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FORT GREELY MISSILE RANGE REFERENCE ATMOSPHERE (PART I)

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IRIG DOCUMENT 104-63

FORT GREELY MISSILE RANGE
REFERENCE ATMOSPHERE
(PART I)

October 6, 1964

Prepared by

Range Reference Atmosphere Committee
Meteorological Working Group
Inter-Range Instrumentation Group

Published November 1964 by the Secretariat

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ABSTRACT

The IRIG Range Reference Atmosphere, which is presented in this document, is one in a series to be published by the Inter-Range Instrumentation Group/Meteorological Working Group. Part I contains an explanation of the basic data, computational procedures, and the resulting values tabulated for altitude intervals between mean sea level and 30 km altitude. Monthly and annual thermodynamic values and wind quantities are tabulated in Part I. The thermodynamic quantities are height (gpm), pressure (kg f m^{-2}), pressure (mb), temperature ($^{\circ}\text{K}$), virtual temperature ($^{\circ}\text{K}$), density (g m^{-3}), speed of sound (m sec^{-1}), relative humidity (%), and vapor pressure (mb) tabulated at 250 m intervals of geometric altitude. The wind quantities are scalar wind, zonal and meridional component values (m/sec) for eleven cumulative percentage frequency levels tabulated at 1 km intervals from 0 to 27 or 30 km altitude. A separate document for Part I will be issued for each of the several IRIG Range Reference Atmospheres. Part II will extend the tabulations of Part I for seasonal and annual periods to 50 km altitude and for summer and winter periods to 90 km altitude. Not all parameters can be presented in as much detail for the 30 to 90 km altitude region as for the 0 to 30 km interval. Part III will contain information on the variability of the principal atmospheric parameters from 0 to 90 km altitude.

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LIST OF SYMBOLS AND ABBREVIATIONS

$^{\circ}\text{C}$	degrees, in thermodynamic Celsius scale
C_s	speed of sound
e_a	actual vapor pressure
e_s	saturation vapor pressure with respect to water
g	acceleration due to gravity, also gram
gpm	geopotential meter
H	geopotential height
kg	kilogram (mass)
kgf	kilogram (force)
km	kilometer
M	mean molecular weight of air
m	meter
mb	millibar
N	Avogadro's number
P	pressure
R^*	universal gas constant
r'	parameter to convert geopotential to geometric altitude (gpm)
r^*	parameter to convert geopotential to geometric altitude (m)
S	Sutherland's constant
sec	second
T	temperature in absolute thermodynamic scales
T_i	ice-point temperature in absolute thermodynamic scales
T_t	triple point temperature of water
T^*	virtual temperature
t	temperature in nonabsolute thermodynamic scales; also, day of year
U	relative humidity
Z	altitude in geometric measure
β	constant used in Sutherland's viscosity equation
γ	ratio of specific heats
ρ	mass density
σ	effective collision diameter of a mean air molecule
Φ	geopotential
φ	geographic latitude

FOREWORD

Atmospheric parameters are essential to the research and development of missiles and aerospace vehicles. The need for realistic atmospheric models derived from consistent basic information and tabulated in a consistent format for each of the several major missile test ranges has been recognized. An atmospheric model which is derived from statistical data from a particular geographical location is referred to as a reference atmosphere. To implement a program to satisfy this need for reference atmospheres for the several missile test ranges, the Inter-Range Instrumentation Group, Meteorological Working Group (IRIG/MG), appointed an ad hoc committee in November 1960. This committee is referred to as the IRIG Range Reference Atmosphere Committee. This committee was charged with the task of establishing reference atmospheres which would be consistent in data tabulation and derivation and would represent the average atmospheric conditions with respect to height for specific geographical locations.

The IRIG Range Reference Atmosphere Committee consists of representatives from the U. S. Air Force, U. S. Army, National Aeronautics and Space Administration, U. S. Navy and U. S. Weather Bureau. Active working members and their organizations included:

Mr. R. Leviton, Geophysics Research Directorate AFCRL, OAR
*Dr. A. Court, Geophysics Research Directorate AFCRL, OAR
Mr. A. Kantor, Geophysics Research Directorate AFCRL, OAR
Mr. A. Cole, Geophysics Research Directorate AFCRL, OAR
Lt. Col. P. E. Romo, 4th Weather Group Det. 11, AWS
Mr. R. Ferrell, Climatic Center, Air Weather Service, USAF
Mr. R. Quiroz, Climatic Center, Air Weather Service, USAF
Mr. W. L. Webb, Electronics R & D Activity, USA
Mr. K. Jenkins, Electronics R & D Activity, USA
Mr. M. Lowenthal, Signal Corps, R. & D Laboratory, USA
Mr. W. Vaughan, (Chairman), George C. Marshall Space Flight Center, NASA
Mr. O. E. Smith, (Alt. Chairman), George C. Marshall Space Flight Center, NASA
Mr. G. Daniels, George C. Marshall Space Flight Center, NASA
Dr. W. Nordberg, Goddard Space Flight Center, NASA
Mr. J. Spurling, Wallops Station, NASA
Mr. R. Tolefson, Langley Research Center, NASA
Mr. J. Masterson, Pacific Missile Range, Navy
Mr. H. Wobus, Navy Weather Research Facility

*Present affiliation Lockheed-California

Mr. V. Rockney, U. S. Weather Bureau
Mr. L. Harrison, U. S. Weather Bureau
Mr. B. Ratner, U. S. Weather Bureau
Mr. S. Teweles, U. S. Weather Bureau

Committee members responsible for the preparation of principal atmospheric data for specific missile test ranges are as follows:

Atlantic Missile Range, Mr. O. E. Smith and Lt. Col. Romo
Eglin Gulf Test Range, Mr. R. Leviton and Dr. A. Court
Pacific Missile Range, Mr. J. Masters and Mr. H. Wobus
Wallops Test Range, Mr. J. Spurling and Mr. R. Tolefson
White Sands Missile Range, Mr. W. Webb and Mr. K. Jenkins
Fort Greely, Mr. W. Webb and Mr. K. Jenkins
Fort Churchill, Mr. W. Webb and Mr. K. Jenkins

Plans are to establish range reference atmospheres for the following locations:

1. Atlantic Missile Range
 - (a) Cape Kennedy
 - (b) Ascension Island
2. Eglin Gulf Test Range
3. Pacific Missile Range
 - (a) Point Mugu
 - (b) Eniwetok
4. Wallops Test Range
5. White Sands Missile Range
6. Fort Greely
7. Fort Churchill

All final computations were performed by the George C. Marshall Space Flight Center, Data Reduction Branch, under the technical supervision of Mr. P. Harness. The control of the final computations was under the direction of Mr. O. E. Smith.

The members of the editorial board are Mr. H. Wobus, (Chairman), Mr. A. Kantor, Mr. G. Daniels, and Mr. O. E. Smith.

Since the appointment of the IRIG Range Reference Atmosphere Committee in November 1960 continued improvement in atmospheric measurements and more frequent atmospheric measurements are rapidly advancing a better understanding of the structure of the atmosphere. This is particularly true in the altitude region between the normal ceiling of rawinsonde measurements (30 km altitude) and that of minima satellite levels near 200 km altitude. Due to this period of rapid growth in understanding the structure of the atmosphere between 30 and 200 km altitude, any detailed atmospheric model that is established at this time is very likely to be replaced when more and improved measurements are made. Therefore, any atmospheric model for altitudes above 30 km must be considered speculative. It is also realized that rapid advances in missile

and aerospace programs cannot await the final confirmation of atmospheric models by atmospheric measurements yet to be made. For these reasons the IRIG Range Reference Atmosphere Committee has decided to publish the Range Reference Atmospheres in a series of separate documents. The organization of these documents is as follows: Part I will contain information on the thermodynamic quantities and wind for each month and annual for the first 30 km altitude. Part I will be issued as a separate IRIG technical document for each Range Reference Atmosphere. Part II will extend thermodynamic quantities for seasonal periods up to 50 km altitude and for summer and winter conditions to 90 km altitude. Part III will contain information on the variability of the principal thermodynamic quantities and wind from surface to 90 km altitude.

The chairman and alternate chairman wish to extend their gratitude to all participants who have contributed in the many technical ways to the establishment of the IRIG Range Reference Atmospheres. Special thanks are extended to the United States Committee on Extension to the Standard Atmosphere (COESA) for the free exchange of scientific information which has been particularly beneficial to the efforts of the IRIG Range Reference Atmosphere Committee.

William W. Vaughan
Chairman, IRIG Range Reference
Atmosphere Committee

Orvel E. Smith
Alternate Chairman, IRIG Range Reference
Atmosphere Committee

SECTION I THERMODYNAMIC QUANTITIES

I.0 INTRODUCTION

Within Section I the basic data and procedure used in deriving the thermodynamic quantities and the resulting tabulations for the first 30 km altitude will be discussed. Section II will describe the basic wind data computational procedures and the resulting tabulations.

The procedure most often used in establishing a model atmosphere has been to assume a simple temperature-altitude relationship and then derive all desired quantities in terms of this relationship. Water in the gaseous stage (water vapor) is usually neglected as a constituent of the air. Since one major purpose of the IRIG Range Reference Atmospheres is to provide an empirical model of atmospheric parameters most often needed for the missile test ranges, moisture and wind quantities must be included.

Simple empirical equations to express the physical relations for saturation vapor pressure, virtual temperature, and geopotential have been used rather than the more exact equations. This has been done to facilitate a more widespread use of high-speed electronic computers for particular applications of these reference atmospheres to missile and aerospace problems.

I.1 BASIC THERMODYNAMIC DATA

The basic data for the first 30 km altitude were from radiosonde and rawinsonde measurements. Frequency distributions were prepared from the basic radiosonde observations between 0 and 30 km by the U. S. Weather Bureau, National Weather Records Center, or Air Weather Service, Data Control Division. The following frequency distributions were obtained for Standard Pressure Levels (see Table A):

(a) Frequency distributions of geopotential heights for the standard pressure levels with a class interval of 20 m.

(b) Two-way frequency distributions of temperature and relative humidity with class intervals of 2°C and 10% respectively.

(c) Frequency distributions of density with a class interval of 0.001 kgm⁻³.

Both annual and monthly frequency distributions were obtained.

Data from Fairbanks, Alaska, were used to form the basic data in the development of the Fort Greely Range Reference Atmosphere. Data from Fort Greely, Alaska, and Northway, Alaska, were used for comparison purposes (see Appendix).

TABLE A
STANDARD PRESSURE LEVELS (mb)

1000	600	200	40
950	550	175	30
900	500	150	25*
850	450	125	20
800	400	100	15*
750	350	80	10
700	300	60	
650	250	50	

*Not used for early periods of record.

I. 2 COMPUTATIONAL PROCEDURES

I. 2. 1 COMPUTATION OF MEDIAN VALUES. The first step in the computational procedures is that of obtaining the monthly and annual median values for geopotential height, temperature, and density; at standard pressure levels. The median relative humidity values were determined from the cumulative frequency corresponding to the class interval in which the median temperature occurred. The median relative humidity was so selected in order to obtain a value more closely associated with the median temperature than if the median relative humidity were selected from the total population. In determining the relative humidity values it was assumed that the relative humidity values tabulated as unknown in the frequency distributions were due to values lower than 20 percent relative humidity. If one-half or more of the total number of relative humidity observations for a specific level were listed as unknown, no relative humidity values are given in the reference atmosphere for that level!

