
10,000	-6.6	6	11	11	13	5	9	11	12	-0	4	6	7	2	7	9	10	3	8	10	11	2	3	3	3	
SYDNEY TO WELLINGTON																										
55,000	-56.5	-63	-6	-3	-2	-61	-4	-2	-0	-57	-0	2	1	-54	1	2	4	-59	-3	0	1	4	4	3	3	1202 N.M.I.
40,000	-56.5	-56	0	3	5	-56	1	4	5	-54	2	6	7	-53	4	7	9	-55	2	6	8	4	4	3	3	
30,000	-44.5	-41	4	6	7	-45	-0	2	4	-50	-3	-2	-1	-46	-1	1	2	-45	-1	3	4	3	4	3	3	
20,000	-21.2	-14	7	10	11	-14	3	5	7	-24	-3	-0	1	-20	1	4	5	-19	2	5	7	3	4	3	3	
10,000	-6.6	3	7	10	11	-2	3	5	6	-6	-2	0	2	-3	1	4	5	-2	2	6	7	3	3	3	3	
TAIPEI TO LONDON																										
55,000	-56.5	-65	-4	-4	-3	-66	-10	-6	-5	-67	-10	-7	-5	-66	-9	-6	-4	-66	-9	-5	-3	5	5	5	5	1132 N.M.I.
40,000	-56.5	-50	4	9	11	-54	1	6	8	-48	8	10	12	-52	5	7	9	-51	5	9	10	4	4	4	4	
30,000	-44.5	-17	4	11	12	-16	8	11	12	-28	17	19	20	-31	13	16	17	-33	12	15	17	4	4	4	4	
20,000	-21.2	-16	5	7	9	-11	10	11	14	-4	17	19	20	-8	13	15	16	-10	11	14	16	4	4	2	3	
10,000	-6.6	-4	1	1	3	2	7	9	11	11	16	17	18	6	11	13	14	4	8	11	13	4	4	2	3	
TEHRAN TO TEL AVIV-JAFFA																										
55,000	-56.5	-62	-4	-1	-2	-61	-4	-2	-1	-70	-13	-11	-10	-64	-8	-5	-4	-64	-8	-5	-3	4	4	3	3	846 N.M.I.
40,000	-56.5	-55	2	4	6	-55	2	5	7	-48	11	13	14	-56	1	3	4	-53	4	7	9	4	5	1	3	
30,000	-44.5	-46	-2	0	2	-41	2	4	5	-27	18	20	21	-39	5	7	8	-39	6	10	12	3	3	3	3	
20,000	-21.2	-21	1	3	4	-16	5	7	8	-3	18	20	21	-13	8	10	11	-13	8	12	14	4	4	3	3	
10,000	-6.6	-5	-0	1	3	1	6	8	10	13	18	20	20	5	10	12	13	4	8	12	14	4	4	2	3	
TEHRAN TO VIENNA																										
55,000	-56.5	-57	-0	1	3	-54	1	3	4	-67	-1	1	3	-59	-3	-0	1	-57	-1	2	3	4	3	3	3	1703 N.M.I.
40,000	-56.5	-57	-0	1	3	-54	1	4	6	-68	9	11	12	-56	0	3	4	-54	2	6	8	4	5	3	3	
30,000	-44.5	-50	-4	-1	-2	-46	-1	1	3	-34	10	13	14	-42	2	5	6	-43	1	5</						

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES																STANDARD DEVIATION								
		ENROUTE TEMPERATURE																								
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL				JAN	APR	JUL	OCT	
		50	D50	075	085	50	D50	075	085	50	D50	075	085	50	D50	075	085	50	D50	075	085					
TEHERAN TO ZURICH																										
55,000	-56.5	-57	-0	3	4	-56	1	3	4	-57	-1	2	3	-59	-3	-0	1	-57	-1	2	3	4	2016 N.M.I.			
40,000	-56.5	-57	-0	3	4	-56	1	4	4	-49	8	10	12	-56	0	3	4	-54	2	6	8	5	5	4	6	
30,000	-44.5	-50	-6	-5	-2	-46	-1	1	3	-35	10	12	15	-42	2	5	6	-43	1	5	7	4	4	4	6	
20,000	-21.2	-26	-4	-1	1	-20	1	4	5	-10	12	14	15	-16	5	8	9	-18	3	7	9	5	6	3	6	
10,000	-4.6	-10	-6	-2	-0	-5	1	4	5	6	11	13	14	0	5	7	9	-2	3	6	8	5	6	3	6	
TEL AVIV-JAFFA ID TRIPOLI																										
55,000	-56.5	-63	-7	-4	-3	-61	-5	-3	-2	-69	-12	-10	-9	-65	-9	-6	-5	-65	-8	-5	-4	3	3	3	3	
40,000	-56.5	-55	2	5	6	-56	0	4	5	-48	9	11	12	-56	1	3	4	-54	3	6	8	4	5	3	3	
30,000	-44.5	-46	-1	1	2	-42	2	4	5	-30	15	17	18	-39	5	7	8	-39	5	9	11	3	3	3	3	
20,000	-21.2	-20	2	4	5	-16	5	7	9	-6	16	17	18	-12	9	10	11	-15	8	11	13	3	3	2	2	
10,000	-4.6	-4	1	3	5	1	6	8	9	11	15	17	18	5	10	11	12	5	8	11	13	3	6	2	3	
TEL AVIV-JAFFA ID LUNIS																										
55,000	-56.5	-61	-5	-2	-1	-59	-3	-1	0	-67	-10	-8	-7	-63	-7	-5	-3	-63	-6	-3	-2	4	3	3	3	
40,000	-56.5	-56	1	4	6	-57	-0	3	5	-48	9	11	12	-56	0	2	4	-54	2	6	7	5	5	3	3	
30,000	-44.5	-47	-2	-0	1	-46	1	3	4	-32	15	15	16	-40	4	6	7	-41	4	8	10	3	3	3	3	
20,000	-21.2	-21	0	3	4	-17	4	6	8	-7	14	16	17	-13	8	9	10	-15	7	10	12	4	3	2	2	
10,000	-4.6	-5	-0	2	3	-0	4	7	6	10	14	16	17	4	8	10	11	2	7	10	11	4	4	2	3	
TEL AVIV-JAFFA ID VIENNA																										
55,000	-56.5	-58	-1	1	3	-57	-0	2	3	-60	-4	-2	-1	-61	-4	-2	-1	-59	-2	0	2	4	3	3	3	
40,000	-56.5	-56	0	5	5	-56	0	4	5	-48	8	11	12	-56	0	3	4	-54	2	6	8	5	5	3	3	
30,000	-44.5	-50	-5	-3	-2	-46	-1	1	2	-34	10	13	14	-42	3	5	6	-43	2	6	8	3	3	3	3	
20,000	-21.2	-24	-3	-0	1	-20	1	4	6	-9	12	14	15	-15	6	8	9	-17	4	8	6	4	6	3	3	
10,000	-4.6	-9	-4	-1	0	-5	2	4	6	6	11	13	14	1	6	8	9	-1	3	7	9	4	6	3	3	
TEL AVIV-JAFFA ID WARSAW																										
55,000	-56.5	-58	-1	2	3	-56	0	3	4	-58	-2	0	1	-60	-4	-1	0	-58	-2	1	3	4	3	3	3	
40,000	-56.5	-57	-0	3	4	-56	1	4	6	-48	8	11	12	-56	0	3	4	-54	2	6	8	5	5	4	6	
30,000	-44.5	-50	-6	-1	-2	-46	-2	1	2	-35	10	12	15	-42	2	5	6	-43	1	5	7	3	4	3	3	
20,000	-21.2	-25	-4	-1	1	-20	1	4	5	-10	11	13	14	-16	5	8	9	-18	3	7	9	5	4	3	4	
10,000	-4.6	-10	-5	-2	-1	-6	1	4	6	5	10	12	13	0	5	7	9	-2	3	6	8	5	4	3	4	
TEL AVIV-JAFFA ID ZURICH																										
55,000	-56.5	-58	-1	1	3	-57	-0	2	3	-60	-4	-2	-1	-61	-4	-2	-1	-59	-3	0	2	4	3	3	3	
40,000	-56.5	-57	-0	3	5	-57	-0	3	5	-49	8	10	11	-56	0	3	4	-55	2	5	7	5	5	3	4	
30,000	-44.5	-49	-5	-2	-1	-46	-1	1	2	-35	10	12	15	-43	3	5	7	-43	2	6	8	3	4	3	4	
20,000	-21.2	-24	-3	0	2	-20	2	4	6	-9	12	14	15	-15	6	8	9	-17	4	8	6	4	6	3	3	
10,000	-4.6	-6	-4	-1	1	-5	2	4	6	6	11	13	14	1	6	8	9	-1	4	7	9	4	6	3	3	
SMULLE TO VANCOUVER																										
55,000	-56.5	-57	-1	3	5	-46	6	11	12	-47	10	12	15	-53	5	5	4	-51	5	6	10	6	6	3	5	
40,000	-56.5	-57	-0	4	4	-51	6	9	11	-44	8	12	15	-52	4	7	9	-52	5	9	11	6	6	3	4	
30,000	-44.5	-56	-12	-9	-7	-52	-7	-5	-5	-45	-0	2	3	-50	-6	-3	-2	-51	-6	-3	-1	4	6	3	4	
20,000	-21.2	-34	-16	-12	-10	-52	-11	-8	-6	-20	2	4	4	-29	-7	-4	-2	-30	-8	-4	-1	6	5	4	5	
10,000	-4.6	-24	-20	-15	-13	-16	-15	-10	-8	-4	1	3	5	-14	-9	-6	-4	-15	-10	-5	-3	7	5	4	5	
SMULLE ID WINNIPEG																										
55,000	-56.5	-58	-1	3	5	-49	6	11	12	-46	10	12	15	-53	4	4	7	-51	5	8	10	6	4	3	5	
40,000	-56.5	-56	1	5	7	-40	6	10	12	-44	9	12	14	-51	4	6	9	-51	5	9	11	6	4	3	5	
30,000	-44.5	-57	-12	-10	-6	-52	-7	-6	-5	-45	-0	2	4	-51	-6	-3	-2	-51	-7	-3	-1	4	5	4	4	
20,000	-21.2	-40	-16	-15	-11	-45	-12	-9	-7	-20	1	4	4	-29	-8	-4	-2	-31	-6	-4	-1	6	4	4	6	
10,000	-4.6	-27	-22	-18	-16	-19	-15	-11	-9	-5	-0	3	4	-15	-10	-6	-4	-14	-12	-7	-4	6	6	4	6	
TORONTO TO VANCOUVER																										
55,000	-56.5	-50	7	10	12	-52	5	8	9	-52	5	7	8	-53	5	6	8	-52	5	6	11	5	4	4	4	
40,000	-56.5	-52	5	9	11	-52	4	8	11	-50	6	10	12	-52	4	8	10	-51	5	9	15	6	6	5	5	
30,000	-44.5	-49	-5	-2	-1	-46	-5	-1	1	-39	6	9	11	-45	-0	3	4	-46	-1	4	4	4	4	4	4	
20,000	-21.2	-23	-7	-3	-1	-25	-4	-1	1	-12	9	11	15	-22	-1	2	4	-22	-5	4	6	6	5	4	5	
10,000	-4.6	-15	-9	-5	-3	-11	-6	-3	-2	2	7	9	10	-7	-3	0	2	-7	-5	3	4	5	5	3	4	
TORONTO ID VIENNA																										
55,000	-56.5	-54	3	6	8	-51	6	9	10	-49	8	11	12	-53	5	6	7	-51	5	8	10	5	4	4	4	
40,000	-56.5	-57	-0	3	5	-51	5	9	15	-49	8	11	15	-52	4	7	9	-52	4	6	11	5	6	3	5	
30,000	-44.5	-54	-9	-7	-5	-46	-4	-1	1	-36	8	12	15	-46	-1	2	4	-46	-2	4	6	6	5	5	5	
20,000	-21.2	-15	-12	-8	-6	-26	-5	-1	1	-12	9	12	15	-22	-1	3	5	-23	-2	3	6	6	6	4	6	
10,000	-4.6	-20	-15	-11	-9	-11	-7	-3	-1	-5	7	10	11	-8	-4	-0	2	-9	-5	0	3	6	6	4	6	
TORONTO TO WARE ISLAND																										
55,000	-56.5	-67	-11	-8	-6	-65	-9	-5	-4	-67	-11	-6	-6	-68	-11	-8	-7	-67	-10	-7	-5	4	4	4	4	
40,000	-56.5	-50	7	10	12	-55	2	5	7	-52	5	7	9	-53	4	6	7	-52	4	8	10	5	5	4	5	
30,000	-44.5	-54	11	15	15	-36	9	11	12	-30	14	16	17	-31	13	15	16	-35	12	14	14	4	4	3	3	
20,000	-21.2	-15	6	10	12	-9	12	14	15	-5	16	18	19	-7	15	17	18	-8	13	15	16	3	3	2	3	
10,000	-4.6	1	5	8	9	5	9	11	15	10	15	16	17	8	13	14	15	6	10	13	14	3	3	2	3	
TORONTO TO TRINIDAD																										
55,000	-56.5	-71	-14	-12	-11	-69	-13	-11	-9	-64	-12	-10	-9	-72	-15	-13	-12	-70	-13	-11	-10	3	3	2	3	
40,000	-56.5	-58	1	3	5	-56	0	3	4	-56	1	2	3	-55	2	4	5	-56	1	3	4	4	3	2	3	
30,000	-44.5	-50	5	7	8	-38	6	8	9	-34	10	12	12	-35	9	11	12	-37	8	10	11	3	2	2	3	
20,000	-21.2	-15	8	10	11	-12	10	12	15	-8	14	15	15	-9	13	14	15	-10	11	13	14	3	3	2	2	
10,000	-4.6	2	6	9	10	5	8	10	11	8	12	13	14	6	11	13	15	5	9	11	12	3	3	2	2	
TORONTO TO VANCOUVER																										
55,000	-56.5	-57	-1	3	4	-55	2	4	6	-56	1	3	5	-59	-2	1	2	-56	0	3	4	5	6	3	4	
40,000	-56.5	-55	1	4	4	-55	1	5	8	-53	5	6	7	-55	1	5	6	-55	2	5	7	6	6	4	5	
30,000	-44.5	-52	-7	-4	-3	-48	-4	-2	-0	-39	6	8	9	-44	0	3	4	-46	-1	2	4	6	3	3	3	
20,000	-21.2	-10	-4	-4	-2	-23	-2	1	1	-12	9	11	12	-14	2	4	7	-21	0	4	6	7	5	3	3	
10,000	-4.6	-16	-11	-6	-3	-8	-3	1	3	4	9	11	13	-3	2	6	8	-6	-1	4	6	7	5	4	6	
TORONTO TO WINNIPEG																										
55,000	-56.5	-57	-1	2	4	-55	1	4	5	-56	1	3	4	-58	-2	1	2	-57	-0	3	4	5	6	4	4	
40,000	-56.5	-54	2	6	8	-55	2	6	8	-53	4	6	8	-54												

*1)--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE.

ENROUTE TEMPERATURES AND STANDARD DEVIATION IN DEGREES CELSIUS FOR GREAT CIRCLE AIR ROUTES

HEIGHT IN FEET	ISA TEMP.	ENROUTE TEMPERATURE																STANDARD DEVIATION							
		JANUARY				APRIL				JULY				OCTOBER				ANNUAL							
		50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	50	050	075	085	JAN	APR	JUL	OCT
TRIPOLI TO FUNIS																									
55,000	-56.5	-61	-4	-2	-0	-60	-3	-1	0	-65	-9	-7	-6	-63	-7	-5	-3	-62	-6	-3	-1	709 N.M.I.			
40,000	-56.5	-56	0	4	6	-56	0	4	5	-69	7	9	10	-56	0	3	4	-54	2	5	7	4	3	3	3
30,000	-66.5	-66	-2	0	1	-66	1	3	4	-34	10	12	13	-60	4	6	7	-61	3	7	9	5	5	3	3
20,000	-21.2	-20	1	3	5	-17	5	7	8	-8	13	15	16	-13	8	10	11	-15	7	10	11	3	3	2	2
10,000	-6.6	-6	1	3	4	1	5	6	9	10	15	16	17	3	8	10	10	2	7	10	12	4	3	3	3
FUNIS TO VIENNA																									
55,000	-56.5	-57	-0	3	5	-56	0	3	4	-57	-0	2	3	-60	-4	-1	0	-57	-1	2	3	731 N.M.I.			
40,000	-56.5	-57	-1	3	4	-57	-1	3	5	-51	6	8	10	-56	0	3	4	-55	1	5	6	5	4	3	3
30,000	-66.5	-69	-5	-2	-1	-66	-2	1	2	-58	7	9	10	-62	3	5	6	-66	1	4	6	5	5	4	4
20,000	-21.2	-25	-3	-0	1	-20	1	4	5	-11	10	12	13	-16	5	8	9	-18	3	7	8	4	4	3	3
10,000	-6.6	-8	-3	-0	1	-3	1	4	5	6	10	12	13	-0	4	7	8	-2	3	7	8	5	4	3	4
FUNIS TO ZURICH																									
55,000	-56.5	-57	-1	3	4	-56	0	3	4	-58	-1	1	2	-60	-4	-1	-0	-58	-1	2	3	690 N.M.I.			
40,000	-56.5	-58	-1	3	5	-57	-1	3	5	-52	5	7	9	-56	0	3	4	-56	1	4	6	5	4	3	3
30,000	-66.5	-69	-6	-2	-0	-66	-2	1	2	-58	7	9	10	-62	3	5	7	-66	1	4	6	5	5	4	4
20,000	-21.2	-24	-1	0	1	-20	2	4	5	-11	10	12	13	-16	6	8	9	-18	4	7	9	5	4	3	3
10,000	-6.6	-7	-2	1	3	-3	2	4	5	6	11	13	14	0	5	7	8	-1	4	7	9	5	4	3	4
VANCOUVER TO WASHINGTON, D.C.																									
55,000	-56.5	-58	-2	1	3	-56	0	3	4	-58	-1	1	2	-60	-4	-1	0	-58	-2	1	3	7049 N.M.I.			
40,000	-56.5	-58	-1	3	5	-56	0	4	7	-56	3	5	7	-56	1	4	6	-55	1	4	6	5	4	3	4
30,000	-66.5	-50	-6	-3	-2	-67	-3	-1	1	-58	7	9	10	-61	1	4	5	-65	-0	3	5	4	3	3	4
20,000	-21.2	-27	-6	-2	0	-22	-0	3	4	-11	10	12	13	-17	4	7	9	-19	2	6	8	4	3	3	4
10,000	-6.6	-13	-8	-4	-1	-6	-1	2	4	6	10	12	14	-1	3	7	9	-4	1	5	7	7	5	3	4
VANCOUVER TO WHITEHORSE																									
55,000	-56.5	-58	2	4	8	-51	5	8	10	-50	7	9	10	-54	2	5	7	-52	4	7	8	802 N.M.I.			
40,000	-56.5	-55	2	4	9	-53	4	8	10	-51	5	8	10	-53	3	6	8	-53	3	7	9	5	4	3	4
30,000	-66.5	-52	-7	-6	-3	-69	-5	-3	-1	-63	1	4	5	-67	-2	1	2	-68	-3	0	2	6	4	3	4
20,000	-21.2	-30	-9	-5	-2	-27	-5	-2	-0	-16	5	8	9	-23	-2	2	4	-24	-3	1	3	7	5	4	5
10,000	-6.6	-15	-10	-5	-3	-11	-6	-4	-2	-1	4	6	8	-7	-3	0	2	-8	-6	0	2	7	5	4	5
VANCOUVER TO WINNIPEG																									
55,000	-56.5	-58	0	4	5	-54	3	5	7	-54	3	5	6	-58	-1	1	3	-55	1	4	5	1006 N.M.I.			
40,000	-56.5	-55	1	5	8	-55	2	6	8	-53	3	6	8	-55	1	4	6	-55	2	5	7	5	4	3	4
30,000	-66.5	-52	-8	-5	-4	-69	-5	-2	-1	-60	5	7	8	-65	-0	2	3	-67	-2	1	3	6	4	4	5
20,000	-21.2	-31	-9	-5	-2	-24	-3	1	2	-14	8	10	11	-21	1	4	6	-22	-1	3	5	6	3	3	4
10,000	-6.6	-16	-12	-6	-4	-8	-3	0	2	4	8	11	12	-5	0	4	6	-6	-2	3	5	7	5	3	5
VANCOUVER TO YELLOWKNIFE																									
55,000	-56.5	-56	1	5	7	-51	5	8	10	-50	7	9	10	-55	1	4	5	-53	4	6	8	848 N.M.I.			
40,000	-56.5	-55	1	6	8	-53	4	7	10	-51	5	8	10	-54	2	6	7	-53	3	7	9	6	4	3	4
30,000	-66.5	-53	-9	-6	-4	-60	-6	-3	-2	-63	1	4	5	-67	-3	0	2	-68	-4	-1	1	6	4	3	4
20,000	-21.2	-33	-12	-7	-4	-27	-6	-2	-1	-16	5	7	8	-23	-2	1	3	-25	-4	0	3	7	5	3	4
10,000	-6.6	-18	-14	-6	-6	-11	-7	-4	-2	-6	4	7	8	-8	-3	0	2	-9	-5	-1	2	8	5	4	5
VIENNA TO WARSAU																									
55,000	-56.5	-56	1	4	6	-54	3	5	7	-50	7	9	10	-57	-1	2	3	-54	2	5	7	796 N.M.I.			
40,000	-56.5	-58	-2	2	4	-55	1	4	6	-51	6	9	10	-56	0	3	4	-55	1	5	7	5	4	3	4
30,000	-66.5	-52	-7	-5	-3	-68	-4	-1	0	-60	4	7	8	-66	1	3	5	-66	-2	2	4	5	5	4	4
20,000	-21.2	-28	-7	-3	-1	-23	-2	1	3	-14	7	10	11	-18	3	6	8	-21	0	4	6	4	4	4	4
10,000	-6.6	-13	-9	-5	-3	-7	-3	0	2	1	6	8	9	-4	1	4	6	-6	-1	3	5	6	5	3	5
VIENNA TO ZURICH																									
55,000	-56.5	-56	1	4	6	-54	2	5	6	-52	5	7	8	-58	-2	1	2	-55	1	4	6	726 N.M.I.			
40,000	-56.5	-58	-2	2	4	-57	-0	3	5	-52	5	8	9	-56	0	3	4	-56	1	5	7	5	4	3	4
30,000	-66.5	-51	-6	-4	-2	-64	-3	-0	1	-60	5	7	9	-65	1	4	5	-65	-1	3	5	5	4	4	4
20,000	-21.2	-27	-6	-2	0	-22	-1	2	4	-15	8	10	11	-17	4	7	8	-20	1	5	7	5	4	3	4
10,000	-6.6	-11	-6	-3	-1	-6	-1	2	3	5	7	9	11	-2	3	6	7	-4	1	4	6	5	4	3	4
WARSAU TO ZURICH																									
55,000	-56.5	-56	1	4	6	-54	3	5	7	-50	6	8	10	-58	-1	1	3	-54	2	5	7	557 N.M.I.			
40,000	-56.5	-58	-2	2	4	-56	1	4	6	-51	5	8	10	-56	0	3	5	-55	1	5	7	5	4	3	4
30,000	-66.5	-51	-7	-4	-3	-68	-4	-1	0	-60	4	7	8	-66	1	3	5	-66	-1	2	4	5	5	4	4
20,000	-21.2	-28	-6	-3	-1	-23	-2	2	3	-14	6	10	11	-18	3	6	8	-21	1	4	6	4	4	4	4
10,000	-6.6	-12	-8	-4	-2	-7	-2	1	2	2	6	9	10	-3	2	5	6	-5	-0	3	5	6	5	3	5
WEST END TO WEST PALM BEACH																									
55,000	-56.5	-73	-17	-15	-16	-70	-14	-12	-11	-70	-16	-12	-12	-75	-18	-16	-15	-72	-16	-14	-13	62 N.M.I.			
40,000	-56.5	-56	0	2	3	-56	1	5	4	-57	-0	1	1	-55	2	3	4	-56	1	2	3	3	3	2	3
30,000	-66.5	-18	6	8	8	-37	7	9	10	-55	11	12	13	-56	11	12	13	-56	9	10	11	2	2	1	2
20,000	-21.2	-10	11	13	13	-10	11	13	14	-7	14	15	16	-7	14	16	16	-8	13	14	15	2	2	1	2
10,000	-6.6	5	10	11	12	5	10	12	13	8	11	14	14	6	13	14	15	7	11	12	13	2	3	1	2
ZAGREB TO ZURICH																									
55,000	-56.5	-56	1	4	6	-55	2	4	6	-53	4	6	7	-59	-2	0	2	-56	1	4	5	526 N.M.I.			
40,000	-56.5	-58	-2	2	4	-57	-1	3	5	-52	4	7	9	-56	0	3	4	-56	1	4	6	5	4	3	4
30,000	-66.5	-51	-6	-3	-2	-67	-3	-0	1	-59	5	8	9	-63	2	4	6	-65	-1	3	5	5	4	4	4
20,000	-21.2	-26	-5	-2	0	-21	-0	2	4	-13	9	11	12	-17	4	7	8	-19	2	5	7	5	4	3	4
10,000	-6.6	-10	-6	-2	-0	-6	-1	2	3	3	8	10	11	-2	3	6	7	-4	1	5	7	5	4	3	4

*D--DIFFERENCE BETWEEN INDICATED PER CENT RELIABILITY TEMPERATURE AND INTERNATIONAL STANDARD ATMOSPHERE TEMPERATURE

TABLE 6

AIRPORT TEMPERATURES FOR THE 0, 50, 75, 85,
95, AND 100 PER CENT PROBABILITY OF OCCURENCE
BY MONTH, QUARTER, HALF YEAR AND YEAR