It should be noted that the resulting statistical values for relative humidity will be, in general, higher than the arithmetic average. This is due to the skewness of the frequency distributions and because only a part of the total sample has been used in determining the median relative humidity.

This task was performed by the committee members responsible for the basic data for their respective missile test ranges.

I. 2. 2 DERIVED MEDIAN GEOPOTENTIAL HEIGHTS. The second step is the derivation of the first approximation for the median geopotential height of the standard pressure levels. This derivation uses the median values of temperature, and median relative humidity associated with the median temperature, and the median geopotential height at standard pressure levels in the following expressions.

I. 2. 3 SATURATION VAPOR PRESSURE. The empirical equation adopted for the determination of saturation vapor pressure with respect to water is as follows:

$$\begin{aligned} \ln e_s = & 24.858048(1 - T_t/T) - 5.028 \ln(T/T_t) \\ & + 3.464807[\exp - 9.21032] \cdot [1 - \exp - 19.104276(T/T_t - 1)] \\ & + 0.987185 \exp - 6.90774[\exp \{10.98227(1 - T_t/T)\} - 1] \\ & + 1.81015 \end{aligned}$$

where $T_t = 273.16$ °K and $T = 273.15 + t$ °C.

$$e_s = \exp \ln e_s, \text{ expressed in mb} \quad \text{Eq. (1)\#}$$

I. 2. 4 ACTUAL VAPOR PRESSURE. The median vapor pressure was obtained by:

$$e_a = e_s U \quad \text{Eq. (2)}$$

where U is relative humidity.

I. 2. 5 VIRTUAL TEMPERATURE. The following empirical equation for virtual temperature was used:

$$T^* = T \left[\frac{P + 0.00123 e_a}{P - 0.37812 e_a} \right] \quad \text{Eq. (3)}$$

I. 2. 6 DERIVED GEOPOTENTIAL HEIGHTS. Using the foregoing definitions and equations the first approximation to the median geopotential height of the standard pressure levels is defined by:

$$H_{\text{derived}} = H_1 + \sum_{n=1}^n (-) A T_m^* \ln \frac{P_n}{P_{n-1}} \quad \text{Eq. (4)}$$

where H_1 is the median height of the first standard pressure level above the station elevation.

$$A = \frac{R^*}{M} \div \text{unit geopotential}$$

#Footnote: This equation was formulated by J. Goff in August 1960, and communicated to the IRIG Range Reference Atmosphere Committee by L. P. Harrison in June 1962. Goff's expression used common logarithms. Appropriate changes have been made to convert to the Napierian System to facilitate computations.

Using the COESA standard values for pressure, temperature, and density from Table C, and adopting $98066.5 \text{ cm}^2 \text{ sec}^{-2}$ as the unit geopotential the computation yields:

$$\frac{R^*}{M} = 2.87052874 \times 10^6 \text{ cm}^2 / \text{sec}^2 \text{ } ^\circ\text{K}$$

and

$$A = 2.87052874 \times 10^6 + 98066.5 = 29.271246 \text{ gpm } (^\circ\text{K})^{-1}$$

T_m^* is $\frac{T_n + T_{n-1}}{2}$, the mean virtual temperature between two consecutive pressure levels, n and $n - 1$, and $P_{n-1} > P_n$.

The molecular weight of air (M) is considered constant from sea level to 90 km altitude. The numerical value for M is derived from the primary physical constants P_0 , ρ_0 , t_0 , R^* , and N as given in Table C. Avogadro's number, N , is based on the scale $C^{12} = 12.0000$. For computation purposes M is taken to be 28.9644. A more complete discussion of molecular weight and, in particular, variations with respect to altitudes above 90 km is given in reference 2.

1.2.7 ADJUSTMENTS TO THE DERIVED GEOPOTENTIAL HEIGHTS. The derived geopotential heights of the standard pressure levels are not necessarily the same as the median geopotential heights. The following procedure has been found experimentally effective in reducing the differences between the derived and median heights (ref. 1).

Let the differences between the derived and median geopotential heights be denoted as H' :

$$H' = H_{\text{derived}} - H_{\text{median}}$$

The differences (H') versus the logarithm of pressure approximate a straight line. A linear regression equation is fitted to H' , which is:

$$H' = a + b (\ln P - \ln P_1) \quad \text{Eq. (5)}$$

where the constants a and b are determined by the method of least squares. Now by differentiating equation (5) yields:

$$dH' = + b \frac{dP}{P}. \quad \text{Eq. (6)}$$

Noting that the hydrostatic equation in differential form is

$$dH = - AT^* \frac{dP}{P},$$

equation 6 is set identical to dH, i. e. ,

$$dH' \equiv dH \text{ as a first and sufficient approximation.}$$

Solving for T^* yields:

$$T^* = \frac{b}{A} = \delta T^*$$

and this small increment of virtual temperature is set equal to δT^* in order to avoid confusion in notations.

The value for δT^* is the adjustment that is added algebraically to the derived virtual temperature in equation 4 to reduce the magnitude of H' . The constant, \underline{a} , is subtracted from the median geopotential height of the first standard pressure level.

The monthly and annual values for the constants \underline{a} and δT^* for Fairbanks are tabulated in Table B.

TABLE B
REGRESSION CONSTANTS FOR FAIRBANKS

Month	\underline{a}	δT^*	Month	\underline{a}	δT^*
January	3.965	0.071	July	3.527	0.019
February	4.559	0.055	August	-0.125	-0.022
March	4.175	0.106	September	2.969	0.066
April	0.465	0.009	October	4.255	-0.030
May	-1.013	-0.053	November	1.461	-0.012
June	-0.379	-0.073	December	1.090	0.023
			Annual	4.682	0.042

In order to obtain smooth interpolations for the thermodynamic quantities versus altitude, the median temperature and relative humidity at the standard pressure levels are interpolated by a fourth degree polynomial for 10 mb intervals. These interpolated values are then substituted in the equation:

$$H_{RRA} = H_1 - a + \sum_{n=1}^n (-) A (T_m^* + \delta T^*) \ln \frac{P_n}{P_{n-1}} \quad \text{Eq. (7)}$$

The terms are as defined previously and H_{RRA} refers to adjusted pressure-heights for the Range Reference Atmosphere (RRA).

I.3 GEOPOTENTIAL TO GEOMETRIC ALTITUDE CONVERSION

A rigorous treatment of the relationships between geopotential, geopotential height and geometric altitude can be found in reference 2. For the altitude range of concern for the IRIG Range Reference Atmospheres, the simple relations as given in reference 3 are used. No significant loss

in accuracy is recognized in using the following equation. Let geopotential ($m^2 \text{ sec}^{-2}$) be defined by:

$$\Phi = \int_0^Z g dZ \quad \text{Eq. (8)}$$

where g is acceleration of gravity, and Z is geometric height above mean sea level.

The unit geopotential for the IRIG Range Reference Atmospheres is taken to be $98066.5 \text{ cm}^2 \text{ sec}^{-2}$. Thus, geopotential height in terms of geopotential meter (s) is given by:

$$H = \frac{1}{9.80665} \int_0^Z g dZ$$

Continuing with the procedure given in reference 3, the equation relating geopotential height to geometric altitude is as follows:

$$Z = \frac{r^*}{\frac{\Phi}{r'} - 1} \quad \text{Eq. (9)}$$

where r^* and r' are parameters which are a function of latitude.

$$r^* = - \frac{2g\phi}{\left(\frac{\partial g}{\partial Z}\right)_{Z=0}}$$

and

$$-\left(\frac{\partial g}{\partial Z}\right)_{Z=0} = 3.085462 \times 10^{-6} + 2.27 \times 10^{-9} \cos 2\phi - 2 \times 10^{-12} \cos 4\phi$$

r^* has the units meter.

r' is derived from r^* by the relation:

$$r' = \frac{g_\phi r^*}{9.80665}$$

r' has the units geopotential meter.

1.3.1 INTERPOLATIONS FOR GEOMETRIC ALTITUDES. The geopotential heights as obtained from equation (7) are converted to geometric altitude by equation (9). Then the temperature, pressure, and relative humidity values are interpolated with respect to geometric altitude at 250 m intervals.

1.3.2 EXTRAPOLATIONS TO MEAN SEA LEVEL. Pressure and temperature are linearly extrapolated from the height of the first standard

pressure level to mean sea level. Relative humidity is held constant from the first standard pressure level to mean sea level in order to avoid physically unreasonable values. All other thermodynamic quantities are derived from these extrapolated values. It is recognized that extrapolated quantities below the station elevation are fictitious values, but are included for reason of continuity and to hold the mean sea level as a common height reference for all range reference atmospheres. The extrapolated data are easily recognized from Table I () because the height of the first standard pressure level will not correspond to a geometric altitude increment of 250 m. The first standard pressure level for this reference atmosphere is taken to be 950 mb.

I. 4 DERIVED THERMODYNAMIC QUANTITIES FOR TABLE I ()

From the interpolated and extrapolated values of temperature, pressure, and relative humidity versus geometric altitude all other quantities as given in Table I () are derived. The following summary statements are given to explain the control of the final computations for Table I ().

(1) Geopotential height is derived from geometric altitude using equation (9). Due to round-off procedures the geopotential height of the first standard pressure level will appear on some tables as a slightly higher value (always less than 1 unit) than the corresponding geometric altitude.

(2) Pressure in the units, kilogram force per square meter (kgf m^{-2}) is obtained by converting the pressure in mb to newton ($1 \text{ mb} \times 100 = 1 \text{ newton m}^{-2}$) and dividing by standard gravity, $9.80665 \text{ m sec}^{-2}$.

(3) Virtual temperature is derived from temperature, pressure, and relative humidity by equation (3).

(4) The analytical expression for density is:

$$\rho = \frac{M}{R^*} \frac{P}{T^*}$$

For density in the units, g m^{-3} , using the pressure in mb virtual temperature in $^{\circ}\text{K}$, the computational equation is:

$$\rho = 0.34836787 \times 10^3 \frac{P}{T^*}$$

The derived density values were compared with the median values as a control check. It is concluded from reference 1 that the differences in derived density and the median density values are less than 1%.

(5) The analytical expression for the speed of sound is:

$$C_s = \left(\gamma \frac{R^*}{M} T^* \right)^{\frac{1}{2}}$$

For computational purposes the speed of sound is given by:

$$C_s = 20.046707 (T^*)^{\frac{1}{2}}$$

The computational procedure used in deriving Table I () yields numerical values consistent with the defining physical equations. The tabular values for virtual temperature and pressure as a function of altitude are closely approximated by the hydrostatic equation. There is good agreement between the tabular values and the original statistical values.

I.5 ADOPTED PRIMARY CONSTANTS

The IRIG Range Reference Atmosphere Committee has agreed to adopt the primary physical constants established by COESA. The numerical values are given in Table C. It is recommended that these values be used as a basis for comparison of the Range Reference Atmosphere with the U. S. Standard Atmosphere 1962.

TABLE C
PRIMARY PHYSICAL CONSTANTS

<i>Symbol</i>	<i>Metric units (mks)</i>	<i>English units (ft-lb-sec)</i>
P_0	1.013250×10^5 newtons m^{-2}	2116.22 lbf ft^{-2}
ρ_0	1.2250 $kg\ m^{-3}$	0.076474 lb ft^{-3}
t_0	15° C	59.0° F
g_0	9.80665 $m\ sec^{-2}$	32.1741 $ft\ sec^{-2}$
S	110.4° K	198.72° R
T_1	273.15° K	491.67° R
β	$1.458 \times 10^{-6}\ kg\ sec^{-1} m^{-1} (^{\circ}K)^{-1/2}$	$7.3025 \times 10^{-7}\ lb\ ft^{-1} sec^{-1} (^{\circ}R)^{-1/2}$
γ	1.40 (dimensionless)	1.40 (dimensionless)
σ	$3.65 \times 10^{-10}\ m$	$1.1975 \times 10^{-9}\ ft$
N	$6.02257 \times 10^{23}\ (kg\text{-mol})^{-1}$	$2.73179 \times 10^{25}\ (lb\text{-mol})^{-1}$
R^*	8.31432 joules $(^{\circ}K)^{-1}\ mol^{-1}$	1545.31 $ft\ lb\ (lb\text{-mol})^{-1}\ (^{\circ}R)^{-1}$

Subscript 0 indicates standard sea level values.

The mean molecular weight of air (M) is considered constant from sea level to 90 km altitude and is taken to be 28.9644 (dimensionless).

SECTION II WIND QUANTITIES

II.0 INTRODUCTION

Probably no other single atmospheric parameter receives as much attention with regard to missile and aerospace vehicle operations at missile test ranges as does wind. Wind is the most difficult of all atmospheric parameters to summarize in a statistical form to satisfy the many diverse applications of wind data for missile and space vehicle programs. The IRIG Range Reference Atmosphere Committee has attempted to present the wind quantities that have the greatest common use. The wind statistics presented in this section are monthly and annual values at selected percentiles for scalar wind, zonal and meridional wind components. These tabulations will not satisfy all needs for information on wind quantities, but they should prove helpful as a common reference in comparing wind statistics from the several missile test ranges.

II.1 BASIC WIND DATA

The rawinsonde, AN/GMD () Upper Air Sounding System, provides the principal wind measurements from 0 to 30 km altitude. These wind measurements are stored at the U. S. Weather Bureau, National Weather Records Center or the Air Weather Service, Data Control Division. The basic wind data correspond to Weather Bureau Card Deck 532 previous to 1956 and Card Deck 535 since 1956. In addition to these card decks NASA George C. Marshall Space Flight Center (Aero-Astroynamics Laboratory) has sponsored a program on a cross service order to the U. S. Weather Bureau to establish Card Deck 600. Wind data in the form of Card Deck 535 were used for Fort Greely Missile Range, Alaska. The period of record for Card Deck 535 as furnished to the IRIG Range Reference Atmosphere Committee for Fairbanks, Alaska, is from January 1956 to January 1961 (see Appendix). The wind data in the form of these card decks were made available to the IRIG Range Reference Atmosphere Committee through the sponsorship of the individual committee members and their agencies who were responsible for this task.

II.2 COMPUTATIONAL PROCEDURES

II.2.1 DEFINITION OF WIND QUANTITIES. The following definitions for wind quantities are used.

(1) Scalar Wind - wind speed without regard to direction.

(2) Zonal Wind - the wind component in the west-east or east-west direction, positive for wind components from the west, negative for wind components from the east.

(3) Meridional Wind - the wind component in the south-north or north-south direction, positive for wind components from the south, negative for wind components from the north.

II. 2. 2 CUMULATIVE PERCENTAGE FREQUENCIES. After the wind records had been checked for errors as described in reference 4, the zonal and meridional wind components were computed. Cumulative percentage frequencies were then formed for monthly and annual reference periods at each altitude for the scalar and wind components. From these cumulative percentage frequencies the wind statistics corresponding to eleven percentiles were determined. These percentiles are the principal headings of Table II ().

A particular feature of the tabulations for scalar wind (Tables II. 1 through II. 13) is that the maximum and minimum scalar winds have been listed. The column heading designated as direction gives the direction from which the maximum and minimum wind speed occurred if the extreme wind value occurred only once during the period of record.

APPENDIX

BASIC DATA FOR THE FORT GREELY MISSILE RANGE REFERENCE ATMOSPHERE

The purpose of this appendix is to discuss the basic data used in the development of the Fort Greely Range Reference Atmosphere.

Any representation of a reference atmosphere must be based on a sufficient number of valid observations so that large fluctuations which often appear in meteorological data do not overly influence measures of central tendency.

The basic data for Fort Greely, Alaska, as furnished to the IRIG Range Reference Atmosphere Committee, do not satisfy this criterion. The annual median values of thermodynamic parameters are based on 1150 observations at the 950 mb level and on 83 observations at the 10 mb level. Wind observations were taken in the years of 1957 and 1958, but the number of observations is very limited. In fact, there were no observations during the months of February, March, April, May, and November.

Basic data for Fairbanks, Alaska, as furnished to the IRIG Range Reference Atmosphere Committee, contain a much larger number of observations. The annual median values of thermodynamic parameters are based on 8868 observations at the 950 mb level and on 234 observations at the 10 mb level. Wind observations were taken over a period of twelve years, with the total number of observations for each month exceeding 500.

A slight difference (less than 1%) is noted when the median values of various atmospheric parameters from Fort Greely are rigorously compared to the median values of respective parameters from Fairbanks. This difference in basic data, however, does not affect the reference atmosphere to a great extent. Due to the scarcity of data from Fort Greely, the best representation of the Fort Greely Missile Range Reference Atmosphere must be based on the basic data from Fairbanks, Alaska.

REFERENCES

1. SMITH, O. E. : A Reference Atmosphere for Patrick AFB, Florida (Annual). NASA Technical Note D-595, March 1961.
2. U. S. Standard Atmosphere, 1962. Prepared under sponsorship of National Aeronautics and Space Administration, United States Air Force, United States Weather Bureau, available through U. S. Government Printing Office, Washington 25, D. C. , December 1962.
3. LIST, R. , Editor: Smithsonian Meteorological Tables. Sixth Revised Edition, Smithsonian Institution, 1951.
4. ESSENWANGER, O. M. , BRADFORD, R. W. , and VAUGHAN, W. W. : On Verification of Upper Air Winds by Vertical Shears and Extreme Winds. Monthly Weather Review, June 1961.
5. Atlantic Missile Range Reference Atmosphere for Cape Kennedy, Florida, (Part I). Prepared by Range Reference Atmosphere Committee. Meteorological Working Group of the Inter-Range Instrumentation Group, IRIG Document 104-63, April 16, 1963.

Previous Publications of the IRIG Range Reference Atmospheres

- (1) Atlantic Missile Range Reference Atmosphere for Cape Kennedy, Florida, Document 104-63, April 16, 1963.
- (2) White Sands Missile Range Reference Atmosphere for White Sands Missile Range, New Mexico, Document 104-63, June 28, 1964.
- (3) Fort Churchill Missile Range Reference Atmosphere for Fort Churchill, Manitoba, Canada, Document 104-63, August 7, 1964.
- (4) Pacific Missile Range Reference Atmosphere for Eniwetok, Marshall Islands, Document 104-63, September 1, 1964.

NOTES ON TABULAR VALUES FOR PRESSURE AND DENSITY

The two digit number preceded by a plus sign as the last two entries for these columns indicates the power of 10 by which the principal values must be multiplied, considering that the decimal point precedes the first digit of the principal value.

For example, a tabular value indicated as 102068+04 is 1020. 68.

IRIG - RANGE REFERENCE ATMOSPHERE, JANUARY

TABLE I.1

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
			LATITUDE	LONGITUDE			FORT GREELY MISSILE RANGE LAUNCH SITE		
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960				
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgm ⁻²	mb	degrees K	degrees K	gm ⁻³	m sec ⁻¹	percent	mb
0	0.0	103245+05	101249+04	255.47	255.56	13602+04	320.469	58	0.886
250	250.6	100056+05	981213+03	256.84	256.94	13304+04	321.336	58	0.995
500	500.6	968730+04	950600+03	258.21	258.32	12811+04	322.200	58	1.114
750	751.6	937372+04	919248+03	259.64	259.78	12327+04	323.108	63	1.378
1000	1002.2	907114+04	889575+03	260.64	260.61	11882+04	323.749	66	1.549
1250	1252.6	877651+04	860721+03	261.30	261.49	11467+04	324.169	66	1.443
1500	1503.1	849481+04	833057+03	261.25	261.44	11100+04	324.139	64	1.588
1750	1753.6	822171+04	806274+03	260.67	260.84	10768+04	323.768	61	1.448
2000	2004.0	795507+04	780126+03	259.73	259.69	10457+04	323.176	58	1.265
2250	2254.4	769763+04	754880+03	258.51	258.65	10167+04	322.435	57	1.126
2500	2504.8	744604+04	730207+03	257.23	257.37	98838+03	321.606	60	1.069
2750	2755.2	720255+04	706368+03	255.86	255.99	96127+03	320.741	61	0.974
3000	3005.5	696524+04	683067+03	254.42	254.54	93487+03	319.829	57	0.865
3250	3255.9	673415+04	660394+03	252.95	253.05	90915+03	318.894	53	0.601
3500	3506.2	651056+04	638508+03	251.48	251.57	88419+03	317.960	55	0.607
3750	3756.5	629253+04	617126+03	249.98	250.06	85973+03	317.006	58	0.558
4000	4006.7	608075+04	596318+03	248.73	248.51	83593+03	316.021	57	0.479
4250	4257.0	587450+04	576092+03	246.83	246.90	81286+03	314.992	54	0.389
4500	4507.2	567406+04	556435+03	245.16	245.21	79052+03	313.916	51	0.318
4750	4757.5	547926+04	537332+03	243.39	243.44	76895+03	312.777	54	0.284
5000	5007.6	528955+04	518767+03	241.62	241.66	74782+03	311.638	53	0.237
5250	5257.8	510403+04	500534+03	239.89	239.92	72677+03	310.513	49	0.183
5500	5508.0	492522+04	483000+03	238.30	238.32	70604+03	309.472	29	0.095
5750	5758.1	475179+04	465991+03	236.69	236.70	68583+03	308.420	12	0.035
6000	6008.2	458359+04	449497+03	235.03	235.03	66625+03	307.331	4	0.011
6250	6258.3	441851+04	433308+03	233.34	233.34	64692+03	306.221		
6500	6508.4	425979+04	417743+03	231.64	231.64	62826+03	305.103		
6750	6758.5	410424+04	402489+03	229.95	229.95	60975+03	303.993		
7000	7008.5	395497+04	387850+03	228.37	228.37	59166+03	302.941		
7250	7258.5	380879+04	373514+03	226.81	226.81	57371+03	301.905		
7500	7508.5	366871+04	359777+03	225.32	225.32	55626+03	300.914		
7750	7758.5	353185+04	346336+03	223.87	223.67	53895+03	299.942		
8000	8008.5	339839+04	333268+03	222.49	222.49	52182+03	299.018		
8250	8258.4	326943+04	320621+03	221.22	221.22	50489+03	298.167		
8500	8508.3	314660+04	308595+03	220.18	220.18	48825+03	297.465		
8750	8758.2	302714+04	296861+03	219.15	219.15	47190+03	296.767		
9000	9008.1	291112+04	285483+03	218.29	218.29	45561+03	296.180		
9250	9258.0	279911+04	274499+03	217.69	217.69	43928+03	295.774		
9500	9507.8	269128+04	263924+03	217.40	217.40	42292+03	295.577		
9750	9757.6	258765+04	253762+03	217.41	217.41	40662+03	295.583		
10000	10007.4	248827+04	244016+03	217.86	217.86	39019+03	295.894		
10250	10257.2	239310+04	234683+03	218.46	218.46	37423+03	296.300		
10500	10507.0	230201+04	225750+03	219.07	219.07	35899+03	296.713		
10750	10756.7	221484+04	217202+03	219.63	219.63	34451+03	297.092		
11000	11006.5	213144+04	209023+03	220.11	220.11	33082+03	297.416		
11250	11256.2	204804+04	200845+03	220.59	220.59	31718+03	297.739		
11500	11505.9	197080+04	193270+03	220.89	220.89	30481+03	297.942		
11750	11755.5	189572+04	185907+03	221.16	221.16	29284+03	298.124		
12000	12005.2	182470+04	178942+03	221.38	221.38	28158+03	298.274		
12250	12254.8	175559+04	172165+03	221.60	221.60	27066+03	298.418		
12500	12504.4	168853+04	165627+03	221.79	221.79	26016+03	298.545		
12750	12754.0	162606+04	159462+03	221.92	221.92	25032+03	298.637		
13000	13003.6	156491+04	153466+03	222.04	222.04	24078+03	298.713		
13250	13253.1	150565+04	147674+03	222.11	222.11	23161+03	298.766		
13500	13502.6	144900+04	142099+03	222.17	222.17	22282+03	298.800		
13750	13752.2	139426+04	136740+03	222.19	222.19	21439+03	298.819		
14000	14001.6	134186+04	131591+03	222.20	222.20	20631+03	298.826		
14250	14251.1	129129+04	126642+03	222.20	222.20	19855+03	298.824		
14500	14500.6	124289+04	121886+03	222.17	222.17	19112+03	298.804		
14750	14750.0	119628+04	117315+03	222.14	222.14	18398+03	298.785		
15000	14999.4	115150+04	112923+03	222.12	222.12	17710+03	298.773		
15250	15248.8	110849+04	108706+03	222.12	222.12	17049+03	298.770		
15500	15498.2	106723+04	104660+03	222.13	222.13	16414+03	298.776		
15750	15747.5	102557+04	100613+03	222.14	222.14	15779+03	298.782		