TABLE 6. SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANY
ACCRA, GHANA														
0	85	77	62	54	48	41	34	28	22	17	12	8	5	50
50	82	70	52	41	34	28	22	17	12	8	5	3	2	40
75	78	65	48	34	28	22	17	12	8	5	3	2	1	35
95	74	61	44	30	24	19	14	10	7	4	3	2	1	30
100	70	57	40	26	20	15	10	7	4	3	2	1	1	25
ADM...	70	57	40	26	20	15	10	7	4	3	2	1	1	25
ADDIS ABABA, ETHIOPIA														
0	52	55	56	52	58	60	52	45	38	32	25	18	12	12
50	57	59	62	59	65	66	57	50	43	36	29	22	15	15
75	63	65	68	66	70	70	60	53	46	39	32	25	18	18
95	71	72	74	72	76	76	66	59	52	45	38	31	24	24
100	77	77	78	76	80	80	70	63	56	49	42	35	28	28
ADM...	77	77	78	76	80	80	70	63	56	49	42	35	28	28
ADELAIDE, AUSTRALIA														
0	65	65	65	65	65	65	65	65	65	65	65	65	65	65
50	71	71	71	71	71	71	71	71	71	71	71	71	71	71
75	77	77	77	77	77	77	77	77	77	77	77	77	77	77
95	83	83	83	83	83	83	83	83	83	83	83	83	83	83
100	89	89	89	89	89	89	89	89	89	89	89	89	89	89
ADM...	89	89	89	89	89	89	89	89	89	89	89	89	89	89
ADEN, ADEN-PADI														
0	67	61	55	41	34	28	22	17	12	8	5	3	2	30
50	74	67	61	47	39	32	26	20	15	10	7	4	3	35
75	81	74	67	53	45	38	32	26	20	15	10	7	4	40
95	88	81	74	60	52	45	39	33	27	21	15	10	7	45
100	95	88	81	67	59	52	46	40	34	28	22	16	10	50
ADM...	95	88	81	67	59	52	46	40	34	28	22	16	10	50
AGUIA, ALASKA														
0	12	14	14	12	17	17	12	12	12	12	12	12	12	12
50	14	16	16	14	19	19	14	14	14	14	14	14	14	14
75	16	18	18	16	21	21	16	16	16	16	16	16	16	16
95	18	20	20	18	23	23	18	18	18	18	18	18	18	18
100	20	22	22	20	25	25	20	20	20	20	20	20	20	20
ADM...	20	22	22	20	25	25	20	20	20	20	20	20	20	20
ALLAMANO, INDIA														
0	54	56	51	54	58	57	50	45	38	32	25	18	12	12
50	62	64	59	62	66	65	58	53	46	39	32	25	18	18
75	69	71	66	69	73	72	66	61	54	47	40	33	26	26
95	77	79	74	77	81	80	74	69	62	55	48	41	34	34
100	85	87	82	85	89	88	82	77	70	63	56	49	42	42
ADM...	85	87	82	85	89	88	82	77	70	63	56	49	42	42
AMMAN, JORDAN														
0	75	71	71	71	76	76	71	66	61	56	51	46	41	41
50	81	77	77	77	82	82	77	72	67	62	57	52	47	47
75	87	83	83	83	88	88	83	78	73	68	63	58	53	53
95	93	89	89	89	94	94	89	84	79	74	69	64	59	59
100	100	96	96	96	101	101	96	91	86	81	76	71	66	66
ADM...	100	96	96	96	101	101	96	91	86	81	76	71	66	66
AMSTERDAM, NETHERLANDS														
0	6	5	5	5	10	10	5	5	5	5	5	5	5	5
50	14	12	12	12	17	17	12	12	12	12	12	12	12	12
75	22	20	20	20	25	25	20	20	20	20	20	20	20	20
95	30	28	28	28	33	33	28	28	28	28	28	28	28	28
100	38	36	36	36	41	41	36	36	36	36	36	36	36	36
ADM...	38	36	36	36	41	41	36	36	36	36	36	36	36	36
ANCHORAGE, ALASKA														
0	-15	-15	-14	-16	-22	-21	-1	-22	-18	11	15	11	11	11
50	14	15	14	15	25	25	15	25	25	25	25	25	25	25
75	25	25	25	25	35	35	25	35	35	35	35	35	35	35
95	35	35	35	35	45	45	35	45	45	45	45	45	45	45
100	45	45	45	45	55	55	45	55	55	55	55	55	55	55
ADM...	45	45	45	45	55	55	45	55	55	55	55	55	55	55
ANKARA, TURKEY														
0	-15	15	-12	-15	5	20	51	5	-11	35	44	40	35	35
50	16	17	16	16	21	21	16	21	21	21	21	21	21	21
75	21	22	21	21	26	26	21	26	26	26	26	26	26	26
95	26	27	26	26	31	31	26	31	31	31	31	31	31	31
100	31	32	31	31	36	36	31	36	36	36	36	36	36	36
ADM...	31	32	31	31	36	36	31	36	36	36	36	36	36	36
ANTIGUA IS., W. I.														
0	64	62	62	62	67	67	62	62	62	62	62	62	62	62
50	71	69	69	69	74	74	69	69	69	69	69	69	69	69
75	78	76	76	76	81	81	76	76	76	76	76	76	76	76
95	85	83	83	83	88	88	83	83	83	83	83	83	83	83
100	92	90	90	90	95	95	90	90	90	90	90	90	90	90
ADM...	92	90	90	90	95	95	90	90	90	90	90	90	90	90

*10T--FIRST QUARTILE DEC-JAN-FEB
 *10F--FIRST HALF YEAR DEC-MAY
 *ADM--AVERAGE DAILY MAXIMUM

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	1QT*	MAR	APR	MAY	2QT	1HF**	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	ANN
ARUBA, NETHERLAND ANTILLES																			
0	69	68	66	66	63	68	70	63	63	71	72	71	71	71	70	68	68	68	63
50	80	79	79	79	79	81	82	81	80	83	82	83	83	84	83	81	83	83	81
75	82	82	82	82	83	84	85	85	86	85	85	86	86	87	86	84	86	86	86
85	84	83	84	86	86	85	86	87	86	87	86	88	87	88	88	86	88	88	87
95	87	85	87	87	87	88	90	91	90	90	89	91	90	91	90	88	91	91	91
100	91	87	91	91	90	91	96	96	96	96	96	95	95	96	94	92	96	96	96
ADM***	84	83	84	84	86	86	86	85	84	87	87	88	87	89	85	85	88	87	86
ASUNCION, PARAGUAY																			
0	67	56	52	47	49	47	34	34	34	29	29	30	29	37	38	45	37	29	29
50	87	83	83	83	81	75	68	74	78	63	64	68	65	72	74	78	74	69	74
75	90	90	90	91	88	83	76	84	89	71	73	77	74	80	83	86	84	80	85
85	94	93	93	94	91	86	80	88	93	75	77	81	78	84	87	89	88	84	89
95	101	100	100	101	98	94	88	94	100	86	87	89	88	93	95	97	96	94	98
100	110	109	109	110	106	104	99	106	110	98	103	101	103	105	106	108	108	108	110
ADM***	94	95	94	94	92	84	77	86	89	72	74	78	75	83	84	90	86	80	85
ATHENS, GREECE																			
0	74	70	71	70	70	75	72	70	70	54	58	59	54	68	65	50	50	30	20
50	82	78	79	79	75	80	76	76	75	76	81	81	79	75	77	78	77	73	64
75	88	85	86	86	83	86	82	82	81	83	87	87	86	81	83	85	84	83	75
85	90	87	88	88	85	88	84	84	83	86	90	90	90	85	86	88	88	88	81
95	95	92	93	93	92	90	86	86	82	95	96	97	97	92	94	96	96	97	92
100	101	99	99	100	98	91	101	101	101	109	106	107	109	103	95	87	103	109	109
ADM***	87	84	85	85	85	87	77	88	82	85	90	90	88	83	74	64	74	81	71
ATLANTA, GA., U. S. A.																			
0	1	-2	-9	-9	9	25	16	8	-9	39	54	55	39	45	28	5	5	5	-9
50	45	45	41	45	53	62	70	61	53	78	80	79	79	74	65	52	63	71	62
75	55	56	59	54	63	71	78	74	68	87	85	85	88	82	72	65	77	86	78
85	59	60	64	62	68	75	81	78	74	90	84	87	91	84	76	67	82	90	84
95	66	64	71	70	76	82	88	87	84	96	94	95	97	92	84	74	91	97	95
100	75	79	79	79	87	93	97	97	97	102	103	102	103	102	95	82	102	103	103
ADM***	54	53	56	54	63	71	81	72	63	88	89	89	89	84	74	62	73	81	72
AUCKLAND, NEW ZEALAND																			
0	45	45	47	45	42	39	36	36	36	35	35	34	35	34	36	41	34	33	33
50	64	67	67	66	65	62	57	61	63	55	51	52	52	55	58	60	57	55	59
75	69	72	72	71	71	67	61	67	70	58	55	56	57	59	63	65	63	61	66
85	72	75	75	74	73	69	64	70	73	60	57	58	59	62	65	68	66	64	70
95	79	81	81	81	79	74	68	77	80	64	61	62	63	66	69	73	72	70	78
100	87	90	90	90	86	81	75	86	90	70	67	67	70	71	75	81	81	81	90
ADM***	70	73	71	72	71	67	62	67	69	58	54	54	57	60	63	66	63	60	65
BAGHDAD, IRAQ																			
0	70	74	75	74	27	37	51	27	16	58	62	64	58	51	39	29	29	29	18
50	81	80	80	80	60	71	82	71	61	89	93	93	92	87	77	64	76	84	73
75	81	81	81	81	64	80	90	82	73	97	101	100	100	96	86	73	87	96	86
85	84	84	84	84	71	84	94	87	79	101	104	104	104	99	89	76	92	101	92
95	87	87	87	87	79	92	101	97	92	104	111	110	111	106	97	84	102	110	106
100	89	89	89	89	90	104	112	112	112	119	121	120	121	116	107	94	116	121	121
ADM***	64	60	64	61	71	85	97	84	73	105	110	110	108	104	92	77	91	100	87
BALTIMORE, MD., U. S. A.																			
0	4	-4	6	-4	14	25	33	14	-4	48	52	48	48	37	25	13	13	13	-4
50	36	36	35	35	43	52	63	53	44	72	76	74	74	68	57	44	57	65	55
75	44	44	43	43	51	60	71	63	56	79	83	81	81	74	65	54	68	78	69
85	49	48	48	50	55	65	75	68	63	82	86	84	84	80	69	58	73	82	75
95	59	57	59	60	65	74	83	79	75	89	92	91	91	87	78	66	84	91	86
100	74	70	76	76	79	90	95	95	95	99	102	100	102	99	92	77	99	102	102
ADM***	44	43	44	44	53	63	73	63	53	83	87	85	85	78	67	55	67	76	65
BANGALORE, INDIA																			
0	52	52	52	52	56	62	63	56	52	64	63	63	63	61	58	52	52	52	52
50	69	69	73	70	78	81	81	80	75	76	74	74	75	74	74	71	73	74	74
75	76	76	78	75	84	86	85	84	81	80	77	77	79	77	78	76	78	80	81
85	76	76	81	78	86	88	88	89	84	83	79	79	81	79	80	78	80	83	84
95	81	81	86	84	91	93	93	94	91	89	84	83	88	84	84	82	85	89	91
100	88	90	94	94	99	101	102	102	102	100	92	90	100	91	90	88	91	100	102
ADM***	79	81	86	82	91	93	92	92	87	85	82	82	83	82	82	80	81	82	85
BANGKOK, THAILAND																			
0	52	55	56	52	62	67	71	62	52	70	71	72	70	69	64	56	56	56	52
50	83	79	82	81	84	86	85	85	83	86	83	83	83	83	82	80	81	82	83
75	89	84	88	88	90	91	89	91	90	87	87	86	87	86	86	85	87	88	90
85	92	87	91	91	92	93	92	93	93	89	89	88	89	88	88	88	90	91	93
95	96	92	97	97	97	98	97	99	99	93	93	92	94	92	93	92	94	95	99
100	100	100	106	106	104	106	106	106	106	100	101	99	101	98	100	99	100	101	106
ADM***	87	89	91	89	91	95	93	94	91	91	90	90	90	89	88	87	88	89	90
BARBADOS, W. I.																			
0	64	61	61	61	62	64	66	62	61	67	68	69	67	67	67	66	66	66	61
50	77	77	76	77	78	79	80	79	78	81	80	81	80	81	80	79	80	80	79
75	80	80	80	80	81	82	83	83	82	84	83	84	84	84	83	82	83	84	83
85	82	81	81	82	83	84	85	84	83	85	84	85	86	85	84	83	85	85	85
95	84	84	84	84	85	86	87	87	87	87	87	89	89	88	87	86	88	89	89
100	88	87	87	88	89	89	91	91	91	90	90	95	95	91	92	89	92	95	95
ADM***	83	83	83	83	85	86	87	86	85	87	86	87	87	87	86	85	86	86	85

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	1QT*	MAR	APR	MAY	2QT	1HF**	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	ANN
BARCELONA, SPAIN																			
0	25	24	29	24	32	35	41	32	24	49	54	56	49	49	39	31	31	31	24
50	51	49	51	50	54	58	64	59	54	70	75	76	74	72	65	56	64	69	62
75	57	55	56	57	60	63	63	70	66	76	80	81	80	77	70	62	72	78	71
85	60	58	59	60	63	66	73	69	67	79	83	83	83	79	73	65	75	81	75
95	65	63	66	67	69	73	80	77	76	85	88	89	89	83	77	71	81	89	85
100	73	71	77	77	79	82	90	90	90	95	96	98	98	89	82	80	89	98	98
ADM***	57	56	57	57	61	64	71	65	61	77	81	82	80	78	71	62	70	75	68
BARRANQUILLA, COLOMBIA																			
0	68	66	68	66	67	68	68	67	66	69	70	69	69	68	68	70	68	68	66
50	85	82	82	82	83	84	85	84	83	85	85	86	85	86	84	84	84	85	84
75	87	86	85	86	86	88	89	88	87	89	89	90	89	90	88	87	89	89	88
85	88	88	87	88	88	90	91	90	90	91	91	92	91	92	90	89	91	91	91
95	92	92	91	92	92	95	94	95	94	95	95	96	96	96	94	92	95	96	95
100	96	98	97	98	98	102	100	102	102	100	101	102	102	102	99	98	102	102	102
ADM***	91	90	90	90	91	92	92	92	91	93	94	94	94	94	92	91	92	93	92
BASEL, SWITZERLAND																			
0	-6	-11	-11	-11	6	22	27	6	-11	37	41	38	37	30	22	13	13	13	-11
50	36	36	36	35	43	50	58	50	42	64	67	67	66	61	51	42	51	58	50
75	46	46	47	45	52	58	66	61	56	71	74	74	74	69	59	49	61	70	65
85	47	48	51	49	56	62	70	66	62	75	78	78	78	73	63	52	66	75	72
95	55	56	58	57	63	72	78	77	74	85	87	88	87	81	71	60	78	84	85
100	65	66	67	67	73	87	92	92	92	101	102	102	102	95	85	71	95	102	102
ADM***	39	39	43	40	52	60	68	60	50	74	78	77	76	70	59	47	59	67	59
BASRAM, IRAQ																			
0	29	26	28	26	36	47	48	36	24	69	72	68	68	58	45	38	38	38	24
50	59	55	58	57	65	74	86	75	66	91	93	92	92	87	79	69	78	85	75
75	66	62	66	65	73	81	95	85	77	96	99	98	98	94	88	76	88	94	88
85	69	65	69	69	76	85	99	90	83	99	102	101	102	98	92	80	95	101	94
95	76	72	76	76	84	93	105	100	95	105	110	109	110	105	101	87	102	110	104
100	85	81	87	87	95	105	114	114	114	115	123	120	123	116	114	98	116	123	123
ADM***	69	64	68	67	75	85	96	85	76	100	104	105	103	102	94	80	92	98	87
BEIRUT, LEBANON																			
0	30	31	30	30	36	45	50	36	30	56	61	62	56	60	52	41	41	41	30
50	60	57	57	58	60	65	71	65	62	76	80	82	79	80	75	67	74	76	69
75	67	64	64	65	67	72	78	74	71	82	84	86	85	85	81	74	82	85	79
85	70	65	68	69	71	75	82	79	76	85	86	88	88	87	84	76	85	88	84
95	76	70	75	76	81	86	91	89	88	92	91	93	94	92	87	82	92	95	93
100	84	77	87	87	97	99	107	107	107	104	98	99	104	99	101	91	101	104	107
ADM***	65	62	63	63	66	72	78	72	68	83	87	89	86	86	81	73	80	83	75
BELEM, BRAZIL																			
0	66	66	68	66	66	69	68	66	66	68	64	67	64	65	67	67	65	64	64
50	81	80	79	80	80	80	81	80	80	80	80	80	80	80	80	81	80	80	80
75	84	83	82	83	84	83	84	84	84	83	83	83	84	84	84	84	84	84	84
85	86	85	84	85	85	85	85	86	86	85	85	85	86	86	86	86	86	86	86
95	91	89	88	90	89	89	89	89	90	89	89	89	89	90	90	90	91	91	91
100	97	95	94	97	95	95	94	95	97	93	94	95	95	96	98	97	98	98	98
ADM***	89	87	86	87	87	87	88	87	87	88	88	88	88	89	89	90	89	89	88
BELFAST, N. IRELAND																			
0	21	16	15	16	21	25	25	21	16	32	41	37	32	30	26	24	24	24	16
50	42	38	38	39	42	46	52	46	43	46	59	58	54	55	50	44	49	52	47
75	46	44	44	45	47	51	58	53	51	51	63	63	60	60	55	49	56	59	56
85	48	46	46	47	50	53	61	57	55	55	65	66	63	63	57	50	59	62	60
95	52	50	50	51	55	59	68	65	63	64	69	71	70	68	62	53	65	70	69
100	56	55	56	56	63	67	77	77	77	62	75	80	82	75	67	57	75	82	82
ADM***	46	42	43	44	48	53	59	52	48	63	65	64	64	61	55	49	55	60	54
BELGRADE, YUGOSLAVIA																			
0	-3	-2	-14	-14	6	21	29	6	-14	41	49	45	41	35	9	12	9	9	-14
50	35	32	36	36	44	55	64	54	44	69	73	72	71	64	56	46	56	63	54
75	44	40	45	45	54	63	72	66	58	76	79	79	79	73	67	55	67	76	70
85	49	44	50	49	58	67	75	70	64	79	83	83	83	77	72	59	72	82	77
95	57	52	58	58	67	76	82	80	76	87	90	92	92	85	81	69	82	93	90
100	69	62	68	69	80	88	92	92	92	98	103	107	107	96	94	85	96	107	107
ADM***	40	37	41	39	53	64	74	64	51	79	84	83	82	76	65	52	64	73	62
BELIZE, BRITISH HONDURAS																			
0	49	49	49	49	54	59	60	54	49	64	62	60	60	60	58	52	52	52	49
50	75	74	76	75	78	80	81	80	77	81	81	82	81	81	79	76	78	80	78
75	80	80	82	81	83	85	86	85	84	85	85	86	86	85	84	81	84	86	85
85	83	82	84	83	85	87	88	88	86	87	87	88	88	88	86	84	87	88	88
95	87	86	88	87	90	91	91	92	91	91	91	92	92	92	90	88	91	92	92
100	92	90	93	93	95	97	96	97	97	97	95	96	97	97	96	95	97	97	97
ADM***	81	81	82	81	84	86	87	86	83	87	87	88	87	87	86	83	85	86	85
BENGASI, LIBYA																			
0	40	38	38	38	37	41	48	37	37	55	57	60	55	52	51	45	45	45	37
50	60	57	58	58	62	66	71	66	62	76	78	79	77	76	73	67	72	75	68
75	64	61	63	63	69	74	78	75	70	82	83	84	84	83	79	73	79	83	77
85	67	64	66	66	73	78	82	79	75	85	86	87	87	86	82	76	83	87	82
95	71	69	72	72	84	88	92	90	87	94	94	94	95	94	89	84	92	95	92
100	78	76	82	82	101	105	108	108	108	109	105	105	109	106	100	95	106	109	109
ADM***	66	63	64	64	69	74	79	74	69	83	84	85	84	83	80	74	79	82	75
BERGEN, NORWAY																			
0	6	7	3	3	10	15	25	10	3	35	39	39	35	28	22	21	21	21	3
50	37	35	35	36	38	45	53	45	40	58	62	60	60	55	48	41	48	54	47
75	44	42	42	43	45	52	60	54	50	65	68	66	67	61	54	46	55	62	58
85	47	44	45	47	48	56	63	58	55	68	71	69	70	61	56	48	59	67	63
95	53	49	49	53	56	64	70	67	65	76	78	75	77	70	61	53	67	75	74
100	62	56	54	62	68	77	81	81	81	89	89	85	89	79	68	59	79	89	89
ADM***	45	43	44	44	47	55	64	55	50	70	72	70	71	64	57	49	57	64	51

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NO. 06-1177

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	197*	MAR	APR	MAY	JUN	JUL	AUG	SEP	SEP	OCT	NOV	DEC	197*	PROB	
BRUSSELS, BELGIUM																		
0	5	8	0	0	14	24	29	14	0	36	40	41	36	34	22	12	12	0
50	38	37	37	37	42	38	36	48	43	60	64	63	62	59	51	42	50	49
75	45	43	46	46	49	54	63	58	54	67	70	70	70	66	59	49	61	67
85	48	46	49	49	53	58	67	63	60	71	74	73	74	70	62	52	66	72
95	53	51	55	55	60	66	77	75	73	80	83	82	83	79	70	59	77	83
100	59	58	63	63	72	80	93	93	93	94	98	97	98	95	82	69	95	98
ADH...	42	42	43	42	49	56	65	57	49	70	73	72	72	67	58	47	57	64
BUCHAREST, ROMANIA																		
0	-16	-18	-12	-18	6	22	32	6	-18	40	46	44	40	29	13	0	0	-18
50	32	27	31	30	42	52	61	52	41	70	74	73	72	65	60	42	55	64
75	43	37	42	42	51	60	71	64	56	78	81	81	80	73	70	53	68	78
85	48	42	47	47	56	65	75	69	62	82	85	84	84	77	74	58	74	84
95	57	50	57	57	64	75	83	80	76	93	95	93	93	85	81	69	84	94
100	69	61	72	72	80	91	96	96	96	105	105	105	105	97	88	85	97	105
ADH...	17	31	36	36	51	63	74	63	49	81	86	84	84	76	65	49	63	74
BUDAPEST, HUNGARY																		
0	-3	-7	-10	-10	8	24	32	8	-10	37	48	45	37	34	15	8	8	-10
50	35	31	34	33	44	51	62	53	41	68	72	70	70	64	53	42	53	61
75	43	39	44	43	51	61	70	64	56	76	78	77	78	71	62	51	64	74
85	47	43	48	47	57	65	75	68	62	80	81	81	82	75	67	54	69	79
95	53	50	55	55	65	75	80	78	74	89	89	89	90	83	75	62	80	90
100	60	59	64	64	78	86	90	90	90	103	101	102	103	95	87	73	95	103
ADH...	38	35	40	38	51	62	72	62	50	78	82	81	80	74	61	47	61	70
BUENOS AIRES, ARGENTINA																		
0	39	41	40	39	59	28	25	25	25	23	22	27	22	28	28	36	28	22
50	72	74	71	71	70	63	56	61	68	49	50	52	50	55	60	66	60	55
75	80	82	81	81	77	71	63	72	78	56	57	59	58	62	68	74	69	64
85	83	84	85	85	81	75	67	76	83	59	61	63	62	66	71	77	73	69
95	91	93	92	91	88	84	74	86	92	66	70	72	72	74	79	84	82	79
100	102	104	103	104	99	97	86	99	104	77	84	87	87	86	91	95	95	104
ADH...	82	85	83	83	79	72	64	72	77	57	57	60	58	64	69	76	70	64
BULLEBORING, REG. OF MALAYA																		
0	67	66	64	64	67	67	67	67	64	68	69	69	68	68	67	65	65	65
50	81	82	82	82	83	83	82	83	82	82	82	81	82	81	81	81	81	82
75	85	86	86	86	87	87	86	87	86	86	85	84	85	84	85	84	85	84
85	86	88	88	88	89	89	87	89	88	87	87	86	87	86	85	84	85	84
95	90	92	92	92	91	93	91	92	92	91	90	90	91	91	89	90	91	92
100	95	98	97	98	95	98	94	98	98	97	95	94	97	98	94	95	98	98
ADH...	89	90	91	90	92	91	90	91	91	90	90	89	90	88	89	88	89	90
CAIRO, EGYPT																		
0	34	35	35	34	34	42	49	34	34	55	61	63	55	58	51	42	42	34
50	69	56	59	61	66	70	77	70	64	82	83	83	83	79	76	68	74	78
75	77	62	65	68	71	74	85	80	75	89	89	89	90	85	83	75	83	88
85	79	66	69	72	75	81	89	85	81	91	92	92	94	88	86	79	87	92
95	85	74	78	80	85	94	100	97	94	102	99	98	103	94	95	87	96	102
100	87	80	92	92	101	113	116	116	116	117	109	109	117	108	109	100	109	117
ADH...	68	65	69	67	75	83	91	83	75	95	94	95	95	90	86	78	85	90
CALCUTTA, INDIA																		
0	45	44	46	44	50	61	65	50	44	70	73	74	70	72	63	51	51	44
50	67	68	72	69	81	86	87	85	77	86	84	84	84	84	82	74	80	82
75	73	71	78	75	88	92	92	92	85	90	87	86	89	87	84	80	86	90
85	75	74	81	79	91	95	95	94	89	93	89	88	92	89	88	82	89	93
95	80	81	86	86	97	100	100	101	97	100	92	91	99	92	91	86	91	101
100	87	89	98	98	104	137	108	108	100	111	98	94	111	97	96	92	97	111
ADH...	79	80	84	81	93	97	96	95	88	92	89	89	90	90	89	84	88	89
CALGARY, ALBERTA, CANADA																		
0	-45	-48	-49	-49	-35	-14	12	-35	-49	26	32	28	26	8	-8	-31	-31	-49
50	19	11	17	16	26	40	50	38	27	56	62	60	59	51	42	28	40	38
75	34	29	35	32	40	53	59	55	46	64	70	69	68	61	54	41	56	67
85	40	34	39	38	46	59	64	62	54	69	74	72	72	66	59	47	63	74
95	52	45	51	51	59	70	74	75	69	79	83	82	82	76	70	58	75	85
100	67	61	66	67	75	85	90	90	90	95	97	96	97	90	85	71	90	97
ADH...	29	24	28	27	37	53	63	51	39	69	75	74	73	64	54	38	52	63
CAMPECHE, MEX.																		
0	55	53	51	51	52	58	63	52	51	69	64	67	64	68	63	56	56	56
50	73	73	74	73	78	81	83	86	77	83	83	82	82	82	79	76	79	81
75	73	70	82	77	84	87	88	87	84	87	87	86	87	85	81	81	84	87
85	80	80	82	81	86	90	91	91	87	89	89	89	90	87	85	83	86	89
95	85	85	88	87	91	96	96	97	95	94	92	93	95	90	88	86	91	95
100	92	92	95	95	98	106	104	106	106	103	97	100	105	96	94	91	96	103
ADH...	82	83	85	83	89	92	94	92	87	92	92	91	92	90	87	85	87	89
CANTON ISLAND, PHOENIX IS.																		
0	71	74	73	71	73	73	71	71	71	73	72	71	71	73	73	74	73	71
50	84	85	84	84	84	84	85	84	84	85	85	85	85	85	84	84	84	85
75	87	87	87	88	87	87	88	88	88	88	88	88	88	88	87	87	87	88
85	88	89	89	89	88	88	89	89	89	89	90	89	90	89	88	88	89	90
95	91	92	91	91	91	92	93	92	93	92	92	92	92	92	91	92	93	93
100	94	96	96	98	96	97	97	97	98	96	96	95	96	95	96	98	98	98
ADH...	89	90	89	88	90	90	91	90	90	91	91	91	91	91	90	90	90	91
CAPE TOWN, U. SO. AFRICA																		
0	41	44	41	41	42	48	51	51	51	59	54	53	55	53	54	40	33	28
50	67	69	70	69	68	65	54	63	66	56	54	55	55	57	61	69	62	59
75	74	76	77	76	75	70	66	72	75	63	61	62	67	64	68	76	70	67
85	78	79	81	80	79	74	70	74	79	66	64	66	66	68	72	79	74	71
95	86	87	88	88	88	85	79	86	89	74	72	75	75	77	79	85	81	80
100	100	99	100	100	103	102	95	103	103	85	84	89	89	93	90	93	93	93
ADH...	76	78	79	78	77	72	67	72	75	65	63	64	64	65	70	73	69	67

•IQT--FIRST QUARTER DEC-JAN-FEB
•IHF--FIRST HALF YEAR DEC---MAY
•••••OM--AVERAGE DAILY MAXIMUM

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	1QT*	MAR	APR	MAY	2QT	1HF**	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	ANN
CARACAS, VENEZUELA																			
0	47	47	46	46	45	51	52	45	45	53	52	53	52	53	54	51	51	51	45
50	68	66	67	67	69	71	71	70	68	70	70	70	70	71	70	69	70	70	69
75	73	70	72	72	74	75	74	76	74	74	74	74	74	75	74	73	74	74	75
95	78	77	74	75	77	78	78	79	77	76	76	76	76	77	76	75	76	76	78
100	83	83	80	80	83	82	82	84	83	80	79	80	80	80	80	79	80	80	83
ADM***	78	75	77	77	79	81	80	80	78	78	78	79	78	80	79	77	79	78	78
CARTAGENA, COLOMBIA																			
0	68	66	68	66	67	68	68	67	66	69	70	69	69	68	68	70	68	68	66
50	83	82	82	82	83	84	85	84	83	85	85	86	85	86	84	84	84	85	84
75	87	86	85	86	86	88	89	88	87	89	89	90	89	90	88	87	89	89	88
95	92	92	91	92	92	95	94	95	94	91	91	92	91	92	90	89	91	91	91
100	96	96	97	98	98	102	100	102	102	95	95	96	96	96	94	92	95	96	95
ADM***	91	90	90	90	91	92	92	92	91	93	94	94	94	94	92	91	92	93	92
CANUPANO, VENEZUELA																			
0	60	57	57	57	54	60	57	54	54	60	52	60	52	56	61	61	56	52	52
50	78	76	77	77	77	79	80	78	77	79	79	79	79	80	80	79	79	79	78
75	82	81	81	82	83	83	85	84	83	84	85	85	85	85	84	83	85	84	85
95	88	88	88	89	89	91	92	92	91	90	92	92	92	93	91	89	93	94	93
100	97	96	95	97	99	99	98	99	99	97	97	95	97	101	98	95	101	101	101
ADM***	86	85	86	86	87	88	89	88	87	87	87	87	87	88	88	87	88	87	87
CASABLANCA, MOROCCO																			
0	57	51	55	51	55	61	64	61	58	69	72	74	71	50	46	40	40	40	51
50	56	54	55	55	65	67	70	69	66	75	78	80	79	71	67	61	66	69	63
75	62	60	61	62	70	71	74	73	71	78	82	84	83	78	74	67	74	77	73
95	72	70	73	74	80	82	84	85	82	85	92	94	93	82	78	71	79	82	78
100	84	81	87	87	98	100	100	100	100	97	108	110	110	92	89	80	91	92	90
ADM***	65	63	64	64	67	69	72	69	67	76	79	81	79	110	107	95	110	110	110
CHEROREE SOUND, BAHAMAS																			
0	45	41	43	41	46	53	53	46	41	62	67	67	62	65	54	49	49	49	41
50	73	73	71	72	73	75	78	75	74	71	82	85	78	82	79	76	79	78	74
75	79	80	77	79	78	80	83	82	81	74	85	86	82	85	84	81	85	85	84
95	81	82	79	81	81	82	85	84	83	76	87	88	84	87	86	83	87	87	86
100	84	84	82	84	84	86	88	88	88	83	90	90	88	89	89	86	90	91	90
ADM***	79	77	77	78	79	81	84	81	79	87	88	89	88	92	92	89	92	94	94
CHICAGO, ILL., U. S. A.																			
0	-12	-15	-15	-15	-7	19	30	-7	-15	35	49	46	35	36	20	-2	-2	-2	-15
50	26	25	27	27	37	48	57	48	37	69	75	73	72	64	54	40	53	63	50
75	38	35	38	38	44	56	67	62	51	78	81	80	81	74	63	50	67	77	66
95	43	40	43	43	54	60	71	67	58	82	85	83	85	78	67	55	73	85	73
100	52	51	54	53	65	69	80	79	72	91	92	90	93	87	77	64	84	93	86
ADM***	35	33	35	34	45	58	70	57	46	104	103	101	104	101	91	81	101	104	104
CHITOSE, JAPAN																			
0	-11	-17	-19	-19	-9	6	24	-9	-19	32	41	42	32	30	24	8	8	8	-19
50	25	20	22	22	28	42	51	40	31	60	67	70	65	61	50	38	49	57	44
75	33	29	31	32	37	51	58	52	44	67	73	77	74	69	56	45	60	69	60
95	40	35	35	37	41	55	62	58	51	70	77	80	77	72	59	49	64	74	66
100	44	41	41	46	50	64	71	69	65	77	84	85	85	79	66	57	74	84	79
ADM***	33	29	31	31	36	51	61	49	40	68	75	79	74	71	60	46	59	67	53
CHITTAGONG, PAKISTAN																			
0	47	45	46	45	51	59	65	51	45	68	67	72	67	71	62	52	52	52	45
50	68	67	71	69	77	81	82	80	74	82	82	81	82	82	80	75	79	80	77
75	73	73	77	75	85	87	88	87	82	86	85	84	85	84	84	80	85	86	85
95	76	75	79	78	86	89	88	90	85	88	87	85	87	86	86	82	87	89	88
100	81	81	85	84	92	94	92	95	92	92	90	88	92	89	90	87	91	93	94
ADM***	79	79	82	80	87	89	89	88	84	87	86	86	86	87	87	84	86	86	85
CHRISTCHURCH, NEW ZEALAND																			
0	53	54	55	55	50	54	48	55	57	44	45	44	43	23	26	31	23	22	21
50	60	62	61	61	66	61	55	62	67	49	48	50	49	49	53	57	53	48	52
75	67	69	68	69	69	64	59	66	71	52	51	53	52	56	61	64	61	56	62
95	71	73	72	73	77	71	68	75	81	59	58	59	59	59	65	68	65	61	66
100	72	74	74	74	80	82	78	90	96	69	70	70	70	68	74	76	75	72	78
ADM***	69	70	69	69	66	62	56	61	65	51	50	52	51	81	68	60	60	60	61
CHUNG KING, CHINA																			
0	51	45	50	49	57	44	54	37	29	58	59	62	58	57	46	41	41	41	29
50	51	45	50	49	59	67	74	66	57	79	85	86	83	77	66	57	67	75	66
75	56	50	56	54	66	73	79	74	66	84	91	92	90	82	72	62	74	84	76
95	58	52	59	58	71	78	83	79	71	87	94	95	93	85	75	65	78	88	81
100	64	58	67	66	83	87	91	88	83	93	101	102	100	92	82	72	88	97	93
ADM***	55	49	55	53	104	104	104	104	104	103	110	111	111	104	94	83	104	111	111
CHURCHILL, MANITOBA, CANADA																			
0	-47	-57	-52	-57	-52	-28	-14	-52	-57	13	22	25	13	15	-17	-53	-53	-53	-57
50	-9	-17	-17	-14	-4	11	28	12	-1	42	55	53	50	43	30	10	27	39	19
75	1	-6	-6	-3	8	22	41	29	16	51	64	61	60	51	41	24	46	60	38
95	6	1	-1	4	13	28	47	38	25	56	69	65	66	56	46	28	54	67	47
100	17	15	12	17	25	42	62	57	44	68	79	75	77	67	56	37	67	81	67
ADM***	-2	-10	-9	-7	4	19	35	19	6	88	96	91	96	84	69	45	84	96	96

*1QT--FIRST QUARTER DEC-JAN-FEB
 **1HF--FIRST HALF YEAR DEC--MAY
 ***ADM--AVERAGE DAILY MAXIMUM
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THE BDEING COMPANY
 TRANSPORT DIVISION

NO. D6-7177

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	1QT	MAR	APR	MAY	2QT	1HF	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	ANN
CORINTHA, BRAZIL																			
0	58	59	60	58	60	56	50	50	50	41	44	44	41	47	51	55	47	41	41
50	76	78	79	78	77	75	71	74	76	68	77	67	71	69	71	74	71	71	75
75	81	84	84	85	82	80	76	81	85	75	84	75	78	76	77	79	78	79	82
85	85	87	86	87	85	83	80	84	86	78	87	77	81	79	80	85	82	85	86
95	92	94	92	94	92	91	87	92	94	85	91	85	89	88	89	90	90	91	94
100	104	107	107	107	104	104	92	104	107	96	96	92	99	105	104	107	104	104	107
ADM...	87	84	85	84	85	81	77	80	82	75	74	75	74	75	76	79	77	75	79
DACCAB, PAKISTAN																			
0	48	45	44	44	51	67	54	51	44	67	70	71	67	70	65	54	54	54	44
50	68	67	71	68	79	85	84	82	75	84	84	84	84	84	82	75	80	82	78
75	75	77	77	75	85	88	89	89	85	88	87	87	88	88	86	80	86	88	87
85	75	75	70	78	84	91	92	92	87	89	84	84	89	84	87	85	89	90	90
95	80	80	80	84	94	97	96	94	94	95	91	91	95	95	91	87	95	94	97
100	87	88	94	94	102	105	101	105	105	98	95	96	98	98	95	94	98	98	105
ADM...	72	74	82	80	90	92	91	91	85	89	88	88	88	89	88	84	87	88	86
DARAR, SENEGAL																			
0	55	56	58	55	54	61	61	59	55	65	69	69	65	65	70	64	64	64	55
50	74	72	72	72	71	75	76	75	75	81	82	82	81	85	85	80	82	81	77
75	79	77	76	74	76	77	81	79	79	85	86	85	86	86	86	84	86	86	84
85	82	80	79	81	80	80	85	82	85	87	88	87	88	88	88	86	86	86	88
95	87	84	87	84	90	94	92	92	95	92	92	92	95	95	95	91	95	95	96
100	95	102	100	102	109	101	100	102	104	100	99	99	100	100	101	99	101	101	109
ADM...	81	74	80	80	80	81	84	82	81	88	88	87	88	89	89	86	88	88	84
DALLAS, TEX., U. S. A.																			
0	12	2	1	2	11	51	59	11	2	55	61	61	55	56	50	17	17	17	2
50	44	40	50	48	57	66	74	66	57	62	66	66	64	72	64	56	68	76	66
75	58	57	60	59	64	75	82	78	70	69	72	72	72	72	76	65	80	89	81
85	65	62	65	64	74	79	85	85	75	72	75	75	75	72	72	69	85	94	87
95	75	75	75	75	85	86	91	91	86	97	101	101	102	98	89	78	94	102	94
100	89	88	84	82	96	96	99	99	99	105	111	109	111	105	99	89	105	111	111
ADM...	54	55	60	58	68	77	84	76	67	72	75	76	74	80	80	66	78	86	77
DAMASCUS, SYRIA																			
0	25	21	25	21	24	55	64	24	21	64	55	55	68	50	42	24	28	28	21
50	46	45	46	47	54	62	70	62	54	76	80	82	79	76	64	57	67	75	64
75	54	51	55	55	60	70	77	71	64	85	87	87	87	82	74	64	76	84	75
85	57	54	60	59	64	74	80	75	69	96	90	92	91	85	77	68	81	89	81
95	62	60	70	64	71	82	88	85	81	95	97	100	100	92	84	75	89	99	95
100	69	69	86	86	85	95	101	101	101	102	104	115	115	102	95	86	102	115	115
ADM...	54	55	57	55	65	75	84	75	65	91	96	99	95	91	81	67	80	87	76
DAWUN, AUSTRALIA																			
0	69	64	69	64	69	66	60	60	60	56	56	56	56	55	64	69	65	54	56
50	85	84	84	84	84	84	82	85	84	79	77	80	76	85	85	86	85	81	85
75	89	84	87	84	84	89	84	89	89	84	82	85	84	90	89	90	90	88	89
85	91	90	92	90	90	91	90	92	92	87	85	87	86	90	92	92	92	91	92
95	96	94	96	95	95	96	95	97	97	92	90	92	92	95	97	97	98	97	97
100	102	100	101	102	102	104	102	104	104	99	94	98	99	102	105	105	105	105	105
ADM...	72	70	80	81	81	92	91	91	91	88	87	89	88	91	95	94	95	90	91
DENVER, COLO., U. S. A.																			
0	-11	-24	-50	-50	-11	6	22	-11	-50	50	45	41	50	24	4	-8	-9	-6	-50
50	32	24	32	31	39	46	56	47	39	66	75	71	70	65	52	54	51	61	50
75	45	42	47	45	50	54	60	51	56	76	81	79	80	72	62	51	65	76	68
85	48	47	52	51	55	62	70	67	65	80	86	85	84	76	67	56	71	82	75
95	54	54	65	62	65	71	80	80	77	90	92	90	95	84	76	66	81	92	88
100	74	72	76	76	80	84	94	94	96	104	104	101	104	95	84	74	95	104	104
ADM...	45	42	45	44	51	61	69	60	52	81	87	85	84	77	66	55	65	75	65
DETROIT, MICH., U. S. A.																			
0	-5	-9	-14	-16	-1	14	30	-1	-16	54	44	41	54	52	25	7	7	7	-16
50	30	26	27	27	35	46	54	46	37	64	75	71	71	64	55	40	52	62	49
75	36	36	38	38	45	55	64	59	51	76	80	79	79	75	61	49	64	75	65
85	42	40	45	45	51	60	70	64	57	80	84	82	85	77	65	54	70	80	72
95	51	51	55	55	65	70	79	76	72	90	92	90	92	86	74	64	82	91	86
100	64	67	69	68	82	87	95	95	95	104	105	101	105	100	89	81	100	105	105
ADM...	50	55	54	54	65	74	84	76	65	78	84	81	81	74	62	47	61	71	54
DHAKA, SAUDI ARABIA																			
0	64	61	65	61	51	56	66	51	61	70	75	75	70	71	66	56	56	58	61
50	84	85	85	84	69	77	85	77	70	89	92	95	91	89	85	76	82	87	74
75	86	84	70	79	74	85	90	84	74	94	97	97	97	95	87	80	89	94	88
85	71	71	74	75	77	86	95	88	85	97	99	100	99	96	89	85	92	97	92
95	77	76	81	81	84	95	99	96	92	102	104	105	105	102	95	84	100	104	101
100	84	85	94	94	95	105	108	108	108	111	112	115	115	112	105	97	112	115	115
ADM...	67	68	70	69	75	84	92	84	76	94	92	100	98	96	90	82	89	94	86
DHAKA, SAUDI ARABIA																			
0	64	61	65	61	51	56	66	51	61	70	75	75	70	71	66	56	56	58	61
50	84	85	85	84	69	77	85	77	70	89	92	95	91	89	85	76	82	87	74
75	86	84	70	79	74	85	90	84	74	94	97	97	97	95	87	80	89	94	88
85	71	71	74	75	77	86	95	88	85	97	99	100	99	96	89	85	92	97	92
95	77	76	81	81	84	95	99	96	92	102	104	105	105	102	95	84	100	104	101
100	84	85	94	94	95	105	108	108	108	111	112	115	115	112	105	97	112	115	115
ADM...	67	68	70	69	75	84	92	84	76	94	92	100	98	96	90	82	89	94	86

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	1QT	MAR	APR	MAY	2QT	1HF	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	ANN
DURBAN, U. SO. AFRICA																			
0	56	57	59	56	58	51	44	44	44	41	39	41	39	46	50	51	46	39	39
50	73	75	75	76	76	71	66	70	72	63	62	64	63	66	69	71	69	66	69
75	77	80	79	79	78	77	72	77	79	69	68	70	69	73	75	77	74	74	77
85	79	82	81	81	80	80	76	81	83	72	72	73	73	77	75	80	80	78	82
95	84	86	86	86	86	87	83	86	89	79	80	79	80	88	80	89	90	89	91
100	90	92	92	92	90	99	95	99	99	90	92	89	92	107	87	102	107	107	107
ADM***	79	81	81	80	80	78	75	78	79	73	72	72	72	73	75	77	75	74	76
DUSSELDORF, W. GERMANY																			
0	-1	0	-1	-1	13	26	31	13	-1	40	46	45	40	36	27	10	10	10	-1
50	34	36	34	37	43	50	58	50	44	63	66	65	64	59	51	43	51	58	51
75	45	45	47	47	51	56	65	60	56	69	71	70	71	65	54	51	61	69	64
85	44	44	51	50	54	60	69	65	62	72	75	74	75	64	61	54	66	74	69
95	51	53	57	57	61	64	78	76	76	80	83	81	83	76	68	61	75	83	81
100	60	64	66	66	72	81	91	91	93	92	96	94	96	88	80	69	88	96	96
ADM***	67	60	63	62	69	57	66	57	49	71	73	72	72	66	57	47	57	64	57
LAST LONDON, U. SO. AFRICA																			
0	52	55	52	52	53	45	40	40	40	39	37	38	37	43	47	49	43	37	37
50	69	71	72	70	70	67	64	67	68	61	60	61	61	63	65	67	65	63	66
75	73	75	77	76	75	73	71	76	76	67	67	68	68	70	71	72	72	71	74
85	76	77	80	79	78	76	74	77	80	70	70	72	72	75	75	76	76	75	78
95	81	82	87	86	86	85	82	86	87	77	79	82	82	86	85	86	87	87	89
100	94	91	99	99	94	96	95	95	99	89	92	98	98	106	101	98	106	106	106
ADM***	75	77	78	77	77	74	73	75	76	70	70	70	70	71	71	73	72	71	73
EDMONTON, ALBERTA, CANADA																			
0	-55	-57	-57	-57	-60	-15	10	-40	-57	25	29	26	25	11	-15	-66	-66	-66	-57
50	12	4	11	10	23	40	52	34	34	58	61	60	60	51	61	24	39	69	37
75	27	23	27	26	39	53	62	57	54	67	72	68	69	61	54	60	57	70	58
85	34	29	34	33	45	59	64	64	53	72	76	73	74	65	59	67	64	77	67
95	46	41	46	45	57	72	78	77	70	82	85	82	86	75	70	59	76	88	81
100	61	57	62	62	72	90	94	94	94	99	92	96	99	90	85	74	90	99	99
ADM***	20	17	21	19	33	51	64	69	54	70	75	72	72	63	52	55	69	61	67
EL GOH, LUGHA, LIBYA																			
0	53	52	53	52	54	61	67	53	52	56	54	59	56	54	50	41	41	41	52
50	55	55	55	54	54	66	71	64	59	76	74	78	77	76	70	63	69	73	66
75	61	58	61	61	66	71	78	73	64	85	84	84	84	82	75	69	77	82	76
85	66	61	65	65	70	75	82	74	73	86	87	87	86	85	79	72	81	86	81
95	71	67	74	74	80	85	91	89	85	95	96	95	96	91	87	79	90	95	92
100	81	75	89	89	97	101	106	106	106	109	109	109	109	105	101	90	105	109	109
ADM***	65	63	65	64	69	75	83	76	70	87	88	88	88	88	80	73	80	84	77
EL PASO, TEX., U. S. A.																			
0	5	-6	8	-6	16	24	38	14	-6	50	60	59	50	41	32	16	16	16	-6
50	45	43	49	46	55	63	72	63	54	80	81	80	80	75	65	52	64	72	63
75	54	53	59	58	64	72	80	74	65	84	87	85	84	81	73	61	74	85	79
85	58	59	65	62	64	76	84	74	75	91	90	88	91	87	77	65	81	90	85
95	65	66	71	71	76	84	92	80	84	94	97	94	94	94	86	73	90	98	95
100	75	75	81	81	84	95	104	104	104	107	107	103	107	103	93	84	103	107	107
ADM***	57	56	62	58	64	77	85	77	64	94	94	92	93	87	78	66	77	85	74
ENTEBE, UGANDA																			
0	57	57	57	57	57	59	59	57	57	58	54	56	54	57	57	58	57	54	56
50	71	72	72	72	72	72	71	72	72	70	69	70	70	70	71	72	71	70	71
75	75	76	76	76	76	76	75	76	76	75	75	75	75	74	75	75	75	75	75
85	76	76	76	76	76	76	75	76	76	75	75	75	75	74	76	77	77	77	76
95	80	82	83	83	83	83	82	83	83	78	78	78	79	80	80	82	81	82	83
100	85	89	90	90	90	91	93	91	91	84	82	84	86	87	85	89	89	89	91
ADM***	79	80	80	80	79	79	78	78	79	77	76	77	77	78	79	79	79	78	78
FORTALEZA, BRAZIL																			
0	64	64	64	64	69	69	69	69	69	67	67	70	67	66	70	71	66	66	66
50	81	81	80	80	80	80	81	80	80	81	80	81	81	81	81	81	81	81	80
75	84	84	84	84	85	85	84	85	84	84	85	85	84	85	84	84	85	85	84
85	86	85	85	85	85	85	85	85	85	86	84	85	85	86	85	85	86	86	86
95	90	87	87	87	87	87	88	89	89	88	88	88	89	90	84	84	90	90	90
100	95	91	91	91	94	94	95	94	95	92	93	92	93	95	93	93	95	95	95
ADM***	87	86	86	86	86	86	87	86	86	88	87	87	87	87	87	86	87	87	87
PT. DE FRANCE, MARTINIQUE																			
0	61	59	60	59	56	63	66	56	56	66	64	66	66	64	65	64	64	64	56
50	74	76	77	77	77	79	80	79	78	80	80	81	80	81	80	79	80	80	79
75	81	80	81	81	82	82	84	84	83	83	83	84	84	85	84	83	84	84	84
85	83	82	82	83	84	84	85	86	85	85	86	86	85	86	85	86	86	86	86
95	86	85	86	86	87	86	88	89	89	88	87	89	89	90	89	88	90	90	91
100	89	90	91	91	91	91	93	94	94	92	90	94	94	96	94	92	96	96	96
ADM***	84	83	84	84	85	86	87	86	85	86	86	87	86	88	87	86	87	87	86
PT. LAUDERDALE, FLA., U. S. A.																			
0	29	30	24	24	32	40	49	32	24	57	65	66	57	63	64	55	55	55	28
50	70	69	64	69	70	74	77	74	71	80	82	82	81	81	78	73	77	74	75
75	74	77	77	74	79	82	84	83	81	86	86	87	87	86	85	81	87	89	86
85	81	80	80	81	82	85	86	86	85	88	88	89	90	88	88	83	90	92	89
95	86	84	85	86	88	90	91	92	91	92	92	93	94	93	92	87	95	97	95
100	90	84	90	90	94	96	97	96	97	97	99	100	100	99	95	90	99	100	100
ADM***	79	74	74	74	80	83	86	83	80	89	90	91	90	89	86	81	85	87	84
FRANKFURT, W. GERMANY																			
0	0	-4	-7	-7	13	24	30	13	-7	40	46	45	40	36	27	10	10	10	-7
50	35	33	37	35	42	50	58	50	42	63	66	65	64	59	50	41	50	57	50
75	43	41	47	45	50	57	65	60	55	69	72	71	71	66	57	44	61	69	64
85	47	45	50	49	54	61	69	65	61	72	76	74	75	70	61	52	66	74	70
95	51	50	56	56	62	70	79	76	74	80	85	83	85	79	64	58	77	85	82
100	62	57	66	66	75	84	94	94	94	95	100	94	100	95	80	68	95	100	100
ADM***	19	37	42	39	49	58	67	58	49	72	75	74	74	67	56	45	56	65	57

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

[illegible]

• IQI--FIRST QUARTER DEC-JAN-FEB
• IHF--FIRST HALF YEAR DEC---MAY
••• AOM--AVERAGE DAILY MAXIMUM
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THE HOEING COMPANY
TRANSPORT DIVISION

N(1). 00-1177

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

[illegible]

- 1QT--FIRST QUARTER DEC-JAN-FEB
- 1HF--FIRST HALF YEAR DEC---MAY
- • • ADM--AVERAGE DAILY MAXIMUM

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	1QT*	MAR	APR	MAY	2QT	1HF**	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	6MM
ISTANBUL, TURKEY																			
0	17	18	20	17	21	32	38	21	17	48	56	53	48	47	35	25	25	25	17
50	46	41	42	43	46	53	61	53	48	69	73	74	72	68	61	54	61	66	57
75	53	47	48	50	53	60	67	62	57	75	78	79	78	74	67	60	70	74	68
85	56	50	51	53	57	65	71	67	62	78	81	82	81	78	70	63	75	80	73
95	62	56	58	60	66	76	80	78	75	86	88	89	89	86	76	69	85	89	84
100	70	66	69	70	82	95	94	95	95	99	100	100	100	100	85	77	100	100	100
ADM***	51	45	47	48	52	61	68	60	54	77	81	81	80	75	67	59	67	73	64
JIDDA, SAUDI ARABIA																			
0	50	49	52	49	55	54	55	54	49	67	70	73	67	70	68	63	63	63	49
50	77	75	75	75	76	81	85	80	78	86	89	90	88	87	84	81	84	86	82
75	83	81	80	82	82	87	92	87	85	92	94	94	94	91	89	86	89	93	91
85	85	83	83	84	85	90	95	90	89	95	96	96	97	94	91	89	92	96	95
95	89	87	88	89	91	94	100	97	97	103	101	101	105	99	96	95	98	104	104
100	93	92	95	95	101	104	108	108	108	117	108	108	117	108	105	105	108	117	117
ADM***	86	84	84	85	85	91	95	90	87	97	99	99	98	96	95	91	94	96	92
JOHANNESBURG, U. S. AFRICA																			
0	42	42	45	42	41	50	22	22	22	19	19	20	19	27	32	35	27	19	19
50	68	68	68	68	65	61	55	60	64	57	51	56	52	61	65	64	64	58	61
75	74	74	75	74	71	68	62	69	74	58	59	64	60	68	73	74	73	68	71
85	77	77	76	77	74	71	65	73	77	61	61	67	64	72	74	77	76	72	75
95	83	83	82	83	80	77	71	79	84	68	67	72	70	78	82	84	84	81	85
100	92	91	91	92	88	85	78	84	92	75	74	79	79	86	90	93	93	93	95
ADM***	78	78	77	78	75	72	66	71	74	67	65	68	64	75	77	77	74	70	72
JOHNSTON ISLAND, P. OCEAN																			
0	57	56	54	56	56	57	59	56	56	58	61	61	58	59	60	58	58	58	54
50	72	71	71	71	71	72	73	72	71	74	75	75	75	75	75	74	75	75	71
75	78	75	74	75	75	75	77	76	76	78	79	79	79	79	79	77	79	79	77
85	78	77	74	74	77	77	78	78	78	79	80	80	80	81	80	79	80	80	79
95	83	81	81	82	82	81	82	82	83	82	83	85	84	84	84	83	84	84	84
100	90	87	87	90	89	86	84	89	90	86	88	88	88	88	88	89	89	89	90
ADM***	79	78	78	78	78	78	80	79	78	81	82	82	82	82	82	81	82	82	80
KANO, NIGERIA																			
0	45	45	44	45	50	57	62	50	45	62	62	61	61	62	54	51	51	51	45
50	72	71	75	72	73	88	87	85	77	84	80	78	80	79	81	77	79	79	78
75	79	78	85	81	80	94	95	91	84	89	84	82	84	84	87	84	84	87	88
85	86	82	87	85	94	99	94	95	91	92	84	84	88	86	90	87	89	90	92
95	94	91	96	95	94	105	102	102	100	97	91	89	95	91	94	95	97	97	101
100	110	104	110	110	112	114	111	114	114	105	98	97	105	100	104	108	108	108	114
ADM***	87	84	81	88	94	101	94	92	94	94	88	85	89	84	94	92	91	90	92
KANSAS CITY, MO., U. S. A.																			
0	-4	-15	-15	-15	-3	16	52	-3	-15	44	54	49	44	34	24	5	5	5	-15
50	34	50	55	53	44	54	64	55	44	75	81	79	78	71	60	64	58	68	54
75	44	61	64	64	54	66	74	69	59	84	84	87	87	80	69	54	72	85	75
85	44	67	51	50	61	70	79	75	66	87	92	91	91	85	74	59	78	89	80
95	59	54	62	60	72	79	88	87	81	94	100	100	100	94	85	69	91	100	94
100	74	75	74	74	89	91	105	105	105	104	112	115	115	109	98	85	109	115	115
ADM***	62	59	64	62	54	64	75	65	55	85	91	89	89	81	70	54	68	78	66
KARACHI, PAKISTAN																			
0	57	60	63	59	67	57	65	67	59	68	75	75	68	69	57	68	68	68	59
50	69	68	69	68	76	82	86	81	74	88	94	94	86	85	82	74	80	85	79
75	74	72	75	75	84	84	92	90	84	95	90	87	91	87	88	82	84	91	89
85	78	75	78	78	87	92	94	95	89	96	95	98	94	89	91	85	91	95	95
95	80	81	80	84	95	99	104	104	100	103	99	92	102	95	98	91	98	105	105
100	91	89	95	95	106	111	118	118	118	114	110	99	114	104	104	100	108	114	118
ADM***	40	77	79	79	85	90	95	89	84	95	91	88	91	88	91	87	89	90	87
REKFAVIA, ICELAND																			
0	4	5	4	4	4	15	19	6	4	32	39	34	32	27	14	10	10	10	4
50	34	52	51	53	55	58	65	59	56	50	55	52	52	47	40	34	41	46	41
75	41	54	59	60	61	64	71	67	64	54	57	57	57	52	46	41	48	55	50
85	45	61	61	62	64	67	75	70	67	56	60	59	59	54	48	44	52	58	54
95	44	65	65	67	68	70	78	78	74	61	65	64	65	60	55	44	58	65	62
100	55	50	50	55	58	59	64	64	64	69	74	71	74	64	54	55	68	74	74
ADM***	54	56	57	57	59	65	70	64	61	55	58	57	57	51	44	39	45	51	46
REICHMAN, ALASKA, U. S. A.																			
0	0	-4	2	-4	9	17	25	9	-8	24	34	34	28	24	21	10	10	10	-4
50	56	55	56	56	59	65	69	64	60	55	58	59	57	54	47	41	48	52	44
75	64	65	64	65	68	71	77	74	72	64	65	66	66	61	54	48	57	64	60
85	68	64	67	69	70	74	82	79	76	68	68	69	70	64	57	51	61	69	66
95	75	74	75	75	78	82	91	87	82	79	77	77	80	71	64	57	69	80	78
100	80	81	81	81	89	92	95	95	95	96	92	84	96	80	72	65	80	96	96
ADM***	61	60	61	61	65	70	77	71	64	85	85	86	85	81	55	46	55	59	52
SHANTUNG, SUOAN																			
0	45	41	44	41	49	55	61	49	41	67	65	64	64	61	62	55	55	55	41
50	77	75	77	76	85	89	92	84	82	94	89	87	90	90	90	85	87	88	85
75	85	85	86	85	91	97	94	97	92	100	95	95	97	96	96	89	95	97	94
85	84	84	86	85	95	101	105	101	96	103	94	95	100	99	99	92	98	100	100
95	95	94	94	94	105	104	109	104	105	109	106	101	107	105	105	94	105	108	104
100	104	104	111	111	115	117	117	117	117	114	117	109	114	115	115	107	115	118	118
ADM***	72	70	75	72	100	105	107	104	94	106	101	98	102	102	104	97	101	101	100
TIMBHELEY, U. S. AFRICA																			
0	45	44	45	45	40	50	25	25	25	22	20	21	20	25	31	36	25	20	20
50	75	78	76	76	71	65	57	64	70	51	51	56	55	62	69	72	67	60	65
75	83	85	83	84	78	75	65	74	81	59	54	65	61	70	78	81	77	70	76
85	86	89	87	87	82	76	68	78	85	62	62	68	65	74	81	84	81	75	81
95	93	95	95	94	84	85	76	86	95	70	69	76	75	82	89	91	89	85	90
100	103	103	101	103	96	95	86	96	105	82	79	86	86	95	99	99	99	99	103
ADM***	89	91	88	89	83	77	70	77	85	65	65	71	67	76	85	86	82	74	79