(CONTINUED) IRIG-RANGE REFERENCE ATMOSPHERE, JANUARY TABLE I.1

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgm ⁻²	mb	degrees K	degrees K	g m ⁻³	m sec ⁻¹	percent	mb
16000	15996.9	987550+03	968456+02	222.21	222.21	15183+03	298.830		
16250	16246.2	950838+03	932453+02	222.26	222.26	14615+02	298.867		
16500	16495.5	915719+03	898014+02	222.29	222.29	14073+03	298.887		
16750	16744.8	880600+03	863574+02	222.32	222.32	13532+03	298.908		
17000	16994.C	847818+03	831426+02	222.32	222.32	13028+03	298.903		
17250	17243.3	816637+03	800848+02	222.28	222.28	12551+03	298.876		
17500	17492.5	785457+03	770270+02	222.24	222.24	12074+03	298.849		
17750	17741.7	756376+03	741751+02	222.18	222.18	11630+03	298.812		
18000	17990.8	727295+03	713232+02	222.13	222.13	11186+03	298.775		
18250	18240.C	700406+03	686863+02	222.08	222.08	10775+03	298.740		
18500	18489.1	673517+03	660494+02	222.02	222.02	10364+03	298.705		
18750	18738.3	648707+03	636165+02	221.99	221.99	99833+02	298.683		
19000	18987.4	623858+03	611835+02	221.96	221.96	96029+02	298.660		
19250	19236.4	601026+03	589405+02	221.95	221.95	92511+02	298.656		
19500	19485.5	578153+03	566975+02	221.95	221.95	88993+02	298.653		
19750	19734.6	557104+03	546333+02	221.97	221.97	85744+02	298.668		
20000	19983.6	536055+03	525691+02	221.99	221.99	82496+02	298.684		
20250	20232.6	515006+03	505048+02	222.01	222.01	79248+02	298.699		
20500	20481.6	496274+03	486678+02	222.06	222.06	76349+02	298.732		
20750	20730.5	477541+03	468308+02	222.11	222.11	73450+02	298.766		
21000	20979.5	460459+03	451556+02	222.22	222.22	70789+02	298.838		
21250	21228.4	443376+03	434804+02	222.33	222.33	68130+02	298.910		
21500	21477.3	426254+03	418051+02	222.43	222.43	65473+02	298.981		
21750	21726.2	409211+03	401299+02	222.54	222.54	62820+02	299.053		
22000	21975.1	394559+03	386969+02	222.74	222.74	60522+02	299.189		
22250	22223.9	379967+03	372440+02	222.94	222.94	58226+02	299.324		
22500	22472.7	365375+03	358310+02	223.15	223.15	55938+02	299.460		
22750	22721.5	352551+03	345735+02	223.31	223.31	53934+02	299.571		
23000	22970.3	339728+03	333159+02	223.48	223.48	51934+02	299.683		
23250	23219.1	326904+03	320583+02	223.65	223.65	49936+02	299.795		
23500	23467.8	314080+03	308008+02	223.81	223.81	47942+02	299.907		
23750	23716.6	302259+03	297365+02	223.95	223.95	46257+02	299.999		
24000	23965.3	292376+03	286723+02	224.39	224.39	44574+02	300.090		
24250	24214.C	281523+03	276080+02	224.22	224.22	42893+02	300.182		
24500	24462.7	270671+03	265438+02	224.36	224.36	4215+02	300.274		
24750	24711.3	259819+03	254795+02	224.50	224.50	39538+02	300.365		
25000	24959.9	251040+03	246186+02	224.65	224.65	38176+02	300.467		
25250	25208.6	242262+03	237577+02	224.80	224.80	36816+02	300.569		
25500	25457.1	233483+03	228969+02	224.96	224.96	35458+02	300.671		
25750	25705.7	224705+03	220360+02	225.11	225.11	34102+02	300.773		
26000	25954.3	215926+03	211751+02	225.26	225.26	32747+02	300.875		
26250	26202.8	207147+03	203142+02	225.41	225.41	31395+02	300.977		
26500	26451.3	200369+03	196514+02	225.48	225.48	30361+02	301.024		
26750	26699.8	193630+03	189887+02	225.55	225.55	29328+02	301.070		
27000	26948.3	186872+03	183259+02	225.62	225.62	28296+02	301.116		
27250	27196.8	180113+03	176631+02	225.69	225.69	27264+02	301.163		
27500	27445.2	173355+03	170003+02	225.76	225.76	26233+02	301.209		
27750	27693.6	166596+03	163375+02	225.83	225.83	25202+02	301.255		
28000	27942.C	159838+03	156747+02	225.90	225.90	24172+02	301.301		
28250	28190.4	153079+03	150119+02	225.97	225.97	23143+02	301.348		
28500	28438.6	146344+03	145475+02	225.85	225.85	22439+02	301.367		
28750	28687.1	143608+03	140832+02	225.73	225.73	21735+02	301.185		
29000	28935.4	138873+03	136186+02	225.61	225.61	21029+02	301.105		
29250	29183.7	134139+03	131544+02	225.48	225.48	20323+02	301.024		
29500	29432.C	129402+03	126900+02	225.36	225.36	19616+02	300.943		
29750	29680.3	124667+03	122256+02	225.24	225.24	18909+02	300.862		
30000	29928.5	119931+03	117613+02	225.12	225.12	18200+02	300.781		

IRIG-RANGE REFERENCE ATMOSPHERE, FEBRUARY TABLE I.2

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgfm ⁻²	mb	degrees K	degrees K	gm ⁻³	m sec ⁻¹	percent	mb
0	0.0	102978+05	150987+04	254.60	254.67	13814+04	319.915	56	0.809
250	250.6	979235+04	978640+03	256.63	256.73	13280+04	321.203	56	0.960
479	480.3	965739+04	950000+03	258.50	258.52	12797+04	322.382	56	1.121
500	501.1	966052+04	947411+03	257.03	259.14	12736+04	322.711	55	1.132
750	751.6	934874+04	916798+03	259.81	259.94	12287+04	323.203	54	1.198
1000	1002.2	904641+04	887150+03	259.87	260.01	11886+04	323.252	58	1.288
1250	1252.6	875381+04	858456+03	259.61	259.76	11513+04	323.096	62	1.352
1500	1503.1	846660+04	830486+03	259.44	259.60	11145+04	322.995	65	1.385
1750	1753.6	819434+04	803590+03	258.91	259.07	10806+04	322.564	64	1.305
2000	2004.0	792832+04	777502+03	257.76	257.90	10502+04	321.937	60	1.112
2250	2254.4	766335+04	752008+03	256.67	256.79	10202+04	321.243	57	0.967
2500	2504.8	741770+04	727428+03	255.96	256.08	98957+03	320.799	58	0.927
2750	2755.2	717316+04	703447+03	255.02	255.15	96047+03	320.211	59	0.886
3000	3005.5	693549+04	680139+03	253.56	253.68	93402+03	319.289	61	0.796
3250	3255.9	672591+04	657625+03	251.88	251.98	90918+03	318.220	61	0.694
3500	3506.2	648143+04	635611+03	250.23	250.32	88454+03	317.168	61	0.595
3750	3756.5	626289+04	614179+03	248.58	248.66	86047+03	316.113	60	0.507
4000	4006.7	605039+04	593341+03	246.92	246.98	83690+03	315.049	59	0.428
4250	4257.0	584365+04	573086+03	245.24	245.30	81389+03	313.971	58	0.363
4500	4507.2	564312+04	553401+03	243.54	243.60	79142+03	312.880	59	0.316
4750	4757.5	544807+04	534273+03	241.83	241.88	76949+03	311.775	65	0.296
5000	5007.6	525850+04	515691+03	240.11	240.15	74807+03	310.660	65	0.249
5250	5257.8	507455+04	497645+03	238.40	238.43	72710+03	309.545	52	0.168
5500	5508.0	489564+04	480128+03	236.70	236.72	70658+03	308.432	31	0.085
5750	5758.1	472057+04	462930+03	235.00	235.01	68623+03	307.316	11	0.027
6000	6008.2	455191+04	446389+03	233.30	233.30	66655+03	306.197	3	0.006
6250	6258.2	438860+04	430172+03	231.60	231.60	64706+03	305.080		
6500	6508.2	422765+04	414613+03	229.94	229.94	62815+03	303.986		
6750	6758.5	407425+04	399549+03	228.37	228.37	60950+03	302.942		
7000	7008.5	392368+04	384781+03	226.84	226.84	59093+03	301.926		
7250	7258.5	377721+04	370418+03	225.35	225.36	57200+03	300.943		
7500	7508.5	362737+04	356704+03	223.98	223.98	55481+03	300.016		
7750	7758.5	350058+04	343289+03	222.60	222.60	53725+03	299.091		
8000	8008.5	336781+04	330270+03	221.32	221.32	51987+03	298.229		
8250	8258.4	324141+04	317874+03	220.30	220.30	50266+03	297.545		
8500	8508.3	311803+04	305776+03	219.45	219.45	48542+03	296.963		
8750	8758.2	299860+04	294003+03	218.72	218.72	46837+03	296.475		
9000	9008.1	288336+04	282761+03	218.23	218.23	45139+03	296.141		
9250	9258.0	277247+04	271886+03	218.01	218.01	43445+03	295.994		
9500	9507.8	266594+04	261439+03	218.07	218.07	41765+03	295.033		
9750	9757.6	256370+04	251412+03	218.36	218.36	40110+03	296.230		
10000	10007.4	246571+04	241804+03	219.03	219.03	38458+03	296.686		
10250	10257.2	237190+04	232603+03	219.75	219.75	36875+03	297.169		
10500	10507.0	228209+04	223797+03	220.41	220.41	35372+03	297.618		
10750	10756.7	219612+04	215366+03	220.99	220.99	33950+03	298.008		
11000	11006.5	211385+04	207297+03	221.47	221.47	32605+03	298.331		
11250	11256.2	203364+04	199432+03	221.86	221.86	31315+03	298.598		
11500	11505.9	195609+04	191827+03	222.19	222.19	30077+03	298.855		
11750	11755.5	188302+04	184462+03	222.44	222.44	28920+03	298.984		
12000	12005.2	181156+04	177692+03	222.57	222.67	27800+03	299.140		
12250	12254.8	174339+04	170968+03	222.90	222.90	26720+03	299.294		
12500	12504.4	167876+04	164630+03	223.09	223.09	25708+03	299.419		
12750	12754.0	161585+04	158465+03	223.24	223.24	24728+03	299.524		
13000	13003.6	155516+04	152509+03	223.36	223.36	23786+03	299.603		
13250	13253.1	149671+04	146777+03	223.42	223.42	22886+03	299.644		
13500	13502.6	144033+04	141268+03	223.45	223.45	22024+03	299.661		
13750	13752.2	138613+04	135972+03	223.45	223.45	21199+03	299.663		
14000	14001.8	133463+04	130887+03	223.44	223.44	20406+03	299.654		
14250	14251.1	128471+04	125987+03	223.41	223.41	19645+03	299.639		
14500	14500.6	123672+04	121281+03	223.39	223.39	18913+03	299.626		
14750	14750.0	119055+04	116756+03	223.37	223.37	18209+03	299.608		
15000	14999.4	114623+04	112407+03	223.33	223.33	17534+03	299.583		
15250	15248.8	110363+04	108229+03	223.29	223.29	16886+03	299.553		
15500	15498.2	106273+04	104218+03	223.23	223.23	16264+03	299.519		
15750	15747.5	102183+04	100207+03	223.18	223.18	15641+03	299.484		