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PRDB	DEC	JAN	FEB	1QT*	MAR	APR	MAY	2QT	1HF**	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	ANN
KINGSTON, JAMAICA																			
0	57	57	59	57	58	63	66	58	57	68	66	68	66	68	65	62	62	62	57
50	78	77	77	77	77	79	80	78	78	82	82	82	82	81	81	79	80	81	79
75	83	81	81	82	82	82	83	83	83	85	85	85	85	85	84	83	85	85	85
85	85	83	83	84	84	84	85	85	85	87	87	87	87	86	86	85	87	87	87
95	90	87	87	89	88	88	88	89	90	90	91	91	91	90	90	90	91	91	91
100	96	93	92	96	93	93	94	94	96	95	96	97	97	96	96	96	96	97	97
ADM***	87	86	86	86	86	87	87	87	86	89	90	90	90	89	88	87	88	89	88
KISUMU, KENYA																			
0	56	57	57	56	60	60	60	60	56	55	56	56	56	56	55	55	56	56	56
50	74	75	75	75	75	74	75	74	74	72	72	72	72	73	75	75	74	75	74
75	79	80	80	80	79	78	77	78	79	76	76	77	77	78	80	80	79	78	79
85	82	82	83	83	82	81	79	81	82	78	78	80	80	80	82	82	82	81	82
95	88	88	89	88	88	87	84	87	88	82	83	86	86	85	87	87	87	87	88
100	98	97	98	98	98	98	95	98	98	89	91	97	97	93	94	95	95	97	98
ADM***	84	85	84	84	83	82	81	82	83	80	80	81	80	83	85	85	84	87	83
KODIAK, ALASKA, U. S. A.																			
0	7	-5	-1	-5	-3	10	20	-3	-5	36	40	40	36	32	24	9	9	9	-5
50	30	30	32	30	32	37	43	37	36	49	54	55	53	50	42	35	42	47	40
75	35	36	39	38	40	43	49	47	44	54	58	60	58	55	46	41	51	57	52
85	37	40	42	41	43	46	53	52	49	57	61	63	62	58	48	43	55	61	57
95	42	45	47	46	48	51	62	62	60	65	67	71	70	65	53	48	63	71	68
100	48	51	52	52	53	59	76	76	76	78	78	84	84	76	60	54	76	84	84
ADM***	34	34	36	35	37	41	47	41	38	54	58	60	57	54	46	39	46	52	45
KUALA LUMPUR, MALAYSIA																			
0	66	66	66	66	68	70	69	68	64	68	67	68	67	68	69	69	68	67	64
50	81	81	82	81	83	85	85	83	82	82	81	82	82	82	81	81	81	81	82
75	84	85	86	86	86	86	86	86	86	86	85	85	85	85	84	84	85	85	86
85	86	87	88	88	88	87	88	88	88	87	86	87	87	87	86	86	86	87	88
95	90	91	92	92	92	91	91	92	92	91	90	90	91	90	89	89	90	90	92
100	95	96	98	98	98	96	97	98	98	96	96	96	96	95	95	95	95	96	98
ADM***	89	90	92	90	92	91	91	91	91	91	90	90	90	90	89	89	89	90	90
KUWAIT, KUWAIT																			
0	56	55	56	55	60	56	60	60	55	72	75	68	68	67	57	43	43	43	33
50	59	55	58	57	66	76	86	76	66	90	95	95	93	91	82	70	81	87	77
75	65	61	64	64	72	82	92	84	76	96	99	101	100	97	88	77	90	97	88
85	67	64	66	67	75	85	95	89	81	99	102	104	103	100	91	80	95	101	93
95	72	71	71	73	81	92	101	97	92	106	108	109	109	107	97	86	106	109	104
100	79	82	78	82	90	103	109	109	109	119	118	115	119	117	105	100	117	119	119
ADM***	65	61	65	64	72	85	94	83	73	98	102	104	102	100	91	77	89	95	84
KUJALEIN, MARSHALL IS.																			
0	72	72	72	72	73	73	73	73	72	73	72	71	71	73	73	73	73	71	71
50	72	81	81	78	82	82	83	82	80	83	83	83	83	83	83	83	83	83	81
75	73	83	83	80	84	84	85	84	82	85	85	85	85	85	85	85	85	84	84
85	75	84	85	81	85	85	86	85	83	86	86	87	87	86	87	86	87	87	86
95	80	86	87	85	87	87	89	88	86	88	89	90	90	89	90	88	90	90	89
100	90	90	91	91	91	91	90	91	91	90	93	94	94	93	95	92	95	95	95
ADM***	86	84	85	85	86	86	87	86	86	87	88	88	88	88	88	87	88	88	87
LAGOS, NIGERIA																			
0	66	65	66	65	60	69	69	60	60	69	69	67	67	64	69	70	68	67	60
50	42	81	83	82	84	83	82	83	82	80	79	78	79	79	80	82	80	79	81
75	86	85	87	87	87	87	86	88	88	82	82	81	82	82	83	85	83	83	86
85	84	87	89	89	91	89	89	91	91	86	83	85	84	83	85	87	84	85	89
95	92	91	92	93	95	93	94	96	96	87	87	88	88	87	89	91	91	90	95
100	99	95	96	99	99	99	104	104	104	93	93	96	96	94	96	99	99	99	104
ADM***	88	88	89	88	89	89	87	88	88	85	85	82	83	85	85	88	85	84	84
LAHORE, PAKISTAN																			
0	55	58	52	58	62	50	61	62	58	66	69	67	66	65	69	57	57	57	58
50	57	55	58	56	68	79	88	78	67	93	90	88	90	85	77	65	76	43	75
75	65	61	65	64	75	87	95	88	78	99	96	95	96	91	84	72	85	94	87
85	66	64	69	68	79	91	99	92	84	102	98	95	100	95	87	76	89	98	92
95	72	70	77	77	87	100	106	102	97	108	106	100	106	99	94	83	97	106	102
100	82	78	90	90	100	115	117	117	117	117	113	108	117	107	104	94	107	117	117
ADM***	73	69	72	71	83	95	104	94	83	106	100	97	101	97	95	83	92	96	89
LAJES, AZORES																			
0	59	58	59	58	62	61	67	61	58	52	57	61	52	53	51	48	48	48	38
50	60	58	58	59	58	60	62	60	59	67	71	75	70	71	67	65	67	68	64
75	65	63	62	63	62	64	66	64	64	71	74	76	75	75	70	66	71	74	70
85	66	64	64	65	63	66	67	66	66	73	76	76	77	77	72	68	74	76	73
95	69	67	67	68	66	69	71	70	71	76	80	82	81	81	74	72	79	81	79
100	71	70	70	71	70	73	76	76	76	82	87	88	88	86	82	77	86	88	88
ADM***	64	62	62	63	62	64	67	64	63	72	76	79	76	76	71	67	71	73	68
LA PAZ, BOLIVIA																			
0	55	55	56	55	56	50	50	50	50	27	26	27	26	30	30	30	30	26	26
50	54	53	53	53	53	53	53	52	52	48	48	49	48	51	53	55	53	50	51
75	59	58	58	59	58	58	54	57	58	53	53	55	54	57	59	61	59	57	58
85	61	61	60	61	60	61	57	60	61	56	56	57	57	60	62	63	62	61	62
95	67	67	66	67	66	67	63	66	67	62	62	63	63	68	67	69	69	68	69
100	76	77	76	77	76	75	72	76	77	70	71	72	72	80	76	77	80	80	80
ADM***	65	65	65	64	64	65	64	64	64	62	62	63	62	64	66	67	66	64	64
LAS PALMAS, CANARY IS.																			
0	67	66	67	66	67	50	54	67	66	58	60	62	58	59	56	52	52	52	46
50	66	64	65	65	65	66	68	66	65	70	72	75	72	74	73	70	72	72	69
75	71	69	69	70	70	71	72	72	71	74	76	79	77	78	78	75	78	78	75
85	73	71	71	72	72	74	74	74	74	76	78	81	80	81	80	77	81	81	79
95	78	77	76	78	78	80	79	81	80	81	84	86	87	87	86	81	87	88	87
100	85	86	86	86	86	86	91	91	91	89	95	99	99	96	95	88	96	98	99
ADM***	72	70	71	71	71	71	73	72	71	75	77	79	77	79	79	76	78	78	79

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	10T*	MAR	APR	MAY	20T	1MF**	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2MF	ANN
LENINGRAD, U. S. S. R.																			
0	-56	-53	-50	-56	-25	-7	20	-25	-56	52	45	51	52	29	9	-8	-8	-8	-56
50	22	18	14	19	26	38	50	38	28	59	64	60	61	51	41	31	41	51	40
75	34	28	26	31	37	49	58	53	45	66	70	66	68	57	49	39	53	64	57
95	45	34	37	41	44	53	62	59	52	70	73	69	72	61	53	42	58	70	64
100	45	43	42	45	56	73	86	86	86	91	90	90	91	88	80	68	68	79	76
ADM***	26	23	26	26	35	45	58	45	35	66	71	66	68	61	55	44	51	61	51
LEOPOLDVILLE, BEL. CONGO																			
0	63	66	64	63	64	67	64	64	63	59	58	58	58	61	59	62	59	58	58
50	78	79	79	78	80	80	80	80	79	76	75	75	74	78	79	79	79	76	78
75	82	82	83	83	84	84	83	84	83	80	76	79	79	82	84	83	83	81	83
95	84	84	85	85	86	86	85	86	85	82	78	81	81	84	86	85	86	84	85
100	85	84	84	85	86	86	85	86	85	86	83	87	86	89	91	89	90	89	90
ADM***	66	67	66	67	67	67	68	69	68	64	61	64	63	67	68	67	67	65	66
LIMBEVILLE, F.M. AFRICA																			
0	66	63	63	63	65	64	64	63	63	63	62	63	62	66	67	67	66	62	62
50	80	80	80	80	80	81	80	81	80	74	76	77	77	76	79	79	78	77	79
75	84	84	84	84	84	85	84	85	85	81	79	80	81	81	82	82	82	82	83
95	84	84	84	84	84	85	84	85	85	83	81	82	83	83	83	84	84	84	86
100	84	84	84	84	84	85	84	85	85	84	85	86	87	86	87	88	88	88	91
ADM***	67	67	67	67	67	67	68	69	68	65	63	64	64	65	66	66	66	65	66
LIMA, PERU																			
0	56	54	54	56	61	56	52	52	52	69	64	50	69	51	51	51	51	46	69
50	70	76	75	75	75	72	67	71	72	63	62	61	62	63	65	67	65	61	66
75	76	78	74	74	76	76	71	76	77	67	66	65	66	66	68	71	69	68	73
95	76	80	81	80	80	78	73	79	80	69	64	67	68	68	69	73	71	70	76
100	77	81	82	82	82	81	75	84	85	74	73	72	73	72	73	78	76	76	82
ADM***	78	82	81	81	81	80	74	79	80	66	67	66	67	68	71	74	71	69	75
LISBON, PORTUGAL																			
0	51	50	50	50	56	50	42	56	29	69	52	55	69	51	43	36	36	36	29
50	52	51	51	52	55	54	45	56	55	68	71	72	70	69	63	57	63	67	61
75	57	56	56	56	61	60	49	56	61	73	77	77	77	75	66	63	71	75	70
95	59	58	58	58	60	60	47	57	67	77	80	80	80	78	72	65	75	60	75
100	66	66	66	66	67	67	46	54	74	85	89	88	89	86	76	70	84	89	86
ADM***	57	56	56	57	61	61	42	45	61	75	79	80	78	76	69	62	69	74	103
LIVINGSTONE, N. RHODESIA																			
0	50	51	50	50	57	51	37	57	37	27	32	36	27	40	52	49	40	27	27
50	72	76	76	76	75	73	67	71	73	61	61	66	65	75	81	79	78	70	71
75	76	79	79	79	78	76	71	76	77	69	68	73	72	83	86	86	87	81	82
95	81	81	81	81	84	83	77	83	83	73	71	77	76	86	91	89	90	85	86
100	89	86	86	86	89	88	84	89	92	80	77	85	86	93	97	96	97	94	95
ADM***	87	85	85	86	85	86	82	84	85	68	65	67	67	103	105	104	105	105	105
LONDON, ENGLAND																			
0	14	11	11	11	21	25	24	21	6	35	44	39	35	34	23	23	23	23	6
50	41	40	40	40	44	44	36	49	44	60	64	63	62	56	51	46	51	57	51
75	46	46	47	47	50	55	42	57	54	67	70	70	70	66	59	50	59	66	62
95	48	49	50	50	54	59	46	62	60	71	75	74	74	69	62	52	64	71	67
100	51	51	51	51	56	61	48	75	73	79	82	81	81	77	71	59	73	62	80
ADM***	45	44	44	45	45	51	36	57	51	69	73	72	71	66	64	66	66	66	69
LOS ANGELES, CALIF., U. S. A.																			
0	51	51	52	51	56	59	43	56	23	68	64	51	68	47	41	34	34	34	23
50	56	56	56	56	57	59	42	56	57	65	68	64	67	67	63	59	63	65	61
75	62	61	61	61	63	65	49	67	66	70	73	74	73	76	70	67	72	74	71
95	66	65	65	65	67	69	47	71	71	76	76	77	76	76	75	71	77	79	77
100	75	73	73	73	76	77	41	81	81	84	82	85	85	89	84	80	89	90	89
ADM***	68	65	65	66	65	67	47	67	66	72	74	75	74	75	72	70	72	73	106
LOUENCO MARQUES, MOZAMBIQUE																			
0	54	51	52	59	60	52	46	56	46	66	65	67	65	69	53	52	49	45	45
50	77	79	79	79	77	75	70	74	76	67	66	68	67	71	73	75	75	70	75
75	81	81	81	81	82	81	77	81	84	72	72	74	73	74	80	82	80	78	81
95	84	84	84	84	85	84	80	85	88	75	75	77	77	82	84	86	85	82	86
100	86	86	86	86	87	86	81	87	90	83	83	86	85	94	95	96	96	94	96
ADM***	65	65	67	66	65	65	43	60	63	77	76	78	77	114	113	112	114	114	114
LUANUA, ANGOLA																			
0	67	64	70	67	70	70	64	64	64	56	56	58	58	62	65	68	62	58	58
50	79	79	80	79	81	80	75	79	79	73	70	69	70	72	75	78	75	72	76
75	82	81	81	82	84	83	81	83	83	75	73	72	74	74	78	81	79	77	81
95	84	83	83	84	85	84	84	86	85	78	75	76	76	76	79	83	81	80	85
100	84	84	84	84	85	84	84	86	85	82	79	77	81	79	83	88	87	87	89
ADM***	83	83	85	84	84	85	82	84	84	77	76	76	75	76	79	82	79	77	80
LUSAKA, N. RHODESIA																			
0	53	51	51	51	51	50	45	45	45	59	62	60	59	69	54	54	49	39	39
50	71	71	71	71	72	71	64	70	71	66	67	69	67	73	74	71	73	70	70
75	75	76	76	76	77	76	75	76	77	72	73	76	74	78	79	76	78	77	78
95	77	79	79	79	79	79	74	79	79	75	75	79	77	81	81	79	81	80	81
100	80	81	81	81	81	80	82	84	84	81	81	84	83	85	86	85	87	87	87
ADM***	81	82	82	82	83	83	83	85	82	89	89	91	91	92	93	95	95	95	95

*10T--FIRST QUARTER DEC-JAN-FEB
 **1MF--FIRST HALF YEAR DEC--MAY
 ***ADM--AVERAGE DAILY MAXIMUM
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THE BOEING COMPANY
 TRANSPORT DIVISION

NO. D6-1177

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	1QT*	MAR	APR	MAY	2QT	1HF**	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	ANY
MADRAS, INDIA																			
0	57	57	57	57	62	64	70	62	57	69	71	69	69	69	62	59	59	59	57
50	77	76	78	77	87	87	92	87	82	91	88	87	88	86	83	79	82	85	83
75	81	81	83	82	87	92	97	93	89	96	92	91	91	90	88	83	88	92	90
85	85	82	85	85	89	94	100	96	92	98	94	95	96	92	90	85	90	95	94
95	87	86	90	90	94	100	105	103	100	103	99	97	101	96	95	89	95	101	101
100	91	91	94	98	102	109	115	113	113	110	106	104	110	102	102	94	102	110	113
ADM***	84	85	84	86	91	95	101	96	91	100	96	95	97	94	90	85	90	95	92
MADRID, SPAIN																			
0	16	14	14	14	25	29	32	25	14	40	47	49	40	39	30	25	25	25	14
50	42	40	43	42	49	54	61	54	48	69	75	74	72	67	58	47	57	65	56
75	48	47	49	49	55	61	68	62	57	76	81	81	80	74	65	53	66	75	67
85	51	49	53	52	58	64	72	67	62	79	85	84	84	77	68	56	70	79	73
95	56	55	59	59	66	72	79	74	75	87	91	91	91	85	75	62	80	89	84
100	64	64	70	70	76	85	91	91	91	94	101	102	102	96	86	72	96	102	102
ADM***	48	47	51	49	57	64	71	64	56	80	87	86	84	77	66	54	66	75	66
MAKASSAR, INDONESIA																			
0	67	70	70	69	70	69	63	63	63	63	63	62	62	58	65	66	58	58	58
50	79	79	80	79	80	80	81	80	80	79	78	79	78	79	80	80	79	79	79
75	82	81	82	82	82	83	84	84	83	83	82	82	82	83	83	83	84	84	84
85	85	82	85	85	85	86	86	85	85	84	83	84	84	86	85	85	86	86	86
95	85	85	85	85	85	87	88	88	88	87	87	88	88	90	88	87	90	90	90
100	89	88	89	89	89	91	91	91	91	91	92	94	94	95	92	91	95	95	95
ADM***	84	84	84	84	85	86	87	86	85	86	86	87	86	87	87	86	87	86	86
MALIA, MALIA																			
0	59	59	54	54	57	64	67	57	54	57	62	62	57	57	45	42	42	42	34
50	54	55	55	56	57	61	66	61	59	75	76	79	77	76	71	64	70	75	66
75	65	60	60	62	65	67	71	66	66	78	83	84	82	81	77	69	78	82	75
85	65	62	63	64	66	70	74	72	70	81	86	87	86	84	80	71	81	84	79
95	69	67	68	69	72	76	81	80	79	88	93	94	95	90	86	76	89	93	89
100	75	76	76	76	85	95	92	93	93	99	104	105	105	100	94	82	100	105	105
ADM***	62	59	59	60	62	66	71	66	63	79	84	85	83	81	76	68	75	79	71
MANAGUA, NICARAGUA																			
0	66	65	64	65	65	64	64	64	65	70	67	64	67	64	64	67	67	67	63
50	80	80	80	80	81	82	81	81	80	80	81	81	80	80	79	79	79	80	80
75	84	84	84	84	85	86	84	85	85	85	84	84	84	85	82	82	83	83	83
85	85	85	86	86	87	88	86	87	87	85	86	85	86	86	84	84	85	85	87
95	89	89	90	90	91	92	90	91	91	89	89	89	89	88	88	88	89	89	91
100	94	95	95	95	96	97	96	97	97	95	95	94	95	94	95	94	95	95	97
ADM***	87	88	89	88	90	90	87	89	89	85	87	87	87	86	85	85	85	86	87
MANAGUA, GUATEMALA																			
0	67	65	64	65	67	64	64	67	65	65	64	67	64	64	64	65	68	64	64
50	85	82	82	82	82	81	82	81	82	82	82	85	82	84	84	84	84	85	82
75	87	86	85	86	85	84	85	85	86	86	86	87	87	86	84	87	88	88	87
85	89	88	87	89	87	86	87	87	88	87	88	89	89	90	90	89	90	90	89
95	94	92	92	93	91	89	90	91	93	91	91	93	93	94	94	93	94	94	94
100	101	99	100	101	97	94	95	97	101	95	95	96	98	99	100	99	100	100	101
ADM***	70	68	68	69	68	67	68	68	68	68	69	71	69	72	72	71	72	70	69
MANGALORI, INDIA																			
0	65	62	62	62	65	71	66	65	62	64	69	69	64	70	64	65	65	65	62
50	80	80	81	80	85	85	85	84	82	80	79	79	79	79	81	81	80	80	81
75	84	84	85	85	87	88	89	89	87	85	82	82	85	81	84	85	84	84	86
85	86	86	86	87	89	89	91	91	89	85	85	81	84	85	84	87	86	85	88
95	90	90	93	92	95	92	94	94	94	88	85	86	88	85	89	90	90	89	95
100	95	95	100	100	98	96	96	98	100	94	92	90	94	89	94	95	95	95	100
ADM***	89	89	88	89	90	91	91	91	90	85	84	84	84	84	86	86	86	85	87
MANILA, PHILIPPINES																			
0	59	58	60	58	61	65	64	61	54	71	69	69	69	69	67	62	62	62	58
50	74	74	74	74	81	85	84	85	80	85	82	81	82	82	81	80	81	81	81
75	82	82	83	83	86	88	88	88	84	86	85	84	86	85	84	84	85	86	84
85	84	84	85	85	88	89	90	90	84	88	87	86	88	86	86	85	87	88	89
95	88	88	90	90	92	94	95	95	94	95	91	89	92	90	90	89	90	95	94
100	94	95	96	96	98	100	101	101	101	100	97	95	100	95	95	95	95	100	101
ADM***	86	86	88	87	91	91	91	92	89	91	88	87	89	88	88	87	88	88	89
MANACAO, MACAU																			
0	59	60	60	60	67	68	68	67	66	69	70	69	69	68	64	70	68	64	66
50	85	82	82	82	85	86	85	84	85	85	85	86	85	86	84	84	84	85	84
75	87	86	85	86	88	88	89	88	87	89	89	90	89	90	88	87	89	89	88
85	88	88	87	88	90	90	91	90	90	91	91	92	91	92	90	89	91	91	91
95	92	92	91	92	92	95	94	95	94	95	95	96	96	96	94	94	95	95	95
100	96	98	97	98	98	102	100	102	102	100	101	102	102	102	98	98	102	102	102
ADM***	91	90	90	90	91	92	92	92	91	95	94	94	94	94	92	91	92	93	92
MARSEILLES, FRANCE																			
0	11	14	14	14	20	28	32	20	9	41	47	47	41	34	27	21	21	21	9
50	51	46	45	47	47	50	56	51	49	62	64	72	67	72	67	59	66	66	58
75	60	55	55	56	54	57	65	59	60	69	74	79	75	80	75	67	76	77	70
85	67	56	58	59	58	60	67	64	65	75	74	82	79	85	78	69	79	82	75
95	67	62	61	65	66	69	77	75	76	82	86	90	87	87	82	75	85	90	86
100	70	64	71	71	72	85	95	93	95	89	100	101	101	92	86	76	92	101	101
ADM***	59	55	52	55	55	59	65	60	57	72	74	83	78	82	76	67	75	76	67
MAURITIUS, INDIAN OCEAN																			
0	62	63	64	62	65	74	55	55	55	51	51	50	50	51	55	57	51	50	50
50	74	80	79	79	74	76	75	76	77	70	69	69	69	70	72	75	72	71	74
75	82	84	83	83	82	80	77	80	83	74	73	73	73	74	76	79	78	76	80
85	84	86	84	85	83	82	78	82	85	76	74	74	75	76	78	81	80	78	82
95	89	89	87	89	86	85	81	86	89	79	77	77	79	79	82	85	85	83	88
100	95	95	91	95	90	88	85	90	95	85	80	80	85	85	88	91	91	91	95
ADM***	85	86	85	85	84	82	79	82	85	76	75	75	75	77	80	83	80	78	81

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

[illegible]

• IQI--FIRST QUARTER DEC-JAN-FEB
• IHF--FIRST HALF YEAR DEC---MAY
• ADM--AVERAGE DAILY MAXIMUM
PAGE 202

THE BOEING COMPANY
TRANSPORT DIVISION

NO. 06-1178

[illegible]