(CONTINUED) IRIG - RANGE REFERENCE ATMOSPHERE, FEBRUARY TABLE I.2

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES			
			LATITUDE	LONGITUDE					
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960	FORT GREELY MISSILE RANGE LAUNCH SITE			
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC) meters	HEIGHT (GEOPOTENTIAL) meters	PRESSURE kgfm ⁻²	PRESSURE mb	TEMPERATURE degrees K	VIRTUAL TEMPERATURE degrees K	DENSITY gm ⁻³	SPEED OF SOUND m sec ⁻¹	RELATIVE HUMIDITY percent	VAPOR PRESSURE mb
16000	15996.9	983786+03	964765+02	223.12	223.12	15063+03	299.442		
16250	16246.2	947340+03	929023+02	223.06	223.06	14509+03	299.398		
16500	16495.5	912439+03	894797+02	222.99	222.99	13979+03	299.353		
16750	16744.8	875373+03	860570+02	222.92	222.92	13 ⁴ +03	299.307		
17000	16994.0	844958+03	828620+02	222.85	222.85	12953+03	299.261		
17250	17243.3	813938+03	798201+02	222.78	222.78	12482+03	299.211		
17500	17492.5	782919+03	767781+02	222.70	222.70	12010+03	299.160		
17750	17741.7	753988+03	739410+02	222.63	222.63	11570+03	299.115		
18000	17990.8	725057+03	711038+02	222.57	222.57	11129+03	299.070		
18250	18240.0	698307+03	684805+02	222.52	222.52	10721+03	299.036		
18500	18489.1	671557+03	658572+02	222.47	222.47	10313+03	299.002		
18750	18738.3	646868+03	634361+02	222.43	222.43	99353+02	298.979		
19000	18987.4	622179+03	610150+02	222.39	222.39	95576+02	298.955		
19250	19236.4	599409+03	587819+02	222.37	222.37	92088+02	298.938		
19500	19485.5	576638+03	565488+02	222.35	222.35	88600+02	298.922		
19750	19734.6	555669+03	544925+02	222.32	222.32	85387+02	298.906		
20000	19983.6	534701+03	524362+02	222.30	222.30	82174+02	298.890		
20250	20232.6	513732+03	503799+02	222.27	222.27	78960+02	298.874		
20500	20481.6	495062+03	485490+02	222.25	222.25	76100+02	298.854		
20750	20730.5	476391+03	467180+02	222.22	222.22	73240+02	298.835		
21000	20979.5	459333+03	450451+02	222.18	222.18	70629+02	298.810		
21250	21228.4	442274+03	433723+02	222.14	222.14	68017+02	298.786		
21500	21477.3	425215+03	416994+02	222.11	222.11	65404+02	298.761		
21750	21726.2	408157+03	400265+02	222.07	222.07	62791+02	298.737		
22000	21975.1	393530+03	385921+02	222.05	222.05	60546+02	298.722		
22250	22223.9	378903+03	371577+02	222.03	222.03	58302+02	298.707		
22500	22472.7	364276+03	357233+02	222.01	222.01	56056+02	298.693		
22750	22721.5	351389+03	344595+02	221.93	221.93	54092+02	298.642		
23000	22970.3	338502+03	331957+02	221.85	221.85	52126+02	298.590		
23250	23219.1	325615+03	319320+02	221.78	221.78	50159+02	298.539		
23500	23467.8	312728+03	306682+02	221.70	221.70	48190+02	298.488		
23750	23716.6	301789+03	295954+02	221.63	221.63	46518+02	298.443		
24000	23965.3	290849+03	285225+02	221.57	221.57	44846+02	298.398		
24250	24214.0	279909+03	274497+02	221.50	221.50	43172+02	298.354		
24500	24462.7	268969+03	263769+02	221.44	221.44	41497+02	298.309		
24750	24711.3	258030+03	253041+02	221.37	221.37	39821+02	298.264		
25000	24959.9	249172+03	244354+02	221.43	221.43	38443+02	298.305		
25250	25208.6	240314+03	235468+02	221.49	221.49	37067+02	298.346		
25500	25457.1	231457+03	226981+02	221.55	221.55	35611+02	298.387		
25750	25705.7	222599+03	218295+02	221.61	221.61	34315+02	298.428		
26000	25954.3	213741+03	209609+02	221.67	221.67	32941+02	298.469		
26250	26202.8	204884+03	200922+02	221.73	221.73	31567+02	298.510		
26500	26451.3	196071+03	19241+02	221.72	221.72	30519+02	298.502		
26750	26699.8	191258+03	187560+02	221.71	221.71	29471+02	298.494		
27000	26948.3	184445+03	180879+02	221.70	221.70	28423+02	298.486		
27250	27196.8	177632+03	174198+02	221.69	221.69	27374+02	298.478		
27500	27445.2	170820+03	167517+02	221.67	221.67	26326+02	298.470		
27750	27693.6	164007+03	160836+02	221.66	221.66	25277+02	298.462		
28000	27942.0	157154+03	154155+02	221.65	221.65	24228+02	298.454		
28250	28190.4	152238+03	149295+02	221.66	221.66	23495+02	298.461		
28500	28438.8	147283+03	144435+02	221.68	221.68	22760+02	298.668		
28750	28687.1	142317+03	139576+02	220.79	220.79	22022+02	297.875		
29000	28935.4	137372+03	134716+02	220.51	220.51	21283+02	297.682		
29250	29183.7	132417+03	129856+02	220.22	220.22	20542+02	297.489		
29500	29432.0	127461+03	124997+02	219.93	219.93	19799+02	297.295		
29750	29680.3	122506+03	120137+02	219.65	219.65	19054+02	297.102		
30000	29928.5	117550+03	115277+02	219.36	219.36	18307+02	296.908		