THE BOEING COMPANY NO. 00-1111
TRANSPORT DIVISION

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	1Q1*	MAR	APR	MAY	2Q1	1HF**	JUN	JUL	AUG	3Q1	SEP	OCT	NOV	4Q1	2HF	ANN
OKINAWA, HYUOKU IS.																			
0	35	37	52	52	55	46	50	55	52	60	67	66	60	56	51	54	54	54	52
50	65	60	59	61	66	70	76	70	65	81	86	85	85	81	74	69	74	78	72
75	70	66	66	66	71	76	82	78	74	86	88	87	88	86	80	76	83	88	81
85	75	69	70	71	74	79	85	82	78	88	90	89	90	88	82	80	86	91	85
95	79	76	77	78	81	86	91	89	86	95	95	94	95	92	88	85	92	97	92
100	84	86	84	88	91	95	98	98	98	99	101	100	101	97	95	92	97	101	101
ADM***	69	66	65	67	70	77	85	77	72	89	92	91	91	88	81	75	81	86	79
OSAKA, JAPAN																			
0	24	19	20	19	25	27	38	25	19	48	59	57	48	51	57	28	28	28	19
50	45	40	41	42	46	56	64	55	48	72	80	82	78	75	66	55	64	71	60
75	51	45	47	44	52	65	71	64	57	78	85	84	85	81	70	60	75	81	70
85	54	48	50	52	55	67	75	67	61	81	87	90	88	85	74	65	77	85	75
95	62	55	59	61	65	76	79	76	71	86	92	95	94	88	81	70	84	92	85
100	75	66	75	57	75	84	88	88	88	94	98	101	101	95	91	80	95	101	101
ADM***	52	47	49	49	56	65	75	64	57	80	87	90	86	85	72	62	72	79	68
OSLO, NORWAY																			
0	-10	-21	-18	-21	-10	5	24	-10	-21	55	42	37	55	24	12	2	2	2	-21
50	24	25	26	26	55	62	55	62	56	60	65	61	62	55	45	35	45	52	45
75	54	55	56	57	62	71	60	55	64	67	71	67	69	59	51	40	55	65	59
85	40	39	40	41	66	55	65	60	54	71	76	71	75	62	54	45	57	65	59
95	46	46	48	48	56	65	71	70	66	80	80	77	81	68	61	49	65	77	65
100	55	55	57	57	65	75	85	85	85	95	95	96	95	77	70	57	77	95	95
ADM***	51	50	52	51	60	50	62	51	61	69	75	69	70	60	49	37	49	59	50
OTTAWA, ONTARIO, CANADA																			
0	-16	-32	-35	-35	-16	-2	21	-16	-35	55	54	55	55	24	14	-10	-10	-10	-35
50	17	12	15	14	25	41	55	40	27	65	70	66	67	58	54	45	55	56	41
75	29	25	26	26	59	52	66	50	65	75	78	74	76	68	56	45	60	71	60
85	35	24	29	31	66	50	69	65	51	77	81	76	80	75	59	48	68	77	68
95	45	39	40	41	59	60	79	74	66	85	89	87	84	84	70	57	81	89	82
100	55	56	56	55	74	81	94	94	94	97	101	100	101	102	87	71	102	102	102
ADM***	24	21	22	22	55	41	46	50	56	74	81	77	78	66	54	44	56	66	51
PAJANG, INDONESIA																			
0	70	70	69	69	70	71	71	70	69	69	70	64	68	70	70	70	70	68	68
50	80	81	81	80	81	81	82	81	81	81	81	81	81	80	80	80	80	80	80
75	85	85	85	85	85	86	86	86	86	86	86	85	86	85	85	85	85	85	85
85	86	86	86	86	86	86	86	86	86	86	86	85	86	85	85	85	85	85	85
95	87	88	88	88	88	88	88	88	88	88	88	88	88	87	87	87	87	88	89
100	91	95	96	96	95	95	95	95	95	95	95	95	95	91	92	91	92	95	94
ADM***	84	87	87	87	87	87	88	87	87	87	87	87	87	86	86	86	86	87	87
PAGASA CITY, PANAMA																			
0	66	65	64	65	65	66	69	64	65	70	67	64	67	64	64	67	67	67	65
50	80	80	80	80	81	82	81	81	80	80	81	81	80	80	78	78	78	80	80
75	84	84	84	84	85	86	86	86	85	85	86	86	86	85	82	82	85	85	85
85	85	85	85	85	86	86	86	86	86	86	86	86	86	85	84	84	86	86	86
95	89	89	89	89	91	92	93	91	91	94	94	94	94	94	94	94	94	94	94
100	94	94	94	94	96	97	98	97	97	99	99	99	99	98	98	98	99	99	99
ADM***	87	88	88	88	90	90	92	91	90	96	97	97	97	96	95	94	95	95	97
PARIS, FRANCE																			
0	4	7	6	6	20	24	34	20	4	60	65	65	60	55	25	15	15	15	4
50	54	57	59	54	66	51	57	51	66	65	66	65	66	60	52	46	52	54	51
75	65	66	67	64	71	57	64	59	75	69	75	71	72	67	59	51	61	64	64
85	66	67	69	69	74	62	68	64	81	75	77	75	76	70	67	56	66	75	70
95	74	72	76	76	82	71	77	75	75	82	87	85	87	79	70	60	77	86	85
100	82	82	86	86	85	88	92	92	92	98	104	104	104	94	85	69	94	104	104
ADM***	65	67	65	65	72	60	67	60	51	75	76	75	75	69	59	44	59	67	59
PEIPING, CHINA																			
0	-2	-5	-1	-5	15	27	34	15	-5	69	67	57	69	40	31	10	10	10	-5
50	29	25	30	24	62	57	64	55	61	78	87	80	80	71	54	41	57	64	55
75	54	52	54	56	69	65	74	67	55	85	87	85	87	78	65	49	68	82	69
85	59	55	62	60	75	69	81	75	62	90	90	89	91	80	69	54	72	87	76
95	66	65	71	69	85	80	91	84	79	96	97	96	94	86	76	65	81	97	89
100	76	76	84	84	97	96	107	107	107	107	108	108	108	92	84	74	92	109	109
ADM***	56	55	54	55	72	64	80	67	51	89	96	97	89	74	64	49	65	77	64
PERTH, AUSTRALIA																			
0	60	60	64	64	66	69	64	64	64	65	66	65	64	59	40	42	59	54	54
50	71	76	76	75	71	77	81	66	70	77	80	80	80	59	67	67	62	59	64
75	74	81	82	81	74	76	84	75	74	85	81	82	82	65	68	74	70	67	74
85	82	85	86	85	82	78	72	80	84	86	85	85	85	68	72	78	74	72	79
95	92	95	96	95	91	86	79	80	95	97	99	99	99	77	80	88	86	84	91
100	104	110	112	112	106	100	90	106	112	102	104	105	104	91	95	105	105	105	112
ADM***	81	85	85	86	81	76	69	75	79	84	85	84	84	67	70	76	71	67	75
RESHAM, PAKISTAN																			
0	24	26	51	26	36	61	52	56	26	65	69	68	65	54	45	55	55	55	26
50	55	52	55	55	66	75	86	75	65	92	91	89	90	84	75	62	75	81	72
75	60	54	61	60	71	81	92	86	76	96	97	96	97	90	81	69	85	95	85
85	65	61	65	64	76	85	96	89	80	102	101	98	101	95	84	72	87	98	90
95	71	67	75	75	82	94	105	100	94	109	109	105	109	100	91	80	97	108	105
100	85	76	86	86	95	104	118	118	116	120	122	118	122	110	101	91	110	122	122
ADM***	67	65	66	65	75	85	94	86	76	106	105	99	105	96	84	77	87	95	85
PHILADELPHIA, PA., U. S. A.																			
0	1	2	4	1	7	26	34	7	1	44	52	50	44	50	28	15	15	15	1
50	56	55	56	56	62	67	65	62	65	72	76	74	74	64	57	46	57	65	54
75	65	62	67	65	72	80	71	64	55	79	85	80	87	76	65	54	68	77	64
85	69	67	67	66	77	84	75	69	61	85	86	84	85	80	69	58	75	82	75
95	74	72	77	76	87	92	85	80	75	90	92	90	92	88	79	68	84	91	85
100	77	74	76	76	87	92	96	96	96	100	102	101	102	100	96	79	100	102	102
ADM***	66	61	62	62	72	82	94	85	76	85	87	84	84	78	67	55	67	75	64

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	Q1*	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	Q4†	2HF	ANN
PHOENIX, ARIZ., U. S. A.																
0	22	17	22	17	29	32	42	29	17	50	61	60	50	49	36	25
50	52	50	56	52	60	67	76	67	60	84	90	88	87	83	71	58
75	60	54	63	61	68	76	84	78	72	93	97	95	96	92	80	67
85	64	62	67	65	72	81	89	83	74	97	101	99	100	96	84	71
95	74	71	75	74	80	90	98	95	91	105	107	105	107	105	92	79
100	88	85	84	86	92	106	113	113	113	117	116	115	117	118	104	91
ADM***	68	65	70	67	76	84	94	84	76	102	105	102	103	98	84	76
PITTSBURGH, U. S. A.																
0	66	65	60	60	61	52	27	27	27	21	21	28	21	28	39	60
50	71	71	70	70	68	64	57	63	66	52	52	56	55	62	67	69
75	77	77	77	76	76	71	64	71	76	59	60	63	61	70	74	76
85	80	80	80	81	77	76	67	75	79	62	64	67	65	74	77	80
95	86	87	86	87	86	80	74	84	87	69	71	74	73	81	85	87
100	96	96	94	96	95	88	84	93	96	79	82	85	85	92	97	99
ADM***	81	81	80	81	74	76	71	75	78	67	67	71	68	76	79	80
PIZZA, ITALY																
0	50	25	27	21	29	41	45	29	21	52	55	55	52	49	42	35
50	50	64	69	69	52	57	66	57	55	70	75	75	73	71	65	56
75	55	56	56	55	57	65	69	65	61	74	80	79	79	76	70	61
85	57	56	56	57	60	64	71	64	65	74	83	81	82	78	72	63
95	60	60	61	62	66	68	77	75	76	81	89	86	84	85	76	67
100	65	65	66	66	74	76	86	86	86	89	99	92	90	89	82	75
ADM***	55	52	54	54	57	62	67	65	54	75	80	80	78	76	69	61
PITTSBURGH, PA., U. S. A.																
0	5	-6	-7	-7	12	20	32	17	-7	65	69	66	65	54	28	9
50	51	29	30	30	59	69	80	69	59	69	72	70	70	65	55	41
75	54	38	39	40	66	77	87	76	52	75	79	77	77	71	60	49
85	62	41	44	46	70	81	90	78	57	78	82	80	81	77	65	55
95	71	59	56	56	77	87	97	85	69	85	88	87	86	85	71	61
100	86	69	69	69	92	101	111	97	87	96	99	97	99	97	85	72
ADM***	54	37	38	38	68	79	89	79	64	79	85	81	81	75	65	49
PORT AU PRINCE, GUADALUPE																
0	54	56	54	54	56	54	60	56	54	57	57	57	57	65	59	60
50	70	71	70	71	70	72	74	72	71	75	75	76	75	76	75	74
75	77	76	76	75	76	76	77	76	76	79	79	80	79	79	79	79
85	77	76	76	77	75	77	77	74	74	80	80	81	81	80	81	81
95	81	80	81	81	79	80	82	81	82	85	85	86	86	84	85	86
100	84	86	84	84	85	85	87	87	84	86	86	86	86	89	92	91
ADM***	74	77	76	77	77	79	80	79	74	80	81	82	81	82	81	80
PORT-AU-PRINCE, HAITI																
0	60	62	61	60	60	65	66	60	60	64	67	66	66	67	66	64
50	74	74	74	74	74	80	81	74	74	85	86	85	85	82	81	80
75	82	81	82	82	84	85	85	85	84	87	87	87	84	86	85	84
85	84	85	84	84	86	87	87	87	86	89	89	89	89	84	87	86
95	84	87	89	89	91	91	92	92	91	95	95	94	94	92	91	90
100	95	95	95	95	96	96	99	99	99	99	101	101	101	99	94	94
ADM***	67	67	68	67	69	69	70	69	64	62	64	63	63	61	60	60
PT. ELIZABETH, U. S. A.																
0	44	45	46	44	45	47	51	51	51	55	52	52	52	55	59	62
50	67	70	70	69	68	64	61	64	66	57	56	56	57	59	62	65
75	75	76	77	76	75	71	68	71	76	65	65	65	64	67	69	72
85	77	79	81	80	74	75	72	74	80	66	67	70	69	72	75	76
95	74	85	90	89	88	85	81	84	90	74	76	80	80	85	92	96
100	86	94	104	104	104	104	104	104	104	86	90	94	94	105	107	104
ADM***	75	76	74	77	76	75	71	75	75	64	67	64	64	64	70	72
PT. MACKENZIE, NIGERIA																
0	60	60	60	60	64	65	65	61	60	61	65	64	61	64	67	64
50	74	74	74	74	80	81	80	80	80	79	74	77	76	74	76	74
75	81	84	87	85	86	86	84	85	85	85	81	85	82	82	83	83
85	85	85	89	87	87	87	85	84	87	85	85	85	84	84	85	86
95	89	89	95	92	91	91	94	92	92	89	86	87	84	84	86	89
100	95	94	94	94	94	95	94	94	94	95	92	94	95	95	90	95
ADM***	67	68	69	68	69	69	68	64	64	66	62	65	64	65	67	67
PT. MORESBY, PAPUA																
0	70	69	67	67	70	65	70	65	65	64	66	66	64	64	64	64
50	85	85	82	82	82	81	81	81	82	79	74	74	74	74	74	74
75	84	84	85	86	85	85	85	85	84	85	81	81	82	85	85	85
85	84	84	87	88	87	87	85	87	86	84	85	82	85	84	85	87
95	87	87	90	92	90	90	94	91	92	87	84	85	86	84	89	91
100	97	94	96	98	94	96	94	96	94	91	90	90	95	94	94	94
ADM***	69	69	67	67	68	67	66	67	68	64	65	62	65	64	65	66
PORTO ALICIA, BRAZIL																
0	66	51	52	46	64	61	50	50	50	24	25	50	25	52	59	65
50	75	77	74	76	76	69	65	69	72	54	54	59	58	67	66	70
75	82	84	84	84	81	76	71	74	85	55	66	67	67	70	75	77
85	85	87	87	87	84	80	74	82	87	67	70	71	71	74	77	79
95	92	95	94	95	91	87	81	90	95	77	77	79	79	85	86	87
100	105	105	105	105	102	97	91	102	105	89	89	92	92	97	100	100
ADM***	65	67	67	66	65	64	61	67	67	66	66	64	67	70	74	76
PT. OF SPAIN, IRELAND																
0	60	57	57	57	54	60	57	54	54	60	52	60	52	56	61	61
50	74	76	77	77	77	74	70	74	77	74	74	74	74	80	80	79
75	82	81	81	82	85	85	85	86	87	84	85	85	85	85	84	85
85	84	85	84	84	85	84	87	87	86	86	87	85	87	84	86	85
95	89	84	84	89	91	91	92	92	91	90	92	89	92	91	91	93
100	97	96	95	97	99	94	94	94	99	97	97	95	97	101	94	95
ADM***	65	65	66	66	67	64	62	64	67	67	67	67	67	64	64	67

*Q1--FIRST QUARTER DEC-JAN-FEB

**2HF--FIRST HALF YEAR DEC--MAY

***ADM--AVERAGE DAILY MAXIMUM

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[illegible]

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TRANSPORT DIVISION

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[illegible]

THE BOEING COMPANY NO. 00-1111
TRANSPORT DIVISION

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	1QT*	MAR	APR	MAY	2QT	1HF**	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	ANY
SAL ISLAND, CAPE VLDOL IS.																			
0	56	50	51	50	50	54	54	50	50	61	54	63	54	65	50	54	50	50	50
50	73	70	69	71	70	71	72	71	71	77	76	77	76	77	76	75	76	76	75
75	77	75	75	75	75	75	76	76	75	77	81	80	81	80	81	80	81	81	79
85	78	76	75	77	77	77	77	78	77	79	81	82	83	81	83	82	83	83	81
95	82	79	79	81	81	80	81	81	81	82	86	85	86	85	86	85	87	87	85
100	86	82	85	86	86	86	85	86	86	87	90	89	90	90	89	88	90	90	90
ADM***	76	74	72	74	74	75	76	75	75	78	81	81	80	79	78	79	79	79	77
SALISBURY, SO. RHOD.																			
0	49	47	47	47	46	45	46	46	46	57	52	54	52	57	44	46	57	57	57
50	70	69	69	69	64	67	67	65	67	57	57	61	54	66	71	71	69	64	65
75	75	75	74	75	75	72	64	72	75	65	65	67	65	75	77	77	77	72	74
85	78	77	76	78	76	75	70	75	78	66	66	71	69	76	80	80	80	75	77
95	85	82	81	83	80	81	76	81	84	71	75	74	76	85	85	86	86	83	85
100	92	90	84	92	86	89	83	89	92	79	82	84	84	92	95	95	95	95	95
ADM***	79	78	74	78	78	74	76	77	77	70	70	74	71	79	85	81	81	76	77
SAN ANTONIO, TEX., U. S. A.																			
0	14	0	6	0	21	34	44	21	0	54	65	65	54	61	54	25	25	25	0
50	35	51	55	55	61	69	76	69	61	79	84	84	84	79	71	60	70	77	69
75	55	67	67	65	71	77	84	80	75	84	89	90	90	86	80	64	81	64	84
85	67	67	71	70	76	81	87	84	80	91	92	92	91	91	85	72	85	92	89
95	77	76	80	80	85	89	95	92	90	97	97	96	94	96	89	80	95	99	94
100	90	87	91	91	97	99	101	101	101	105	106	106	104	102	95	91	102	106	106
ADM***	64	61	66	64	75	80	87	80	72	92	95	96	94	90	85	71	81	84	80
SAN DIEGO, CALIF., U. S. A.																			
0	56	59	56	59	61	61	64	61	29	50	55	57	50	51	45	40	40	40	29
50	77	75	76	76	74	61	65	61	54	66	69	70	64	69	65	61	65	67	62
75	85	82	82	85	85	86	89	87	67	71	75	75	74	75	71	67	72	74	72
85	86	84	86	87	87	87	90	87	71	74	76	74	77	78	74	75	77	74	76
95	95	94	94	95	94	94	96	94	81	85	87	85	85	88	87	80	87	86	87
100	95	94	94	94	96	97	96	96	96	97	99	98	94	104	94	96	104	104	104
ADM***	66	64	65	65	67	64	70	64	67	72	76	77	75	74	75	71	75	74	70
SANDY POINT, N. I.																			
0	61	64	62	61	65	67	67	65	61	69	70	70	69	64	69	64	68	68	61
50	74	74	74	74	77	74	80	78	77	81	81	81	81	81	80	74	80	80	79
75	81	74	74	80	80	80	81	82	81	85	84	84	84	84	85	82	85	85	85
85	87	80	80	81	81	82	84	85	82	85	85	85	85	85	84	85	84	85	84
95	85	82	82	84	86	84	84	85	85	86	87	87	87	86	86	85	87	87	87
100	87	86	85	87	89	87	89	89	89	89	89	89	89	91	90	89	91	91	91
ADM***	87	80	81	81	82	85	84	85	82	85	86	86	86	84	85	84	85	85	84
SAN FRANCISCO, CALIF., U. S. A.																			
0	70	74	74	74	59	51	56	50	20	41	45	42	41	34	34	25	25	25	20
50	87	84	81	84	55	54	57	54	52	60	60	61	60	62	59	54	59	59	56
75	90	84	84	87	59	61	65	67	61	64	67	66	67	67	67	62	66	69	66
85	90	87	81	80	65	65	67	64	66	71	72	70	72	74	71	66	75	74	71
95	96	85	84	87	71	75	77	77	77	82	85	74	85	84	80	75	84	86	84
100	96	77	74	74	85	84	84	84	84	101	104	92	104	102	94	86	102	104	104
ADM***	57	56	54	57	61	65	65	65	60	69	69	70	69	72	69	64	69	69	65
SAN JOSE, GUATEMALA																			
0	49	49	51	49	50	55	54	50	49	57	54	56	54	56	55	52	52	52	49
50	67	67	67	67	69	71	71	70	68	71	70	70	70	70	69	69	69	69	69
75	71	71	72	72	74	75	75	75	74	75	75	75	74	74	72	75	75	74	74
85	74	74	74	74	77	77	77	74	76	77	75	75	77	74	74	75	75	77	77
95	79	79	79	79	82	82	82	84	82	85	79	79	85	80	74	74	80	85	85
100	87	87	84	84	91	89	84	91	91	92	84	85	92	86	85	84	86	92	92
ADM***	75	75	74	75	74	74	80	74	77	79	77	74	74	74	77	77	74	74	74
SAN JUAN, PUERTO RICO																			
0	62	65	62	62	65	65	66	64	62	66	70	64	66	69	64	66	66	66	62
50	77	75	75	75	74	77	77	77	76	80	80	81	80	81	80	74	80	80	74
75	80	74	74	74	79	80	82	81	80	84	85	84	84	84	85	82	85	85	82
85	82	80	80	81	81	82	84	85	82	85	84	85	85	85	85	85	85	85	84
95	85	85	84	85	85	86	86	87	87	88	87	87	87	89	89	87	89	89	89
100	90	84	81	81	91	91	91	94	94	95	92	94	94	94	94	95	94	94	94
ADM***	81	80	80	80	81	82	84	87	81	84	84	85	84	86	85	85	85	85	85
SAN PEDRO SULA, MONDOURAS																			
0	49	49	49	49	54	54	60	54	49	64	62	60	60	60	54	52	52	52	49
50	75	74	74	75	74	80	81	80	77	81	81	82	81	81	74	74	74	60	74
75	80	80	82	81	85	85	84	85	84	85	85	84	84	85	84	81	84	84	85
85	85	82	84	85	85	87	86	84	84	87	87	84	84	84	86	84	87	84	84
95	87	86	84	87	90	91	95	92	91	91	91	92	92	92	90	84	91	92	92
100	92	90	85	95	95	97	96	97	97	97	95	96	97	97	94	95	97	97	97
ADM***	81	81	82	81	84	86	87	86	85	87	87	84	87	87	86	85	85	86	85
SAN SALVADOR, NICHANAS																			
0	67	65	69	65	65	54	54	65	65	56	54	60	56	55	54	49	49	49	65
50	75	75	76	75	74	74	74	74	77	77	77	74	77	77	76	75	76	76	77
75	82	82	85	85	86	85	85	87	85	87	82	82	82	82	82	82	85	85	85
85	85	86	86	86	86	89	84	87	84	84	84	85	85	85	85	85	86	86	86
95	92	92	95	95	94	95	94	97	95	90	90	90	90	91	91	92	92	94	95
100	101	101	105	105	105	105	105	105	105	94	94	94	94	94	101	102	102	102	105
ADM***	89	90	92	90	94	95	91	95	91	87	89	89	84	87	87	87	87	84	90
SANTA MARIA, AZORES																			
0	54	54	54	54	62	61	67	61	54	52	57	61	52	55	51	48	48	44	54
50	60	54	54	59	62	60	62	60	59	67	71	75	70	71	67	65	67	64	64
75	65	65	67	65	62	64	66	64	64	71	74	76	75	75	70	66	71	74	70
85	66	64	64	65	65	66	67	66	66	75	76	78	77	77	72	68	74	76	75
95	69	67	67	64	66	69	71	70	71	76	80	82	81	81	76	72	79	81	74
100	71	70	70	71	70	75	76	76	76	82	87	84	84	84	82	77	86	84	84
ADM***	64	62	62	65	67	64	67	64	65	72	76	74	76	76	71	67	71	75	64