IRIG-RANGE REFERENCE ATMOSPHERE, MARCH

TABLE I.3

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES				
FAIRBANKS, ALASKA		134	64° 43' N	147° 52' W	OCT 1948 TO DEC 1960	FORT GREELY MISSILE RANGE LAUNCH SITE				
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS					
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE	
meters	meters	kg m ⁻²	mb	degrees K	degrees K	g m ⁻³	m sec ⁻¹	percent	mb	
0	0.0	102788+05	100801+04	265.87	266.07	13198+04	326.994	55	1.948	
250	250.6	996864+04	977590+03	265.74	265.94	12806+04	326.915	55	1.928	
477	477.8	968720+04	950000+03	265.62	265.82	12450+04	326.843	55	1.910	
500	501.1	965847+04	947172+03	265.58	265.79	12414+04	326.826	57	1.978	
750	751.6	935345+04	917260+03	265.20	265.42	12339+04	326.595	60	2.038	
1000	1002.2	905683+04	888172+03	264.49	264.71	11688+04	326.161	62	1.973	
1250	1252.6	876882+04	859928+03	263.60	263.81	11355+04	325.604	62	1.860	
1500	1503.1	848721+04	832321+03	262.66	262.87	11030+04	325.020	63	1.758	
1750	1753.6	821540+04	805655+03	261.33	261.53	10731+04	324.195	66	1.645	
2000	2004.0	795093+04	779719+03	259.51	259.70	10459+04	323.057	70	1.508	
2250	2254.4	769180+04	754308+03	257.63	257.80	10193+04	321.875	73	1.346	
2500	2504.6	744076+04	729689+03	255.89	256.04	99281+03	320.773	73	1.158	
2750	2755.2	719520+04	705608+03	254.36	254.49	96589+03	319.801	71	0.993	
3000	3005.5	695628+04	682178+03	253.17	253.29	93824+03	319.047	68	0.857	
3250	3255.9	672624+04	659597+03	251.94	252.04	91168+03	318.259	65	0.744	
3500	3506.2	650111+04	637541+03	250.43	250.53	88653+03	317.300	65	0.650	
3750	3756.5	628213+04	616067+03	248.77	248.86	86240+03	316.243	66	0.564	
4000	4006.7	606917+04	595183+03	247.09	247.16	83890+03	315.161	64	0.475	
4250	4257.0	586217+04	574882+03	245.40	245.47	81588+03	314.080	62	0.393	
4500	4507.2	566099+04	555154+03	243.71	243.77	79337+03	312.990	61	0.329	
4750	4757.5	546551+04	535984+03	242.00	242.05	77142+03	311.884	64	0.294	
5000	5007.6	527563+04	517362+03	240.30	240.34	74990+03	310.782	62	0.242	
5250	5257.8	509125+04	499281+03	238.63	238.66	72880+03	309.693	49	0.163	
5500	5508.0	491024+04	481530+03	236.98	237.00	70781+03	308.613	31	0.088	
5750	5758.1	473621+04	464464+03	235.36	235.36	68746+03	307.549	12	0.030	
6000	6008.2	456758+04	447927+03	233.80	233.80	66743+03	306.523	4	0.008	
6250	6258.3	440220+04	431709+03	232.24	232.24	64759+03	305.498			
6500	6508.4	424327+04	416133+03	230.56	230.56	62877+03	304.391			
6750	6758.5	408871+04	400867+03	228.79	228.79	61038+03	303.223			
7000	7008.5	393808+04	386194+03	226.73	226.73	59339+03	301.853			
7250	7258.5	379137+04	371806+03	224.77	224.77	57625+03	300.350			
7500	7508.5	365058+04	358000+03	223.17	223.17	55884+03	299.475			
7750	7758.5	351267+04	344495+03	221.87	221.87	54090+03	298.603			
8000	8008.5	337924+04	331391+03	220.87	220.87	52269+03	297.926			
8250	8258.4	325238+04	318950+03	220.20	220.20	50459+03	297.478			
8500	8508.3	312875+04	306825+03	219.66	219.66	48660+03	297.114			
8750	8758.2	300907+04	295089+03	219.15	219.15	46909+03	296.765			
9000	9008.1	289368+04	283773+03	218.78	218.78	45185+03	296.518			
9250	9258.0	278269+04	272888+03	218.63	218.63	43482+03	296.416			
9500	9507.8	267607+04	262433+03	218.71	218.71	41801+03	296.468			
9750	9757.6	257375+04	252399+03	218.99	218.99	40151+03	296.659			
10000	10007.4	247568+04	242781+03	219.59	219.59	38516+03	297.062			
10250	10257.2	238175+04	233570+03	220.24	220.24	36945+03	297.504			
10500	10507.0	229182+04	224751+03	220.87	220.87	35449+03	297.927			
10750	10756.7	220573+04	216308+03	221.43	221.43	34032+03	298.303			
11000	11006.5	212322+04	208227+03	221.89	221.89	32691+03	298.618			
11250	11256.2	204092+04	200146+03	222.36	222.36	31356+03	298.932			
11500	11505.9	196469+04	192670+03	222.66	222.66	30145+03	299.131			
11750	11755.5	189050+04	185394+03	222.90	222.90	28975+03	299.295			
12000	12005.2	182021+04	178502+03	223.05	223.05	27879+03	299.397			
12250	12254.8	175179+04	171792+03	223.16	223.16	26818+03	299.466			
12500	12504.4	168575+04	165316+03	223.22	223.22	25801+03	299.506			
12750	12754.0	162328+04	159199+03	223.23	223.23	24844+03	299.519			
13000	13003.6	156268+04	153247+03	223.24	223.24	23914+03	299.525			
13250	13253.1	150403+04	147495+03	223.26	223.26	23014+03	299.538			
13500	13502.6	144755+04	141956+03	223.27	223.27	22149+03	299.545			
13750	13752.2	139325+04	136631+03	223.26	223.26	21319+03	299.537			
14000	14001.6	134105+04	131512+03	223.23	223.23	20523+03	299.516			
14250	14251.1	129085+04	126589+03	223.18	223.18	19760+03	299.480			
14500	14500.6	124258+04	121856+03	223.06	223.06	19031+03	299.404			
14750	14750.0	119617+04	117304+03	222.95	222.95	18329+03	299.328			
15000	14999.4	115155+04	112929+03	222.85	222.86	17653+03	299.266			
15250	15248.8	110869+04	108725+03	222.80	222.80	17000+03	299.227			
15500	15498.2	106755+04	104691+03	222.77	222.77	16372+03	299.205			
15750	15747.5	102641+04	100656+03	222.74	222.74	15743+03	299.183			

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
			LATITUDE	LONGITUDE					
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC) meters	HEIGHT (GEOPOTENTIAL) meters	PRESSURE kgf m ⁻²	PRESSURE mb	TEMPERATURE degrees K	VIRTUAL TEMPERATURE degrees K	DENSITY g m ⁻³	SPEED OF SOUND m sec ⁻¹	RELATIVE HUMIDITY percent	VAPOR PRESSURE mb
16000	15996.9	988080+03	968975+02	222.80	222.80	15151+03	299.225		
16250	16246.2	951453+03	933056+02	222.85	222.85	14586+03	299.262		
16500	16495.5	916415+03	898696+02	222.89	222.89	14047+03	299.284		
16750	16744.8	891377+03	864336+02	222.92	222.92	13507+03	299.307		
17000	16994.0	848659+03	832251+02	222.91	222.91	13006+03	299.304		
17250	17243.3	815941+03	800165+02	222.91	222.91	12505+03	299.301		
17500	17492.5	785766+03	770574+02	222.84	222.84	12046+03	299.255		
17750	17741.7	756995+03	742358+02	222.77	222.77	11609+03	299.206		
18000	17990.8	728223+03	714143+02	222.70	222.70	11171+03	299.157		
18250	18240.0	701420+03	637858+02	222.63	222.63	10764+03	299.110		
18500	18489.1	674616+03	661573+02	222.56	222.56	10356+03	299.062		
18750	18738.3	649835+03	637271+02	222.49	222.49	99780+02	299.021		
19000	18987.4	625054+03	612969+02	222.43	222.43	96002+02	298.980		
19250	19236.4	602192+03	590549+02	222.39	222.39	92510+02	298.948		
19500	19485.5	579329+03	568128+02	222.34	222.34	89017+02	298.916		
19750	19734.6	558277+03	547483+02	222.30	222.30	85794+02	298.894		
20000	19983.6	537225+03	526837+02	222.27	222.27	82571+02	298.872		
20250	20232.6	516172+03	506192+02	222.24	222.24	79347+02	298.850		
20500	20481.6	497414+03	487797+02	222.26	222.26	76455+02	298.867		
20750	20730.5	478656+03	469401+02	222.29	222.29	73564+02	298.884		
21000	20979.5	459898+03	451006+02	222.31	222.31	70673+02	298.900		
21250	21228.4	443306+03	434734+02	222.28	222.28	68134+02	298.876		
21500	21477.3	426714+03	418463+02	222.24	222.24	65955+02	298.851		
21750	21726.2	410122+03	402192+02	222.20	222.20	63055+02	298.827		
22000	21975.1	395431+03	387786+02	222.07	222.07	60832+02	298.739		
22250	22223.9	380741+03	373379+02	221.94	221.94	58607+02	298.650		
22500	22472.7	366051+03	358973+02	221.81	221.81	56379+02	298.562		
22750	22721.5	353123+03	346295+02	221.92	221.92	54362+02	298.632		
23000	22970.3	340195+03	333618+02	222.02	222.02	52347+02	298.703		
23250	23219.1	327268+03	320940+02	222.13	222.13	50334+02	298.774		
23500	23467.8	314340+03	308262+02	222.23	222.23	48323+02	298.845		
23750	23716.6	303429+03	297553+02	222.51	222.51	46585+02	299.034		
24000	23965.3	292499+03	286844+02	222.79	222.79	44852+02	299.222		
24250	24214.0	281578+03	276134+02	223.07	223.07	43123+02	299.411		
24500	24462.7	270658+03	265425+02	223.36	223.36	41398+02	299.600		
24750	24711.3	259737+03	254715+02	223.64	223.64	39678+02	299.788		
25000	24959.9	250936+03	246084+02	223.85	223.85	38296+02	299.934		
25250	25208.6	242135+03	237453+02	224.07	224.07	36917+02	300.080		
25500	25457.1	233333+03	228822+02	224.29	224.29	35540+02	300.227		
25750	25705.7	224532+03	220190+02	224.51	224.51	34167+02	300.373		
26000	25954.3	215730+03	211559+02	224.73	224.73	32795+02	300.519		
26250	26202.8	206929+03	202928+02	224.95	224.95	31427+02	300.664		
26500	26451.3	200175+03	196305+02	225.11	225.11	30378+02	300.777		
26750	26699.8	192421+03	189682+02	225.28	225.28	29331+02	300.890		
27000	26948.3	186678+03	183058+02	225.45	225.45	28286+02	301.003		
27250	27196.8	179914+03	176435+02	225.62	225.62	27242+02	301.116		
27500	27445.2	173160+03	169812+02	225.79	225.79	26200+02	301.228		
27750	27693.6	166406+03	163189+02	225.96	225.96	25159+02	301.341		
28000	27942.0	159652+03	156565+02	226.13	226.13	24120+02	301.454		
28250	28190.4	154793+03	151800+02	226.34	226.34	23364+02	301.596		
28500	28438.8	149934+03	147035+02	226.55	226.55	22609+02	301.738		
28750	28687.1	145076+03	142270+02	226.77	226.77	21856+02	301.880		
29000	28935.4	140217+03	137506+02	226.98	226.98	21104+02	302.022		
29250	29183.7	135358+03	132741+02	227.19	227.19	20354+02	302.164		
29500	29432.0	130499+03	127976+02	227.41	227.41	19605+02	302.305		
29750	29680.3	125640+03	123211+02	227.62	227.62	18857+02	302.447		
30000	29928.5	120781+03	118446+02	227.83	227.83	18111+02	302.589		