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

	DEC	JAN	FEB	1QT*	MAR	APR	MAY	2QT	IMF**	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	ANY
SANTIAGO, CHILE																			
0	56	45	45	16	38	35	27	27	27	26	24	26	24	51	57	57	51	24	24
50	67	62	64	68	65	60	55	59	64	68	68	51	49	54	59	63	59	54	59
75	75	70	75	76	72	66	60	67	71	74	75	58	56	61	66	70	66	67	68
85	79	72	78	80	75	70	64	72	77	78	79	61	60	65	70	74	71	67	73
95	87	86	86	88	83	77	73	80	86	86	87	70	69	75	78	83	81	78	85
100	89	86	88	89	84	78	74	81	87	87	88	71	70	76	81	85	82	79	87
ADM***	85	85	84	84	80	74	65	73	79	78	79	62	60	66	72	78	72	66	72
SAVO DUMINGO, DOM. REPUBLIC																			
0	67	59	60	59	60	67	65	60	59	67	64	64	64	68	64	61	61	61	59
50	76	75	76	76	76	77	72	77	76	80	80	81	80	80	80	74	79	80	78
75	80	79	80	80	80	81	82	81	81	85	86	85	86	86	85	85	86	84	85
85	82	81	82	82	82	82	81	84	84	86	86	87	86	86	85	85	86	87	85
95	87	86	86	87	87	88	88	88	88	89	90	91	91	90	89	90	91	91	90
100	88	87	87	87	87	88	88	88	88	90	90	91	91	90	89	90	91	91	90
ADM***	85	84	85	85	84	85	86	85	85	87	88	88	88	88	87	86	87	87	86
SAO PAULO, BRAZIL																			
0	54	54	60	54	60	56	50	50	50	61	64	64	61	67	51	55	67	61	61
50	70	74	79	74	77	75	71	76	76	68	67	67	67	67	71	74	71	69	72
75	81	86	86	85	87	80	76	81	85	75	71	71	74	74	77	79	78	77	81
85	85	87	86	87	87	85	80	84	86	78	77	77	78	79	80	85	82	81	85
95	87	88	88	88	88	88	87	87	88	88	88	88	88	88	88	88	88	88	88
100	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
ADM***	82	84	85	85	84	85	86	85	85	87	88	88	88	88	87	86	87	87	86
SAO TOME, SAO TOME IS.																			
0	67	64	66	67	68	68	65	65	65	61	59	56	56	62	66	65	62	56	56
50	74	74	76	77	76	74	70	70	72	77	76	76	76	77	78	78	77	77	78
75	81	82	82	82	82	82	82	82	82	82	81	81	82	82	82	82	82	82	82
85	82	82	82	82	82	82	82	82	82	82	81	81	82	82	82	82	82	82	82
95	85	86	86	87	87	87	86	86	87	87	86	86	87	87	87	87	87	87	87
100	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
ADM***	84	86	86	86	86	86	86	86	86	87	87	87	87	87	86	86	86	86	86
SARAJEVO, YUGOSLAVIA																			
0	16	16	15	-16	25	25	20	6	-16	60	65	60	60	50	55	55	51	11	-16
50	35	35	35	35	51	51	50	50	52	64	64	64	67	51	51	55	52	60	51
75	42	43	43	44	51	50	46	41	55	70	75	76	75	71	60	51	63	72	60
85	45	46	46	49	55	52	47	40	61	76	78	79	79	75	65	54	64	77	75
95	52	51	54	56	64	61	57	51	71	85	86	86	86	84	70	61	81	84	86
100	61	54	60	60	70	66	64	64	64	92	94	94	94	100	74	75	100	104	104
ADM***	61	57	62	60	51	62	64	61	50	75	80	81	79	75	60	50	62	70	60
SEATTLE, WASH. U. S. A.																			
0	16	16	16	16	29	29	28	11	0	54	61	64	54	56	54	6	6	6	0
50	60	57	61	19	45	47	55	50	64	60	64	64	62	59	52	44	51	57	55
75	66	66	66	66	55	55	67	54	56	67	70	67	69	65	54	55	62	69	65
85	68	69	69	69	56	59	66	64	61	75	76	75	71	64	61	57	67	74	69
95	74	74	74	74	61	67	74	75	72	80	82	80	82	76	69	66	76	84	80
100	81	80	80	80	72	72	77	77	77	86	86	86	86	84	80	74	84	96	96
ADM***	65	61	64	65	52	54	65	54	52	70	75	76	75	64	59	50	59	66	59
SEBUL, KOREA																			
0	-12	-4	-5	-12	5	25	16	5	-12	69	55	56	69	58	25	15	11	11	-12
50	24	24	24	27	34	37	62	50	19	71	77	77	76	69	56	62	55	65	52
75	37	37	37	37	47	47	68	62	52	77	83	86	82	76	66	50	66	76	67
85	42	35	41	61	51	62	72	66	54	80	85	87	85	74	64	55	71	82	74
95	49	61	64	64	64	64	64	64	64	84	84	84	84	84	84	84	84	84	84
100	58	64	64	61	72	85	90	90	90	98	98	99	99	91	86	74	91	99	99
ADM***	57	62	67	65	67	67	72	60	60	89	94	97	94	74	67	55	65	74	61
SEVILLE, SPAIN																			
0	27	27	29	27	52	52	57	52	27	61	52	54	61	64	65	52	52	52	27
50	52	50	55	52	59	62	62	65	57	76	82	81	80	77	64	54	67	74	65
75	54	50	54	54	64	66	71	71	66	85	89	90	90	84	75	65	77	85	76
85	61	59	65	62	64	72	61	76	71	90	91	96	96	84	74	67	82	90	82
95	65	64	66	66	75	79	69	86	85	99	101	105	104	96	87	75	92	101	95
100	72	71	70	70	86	91	102	102	102	115	116	117	117	104	102	92	109	117	117
ADM***	60	59	62	60	67	75	69	75	67	92	96	97	96	89	74	67	74	86	76
SHANGHAI, CHINA																			
0	14	10	17	10	21	10	37	21	10	51	61	65	51	44	54	25	25	25	10
50	45	40	41	42	44	54	64	54	50	75	82	82	80	76	66	54	65	72	61
75	52	47	48	50	55	66	76	67	60	81	87	87	87	81	73	62	75	83	75
85	56	51	51	55	60	70	79	72	64	86	90	90	90	85	76	66	74	87	74
95	64	60	64	65	70	79	86	82	76	92	96	96	96	91	85	74	84	95	89
100	75	74	74	75	86	95	96	96	96	105	106	106	106	100	92	86	100	104	104
ADM***	55	66	67	69	55	66	77	66	57	82	90	90	87	82	76	65	75	80	69
SHANNON, LIMERICK, IRELAND																			
0	21	12	19	12	14	24	29	18	12	35	40	37	35	51	26	20	20	20	12
50	65	61	62	62	64	64	61	64	65	64	60	61	59	54	52	46	52	55	50
75	68	67	67	67	67	67	67	67	67	64	65	67	66	64	64	62	62	64	60
85	70	70	70	70	70	70	70	70	70	67	68	69	69	66	60	55	67	68	65
95	75	75	75	75	75	75	75	75	75	75	75	75	75	70	64	59	68	76	74
100	81	81	81	81	81	81	81	81	81	82	82	82	82	75	70	65	75	87	87
ADM***	64	66	67	67	67	67	67	67	67	66	66	66	67	64	58	52	64	67	67
SHANJIAH, JAPAN																			
0	67	57	66	57	66	55	61	66	57	67	71	71	67	69	64	54	54	54	57
50	74	64	66	66	70	76	83	76	71	87	91	95	90	84	72	76	82	86	78
75	75	70	72	75	77	82	88	84	80	95	96	98	97	93	86	81	89	94	88
85	76	75	76	76	76	81	85	81	84	95	99	101	100	96	89	84	95	98	94
95	81	74	81	82	90	92	94	96	94	102	106	107	107	105	95	89	101	106	104
100	84	85	85	85	104	105	107	104	109	112	117	118	118	115	106	97	155	118	118
ADM***	74	74	75	76	80	86	95	86	81	97	100	105	106	99	92	87	155	96	84

PROB	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
TAIPEI, FORMOSA														
0	55	57	52	52	55	50	55	52	60	67	66	60	56	52
50	63	60	59	61	64	70	76	70	65	81	84	83	81	77
75	70	66	66	68	71	76	82	74	74	86	88	87	86	81
95	75	69	70	71	74	79	85	82	78	88	90	89	87	85
95	79	76	77	74	81	86	91	89	86	93	95	94	95	92
100	84	86	88	89	91	95	98	94	88	99	101	100	101	101
ADH***	64	66	65	67	70	77	81	77	72	89	92	91	88	72
TAMPA, FLA., U. S. A.														
0	19	23	22	19	51	58	52	51	59	64	66	59	54	19
50	65	62	61	62	66	72	77	71	67	80	82	82	81	72
75	72	70	72	72	74	79	82	80	78	84	86	86	87	78
95	76	75	75	75	78	82	85	84	82	84	84	84	89	84
95	81	79	81	81	84	86	90	90	89	92	92	92	93	93
100	86	85	87	87	92	97	99	96	96	98	98	97	98	98
ADH***	72	71	72	72	75	81	86	81	76	89	90	90	88	81
TANANARIVE, MADAGASCAR														
0	52	55	52	52	51	45	40	40	40	54	57	55	54	54
50	70	70	70	70	70	67	66	67	68	60	58	59	59	65
75	75	75	74	75	76	71	69	71	73	66	65	65	65	70
95	77	77	77	77	76	75	72	76	78	64	66	64	68	71
95	85	82	82	85	81	80	77	81	84	75	72	75	75	82
100	91	91	90	91	87	87	85	87	91	80	80	85	85	95
ADH***	40	49	48	48	49	56	55	56	56	69	68	70	69	76
TARAPAC, HONOLULU														
0	67	69	67	67	68	69	71	68	67	67	69	68	67	67
50	80	80	80	80	80	81	81	80	80	80	81	80	80	80
75	85	85	85	85	85	85	85	85	85	85	85	85	85	85
95	85	85	85	85	85	85	85	85	85	85	85	85	85	85
95	87	86	86	86	87	87	87	86	89	87	88	88	88	89
100	91	91	90	91	91	91	92	92	94	91	95	92	93	94
ADH***	86	85	86	86	86	86	86	86	86	86	87	87	87	88
TIGUAICALPA, HONDURAS														
0	64	65	66	65	65	51	55	65	61	54	55	56	54	65
50	70	69	71	70	74	75	76	75	72	76	75	74	75	72
75	76	76	77	76	81	81	81	82	79	78	78	78	79	80
95	77	74	80	79	84	85	85	85	82	81	80	80	81	82
95	84	85	85	85	89	89	89	89	88	85	84	85	85	89
100	87	89	94	94	90	97	96	97	97	97	91	91	92	97

- 101--FIRST QUARTER DEC-JAN-FEB
- 1HF--FIRST HALF YEAR DEC--MAY
- AOM--AVERAGE DAILY MAXIMUM

PAGE 212

THE BOEING COMPANY
TRANSPORT DIVISION

NO. 00-7177

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

POB	DEC	JAN	FEB	1QT	MAR	APR	MAY	2QT	1HF	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	6MM
TRIPOLI, LIBYA																			
0	33	39	37	33	39	93	93	39	33	50	60	62	50	59	50	42	42	42	33
50	57	54	56	56	65	65	69	66	61	79	78	79	77	78	75	65	72	74	68
75	63	60	62	62	72	72	76	74	69	81	89	85	85	84	79	72	80	85	77
85	66	63	66	66	76	76	81	79	75	85	88	88	89	88	83	75	85	88	85
95	79	71	75	75	85	87	91	90	87	95	97	97	98	97	92	83	96	98	95
100	86	83	91	91	101	105	109	109	109	112	119	112	114	113	106	96	113	119	119
ADMM	69	61	63	63	67	72	76	72	67	81	85	86	89	85	80	73	79	82	74
TUNIS, TUNISIA																			
0	50	50	52	50	54	57	55	54	50	48	50	52	48	52	45	39	39	39	30
50	52	51	53	52	56	61	66	61	56	74	79	80	78	77	68	60	68	75	69
75	56	56	59	58	63	68	75	69	65	81	87	88	86	89	75	66	77	85	75
85	62	59	62	62	67	73	77	74	70	85	92	92	91	87	79	70	82	88	81
95	69	66	70	70	76	84	87	85	82	99	102	102	101	96	88	78	93	100	95
100	81	77	84	84	91	104	104	104	104	109	114	117	118	111	109	90	111	118	118
ADMM	60	58	61	60	65	70	76	70	65	89	90	91	88	87	77	68	77	85	74
USHUNTA, ARGENTINA																			
0	27	24	27	27	27	21	-4	-4	-4	-1	-6	6	-6	17	24	21	17	-6	-6
50	48	47	50	49	47	41	36	41	37	35	32	35	33	39	44	45	42	38	41
75	54	56	56	55	52	46	45	52	57	41	41	41	42	46	49	52	49	48	53
85	57	60	59	59	55	49	49	56	62	44	44	44	46	47	52	55	55	55	58
95	66	69	67	69	62	55	57	64	72	51	49	50	52	52	59	62	61	62	69
100	80	85	79	85	74	65	66	74	85	60	55	57	60	60	70	74	76	74	85
ADMM	56	57	58	57	55	48	45	49	55	39	39	42	40	46	52	54	51	45	49
VANCOUVER, B. C., CANADA																			
0	4	2	6	2	15	27	33	15	2	35	40	39	35	30	21	10	10	10	2
50	59	57	59	58	44	49	55	49	44	61	64	64	63	57	51	44	50	56	50
75	66	66	66	66	51	55	61	58	54	68	70	70	70	64	58	52	60	68	62
85	67	67	67	67	54	59	64	62	59	71	74	73	73	67	61	56	65	72	67
95	74	75	74	75	60	66	72	70	69	79	80	81	81	74	68	63	73	81	78
100	80	80	81	81	64	74	81	85	85	92	91	92	92	85	77	74	85	92	92
ADMM	45	41	44	43	50	56	64	57	50	69	74	73	72	65	57	48	57	66	57
VENICE, ITALY																			
0	24	22	20	20	27	35	44	27	20	44	52	55	48	44	30	20	24	24	20
50	42	36	41	40	44	56	64	56	48	71	75	75	73	70	59	49	59	66	57
75	46	42	46	46	55	62	69	63	56	77	80	79	80	76	65	54	67	75	67
85	49	45	49	48	56	64	72	67	60	79	85	82	82	78	67	56	71	79	71
95	54	50	55	55	61	71	77	74	69	85	84	84	88	85	72	60	76	86	81
100	62	54	65	65	70	80	84	84	84	89	90	91	94	91	77	67	91	96	96
ADMM	46	43	46	45	54	63	71	65	54	79	82	82	81	76	65	54	66	75	65
VILNIA, LITHUANIA																			
0	-4	-8	-14	-14	5	16	27	5	-14	59	65	62	59	51	16	6	6	6	-14
50	34	30	33	32	41	49	56	49	41	64	67	66	65	59	50	40	50	57	49
75	45	39	44	43	50	57	64	61	54	71	75	72	73	66	56	49	60	70	64
85	47	43	48	48	54	61	70	66	61	76	77	76	76	70	62	52	65	75	70
95	55	51	57	56	62	70	79	77	74	85	85	84	85	77	70	60	75	85	82
100	66	62	67	67	74	85	92	92	92	97	98	97	98	88	82	71	88	96	96
ADMM	57	54	58	56	67	77	86	87	86	71	75	75	75	66	55	44	55	64	55
BAOJ MEI, SUDAN																			
0	26	32	34	29	37	45	55	37	26	56	63	57	54	56	42	39	39	39	26
50	44	41	44	45	51	60	67	79	71	90	90	90	90	87	85	75	81	85	76
75	51	49	52	52	61	70	76	91	85	98	97	96	96	94	92	82	91	96	91
85	54	53	57	57	64	75	100	96	89	102	101	102	102	98	97	87	95	101	97
95	67	65	68	68	77	107	106	106	104	110	106	106	110	106	105	98	105	109	109
100	102	99	106	106	114	127	120	127	127	120	120	116	120	110	117	115	118	120	127
ADMM	74	75	79	77	89	94	104	97	87	104	106	105	106	101	96	87	95	100	94
HARE ISLAND, PACIFIC OCEAN																			
0	55	54	52	52	55	59	60	55	52	65	61	65	65	65	65	59	59	59	52
50	74	73	72	73	72	75	75	75	73	77	76	76	76	76	77	75	77	77	75
75	78	77	76	77	76	77	79	79	76	80	81	82	81	81	81	79	81	81	80
85	74	76	76	79	76	76	80	80	80	81	82	85	82	85	82	80	85	85	82
95	92	91	91	92	91	91	95	95	95	94	95	96	95	95	95	95	96	96	96
100	95	94	94	95	94	94	97	97	97	96	96	96	98	98	90	96	90	90	90
ADMM	78	76	76	77	77	76	80	78	77	81	82	85	82	85	82	80	82	82	80
GARSNO, POLAND																			
0	-5	-22	-8	-22	-4	24	50	-4	-22	57	64	61	57	52	17	1	1	1	-22
50	29	24	26	27	35	46	54	46	37	65	66	64	64	57	44	36	47	55	44
75	36	36	36	38	44	52	65	59	51	69	72	71	72	65	55	46	58	68	62
85	39	39	39	42	49	56	69	64	54	72	75	75	75	67	59	47	65	74	69
95	45	45	46	46	57	65	78	76	72	79	85	85	84	75	66	55	73	84	81
100	51	50	54	54	69	75	95	95	95	90	95	96	98	88	77	60	88	98	94
ADMM	52	50	52	51	61	64	67	64	65	72	75	75	75	65	54	40	55	65	55
WASHINGTON, D.C., U. S. A.																			
0	-15	-14	-15	-15	4	15	55	4	-15	65	52	49	45	56	26	11	11	11	-15
50	58	57	58	57	66	75	85	75	66	74	76	76	76	70	58	48	59	67	57
75	60	59	61	60	67	75	85	85	81	82	85	85	84	79	67	58	71	80	73
85	65	64	66	66	74	80	91	85	80	85	88	88	88	85	72	62	76	85	80
95	74	74	76	76	85	95	107	97	97	92	95	94	95	91	81	72	88	95	92
100	83	80	84	84	95	105	117	107	107	102	106	106	106	104	96	87	109	106	106
ADMM	64	64	66	65	75	85	95	85	85	84	87	85	85	79	68	57	68	77	66
WELLINGTON, NEW ZEALAND																			
0	58	59	61	58	59	56	52	52	52	50	49	49	49	51	59	56	51	49	29
50	61	63	63	62	61	67	55	57	59	50	48	49	49	52	59	57	54	51	55
75	66	66	68	68	66	67	58	65	66	55	52	55	54	57	59	62	60	58	63
85	69	71	71	71	68	64	60	66	70	57	54	55	56	59	62	65	63	61	66
95	75	77	78	78	79	68	64	72	77	62	59	60	61	65	67	71	70	69	75
100	83	85	88	88	81	79	71	81	88	69	66	66	69	69	75	81	81	81	88
ADMM	67	69	69	68	67	65	58	65	65	55	53	54	54	57	60	63	60	57	61

SURFACE RELIABILITY TEMPERATURE IN DEGREES FAHRENHEIT FOR GIVEN PROBABILITIES OF NOT BEING EXCEEDED

PROB	DEC	JAN	FEB	1QT*	MAR	APR	MAY	2QT	1HF**	JUN	JUL	AUG	3QT	SEP	OCT	NOV	4QT	2HF	ANN
WEST END, BAHAMAS																			
0	45	41	41	41	46	51	51	46	41	67	67	67	67	65	56	49	49	49	41
50	73	73	71	72	75	75	74	75	74	71	67	63	78	82	79	76	79	78	76
75	79	40	77	79	78	80	81	82	81	76	85	86	82	85	84	81	85	85	84
95	81	42	77	81	81	82	85	84	81	76	87	88	84	87	86	81	87	87	86
99	86	46	82	86	86	88	88	88	88	81	90	90	88	89	89	86	90	91	90
100	86	46	86	86	88	91	92	92	92	94	94	94	94	92	92	89	92	94	94
ADMM***	77	77	77	78	79	81	84	81	79	87	88	89	88	86	85	81	85	86	85
WEST PALM BEACH, FLA., USA																			
0	51	51	51	51	57	65	51	57	51	64	68	65	64	65	51	56	56	56	51
50	67	67	68	68	70	74	77	74	71	81	82	82	82	81	74	72	77	79	75
75	77	75	75	76	78	81	85	82	80	85	86	86	86	85	84	80	86	89	85
95	80	78	74	79	81	85	85	85	85	87	88	88	89	87	86	82	88	92	88
99	85	85	84	84	86	89	90	90	89	91	93	92	93	91	90	87	93	97	95
100	90	89	90	90	92	96	96	96	96	98	101	97	101	96	95	91	96	101	101
ADMM***	77	75	77	76	79	81	86	82	79	89	90	90	90	88	85	80	84	87	85
WILLOWHURST, CANADA																			
0	-56	-62	-59	-62	-56	-56	19	-56	-62	50	52	24	24	15	-4	-61	-61	-61	-62
50	4	5	7	5	22	32	46	51	19	55	66	54	54	46	55	15	32	45	32
75	17	20	22	21	34	42	51	49	19	62	74	61	67	56	44	27	46	64	51
95	25	26	28	27	39	45	58	54	47	65	77	65	71	58	44	37	55	70	61
99	35	36	38	37	46	52	64	64	46	74	85	72	72	61	50	41	66	81	75
100	47	47	50	50	56	59	86	86	86	89	91	84	91	80	66	51	80	91	91
ADMM***	11	15	16	15	31	41	57	45	24	66	67	64	66	55	41	21	39	52	40
WINNIPEG, SO. W. ALBERTA																			
0	56	64	64	54	59	56	29	29	29	27	27	25	25	31	35	35	31	25	25
50	74	74	72	71	70	66	60	65	69	56	56	60	57	65	72	72	69	65	66
75	82	80	79	81	77	75	68	74	74	61	62	68	65	73	80	80	76	71	76
95	85	83	81	85	80	76	71	76	82	66	65	71	69	76	83	84	82	77	80
99	91	89	87	90	86	81	79	85	89	72	70	77	75	81	89	89	86	85	87
100	97	97	96	97	94	87	82	84	87	75	77	85	85	91	93	96	96	96	97
ADMM***	66	65	65	65	80	77	72	76	80	68	64	71	70	77	84	84	82	76	78
WINNIPEG, MANITOBA, CANADA																			
0	-56	-60	-67	-56	-56	-56	11	-56	-56	21	35	10	21	17	-5	-56	-56	-56	-56
50	6	-1	2	2	16	36	52	55	18	62	67	64	64	54	61	22	39	51	35
75	20	9	14	15	30	52	65	55	34	72	74	75	75	66	55	35	57	71	57
95	26	15	19	22	37	56	69	61	47	77	81	77	81	69	54	41	64	79	66
99	38	27	31	35	52	71	81	77	64	87	91	87	92	81	69	54	79	92	86
100	51	46	47	51	74	90	100	100	100	101	106	105	106	99	86	71	99	108	108
ADMM***	15	7	12	11	27	44	65	67	29	74	79	74	74	65	51	30	49	62	46
WILLOWHURST, N.W. ALBERTA, CANADA																			
0	-55	-60	-60	-60	-65	-55	4	-65	-60	26	35	34	26	14	-8	-56	-56	-56	-60
50	-14	-16	-15	-16	-1	14	40	19	2	53	61	54	57	46	31	7	26	42	27
75	-7	-7	-6	-6	10	30	49	35	19	59	67	56	64	53	41	17	43	59	42
95	5	-5	0	2	15	35	54	42	24	67	71	67	69	57	45	22	49	65	50
99	14	7	9	14	25	45	64	57	46	70	77	75	75	65	53	31	72	76	65
100	32	27	31	32	38	58	79	79	79	81	86	84	86	79	65	44	79	86	86
ADMM***	-6	-10	-8	-7	10	29	44	29	11	61	69	65	65	52	36	14	34	50	39
FAIRFAX, VIRGINIA																			
0	51	51	51	51	57	65	51	57	51	67	65	69	67	58	56	56	56	56	56
50	67	67	68	68	70	74	77	74	71	81	82	82	82	81	74	72	77	79	75
75	77	75	75	76	78	81	85	82	80	85	86	86	86	85	84	80	86	89	85
95	80	78	74	79	81	85	85	85	85	87	88	88	89	87	86	82	88	92	88
99	85	85	84	84	86	89	90	90	89	91	93	92	93	91	90	87	93	97	95
100	90	89	90	90	92	96	96	96	96	98	101	97	101	96	95	91	96	101	101
ADMM***	62	56	62	60	79	81	86	82	79	89	90	90	90	88	85	80	84	87	85
FAIRFAX, SWITZERLAND																			
0	-6	-11	-11	-11	6	22	27	6	-11	37	61	39	37	30	22	15	15	15	-11
50	34	34	34	34	45	50	54	50	42	64	67	67	66	61	51	42	51	58	50
75	44	44	44	44	52	56	66	61	56	71	74	74	74	69	59	49	61	70	65
95	47	44	44	44	55	62	70	66	62	75	78	78	78	73	63	52	66	75	72
99	55	54	54	54	63	72	74	77	76	85	87	86	87	81	71	60	78	86	85
100	65	66	67	67	73	81	87	92	92	101	107	107	107	95	85	71	95	102	102
ADMM***	59	59	65	60	72	80	84	80	80	74	74	77	76	70	59	47	59	67	59

*1 QT--FIRST QUARTER DEC-JAN-FEB
 **1HF--FIRST HALF YEAR DEC-MAY
 ***ADM--AVERAGE DAILY MAXIMUM
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THE BOEING COMPANY
 TRANSPORT DIVISION

NO. D6-7177
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TABLE 7

**LIST OF AIRPORTS WITH GEOGRAPHICAL
COORDINATES, ELEVATION, AND LENGTH
OF LONGEST RUNWAY**

AIRPORTS

TABLE 7. AIRPORTS

<u>CITY - COUNTRY</u>	<u>AERODROME</u>	<u>CODE</u>	<u>LAT.</u> ° '	<u>LONG.</u> ° '	<u>ELEV.</u> ft.	<u>RUNWAY</u> ft.
Accra, Ghana	Accra	ACC	5.36N	0.10W	221	9600
Addis Ababa, Ethiopia	Haile Selassie	ADD	9.00N	38.44E	7743	5670
Adelaide, Australia	Adelaide	ADL	34.57S	138.32E	12	6850
Aden, Aden-Prot	Khormaksar	ADE	12.50N	45.02E	10	8386
Algiers, Algeria	Maison Blanche	ALG	36.42N	3.13E	82	7972
Alice Springs, Australia		ASP	23.48S	133.53S		
Allahabad, India	Allahabad		25.26N	81.44E	319	6000
Amman, Jordan	Amman	AMM	31.58N	35.59E	2550	8000
Amsterdam, Netherlands	Schiphol	AMS	52.19N	4.47E	13	10663
Anchorage, Alaska	Anchorage International	ANC	61.10N	150.00W	124	10600
Ankara, Turkey	Esenboga	ANK	40.08N	33.00E	3122	12310
Antigua Island, B. W. I.	Coolidge	ANU	17.09N	61.47W	62	6900
Aruba, N. W. I.		AUA	12.30N	70.01W		
Asuncion, Paraguay	Presidente Stroessner	ASU	25.15S	57.31W	330	9000
Athens, Greece	Athens Central	ATH	37.54N	23.44E	90	8333
Atlanta, Ga., U.S.A.	Atlanta Municipal	ATL	33.39N	84.26W	1024	7800
Auckland, New Zealand	Whenuapai	AKL	36.47S	174.38E	100	6590
Baghdad, Iraq	Baghdad West	BGW	33.19N	44.22E	112	7054
Bahrein I., Persian Gulf	Bahrein/Muharrag	BAH	26.16N	50.38E	6	7500
Baltimore, Md., U.S.A.	Friendship Int'l	BAL	39.10N	76.40W	146	3400
Bangalore, India		BLR	12.57N	77.40E	2937	6900
Bangkok, Thailand	Don Muang	BKK	13.54N	100.36E	12	9840
Barbados, B. W. I.	Barbadoes/Seawell	BGI	13.04N	59.29W	165	9000
Barcelona, Spain	Barcelona	BCN	41.18N	2.04E	13	8415
Barranquilla, Colombia	Soledad	BAQ	10.54N	74.47W	47	5200
Basle, Switzerland	Mulhouse	BSL	47.35N	7.32E	886	7775
Basrah, Iraq	Margil	BSR	30.34N	47.47E	8	6000
Beirut, Lebanon	Beirut Int'l	BEY	33.50N	35.29E	85	10663
Belem, Brazil	Val de Cans	BEL	1.23S	48.28W	46	6000
Belfast, N. Ireland	Nutts Corner	BFS	54.38N	6.09W	359	6014
Belgrade, Yugoslavia	Zemun	BEG	44.49N	20.24E	243	5249
Belize, British Honduras	Stanley	BZE	17.32N	88.18W	16	5000
Bengasi, Libya	Benina	BEN	32.06N	20.16E	425	6600
Bergen, Norway	Flesland	BGO	60.18N	5.13E	165	8038
Berlin, Germany	Tempelhof Air Base	BER	52.28N	13.24E	163	5267
Bermuda, Bermuda	Kindley AFB	BDA	32.21N	64.41W	11	9710
Biak, Australia		BIK	1.12S	136.07E	37	11700
Bimini, Bahamas		BIM	25.42N	79.17W		
Bled, Yugoslavia	Lesce	BLY	46.22N	14.11E	1654	4900
Bloem Fontein, Africa	Tempe	BFN	29.06S	26.11E	4680	10000
Bogota, Colombia	El Dorado	BOG	4.42N	74.09W	8355	12500
Bombay, India	Santa Cruz	BOM	19.05N	72.52E	35	10500
Bordeaux, France	Merignac	BOD	44.50N	0.43W	161	7874
Boston, Mass., U.S.A.	Logan Int'l	BOS	42.22N	71.00W	19	10023
Brasilia, Brazil	Brasilia	BSB	15.51S	47.56W	3474	10500
Brisbane, Australia	Brisbane	BNE	27.25S	153.05E	7	7760
Brownsville, Tex., U.S.A.	Harlingen AFB	HRL	26.13N	97.39W	35	6000
Brussels, Belgium	Brussels National	BRU	50.54N	4.29E	180	11936

<u>CITY - COUNTRY</u>	<u>AERODROME</u>	<u>CODE</u>	<u>LAT.</u> ° '	<u>LONG.</u> ° '	<u>ELEV.</u> ft.	<u>RUNWAY</u> ft.
Bucharest, Romania	Baneasa	BUH	44.30N	26.05E	297	7218
Budapest, Hungary	Ferihegy	BUD	47.26N	19.14E	430	8200
Buenos Aires, Argentina	Ezeiza	BUE	34.48S	58.38W	64	10800
Butterworth, Fed. of Malaya	Butterworth	BWH	5.88N	100.24E	10	8000
Cairo, Egypt	Cairo International	CAI	30.08N	31.24E	311	10827
Calcutta, India	Dum Dum	CCU	22.38N	88.38N	18	7700
Calgary, Alberta, Canada	Calgary	YYC	51.06N	114.01W	3557	8700
Campeche, Mexico		CPE	19.50N	90.31W		
Cananea, Mexico		CNA	30.59N	110.16W		5200
Canton Island, Phoenix Is.	Canton	CAN	2.46S	171.43W	9	6000
Capetown, U. So. Africa	D. F. Malan	CPT	33.58S	18.36E	151	6900
Caracas, Venezuela	Maiquetia	CCS	10.37N	66.59W	230	9800
Cartagena, Colombia		CTG	10.28N	75.31W		
Carupano, Venezuela		CUP	10.39N	63.14W		
Casablanca, Morocco	Cazes	CAS	33.33N	7.40W	203	6004
Cherokee Sound, Bahamas			26.17N	77.04W		
Chicago, Illinois, U.S.A.	O'Hare Chicago Int'l	ORD	41.59N	87.54W	667	11600
Chitose, Japan	Chitose AB		42.48N	141.40E	82	9000
Chittagong, Pakistan		CGP	22.16N	91.49E	12	6000
Christchurch, New Zealand	Christchurch	CHC	43.29S	172.32E	113	6600
Chung King, China		CKG	29.32N	106.35E		
Churchill, Manitoba, Canada	Churchill	YYQ	58.45N	94.04W	100	11200
Ciudad Del Carmen, Mexico		CME	18.39N	91.49W		
Cleveland, Ohio, U.S.A.	Cleveland-Hopkins	CLE	41.25N	81.51W	789	9000
Cocos Island, Indian Ocean	Cocos Island	CCK	12.11S	96.50E	11	8000
Cold Bay, Alaska	Cold Bay	CDB	55.13N	162.44W	94	7300
Cologne, West Germany	Koln-Bonn	CGN	50.52N	7.09E	300	12467
Colombo, Ceylon	Ratmalana	CMB	6.49N	79.53E	22	6000
Conakry, Fr. W. Africa	Conakry	CKY	9.34N	13.37W	85	5577
Copenhagen, Denmark	Kastrup	CPH	55.37N	12.39E	16	10827
Cordoba, Argentina	Cordoba	COR	31.19S	64.13W	1588	10500
Curacao, N. W. I.		CUR	12.12N	68.58W		
Cumana, Venezuela		CUM	10.39N	64.11W		
Curitiba, Brazil	Afonso Pena	CWB	25.31S	49.11W	2986	5905
Dacca, Pakistan	Tezgaon	DAC	23.46N	90.23E	24	7500
Dakar, Senegal	Yof	DKR	14.44N	17.29W	89	7907
Dallas, Texas, U.S.A.	Love Field	DAL	32.51N	96.51W	485	7750
Damascus, Syria, U.R.A.	Damascus Int'l	DAM	33.29N	36.14E	2405	8235
Darwin, Australia	Darwin	DRW	12.25S	130.52E	86	9570
Denver, Colorado, U.S.A.	Stapleton Airfield	DEN	39.46N	104.53W	5331	10010
Detroit, Mich., U.S.A.	Detroit Metropolitan	YIP	42.14N	83.21W	639	10500
Dhahran, Saudi Arabia	Dhahran	DHA	26.17N	50.10E	78	10100
Djakarta, Indonesia	Kemajoran	JKT	6.09S	106.51E	16	8120
Doha Qatar, Saudi Arabia		DOH	25.16N	51.34E	33	6300

<u>CITY-COUNTRY</u>	<u>AERODROME</u>	<u>CODE</u>	<u>LAT.</u> ° ' "	<u>LONG.</u> ° ' "	<u>ELEV.</u> ft.	<u>RUNWAY</u> ft.
Dubrovnik, Yugoslavia	Gruda	DBV	42.33N	18.17E		
Durban, U. of So. Africa	Louis Botha	DUR	29.58S	30.57E	25	6800
Dusseldorf, W. Germany	Dusseldorf	DUS	51.17N	6.45E	133	8382
East London, U. So. Africa	Collondale	ELS	33.03S	27.49E	425	6350
Edmonton, Alberta, Canada	Edmonton Municipal	YXD	53.34N	113.31W	2200	5868
El Adem, Tobruk, Libya	El Adem	ELE	31.52N	23.55E	510	6546
El Paso, Texas, U.S.A.	El Paso Int'l	ELP	31.48N	106.23W	3939	11000
Entebbe, Uganda	Entebbe	EBB	.03N	32.27E	3789	8957
Fortaleza, Brazil		FOR	3.47S	38.32W		
Ft. de France, Martinique		FDF	14.36N	61.05W		
Ft. Lauderdale, Fla., U.S.A.	Broward Co. Int'l	FLL	26.04N	80.10W	10	6500
Frankfurt, West Germany	Rhein/Main	FRA	50.02N	8.34E	368	12795
Freetown, Sierre Leone	Freetown-Lungi	FNA	8.37N	13.12W	82	6500
Frobisher Bay, N.W.T., Canada	Frobisher	YFB	63.45N	68.33W	110	9000
Fukuoka, Japan	Itazuke AB	FUK	33.35N	130.27E	30	10000
Gander, Canada	Gander	YQX	48.57N	54.34W	496	8200
Gaya, India	Gaya		24.44N	84.56E	362	6000
Geneva, Switzerland	Cointrin	GVA	46.14N	6.06E	1411	12795
Georgetown, Br. Guiana	Atkinson	GEO	6.30N	58.15W	95	7430
Gibraltar, Gibraltar	Gibraltar	GIB	36.09N	5.21W	15	6000
Glasgow, Scotland	Renfrew	GLA	55.51N	4.16W	35	5789
Goose Bay, Nfld, Canada	Goose	YYR	53.19N	60.25W	150	11000
Grand Cayman, B.W.I.		GCM	19.17N	81.22W		
Grenada, B.W.I.	Pearls	GND	12.09N	61.36W	30	5300
Guam, S. W. Pacific	Agana NAS	GUM	13.29N	144.47E	280	10000
Guatemala City, Guatemala	La Aurora	GUA	14.34N	90.32W	4958	9800
Guayaquil, Ecuador	Simon Bolivar	GYE	2.10S	79.52W	13	8000
Hamburg, Germany	Hamburg	HAM	53.38N	9.59E	42	10006
Havana, Cuba	Jose Marti Int'l	HAV	23.01N	82.24W	210	10500
Helsinki, Finland	Helsinki	HEL	60.19N	24.58E	167	6562
Hong Kong, Hong Kong	Hong Kong Int'l	HKG	22.20N	114.12E	15	8350
Honolulu, Hawaii, U.S.A.	Honolulu Int'l	HNL	21.20N	157.56W	13	12300
Houston, Texas, U.S.A.	Houston Int'l	HOU	29.39N	95.16W	50	7600
Hyderabad, India		HYD	17.33	78.30E	2020	6900
Istanbul, Turkey	Yesilkoy	IST	40.58N	28.49E	88	7548
Jidda, Saudi Arabia		JED	21.30N	39.12E		
Johannesburg, U. S. Africa	Jan Smuts	JNB	26.08S	28.15E	5559	14500
Johnston Island, Pacific Ocean	Johnston Island AFB	JON	16.44N	169.31W	7	5900

<u>CITY-COUNTRY</u>	<u>AERODROME</u>	<u>CODE</u>	<u>LAT.</u> °	<u>LONG.</u> °	<u>ELEV.</u> ft.	<u>RUNWAY</u> ft.
Kano, Nigeria	Kano	KAN	12.03N	8.31E	1563	8610
Kansas City, Mo., U.S.A.	Kansas City	MKC	39.07N	94.36W	758	7000
Karachi, Pakistan	Karachi	KHI	24.54N	67.09E	75	10500
Keflavik, Iceland	Keflavik	KEF	63.59N	22.36W	169	10000
Ketchikan, Alaska, U.S.A.	Annette Island	KTN	55.02N	131.34W	119	7500
Khartoum, Sudan	Khartoum Civil	KRT	15.36N	32.34E	1253	7050
Kimberley, U. So. Africa	Kimberley	KIM	28.48S	24.46E	3950	7900
Kingston, Jamaica	Palisadoes	KIN	17.56N	76.47W	10	7600
Kisumu, Kenya	Kisumu	KIS	.05S	34.44E	3795	5950
Kodiak, Alaska, U.S.A.	NS Kodiak	NHB	57.45N	152.30W	77	7500
Kuala Lumpur, Malaya		KUL	3.07N	101.42E	111	6200
Kuwait, Kuwait		KWI	29.21N	48.00E	57	5400
Kwajalein, Marshall Is.	Kwajalein NAS	KWA	8.43N	167.44E	7	6750
Lagos, Nigeria	Lagos	LOS	6.35N	3.20E	132	7595
Lahore, Pakistan	Walton	LHE	31.32N	74.24E	700	6300
Lajes, Azores	Lajes	LJZ	38.45N	27.06W	180	10800
Las Palmas, Canary Is.	Las Palmas	LPA	27.56N	15.23W	46	5791
Las Piedras, Venezuela		LSP	11.44N	70.12W		
La Paz, Bolivia	El Alto	LPB	16.30S	68.11W	13398	11100
Leningrad, U.S.S.R.	Leningrad	LED	59.57N	30.18E		
Leopoldville, Belgian Congo	Leopoldville/N'Dolo	LEO	4.19S	15.19E	51	6560
	Leopoldville/N'Djili		4.23S	15.26E	1014	15420
Libreville, Fr. Africa	Libreville	LBV	.27N	9.25E	39	5741
Lima, Peru	Limatambo	LIM	12.06S	77.01W	483	5900
Lisbon, Portugal	Lisbon	LIS	38.46N	9.08W	361	7874
Livingstone, N. Rhodesia	Livingstone	LVI	17.49S	25.49E	3230	7500
Ljubljana, Yugoslavia	Ljubljana	LJU	46.04N	14.34E	951	3600
London, England	Heathrow	LON	51.28N	.27W	80	11000
Los Angeles, Calif., U.S.A.	Los Angeles Int'l	LAX	33.56N	118.24W	126	12000
Lourenco Marques, Mozambique	Mavalano	LUM	25.55S	32.34E	128	7380
Luanda, Angola	Presidente Craveiro Lopez	LAD	8.51S	13.14E	243	7382
Lusaka, N. Rhodesia	Lusaka	LUN	15.25S	28.20E	4208	6660
Madras, India	Madras (St. Thomas Mt.)	MAA	12.59N	80.10E	48	6000
Madrid, Spain	Barajas	MAD	40.28N	3.34W	1985	10006
Makassar, Indonesia		MSR	5.04S	119.33E	46	5100
Malta, Malta	Luqa	MLA	35.51N	14.29E	297	7800
Managua, Nicaragua		MGA	12.07N	86.11W		
Manaos, Brazil	Ponta Pelada	MAO	3.09S	59.59W	272	6500
Mangalore, India			12.59N	74.54E	344	4000
Manila, Philippines	Manila Int'l	MNL	14.31N	121.01E	67	7900
Maracaibo, Venezuela		MAR	10.40N	71.39W		
Marseilles, France	Marignane	MRS	43.25N	5.13E	66	8858
Mauritius, Ind. Ocean	Makebourg-Plaisance	MRU	20.26S	57.41E	165	6958
Mazatlan, Mexico		MZT	23.14N	106.25W		
Medan, Indonesia	Polonia	MES	3.34N	98.41E	82	5500

<u>CITY - COUNTRY</u>	<u>AERODROME</u>	<u>CODE</u>	<u>LAT.</u> ° 	<u>LONG.</u> ° 	<u>ELEV.</u> ft.	<u>RUNWAY</u> ft.
Melbourne, Australia	Melbourne	MEB	37.44S	144.54E	260	6100
Menado, Indonesia		MDC	1.32N	124.55E	264	4921
Mendoza, Argentina	Ei Piumerilio	MDZ	32.50S	68.47N	2313	8400
Merida, Mexico		MID	20.56N	89.41W		
Mexico City, Mexico	Central	MEX	19.26N	99.05W	7340	11700
Miami, Florida, U.S.A.	Miami Int'l	MIA	25.48N	80.17W	9	10500
Midway, Pacific Ocean	Sand Field	MDY	28.12N	177.23W	13	7900
Milan, Italy	Malpensa	MIL	45.38N	8.43E	767	12844
Minneapolis, Minn., U.S.A.	Minneapolis/St. Paul International	MSP	44.53N	93.13W	840	8200
Monrovia, Liberia	Robertsfield	MLW	6.15N	10.21W	24	6988
Montego Bay, Jamaica	Montego Bay	MJB	18.30N	77.55W	3	7100
Monterrey, Mexico		MTY	25.52N	100.14W		
Montevideo, Uruguay	Carrasco	CSO	34.50S	56.02W	86	7100
Montreal, Quebec, Canada	Montreal Int'l	YUL	45.28N	73.45W	117	9600
Moscow, U.S.S.R.	Sheremetievo	MOW	55.58N	37.25E	623	11100
Mount Isa, Australia		ISA	20.40S	139.28E		
Mukden, Manchuria		MUK	41.45N	123.29E		
Munich, W. Germany	Munich	MUC	48.08N	11.42E	1732	8530
Nagoya, Japan	Kamaki AFB	NGO	35.15N	136.55E	51	9000
Nagpur, India		NAG	21.05N	79.03E	1012	6400
Nairobi, Kenya	Nairobi	NBO	1.19S	36.56E	5327	10000
Nandi, Fiji Islands	Nandi	NAN	17.45S	177.27E	63	10500
Nanking, China		NKG	32.07N	118.47E		
Napies, Italy	Capodichino	NAP	40.53N	14.17E	289	7218
Nassau, Bahamas, B.W.I.	Nassau Int'l	NAS	25.03N	77.28W	10	8300
Natal, Brazil	Parnamirim	NAT	5.55S	35.15W	161	7400
New Delhi, India	Palam	NDH	28.34N	77.07E	761	7500
New Orleans, La., U.S.A.	Moisant Int'l	MSY	29.50N	90.01W	3	8000
New York, N. Y., U.S.A.	New York Int'l (Idlewild)	IDL	40.38N	73.47W	12	14600
Nicosia, Cyprus	Nicosia	NCY	35.09N	33.16E	734	8000
Nogales, Mexico			31.13N	110.59W		
Nome, Alaska, U.S.A.	Nome (FAA)	OME	64.31N	165.26W	37	5400
Noumea, N. Calédonia		NOU	22.16S	166.26E		
Okinawa, Ryuyku Is.	Kadena AB	OKA	26.21N	127.46E	142	12100
Osaka, Japan	Osaka Int'l	OSA	34.47N	135.26E	50	6000
Oslo, Norway	Fornebu	OSL	59.54N	10.38E	56	5741
Ottawa, Ontario, Canada	Ottawa	YOW	45.19N	75.40W	374	8800
Padang, Indonesia		PDG	0.53S	100.21E	19	4900
Panama, Panama	Tocumen National	PTY	9.05N	79.23W	135	8800
Paris, France	Le Bourget	PAR	48.58N	2.27E	217	9842
Peiping, China		PEP	39.36N	116.24E		
Perth, Australia	Perth	PER	31.56S	115.58E	51	6920
Peshawar, Pakistan		PEW	34.00N	71.31E	1150	9000

<u>CITY - COUNTRY</u>	<u>AERODROME</u>	<u>CODE</u>	<u>LAT.</u> ° ' "	<u>LONG.</u> ° ' "	<u>ELEV.</u> ft.	<u>RUNWAY</u> ft.
Philadelphia, Pa., U.S.A.	Philadelphia Int'l	PHL	39.53N	75.14W	14	9500
Phoenix, Ariz., U.S.A.	Phoenix-Muni.	PHX	33.26N	112.01W	1122	8800
Pietersburg, U. So. Africa	Pietersburg		23.51S	29.27E	4074	8823
Pisa, Italy	San Giusto	PSA	43.41N	10.24E	8	8500
Pittsburg, Pa., U.S.A.	Allegheny County	PIT	40.21N	79.56W	1252	5500
Pointe a Pitre, Guadeloupe		PTP	16.16N	61.32W		
Porlamar, Venezuela		PMU	11.01N	63.54W		
Port au Prince, Haiti		PAP	18.34N	72.20W		
Port Elizabeth, U. of So. Africa	Port Elizabeth	PLZ	33.59S	25.37E	227	6500
Port Harcourt, Nigeria	Port Harcourt	PHC	4.51N	7.01E	58	6000
Port Moresby, N. Guinea		POM	9.30S	147.07E		
Porto Alegre, Brazil	Salgado Filho	POA	30.00S	51.11W	10	6600
Port of Spain, Trinidad	Piarco Field	POS	10.36N	61.21W	44	9500
Prague, Czechoslovakia	Ruzyně	PRG	50.06N	14.17E	1247	7546
Prestwick, Scotland	Prestwick	PIK	55.30N	4.35W	64	9800
Puerto Barrios, Guatemala		PBR	15.44N	88.35W		
Puerto Cabello, Venezuela		PBL	10.29N	68.04W		
Quito, Ecuador	Mariscal Sucre	UIO	.08S	78.29W	9218	10200
Rangoon, Burma	Mingaladan	RGN	16.54N	96.08E	109	8100
Rawalpindi, Pakistan		RWP	33.37N	73.06E	1662	6600
Recife, Brazil	Guararapes	REC	8.08S	34.55W	33	7800
Resolute Bay, N.W. Terr.	Resolute	JRE	74.43N	94.59W	220	6500
Reykjavik, Iceland	Reykjavik	REK	64.08N	21.57W	45	4700
Rimini, Italy	Rimini		44.01N	12.37E	39	9810
Rio de Janeiro, Brazil	Galeao	RIO	22.49S	43.15W	10	10800
Riyadh, Saudi Arabia			24.43N	46.42E	1818	6000
Rome, Italy	Ciampino	ROM	41.48N	12.36E	423	7218
Saigon, Viet-Nam	Tan San Nhut	SGN	10.49N	106.39E	33	7900
St. Croix, Virgin Is.		STX	17.42N	64.48W		
St. Kitts I., Leeward Is., B.W.I.		SKB	17.25N	62.45W		
St. Louis, Mo., U.S.A.	Lambert-St. Louis	STL	38.45N	90.22W	571	10000
St. Lucia, B.W.I.		SLU	13.45N	60.57W		
St. Maarten, N.W.I.		SXM	18.03N	63.07W		
St. Thomas, Virgin Is.		STT	18.20N	64.58W		
St. Vincent, Windward Is.		SVD	13.15N	61.12W		
Sal Island, Cape Verde Is.	Sal	SID	16.44N	22.57W	184	7054
Salisbury, S. Rhod.		SAY	17.56S	31.06E	4904	8612
San Antonio, Tex., U.S.A.	San Antonio Int'l	SAT	29.32N	98.28W	800	8500
San Diego, Calif., U.S.A.	Lindbergh Field	SAN	32.44N	117.11W	15	8100
Sandy Point, St. Kitts I.,			17.22N	62.51W		
San Francisco, Calif., USA	San Francisco Int'l	SFO	37.38N	122.23W	10	9500
San Jose, Guatemala		OCO	13.57N	90.51W		

<u>CITY - COUNTRY</u>	<u>AERODROME</u>	<u>CODE</u>	<u>LAT.</u> ° '	<u>LONG.</u> ° '	<u>ELEV.</u> ft.	<u>RUNWAY</u> ft.
San Juan, Puerto Rico	Puerto Rico Int'l	SJU	18.26N	66.00W	9	10000
San Pedro Sula, Honduras		SAP	15.26N	88.01W		
San Salvador, Bahama Is.		SAL	24.04N	74.31W		
Santa Maria, Azores	Santa Maria	SMA	36.58N	25.10W	305	10000
Santa Marta, Colombia		SMR	11.18N	74.10W		
Santiago, Chile	Los Cerrillos	SCL	33.30S	70.42W	1675	8500
Santo Domingo, Dom. Rep.	Punta Caucedo Int'l		18.25N	69.40W	57	8300
Sao Paulo, Brazil	Congonhas	SAO	23.37S	46.39W	2628	6200
Sao Tome, Sao Tome Is.		TMS	.19N	6.43E	16	
Sarajevo, Yugoslavia	Butmir	SJJ	43.49N	18.21E	1693	3900
Seattle, Washington, USA	Seattle-Tacoma Int'l	SEA	47.27N	122.19W	428	9800
Seoul, Korea	Kimpo AFB	SEL	37.34N	126.48E	64	8100
Seville, Spain	Moron AB	SVQ	37.10N	5.37E	287	11800
Shanghai, China		SHA	31.15N	121.29E		
Shannon, Limerick, Ireland	Shannon	SNN	52.42N	8.55W	47	10000
Sharjah, Oman		SHJ	25.21N	55.24E	6	6900
Shemya Is., Alaska, USA	Shemya	SYA	52.43N	174.06E	95	10000
Singapore, Str. Settlements	Paya Lebar	SIN	1.22N	103.59E	10	6000
Skopje, Yugoslavia		SKP	41.59N	21.28E	783	39
Soerabaya, Indonesia	Tanjong Perok		7.13S	112.43E	10	5300
Sofia, Bulgaria	Sofia	SOF	42.42N	23.24E	1830	6000
Sondrestromfjord, Greenland	Sondrestrom AB	SFJ	67.01N	50.42W	160	9200
Split, Yugoslavia	Sinj	SPU	43.42N	16.40E		
Stanleyville, Belgian Congo	Stanleyville	SYV	.31N	25.10E	1362	7087
Stockholm, Sweden	Arlanda	STO	59.39N	17.55E	112	10827
Sydney, Australia	Kingsford Smith	SYD	33.56S	151.11E	10	8290
Tahiti, Society Is.	Tahiti (FAAA)	PPT	17.33S	149.37W	7	11200
Taipei, Formosa	Taipei Int'l	TPE	25.04N	121.32E	19	8500
Tampa, Florida, U.S.A.	Tampa Int'l	TPA	27.58N	82.32W	27	8300
Tananarive, Madagascar	Arlvonlmemo	TNR	19.02S	47.10E	4757	8222
Tarkan, Borneo		TRK	3.20N	117.34E		
Tegucigalpa, Honduras		TGU	14.03N	87.14W		
Teheran, Iran	Mehrabad	THR	35.41N	51.19E	3960	9840
Tel Aviv-Jaffa, Israel	Lod	TLV	32.00N	34.54E	131	10000
Thule, Greenland	Thule AB	THU	76.32N	68.45W	251	10000
Tokyo, Japan	Tokyo Int'l	TYO	35.33N	139.46E	11	8400
Toronto, Ontario, Canada	Malton	YYZ	43.41N	79.38W	569	11000
Townsville, Australia		TSV	19.15S	146.46E		
Trinidad, Port of Spain	Piarco	TND	10.36N	61.21W	44	9500
Tripoli, Libya	Idris El Awad	TIP	32.40N	13.09E	263	7306
Tunis, Tunisia	El Aoulina	TUN	36.51N	10.14E	16	8620
Ushuala, Argentina		USH	54.49S	68.19W	10	
Vancouver, B.C., Canada	Vancouver Int'l	YUR	49.11N	123.10W	9	8600
Venice, Italy	Tessera	VCE	45.30N	12.20E	7	8875
Vienna, Austria	Schwechat	VIE	48.07N	16.34E	600	9840

<u>CITY - COUNTRY</u>	<u>AERODROME</u>	<u>CODE</u>	<u>LAT.</u> °	<u>LONG.</u> °	<u>ELEV.</u> ft.	<u>RUNWAY</u> ft.
Wadi Halfa, Sudan	Wadi Halfa	WHA	21.50N	31.18E	509	6003
Wake Island, Pacific Ocean	Naval Air Station	AWK	19.17N	166.39E	13	9800
Warsaw, Poland	Okecie	WAW	52.10N	20.58E	344	6562
Washington, D. C., U.S.A.	Washington National	DCA	38.51N	77.02W	15	6900
Wellington, New Zealand	Wellington	WLG	41.20S	174.48E	38	5350
West End, Bahamas		WTD	26.40N	78.57W		
West Palm Beach, Fla., USA	Palm Beach Int'l	PBI	26.41N	80.06W	19	8000
Whitehorse, Canada	Whitehorse	YXY	60.43N	135.04W	2303	7200
Windhoek, S. W. Africa	J. G. Strydom	WDH	22.37S	17.05E		
Winnipeg, Manitoba, Canada	Stevenson	YWG	49.54N	97.14W	785	8700
Yellowknife, N.W.T., Canada	Yellowknife	YZF	62.28N	114.27W	672	7500
Zagreb, Yugoslavia	Pleso	ZAG	45.44N	16.04E		
Zurich, Switzerland	Zurich	ZRH	47.27N	8.33E	1414	12139