IRIG - RANGE REFERENCE ATMOSPHERE, APRIL

TABLE I.4

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES			
			LATITUDE	LONGITUDE		FORT GREELY MISSILE RANGE LAUNCH SITE			
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960				
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC) m-meters	HEIGHT (GEOPOTENTIAL) meters	PRESSURE kgfm ⁻²	PRESSURE mb	TEMPERATURE degrees K	VIRTUAL TEMPERATURE degrees K	DENSITY gm ⁻³	SPEED OF SOUND m sec ⁻¹	RELATIVE HUMIDITY percent	VAPOR PRESSURE mb
0	0.0	102685+05	100700+04	274.62	275.01	12756+04	332.441	54	3.734
250	250.6	996582+04	977313+03	273.43	273.79	12435+04	331.706	54	3.426
480	481.1	968720+04	950000+03	272.33	272.67	12137+04	331.028	54	3.163
500	501.1	966314+04	947630+03	272.01	272.36	12121+04	330.837	57	3.206
750	751.6	936481+04	918374+03	270.80	271.14	11800+04	330.095	58	3.023
1000	1002.2	907356+04	889813+03	269.26	269.57	11499+04	329.140	58	2.683
1250	1252.6	878803+04	861812+03	267.64	267.92	11206+04	328.129	59	2.392
1500	1503.1	851120+04	834674+03	266.00	266.27	10920+04	327.118	63	2.269
1750	1753.6	824154+04	808259+03	264.35	264.61	10641+04	326.098	68	2.152
2000	2004.0	797811+04	782386+03	262.65	262.90	10367+04	325.044	71	1.971
2250	2254.4	772255+04	757323+03	260.99	261.21	10100+04	323.997	71	1.732
2500	2504.8	747243+04	732795+03	259.39	259.59	98339+03	322.991	70	1.489
2750	2755.2	723039+04	709059+03	257.78	257.96	95758+03	321.970	67	1.246
3000	3005.5	699357+04	685835+03	256.10	256.24	93241+03	320.900	63	1.023
3250	3255.9	676280+04	663204+03	254.39	254.51	90777+03	319.814	60	0.841
3500	3506.2	653826+04	641184+03	252.71	252.82	88351+03	318.748	58	0.712
3750	3756.5	632138+04	619916+03	251.06	251.15	85986+03	317.698	58	0.613
4000	4006.7	610944+04	599131+03	249.40	249.48	83660+03	316.638	57	0.515
4250	4257.0	590306+04	578892+03	247.73	247.80	81384+03	315.566	54	0.424
4500	4507.2	570236+04	559211+03	246.04	246.10	79160+03	314.483	52	0.352
4750	4757.5	550731+04	540083+03	244.34	244.39	76987+03	313.389	54	0.309
5000	5007.6	531569+04	521291+03	242.63	242.68	74832+03	312.290	54	0.264
5250	5257.8	513131+04	503210+03	240.93	240.97	72749+03	311.188	48	0.198
5500	5508.0	495235+04	485660+03	239.25	239.27	70710+03	310.091	30	0.108
5750	5758.1	477867+04	468628+03	237.58	237.58	68714+03	308.996	14	0.044
6000	6008.2	460819+04	451909+03	235.90	235.90	66736+03	307.899	1	0.004
6250	6258.3	444428+04	435835+03	234.25	234.25	64817+03	306.817		
6500	6508.4	428362+04	420079+03	232.58	232.58	62921+03	305.725		
6750	6758.5	412932+04	404948+03	230.90	230.90	61096+03	304.618		
7000	7008.5	397812+04	390120+03	229.23	229.23	59288+03	303.514		
7250	7258.5	383300+04	375689+03	227.59	227.59	57537+03	302.425		
7500	7508.5	369086+04	361950+03	225.98	225.98	55798+03	301.354		
7750	7758.5	355465+04	348592+03	224.43	224.43	54111+03	300.317		
8000	8008.5	342137+04	335522+03	222.96	222.96	52425+03	299.332		
8250	8258.4	329185+04	322820+03	221.67	221.67	50734+03	298.465		
8500	8508.3	316661+04	310538+03	220.64	220.64	49031+03	297.771		
8750	8758.2	304780+04	298887+03	220.03	220.03	47323+03	297.359		
9000	9008.1	293212+04	287543+03	219.62	219.62	45611+03	297.083		
9250	9258.0	282028+04	276575+03	219.45	219.45	43905+03	296.971		
9500	9507.8	271262+04	266017+03	219.53	219.53	42215+03	297.020		
9750	9757.6	260925+04	255880+03	219.81	219.81	40554+03	297.210		
10000	10007.4	251015+04	246111+03	220.34	220.34	38916+03	297.573		
10250	10257.2	241525+04	236855+03	220.98	220.98	37340+03	297.999		
10500	10507.0	232442+04	227948+03	221.61	221.61	35833+03	298.426		
10750	10756.7	223750+04	219424+03	222.19	222.19	34402+03	298.820		
11000	11006.5	215058+04	210900+03	222.70	222.78	32979+03	299.213		
11250	11256.2	207014+04	203012+03	223.24	223.24	31681+03	299.519		
11500	11505.9	199198+04	195347+03	223.63	223.63	30431+03	299.781		
11750	11755.5	191804+04	188096+03	223.91	223.91	29265+03	299.970		
12000	12005.2	184606+04	181037+03	224.14	224.14	28137+03	300.128		
12250	12254.8	177787+04	174349+03	224.29	224.29	27080+03	300.228		
12500	12504.4	171148+04	167839+03	224.41	224.41	26055+03	300.304		
12750	12754.0	164724+04	161549+03	224.48	224.48	25070+03	300.355		
13000	13003.6	158564+04	155498+03	224.53	224.53	24127+03	300.384		
13250	13253.1	152742+04	149789+03	224.53	224.53	23240+03	300.387		
13500	13502.6	147081+04	144237+03	224.52	224.52	22380+03	300.381		
13750	13752.2	141608+04	138500+03	224.50	224.50	21549+03	300.368		
14000	14001.6	136335+04	133699+03	224.47	224.47	20749+03	300.347		
14250	14251.1	131260+04	128722+03	224.43	224.43	19981+03	300.320		
14500	14500.6	126381+04	123937+03	224.38	224.38	19242+03	300.288		
14750	14750.0	121691+04	119338+03	224.33	224.33	18532+03	300.254		
15000	14999.4	117185+04	114920+03	224.28	224.28	17851+03	300.216		
15250	15248.8	112680+04	110301+03	224.22	224.22	17168+03	300.178		
15500	15498.2	108486+04	106388+03	224.16	224.16	16534+03	300.136		
15750	15747.5	104467+04	102448+03	224.09	224.09	15926+03	300.092		

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES			
			LATITUDE	LONGITUDE		FORT GREELY MISSILE RANGE LAUNCH SITE			
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960				
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgm ⁻²	mb	degrees K	degrees K	g m ⁻³	m sec ⁻¹	percent	mb
16000	15996.9	100613+04	986673+02	224.02	224.02	15343+03	300.047		
16250	16246.2	969172+03	950433+02	223.95	223.95	14784+03	300.001		
16500	16495.5	932217+03	914193+02	223.88	223.88	14225+03	299.954		
16750	16744.8	897654+03	880298+02	223.81	223.81	13702+03	299.906		
17000	16994.C	864726+03	848006+02	223.74	223.74	13204+03	299.857		
17250	17243.3	831757+03	815715+02	223.67	223.67	12705+03	299.808		
17500	17492.5	801081+03	785592+02	223.60	223.60	12240+03	299.762		
17750	17741.7	770364+03	755469+02	223.53	223.53	11774+03	299.717		
18000	17990.8	741979+03	727633+02	223.46	223.46	11344+03	299.668		
18250	18240.C	715027+03	701202+02	223.38	223.38	10935+03	299.616		
18500	18489.1	688075+03	674771+02	223.30	223.30	10527+03	299.565		
18750	18738.3	662963+03	650144+02	223.22	223.22	10146+03	299.511		
19000	18987.4	637850+03	625518+02	223.14	223.14	97655+02	299.457		
19250	19236.4	612738+03	600891+02	223.06	223.06	93844+02	299.403		
19500	19485.5	590336+03	578922+02	222.98	222.98	90446+02	299.349		
19750	19734.6	567934+03	556953+02	222.90	222.90	87045+02	299.295		
20000	19983.6	547287+03	536705+02	222.83	222.83	83906+02	299.249		
20250	20232.6	526640+03	516457+02	222.77	222.77	80765+02	299.204		
20500	20481.6	507664+03	497848+02	222.72	222.72	77870+02	299.176		
20750	20730.5	488689+03	479240+02	222.68	222.68	74973+02	299.148		
21000	20979.5	469713+03	460631+02	222.64	222.64	72075+02	299.120		
21250	21228.4	452753+03	444038+02	222.59	222.59	69493+02	299.089		
21500	21477.3	435873+03	427446+02	222.55	222.55	66911+02	299.057		
21750	21726.2	418953+03	410853+02	222.50	222.50	64327+02	299.026		
22000	21975.1	403989+03	396177+02	222.43	222.43	62050+02	298.975		
22250	22223.9	389024+03	381502+02	222.35	222.35	59772+02	298.925		
22500	22472.7	374059+03	366827+02	222.28	222.28	57492+02	298.875		
22750	22721.5	359054+03	352151+02	222.20	222.20	55211+02	298.824		
23000	22970.3	346368+03	339671+02	222.14	222.14	53244+02	298.851		
23250	23219.1	333642+03	327191+02	222.08	222.08	51278+02	298.879		
23500	23467.8	320915+03	314710+02	222.02	222.02	49314+02	298.906		
23750	23716.6	308189+03	302230+02	222.06	222.06	47349+02	298.933		
24000	23965.3	297444+03	291693+02	222.47	222.47	45677+02	299.005		
24250	24214.0	286659+03	281156+02	222.58	222.58	44005+02	299.076		
24500	24462.7	275954+03	270619+02	222.68	222.68	42336+02	299.148		
24750	24711.3	265209+03	260082+02	222.79	222.79	40666+02	299.219		
25000	24959.9	256223+03	251269+02	222.85	222.85	39280+02	299.259		
25250	25208.6	247237+03	242457+02	222.91	222.91	37892+02	299.298		
25500	25457.1	238251+03	233645+02	222.97	222.97	36505+02	299.338		
25750	25705.7	229265+03	224832+02	223.02	223.02	35119+02	299.377		
26000	25954.3	220279+03	216020+02	223.08	223.08	33734+02	299.417		
26250	26202.8	211293+03	207208+02	223.14	223.14	32349+02	299.456		
26500	26451.3	204342+03	200391+02	223.21	223.21	31275+02	299.503		
26750	26699.8	197351+03	193574+02	223.28	223.28	30202+02	299.549		
27000	26948.3	190440+03	186758+02	223.35	223.35	29129+02	299.595		
27250	27196.8	183489+03	179941+02	223.42	223.42	28058+02	299.642		
27500	27445.2	176538+03	173124+02	223.49	223.49	26986+02	299.688		
27750	27693.6	169586+03	166308+02	223.56	223.56	25916+02	299.735		
28000	27942.C	162635+03	159491+02	223.63	223.63	24846+02	299.781		
28250	28190.4	155684+03	152674+02	223.69	223.69	23776+02	299.827		
28500	28438.8	150800+03	147943+02	223.87	223.87	23022+02	299.946		
28750	28687.1	146026+03	143213+02	224.05	224.05	22268+02	300.064		
29000	28935.4	141212+03	138482+02	224.22	224.22	21515+02	300.182		
29250	29183.7	136388+03	133751+02	224.40	224.40	20764+02	300.300		
29500	29432.C	131574+03	129021+02	224.58	224.58	20014+02	300.418		
29750	29680.3	126740+03	124290+02	224.75	224.75	19265+02	300.536		
30000	29928.5	121916+03	119559+02	224.93	224.93	18517+02	300.654		