TABLE 8

**ROUTES INDEXED ALPHABETICALLY
AND UNDER BOTH TERMINALS**

ACCRA		ALGIERS (Continued)		ANCHORAGE		ASUNCION (Continued)	
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Casablanca - - - - -	19	Milan - - - - -	23	Edmonton - - - - -	27	Houston - - - - -	32
Dakar - - - - -	19	New Delhi - - - - -	23	Frankfurt - - - - -	27	La Paz - - - - -	32
Freetown - - - - -	19	Paris - - - - -	23	Geneva - - - - -	27	Lima - - - - -	32
Johannesburg - - - - -	19	Rome - - - - -	23	Hamburg - - - - -	28	Lisbon - - - - -	32
Kano - - - - -	19	Tel Aviv-Jaffa - - - - -	23	Keflavik - - - - -	28	London - - - - -	32
Lagos - - - - -	19	Tripoli - - - - -	23	London - - - - -	28	Los Angeles - - - - -	32
Lajes - - - - -	19	Tunis - - - - -	23	Minneapolis - - - - -	28	Madrid - - - - -	32
Leopoldville - - - - -	19			Montreal - - - - -	28	Mexico City - - - - -	32
Lisbon - - - - -	19	ALICE SPRINGS		New York - - - - -	28	Miami - - - - -	32
London - - - - -	19	Melbourne - - - - -	23	Paris - - - - -	28	Natal - - - - -	32
Port of Spain - - - - -	19			Seattle - - - - -	28	New Orleans - - - - -	33
Rio de Janeiro - - - - -	19	ALLAHABAD		Shannon - - - - -	28	New York - - - - -	33
		Calcutta - - - - -	24	Sondrestromfjord - - - - -	28	Panama - - - - -	33
ADAMA				Tokyo - - - - -	28	Quito - - - - -	33
Karachi - - - - -	19	AMMAN		Zurich - - - - -	28	Rio de Janeiro - - - - -	33
		Baghdad - - - - -	24			San Francisco - - - - -	33
ADDIS ABABA		Rome - - - - -	24	ANKARA		San Juan - - - - -	33
Aden - - - - -	20			Amsterdam - - - - -	24	Santa Maria - - - - -	33
Besra - - - - -	20	AMSTERDAM		Athens - - - - -	28	Santiago - - - - -	33
Beirut - - - - -	20	Anchorage - - - - -	24	Baghdad - - - - -	28		
Bombay - - - - -	20	Ankara - - - - -	24	Bercelona - - - - -	29	ATHENS	
Cairo - - - - -	20	Athens - - - - -	24	Besla - - - - -	29	Algiers - - - - -	22
Colombo - - - - -	20	Baghdad - - - - -	24	Besra - - - - -	29	Amsterdam - - - - -	24
Dhahran - - - - -	20	Bercelona - - - - -	24	Beirut - - - - -	29	Ankara - - - - -	28
Jidda - - - - -	20	Besla - - - - -	24	Bombay - - - - -	29	Bangkok - - - - -	33
Kano - - - - -	20	Beirut - - - - -	24	Brussels - - - - -	29	Besra - - - - -	33
Khartoum - - - - -	20	Belam - - - - -	24	Budapest - - - - -	29	Beirut - - - - -	33
Nairobi - - - - -	20	Berlin - - - - -	24	Cairo - - - - -	29	Belgrade - - - - -	33
		Brussels - - - - -	24	Copenhagen - - - - -	29	Bengali - - - - -	33
ADELAIDE		Budapest - - - - -	24	Dhahran - - - - -	29	Bombay - - - - -	34
Melbourne - - - - -	20	Cairo - - - - -	25	Dusseldorf - - - - -	29	Cairo - - - - -	34
Perth - - - - -	20	Copenhagen - - - - -	25	Frankfurt - - - - -	29	Calcutta - - - - -	34
Sydney - - - - -	20	Dakar - - - - -	25	Geneva - - - - -	29	Colombo - - - - -	34
		Dhahran - - - - -	25	Istanbul - - - - -	30	Damascus - - - - -	34
ADEN		Dusseldorf - - - - -	25	London - - - - -	30	Dhahran - - - - -	34
Addis Ababa - - - - -	20	Edmonton - - - - -	25	Madrid - - - - -	30	Dusseldorf - - - - -	34
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Beirut - - - - -	21	Geneva - - - - -	25	Mukden - - - - -	30	Geneva - - - - -	34
Bombay - - - - -	21	Glasgow - - - - -	25	Nairobi - - - - -	30	Istanbul - - - - -	34
Cairo - - - - -	21	Goose Bay - - - - -	25	Paris - - - - -	30	Kano - - - - -	34
Colombo - - - - -	21	Hamburg - - - - -	25	Rome - - - - -	30	Karachi - - - - -	34
Dhahran - - - - -	21	Helinski - - - - -	25	Stockholm - - - - -	30	Khartoum - - - - -	34
El Adem - - - - -	21	Kano - - - - -	25	Tehran - - - - -	30	Lisbon - - - - -	34
Gan - - - - -	21	Keflavik - - - - -	25	Tel Aviv-Jaffa - - - - -	30	London - - - - -	35
Jidda - - - - -	21	Lagos - - - - -	26	Vienne - - - - -	30	Madrid - - - - -	35
Karachi - - - - -	21	Libreville - - - - -	26	Moscow - - - - -	30	Milan - - - - -	35
Khartoum - - - - -	21	Lisbon - - - - -	26	Zurich - - - - -	30	Munich - - - - -	35
Mauritius - - - - -	21	Los Angeles - - - - -	26			Nairobi - - - - -	35
Nairobi - - - - -	21	Madrid - - - - -	26	ANTIGUA		New Delhi - - - - -	35
Nicosia - - - - -	21	Miami - - - - -	26	Barbados - - - - -	31	Nicosia - - - - -	35
Tripoli - - - - -	22	Moscow - - - - -	26	Bermuda - - - - -	31	Paris - - - - -	35
		Mukden - - - - -	26	New York - - - - -	31	Prague - - - - -	35
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Bangkok - - - - -	22	Paris - - - - -	26			Tel Aviv-Jaffa - - - - -	35
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Besra - - - - -	22	Rome - - - - -	26	Caracas - - - - -	31	Tunis - - - - -	35
Beirut - - - - -	22	San Francisco - - - - -	27	Kingston - - - - -	31	Vienne - - - - -	36
Bengali - - - - -	22	Shannon - - - - -	27	Maracaibo - - - - -	31	Zurich - - - - -	36
Bombay - - - - -	22	Sofia - - - - -	27	Montego Bay - - - - -	31		
Cairo - - - - -	22	Sondrestromfjord - - - - -	27	San Juan - - - - -	31	ATLANTA	
Calcutta - - - - -	22	Stockholm - - - - -	27			Mexico City - - - - -	36
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Colombo - - - - -	22	Tel Aviv-Jaffa - - - - -	27	Belam - - - - -	31	San Juan - - - - -	36
Damascus - - - - -	22	Vancouver - - - - -	27	Bermuda - - - - -	31		
Dhahran - - - - -	22	Vienne - - - - -	27	Bogota - - - - -	31	AUCKLAND	
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BASRAH	
Addis Abeba	20
Aden	21
Algiers	22
Ankara	29
Athens	33
Baghdad	38
Bangkok	40
Barcelona	43
Beirut	43
Bengasi	43
Bombay	43
Cairo	43
Calcutta	43
Colombo	43
Damascus	43
Dhahran	43
Istanbul	43
Karachi	43
Lisbon	43
Madrid	43
Milan	43
New Delhi	43
Rome	43
Teheran	43
Tel Aviv-Jaffa	43
Tripoli	43
Tunis	43

BEIRUT	
Accre	19

BEIRUT (Continued)	
Addis Abeba	20
Aden	21
Amsterdam	24
Ankara	29
Athens	33
Baghdad	38
Bahrain	39
Bangkok	40
Barcelona	43
Basrah	48
Bengasi	49
Bombay	49
Brussels	49
Cairo	49
Calcutta	49
Colombo	49
Copenhagen	50
Damascus	50
Dhahran	50
Djakarta	50
Dusseldorf	50
Frankfurt	50
Geneve	50
Hamburg	50
Helsinki	50
Istanbul	50
Jidda	50
Karachi	50
Khartoum	50
Kuwait	50
Lisbon	51
London	51
Madrid	51
Milan	51
Munich	51
Nairobi	51
New Delhi	51
Nicosie	51
Paris	51
Pregue	51
Rangoon	51
Riyadh	51
Rome	51
Singapore	51
Stockholm	52
Teheran	52
Tel Aviv-Jaffa	52
Tripoli	52
Tunis	52
Vienna	52
Versaw	52
Zurich	52

BELEM	
Amsterdam	24
Ankara	29
Asuncion	31
Berlin	52
Bermude	52
Bogota	52
Bresilia	52
Brussels	52
Buenos Aires	52
Cairo	53
Ceracas	53
Copenhagen	53
Dakar	53
Fortaleza	53
Havana	53
Houston	53
Kingston	53
La Paz	53
Lima	53
Lisbon	53
London	53

BRASILIA (Continued)

Rio de Janeiro	70
San Juan	70
Sao Paulo	70

BRISBANE

Darwin	70
Melbourne	70
Mount Isa	71
Port Moresby	71
Sydney	71

BROWNSVILLE

Mexico City	71
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BRUSSELS

Amsterdam	24
Ankara	29
Barcelona	43
Beirut	49
Belem	52
Belfast	55
Berlin	59
Bermuda	61
Cairo	71
Cologne	71
Copenhagen	71
Oakar	71
Dusseldorf	71
Frankfurt	71
Geneva	71
Glasgow	71
Hamburg	71
Helsinki	71
Istanbul	72
Kano	72
Keflavik	72
Leopoldville	72
Lisbon	72
London	72
Los Angeles	72

BUCHAREST

Budapest	72
Cairo	72
Cologne	72
Copenhagen	72
Dhahran	72
Dusseldorf	72
Frankfurt	72
Geneva	73
Glasgow	73
Hamburg	73
Helsinki	73
Istanbul	73
Karachi	73
Lisbon	73
London	73
Madrid	73
Moscow	73
Munich	73
Oslo	73
Paris	73
Prague	73
Rome	74
Shannon	74
Stockholm	74
Tehran	74
Tel Aviv-Jaffa	74
Vienna	74
Warsaw	74
Zurich	74

BUDAPEST

Amsterdam	24
Ankara	29

BUDAPEST (Continued)

Barcelona	43
Berlin	59
Bucharest	72
Cairo	74
Cologne	74
Copenhagen	74
Dhahran	74
Dusseldorf	74
Frankfurt	74
Geneva	75
Glasgow	75
Hamburg	75
Helsinki	75
Istanbul	75
Kano	75
Keflavik	75
Lisbon	75
London	75
Madrid	75
Moscow	75
Munich	75
Oslo	75
Paris	75
Prague	76
Rome	76
Santa Maria	76
Shannon	76
Stockholm	76
Tehran	76
Tel Aviv-Jaffa	76
Vienna	76
Warsaw	76
Zurich	76

BUENOS AIRES

Asuncion	31
Belem	52
Bogota	64
Brasilia	70
Caracas	76
Chicago	76
Copenhagen	76
Cordoba	76
Oakar	77
Havana	77
Honolulu	77
Johannesburg	77
Kingston	77
La Paz	77
Lima	77
Lisbon	77
London	77
Los Angeles	77
Madrid	77
Melbourne	77
Mexico City	77
Miami	77
Montevideo	78
Natal	78
New Orleans	78
New York	78
Panama	78
Perth	78
Quito	78
Rio de Janeiro	78
Rome	78
San Juan	78
Santiago	78
Sao Paulo	78
Seattle	78
Trinidad	78
Ushuaia	79

BUTTERWORTH

Gen	79
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BUTTERWORTH (Continued)

Karachi	79
Nairobi	79
Singapore	79

CAIRO

Addis Ababa	20
Aden	21
Algiers	22
Amsterdam	25
Ankara	29
Athens	34
Baghdad	38
Bangkok	40
Barcelona	43
Basrah	48
Beirut	49
Belem	53
Bengasi	58
Berlin	59
Bombay	66
Brussels	71
Bucharest	72
Budapest	74
Calcutta	79
Cologne	79
Colombo	79
Copenhagen	79
Oakar	79
Damascus	79
Dhahran	79
Djakarta	79
Dusseldorf	79
Entebbe	80
Frankfurt	80
Geneva	80
Glasgow	80
Hamburg	80
Helsinki	80
Istanbul	80
Jidda	80
Johannesburg	80
Kano	80
Karachi	80
Khartoum	80
Kuwait	80
Libreville	80
Lisbon	81
London	81
Madrid	81
Milan	81
Moscow	81
Munich	81
Nairobi	81
Natal	81
New Delhi	81
New York	81
Nicosia	81
Oslo	81
Paris	81
Rangoon	81
Rome	82
Santa Maria	82
Shannon	82
Singapore	82
Stockholm	82
Tenasserive	82
Tehran	82
Tel Aviv-Jaffa	82
Tripoli	82
Tunis	82
Vienna	82
Warsaw	82
Zurich	82

CALCUTTA

Algiers	22
Allahabad	24
Athens	34
Bahrain	39
Bangkok	40
Basrah	48
Beirut	49
Bengasi	58
Bombay	66
Cairo	79
Colombo	82
Damascus	83
Dhahran	83
Djakarta	83
Gaya	83
Hong Kong	83
Istanbul	83
Karachi	83
Lisbon	83
Madras	83
Madrid	83
Manila	83
Milan	83
Moscow	83
Magpur	83
Manking	84
New Delhi	84
Palping	84
Rangoon	84
Rome	84
Singapore	84
Taipei	84
Tenasserive	84
Tehran	84
Tel Aviv-Jaffa	84
Tripoli	84
Tunis	84

CALGARY

Denver	84
Los Angeles	84
Phoenix	85

CAMPECHE

Ciudad del Carmen	85
Merida	85

CANANEA

Mogilas	85
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CANTON ISLAND

Honolulu	85
Mandi	85

CAPETOWN

Asuncion	32
Bloem Fontein	64
Durban	85
Entebbe	85
Johannesburg	85
Kimberley	85
Leopoldville	85
Port Elizabeth	85
Windhoek	85

CARACAS

Aruba	31
Asuncion	32
Barbados	42
Barcelona	43
Barranquilla	45
Belem	53
Bermuda	61
Bogota	65
Buenos Aires	76

CARACAS (Continued)		CHICAGO (Continued)		CLEVELAND (Continued)		COLOMBO (Continued)	
Cumana	85	Copenhagen	90	Vancouver	94	Madrid	97
Curacao	86	Frankfurt	90			Manila	97
Dakar	86	Geneva	90	COCOS ISLAND		Milan	97
Havana	86	Glasgow	90	Colombo	94	Nairobi	97
Houston	86	Hamburg	90	Darwin	94	New Delhi	97
Kingston	86	Havana	90	Mauritius	94	Rangoon	97
Las Piedras	86	Honolulu	90	Perth	94	Rome	97
La Paz	86	Keflavik	90	Singapore	94	Sharjah	98
Lima	86	Kingston	90			Singapore	98
Lisbon	86	Lisbon	90	COLO BAY		Tanarive	98
London	86	London	90	Chitose	92	Tel Aviv-Jaffa	98
Madrid	86	Madrid	90	Seattle	94	Tripoli	98
Manaos	86	Melbourne	90	Tokyo	94	Tunis	98
Maracaibo	86	Mexico City	91	Vancouver	94		
Mexico City	86	Montreal	91	Whitehorse	94	CONAKRY	
Miami	87	Moscow	91			Casablanca	88
Montego Bay	87	Oslo	91	COLOGNE			
Natal	87	Panama	91	Belfast	55	COPENHAGEN	
New Orleans	87	Paris	91	Berlin	59	Amsterdam	25
New York	87	Rio de Janeiro	91	Brussels	71	Anchorage	27
Panama	87	Rome	91	Bucharest	72	Ankara	29
Paris	87	San Juan	91	Budapest	74	Basle	46
Pointe a Pitre	87	Santa Maria	91	Cairo	79	Beirut	50
Port of Spain	87	Santiago	91	Copenhagen	94	Belien	53
Puerto Cabello	87	Shannon	91	Ousseldorf	95	Belfast	55
Quito	87	Stockholm	91	Frankfurt	95	Berlin	59
Recife	87	Tokyo	91	Geneva	95	Brussels	71
Rio de Janeiro	87	Toronto	92	Glasgow	95	Bucharest	72
San Juan	87	Vancouver	92	Hamburg	95	Budapest	74
Santa Maria	88	Vienna	92	Helsinki	95	Buenos Aires	76
Santiago	88	Warsaw	92	Istanbul	95	Cairo	79
Sao Paulo	88	Winnipeg	92	Keflavik	95	Casablanca	88
Toronto	88	Zurich	92	Lisbon	95	Chicago	90
				London	95	Cologne	94
CARTAGENA		CHITOSE		Madrid	95	Oakar	98
Barranquilla	45	Cold Bay	92	Moscow	95	Ousseldorf	98
		Tokyo	92	Munich	95	Frankfurt	98
CARUPANO		CHITTAGONG		New York	95	Geneva	98
Port-au-Prince	88	Dacca	92	Oslo	96	Glasgow	98
		Rangoon	92	Paris	96	Hamburg	98
CASABLANCA		CHRISTCHURCH		Prague	96	Helsinki	98
Accra	19	Auckland	36	Rome	96	Honolulu	98
Algiers	22	Melbourne	92	Santa Maria	96	Istanbul	99
Conakry	88	Nandi	92	Shannon	96	Johannesburg	99
Copenhagen	88	Osaka	92	Stockholm	96	Karachi	99
Dakar	88	Sydney	92	Teheran	96	Keflavik	99
Frankfurt	88			Tel Aviv-Jaffa	96	Lisbon	99
Jidda	88	CHUNG KING		Vienna	96	London	99
Johannesburg	88	Auckland	36	Warsaw	96	Los Angeles	99
Kano	88	Hong Kong	93	Zurich	96	Madrid	99
Khartoum	88	Manila	93			Montreal	99
Leopoldville	88	Nanking	93	COLOMBO		Moscow	99
Lisbon	89	Peking	93	Addis Ababa	20	Munich	99
London	89	Perling	93	Aden	21	New York	99
Madrid	89	Rangoon	93	Algiers	22	Oslo	99
Munich	89	Taipei	93	Athens	34	Paris	99
Nairobi	89			Baghdad	38	Perth	100
Natal	89	CHURCHILL		Bahrain	39	Prague	100
New York	89	Keflavik	93	Bangkok	40	Rio de Janeiro	100
Paris	89	London	93	Basra	48	Rome	100
Rome	89	Montreal	93	Beirut	49	San Francisco	100
Santa Maria	89	Ottawa	93	Bengasi	58	Santa Maria	100
Seville	89	Resolute Bay	93	Bombay	66	Seattle	100
Shannon	89	San Francisco	93	Cairo	79	Shannon	100
Tunis	89	Vancouver	93	Calcutta	82	Sondrestromfjord	100
Zurich	89	Whitehorse	93	Cocos Is.	94	Stockholm	100
				Damascus	96	Teheran	100
CHEROKEE SOUND		CIUDAD DEL CARMEN		Ohahrn	96	Tel Aviv-Jaffa	100
Sandy Point	90	Campeche	85	Osaka	97	Tokyo	100
				Hong Kong	97	Vienna	100
CHICAGO		CLEVELAND		Istanbul	97	Warsaw	101
Bermuda	61	Mexico City	94	Karachi	97	Zurich	101
Bogota	65	Montreal	94	Kuala Lumpur	97		
Bombay	66	Toronto	94	Lisbon	97	CORDOBA	
Buenos Aires	76			Madras	97	Buenos Aires	76

CUMANA		DAMASCUS (Continued)		OHAIHAN (Continued)		DUSSELDORF (Continued)	
Barcelona - - - - -	44	Beirut - - - - -	50	Djakarta - - - - -	-106	Glasgow - - - - -	-109
Caracas - - - - -	85	Bengasi - - - - -	58	Istanbul - - - - -	-106	Hamburg - - - - -	-109
CURACAO		Bombay - - - - -	66	Johannesburg - - - - -	-106	Helsinki - - - - -	-109
Bonaire - - - - -	69	Cairo - - - - -	79	Karachi - - - - -	-106	Istanbul - - - - -	-109
Caracas - - - - -	86	Calcutta - - - - -	83	Khartoum - - - - -	-107	Keflavik - - - - -	-109
CURITIBA		Colombo - - - - -	96	Lisbon - - - - -	-107	Lisbon - - - - -	-109
Rio de Janeiro - - - - -	-101	Ohaihan - - - - -	-104	London - - - - -	-107	London - - - - -	-109
DACCA		Frankfurt - - - - -	-104	Madrid - - - - -	-107	Madrid - - - - -	-110
Chittagong - - - - -	92	Jidda - - - - -	-104	Milan - - - - -	-107	Montreal - - - - -	-110
Karachi - - - - -	-101	Karachi - - - - -	-104	Moscow - - - - -	-107	Moscow - - - - -	-110
Lahore - - - - -	-101	Lisbon - - - - -	-104	Nairobi - - - - -	-107	Munich - - - - -	-110
Rangoon - - - - -	-101	Madrid - - - - -	-104	New Delhi - - - - -	-107	New York - - - - -	-110
DAKAR		Milan - - - - -	-104	Riyadh - - - - -	-107	Oslo - - - - -	-110
Accra - - - - -	19	New Delhi - - - - -	-104	Rome - - - - -	-107	Paris - - - - -	-110
Amsterdam - - - - -	25	Nicosia - - - - -	-104	Tehran - - - - -	-107	Prague - - - - -	-110
Asuncion - - - - -	32	Riyadh - - - - -	-104	Tel Aviv-Jaffa - - - - -	-107	Rome - - - - -	-110
Barcelona - - - - -	44	Rome - - - - -	-104	Tripoli - - - - -	-107	Santa Maria - - - - -	-110
Belm - - - - -	53	Tel Aviv-Jaffa - - - - -	-104	Tunis - - - - -	-107	Shannon - - - - -	-110
Bermude - - - - -	61	Tunis - - - - -	-104	BJAKARTA		Stockholm - - - - -	-110
Bogota - - - - -	65	DARWIN		Auckland - - - - -	36	Tehran - - - - -	-110
Brussels - - - - -	71	Auckland - - - - -	36	Bangkok - - - - -	40	Tel Aviv-Jaffa - - - - -	-110
Buenos Aires - - - - -	77	Bangkok - - - - -	40	Beirut - - - - -	50	Vienna - - - - -	-111
Cairo - - - - -	79	Brisbane - - - - -	70	Bombay - - - - -	67	Zurich - - - - -	-111
Caracas - - - - -	86	Cocos Island - - - - -	95	Cairo - - - - -	79	EAST LONDON	
Casablanca - - - - -	88	Colombo - - - - -	97	Calcutta - - - - -	83	Bloom Fontein - - - - -	64
Copenhagen - - - - -	98	Hong Kong - - - - -	-105	Colombo - - - - -	97	Durban - - - - -	-109
Dusseldorf - - - - -	-101	Johannesburg - - - - -	-105	Darwin - - - - -	-105	Port Elizabeth - - - - -	-111
Frankfurt - - - - -	-101	Manila - - - - -	-105	Ohaihan - - - - -	-106	EDMONTON	
Freestown - - - - -	-101	Melbourne - - - - -	-105	Hong Kong - - - - -	-108	Amsterdam - - - - -	25
Geneva - - - - -	-101	Mount Isa - - - - -	-105	Karachi - - - - -	-108	Anchorage - - - - -	27
Glasgow - - - - -	-101	Nairobi - - - - -	-105	Manila - - - - -	-108	Los Angeles - - - - -	-111
Hamburg - - - - -	-101	Perth - - - - -	-105	Madon - - - - -	-108	Montreal - - - - -	-111
Incirlik - - - - -	-101	Port Morsby - - - - -	-105	Manado - - - - -	-108	Ottawa - - - - -	-111
Istanbul - - - - -	-101	Singapore - - - - -	-105	Nairobi - - - - -	-108	Sandstromfjord - - - - -	-111
Johannesburg - - - - -	-102	Soerabaya - - - - -	-105	New Delhi - - - - -	-108	Toronto - - - - -	-111
Kano - - - - -	-102	Sydney - - - - -	-105	Padang - - - - -	-108	Vancouver - - - - -	-111
Lajes - - - - -	-102	Taipei - - - - -	-105	Perth - - - - -	-108	Winnipeg - - - - -	-111
Las Palmas - - - - -	-102	Tanarive - - - - -	-105	Rangoon - - - - -	-108	EL ADEH	
Leopoldville - - - - -	-102	Tokyo - - - - -	-106	Singapore - - - - -	-108	Aden - - - - -	21
Lisbon - - - - -	-102	DENVER		Taipei - - - - -	-108	Entebbe - - - - -	-111
London - - - - -	-102	Calgary - - - - -	84	Tanarive - - - - -	-108	Khartoum - - - - -	-111
Madrid - - - - -	-102	Honolulu - - - - -	-106	Tarakan - - - - -	-108	London - - - - -	-111
Marseille - - - - -	-102	San Juan - - - - -	-106	BONA QATAR		Sherjah - - - - -	-111
Montreal - - - - -	-102	Vancouver - - - - -	-106	Jidda - - - - -	-109	EL PASO	
Munich - - - - -	-102	DETROIT		DUBROVNIK		Mexico City - - - - -	-112
Nairobi - - - - -	-102	London - - - - -	-106	Bled - - - - -	64	ENTEBBE	
Natal - - - - -	-102	Mexico City - - - - -	-106	Rome - - - - -	-109	Cairo - - - - -	80
New Orleans - - - - -	-102	Montreal - - - - -	-106	Shapje - - - - -	-109	Capetown - - - - -	85
New York - - - - -	-103	Shannon - - - - -	-106	DURBAN		El Adem - - - - -	-111
Paris - - - - -	-103	Toronto - - - - -	-106	Capetown - - - - -	85	Johannesburg - - - - -	-112
Port of Spain - - - - -	-103	Vancouver - - - - -	-106	East London - - - - -	-109	Khartoum - - - - -	-112
Recife - - - - -	-103	OHAIHAN		Perth - - - - -	-109	Kisumu - - - - -	-112
Rio de Janeiro - - - - -	-103	Addis Abeba - - - - -	20	DUSSELDORF		Nairobi - - - - -	-112
Rome - - - - -	-103	Aden - - - - -	21	Amsterdam - - - - -	25	Rome - - - - -	-112
San Juan - - - - -	-103	Algiers - - - - -	22	Athens - - - - -	29	Salisbury - - - - -	-112
Santa Maria - - - - -	-103	Amsterdam - - - - -	25	Bangkok - - - - -	44	FAIRBANKS	
Tel Aviv-Jaffa - - - - -	-103	Ankara - - - - -	29	Beirut - - - - -	47	Seattle - - - - -	-112
Vienna - - - - -	-103	Athens - - - - -	34	Belfast - - - - -	55	PORTALEZA	
Zurich - - - - -	-103	Baghdad - - - - -	38	Berlin - - - - -	59	Belm - - - - -	53
DALLAS		Bangkok - - - - -	40	Brussels - - - - -	71	Leopoldville - - - - -	-112
Mexico City - - - - -	-103	Basra - - - - -	48	Bucharest - - - - -	72	Panama - - - - -	-112
Monterrey - - - - -	-103	Beirut - - - - -	50	Budapest - - - - -	74	Recife - - - - -	-112
Toronto - - - - -	-103	Bengasi - - - - -	58	Cairo - - - - -	79	PORT OF FRANCE	
DAMASCUS		Bombay - - - - -	66	Cologne - - - - -	95	Barbados - - - - -	42
Algiers - - - - -	22	Bucharest - - - - -	72	Copenhagen - - - - -	98	Pointe a Pitre - - - - -	-112
Athens - - - - -	34	Budapest - - - - -	74	Dakar - - - - -	-101	St. Lucia - - - - -	-112
Baghdad - - - - -	38	Calcutta - - - - -	83	Frankfurt - - - - -	-109		
Bangkok - - - - -	40	Colombo - - - - -	96	Geneva - - - - -	-109		
Basra - - - - -	48	Damascus - - - - -	-104				

FT. LAUDERDALE		FUNCHAL		GENEVA (Continued)		GUATEMALA CITY (Continued)	
Bimini -	64	Lisbon -	115	Tel Aviv-Jaffa -	118	San Pedro Sula -	121
Nassau -	112			Vienna -	118	San Salvador -	121
FRANKFURT		GAN		Warsaw -	119	Santo Domingo -	121
Amsterdam -	25	Aden -	21	Zurich -	119		
Anchorage -	27	Butterworth -	79			GUAYAQUIL	
Ankara -	29	Nairobi -	116			Bogota -	65
Athens -	34			GEORGETOWN		Houston -	121
Barcelona -	44	GANDER		Barbados -	42	Lima -	121
Basle -	47	Bermuda -	61	Trinidad -	119	Miami -	121
Beirut -	50	Boston -	69			New Orleans -	121
Belfast -	55	Goose Bay -	116	GIBRALTAR		New York -	121
Berlin -	59	Keflavik -	116	London -	119	Panama -	121
Brussels -	71	Lajes -	116	Madrid -	119	Quito -	122
Bucharest -	72	London -	116			Rio de Janeiro -	122
Budapest -	74	Montreal -	116	GLASGOW		Santiago -	122
Cairo -	80	Nassau -	116	Barcelona -	44		
Casablanca -	88	New York -	116	Basle -	47	HAMBURG	
Chicago -	90	Prerastwick -	116	Belfast -	55	Amsterdam -	25
Cologne -	95	Shannon -	116	Berlin -	59	Anchorage -	28
Copenhagen -	98			Bermuda -	62	Barcelona -	44
Dakar -	101	GAYA		Brussels -	71	Basle -	47
Damascus -	104	Calcutta -	83	Bucharest -	73	Beirut -	50
Dusseldorf -	109			Budapest -	75	Belfast -	55
Geneva -	113	GENEVA		Cairo -	80	Berlin -	59
Glasgow -	113	Amsterdam -	25	Chicago -	90	Brussels -	71
Hamburg -	113	Anchorage -	27	Cologne -	95	Bucharest -	73
Helsinki -	113	Ankara -	29	Copenhagen -	98	Budapest -	75
Istanbul -	113	Athens -	34	Dakar -	101	Cairo -	80
Keflavik -	113	Barcelona -	44	Dusseldorf -	109	Chicago -	90
Khartoum -	113	Basle -	47	Frankfurt -	113	Cologne -	95
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