IRIG - RANGE REFERENCE ATMOSPHERE, MAY

TABLE I.5

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES				
FAIRBANKS, ALASKA			134	64° 49' N		147° 52' W	FORT GREELY MISSILE RANGE LAUNCH SITE			
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS					
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE	
meters	meters	kgf-m ⁻²	mb	degrees K	degrees K	g-m ⁻³	m sec ⁻¹	percent	mb	
0	0.0	102869+05	100880+C4	283.90	284.61	12348+04	338.196	52	6.707	
250	250.6	999343+04	980021+03	282.36	283.02	12063+04	337.249	52	6.049	
500	501.1	968955+04	951240+03	280.82	281.43	11775+04	336.300	52	5.449	
511	511.9	968732+04	950020+03	280.75	281.36	11763+04	336.259	52	5.425	
750	751.6	940889+04	922697+03	279.15	279.71	11492+04	335.274	52	4.915	
1000	1002.2	912469+04	894827+C3	277.25	277.78	11222+04	334.114	54	4.470	
1250	1252.6	884728+04	867622+C3	275.27	275.76	10961+04	332.898	57	4.105	
1500	1503.1	857507+04	840927+03	273.30	273.77	10701+04	331.694	61	3.799	
1750	1753.6	831072+04	815003+03	271.34	271.78	10447+04	330.484	65	3.489	
2000	2004.2	805288+04	789718+03	269.23	269.63	10203+04	329.177	67	3.078	
2250	2254.4	779950+04	764909+C3	267.22	267.58	99584+C3	327.923	68	2.692	
2500	2504.8	755252+04	740688+03	265.55	265.87	97051+03	326.873	69	2.384	
2750	2755.2	734034+04	717261+C3	264.15	264.45	94487+C3	325.998	69	2.152	
3000	3005.5	703034+04	694344+03	262.65	262.93	91997+03	325.059	70	1.947	
3250	3255.9	685263+04	672013+03	261.04	261.30	89595+03	324.049	71	1.740	
3500	3506.2	663058+04	650277+03	259.42	259.65	87247+03	323.025	71	1.506	
3750	3756.5	641672+04	629265+03	257.86	258.05	84949+03	322.032	66	1.237	
4000	4006.7	620725+04	608723+03	256.28	256.44	82693+03	321.025	61	1.012	
4250	4257.0	600318+04	588711+03	254.65	254.79	80494+03	319.986	58	0.840	
4500	4507.2	580461+04	569238+03	253.00	253.11	78346+03	318.934	56	0.703	
4750	4757.5	560946+04	550100+C3	251.34	251.44	76216+C3	317.878	55	0.589	
5000	5007.6	542155+04	531673+C3	249.71	249.80	74147+03	316.839	53	0.493	
5250	5257.8	523889+04	513759+C3	248.02	248.10	72140+03	315.758	52	0.416	
5500	5508.0	506123+04	496347+C3	246.23	246.30	70254+03	314.611	52	0.356	
5750	5758.1	488874+04	479422+03	244.38	244.44	68326+03	313.422	53	0.304	
6000	6008.2	471915+04	462791+03	242.53	242.58	66461+03	312.228	53	0.257	
6250	6258.3	455572+04	446764+03	240.74	240.78	64639+03	311.066	52	0.213	
6500	6508.4	439940+04	431042+03	238.97	239.00	62828+03	309.918	50	0.173	
6750	6758.5	424117+04	415917+C3	237.18	237.21	61081+03	308.753	45	0.130	
7000	7008.5	408950+04	401082+03	235.37	235.39	59358+03	307.567	38	0.092	
7250	7258.5	394441+04	386815+03	233.53	233.54	57701+03	306.352	25	0.051	
7500	7508.5	380174+04	372824+C3	231.67	231.67	56062+03	305.127	14	0.023	
7750	7758.5	366464+04	359378+C3	229.82	229.82	54475+C3	303.95	5	0.008	
8000	8008.5	353028+04	346202+03	227.97	227.97	52903+03	302.1	1	0.002	
8250	8258.4	339938+04	333365+03	226.19	226.19	51342+03	301.498			
8500	8508.3	327238+04	320911+C3	224.55	224.55	49786+03	300.402			
8750	8758.2	315127+04	309034+03	223.22	223.22	48230+03	299.506			
9000	9008.1	303257+04	297432+C3	221.92	221.92	46691+03	298.634			
9250	9258.0	291811+04	286169+03	220.85	220.85	45140+03	297.914			
9500	9507.8	281784+04	275280+C3	220.13	220.13	43565+03	297.428			
9750	9757.6	270009+04	264788+C3	219.81	219.81	41966+03	297.209			
10000	10007.4	259724+04	254702+C3	219.86	219.86	40357+C3	297.248			
10250	10257.2	249860+04	245029+03	220.47	220.47	38718+03	297.656			
10500	10507.0	240420+04	235772+03	221.27	221.27	37121+03	298.195			
10750	10756.7	231351+04	226917+C3	222.09	222.09	35594+03	298.748			
11000	11006.5	222756+04	218449+03	222.85	222.85	34150+03	299.257			
11250	11256.2	214499+04	210352+03	223.49	223.49	32789+03	299.697			
11500	11505.9	206243+04	202255+03	224.14	224.14	31435+03	300.125			
11750	11755.5	198571+04	194731+C3	224.57	224.57	30208+03	300.411			
12000	12005.2	191121+04	187426+03	224.92	224.92	29030+03	300.644			
12250	12254.8	183944+04	180388+C3	225.18	225.18	27908+03	300.818			
12500	12504.4	177176+04	173750+C3	225.31	225.31	26865+03	300.966			
12750	12754.0	170586+04	167287+03	225.39	225.39	25856+03	300.964			
13000	13003.6	164220+04	161045+C3	225.44	225.44	24886+03	300.991			
13250	13253.1	158097+04	155041+C3	225.44	225.44	23959+03	300.992			
13500	13502.6	152312+04	149567+C3	225.41	225.41	23085+03	300.973			
13750	13752.2	146685+04	143849+C3	225.37	225.37	22236+03	300.946			
14000	14001.6	141245+04	138514+C3	225.31	225.31	21417+03	300.926			
14250	14251.1	136001+04	133372+03	225.23	225.23	20629+C3	300.852			
14500	14500.6	130955+04	128423+C3	225.13	225.13	19872+C3	300.786			
14750	14750.0	126100+04	123662+C3	224.99	224.99	19147+C3	300.695			
15000	14999.4	121431+04	119083+C3	224.85	224.85	18500+C3	300.601			
15250	15248.8	116943+04	114682+C3	224.72	224.72	17778+C3	300.515			
15500	15498.2	112455+04	110280+C3	224.59	224.59	17106+C3	300.429			
15750	15747.5	108279+04	106186+C3	224.50	224.50	16477+C3	300.368			

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES				
			LATITUDE	LONGITUDE		FORT GREELY MISSILE RANGE LAUNCH SITE				
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960					
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS					
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE	
meters	meters	kgfm ⁻²	mb	degrees K	degrees K	g m ⁻³	m sec ⁻¹	percent	mb	
16000	15996.9	104274+04	102258+03	224.44	224.44	15872+03	300.324			
16250	16246.2	109421+04	984895+02	224.41	224.41	15289+03	300.309			
16500	16495.5	967481+03	948774+02	224.41	224.41	14729+03	300.304			
16750	16744.8	930648+03	912654+02	224.40	224.40	14169+03	300.298			
17000	16994.0	695229+03	878901+02	224.40	224.40	13645+03	300.297			
17250	17243.3	863440+03	846745+02	224.39	224.39	13146+03	300.295			
17500	17492.5	830650+03	814589+02	224.39	224.39	12647+03	300.294			
17750	17741.7	800079+03	784610+02	224.39	224.39	12181+03	300.294			
18000	17990.8	769509+03	754631+02	224.39	224.39	11716+03	300.295			
18250	18240.0	741271+03	726939+02	224.38	224.38	11286+03	300.288			
18500	18489.1	714458+03	700644+02	224.36	224.36	10879+03	300.276			
18750	18738.3	687644+03	674349+02	224.35	224.35	10471+03	300.264			
19000	18987.4	662668+03	649855+02	224.33	224.33	10092+03	300.249			
19250	19236.4	637692+03	625362+02	224.30	224.30	97126+02	300.234			
19500	19485.5	612716+03	600869+02	224.28	224.28	93317+02	300.220			
19750	19734.6	590438+03	579022+02	224.26	224.26	89947+02	300.204			
20000	19983.6	568161+03	557176+02	224.23	224.23	86563+02	300.188			
20250	20232.6	547635+03	537046+02	224.24	224.24	83434+02	300.189			
20500	20481.6	527109+03	516917+02	224.24	224.24	80306+02	300.191			
20750	20730.5	508254+03	498427+02	224.29	224.29	77414+02	300.229			
21000	20979.5	489400+03	479938+02	224.35	224.35	74524+02	300.267			
21250	21228.4	470546+03	461448+02	224.41	224.41	71634+02	300.305			
21500	21477.3	452739+03	444966+02	224.44	224.44	69067+02	300.325			
21750	21726.2	434932+03	428484+02	224.47	224.47	66499+02	300.345			
22000	21975.1	420125+03	412002+02	224.50	224.50	63933+02	300.365			
22250	22223.9	405257+03	397421+02	224.44	224.44	61686+02	300.327			
22500	22472.7	390369+03	382841+02	224.38	224.38	59438+02	300.288			
22750	22721.5	375521+03	368260+02	224.33	224.33	57189+02	300.250			
23000	22970.3	360653+03	353679+02	224.27	224.27	54939+02	300.211			
23250	23219.1	348002+03	341273+02	224.45	224.45	52968+02	300.335			
23500	23467.8	335351+03	328867+02	224.64	224.64	51000+02	300.459			
23750	23716.6	322701+03	316461+02	224.82	224.82	49036+02	300.583			
24000	23965.3	310050+03	304055+02	225.01	225.01	47075+02	300.707			
24250	24214.0	299394+03	293606+02	225.32	225.32	45395+02	300.912			
24500	24462.7	288739+03	283156+02	225.62	225.62	43720+02	301.118			
24750	24711.3	278083+03	272706+02	225.93	225.93	42049+02	301.323			
25000	24959.9	267427+03	262256+02	226.24	226.24	40383+02	301.528			
25250	25208.6	256771+03	251807+02	226.55	226.55	38721+02	301.732			
25500	25457.1	246116+03	243365+02	226.68	226.68	37401+02	301.822			
25750	25705.7	235554+03	234922+02	226.82	226.82	36082+02	301.911			
26000	25954.3	230946+03	226480+02	226.95	226.95	34765+02	302.000			
26250	26202.8	222327+03	218038+02	227.08	227.08	33449+02	302.090			
26500	26451.3	213728+03	209596+02	227.22	227.22	32135+02	302.179			
26750	26699.8	205120+03	201154+02	227.35	227.35	30823+02	302.268			
27000	26948.3	196450+03	194652+02	227.54	227.54	29801+02	302.395			
27250	27196.8	191860+03	188150+02	227.73	227.73	28782+02	302.522			
27500	27445.2	185230+03	181648+02	227.92	227.92	27764+02	302.648			
27750	27693.6	178600+03	175147+02	228.12	228.12	26748+02	302.775			
28000	27942.0	171970+03	168645+02	228.31	228.31	25733+02	302.902			
28250	28190.4	165340+03	162143+02	228.50	228.50	24720+02	303.028			
28500	28438.8	158710+03	155641+02	228.69	228.69	23709+02	303.155			
28750	28687.1	152060+03	150983+02	229.19	229.19	22950+02	303.486			
29000	28935.4	149211+03	146326+02	229.69	229.69	22193+02	303.817			
29250	29183.7	144461+03	141668+02	230.19	230.19	21440+02	304.147			
29500	29432.0	139712+03	137010+02	230.69	230.69	20690+02	304.477			
29750	29680.3	134962+03	132353+02	231.19	231.19	19944+02	304.807			
30000	29928.5	130213+03	127695+02	231.69	231.69	19200+02	305.136			

IRIG - RANGE REFERENCE ATMOSPHERE, JUNE

TABLE I.6

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgm ⁻²	mb	degrees K	degrees K	g m ⁻³	m sec ⁻¹	percent	mb
0	0.0	102874+05	100884+04	289.20	290.42	12102+04	341.627	61	11.121
250	250.6	999980+04	980645+03	287.72	288.85	11827+04	340.708	61	10.114
500	501.1	971224+04	952445+03	286.25	287.30	11549+04	339.790	61	9.189
522	522.8	96873+04	950000+03	286.12	287.16	11525+04	339.710	61	9.112
750	751.6	942657+04	924470+02	284.65	285.63	11275+04	338.799	61	8.314
1000	1002.2	914823+04	897135+03	282.87	283.77	11044+04	337.695	62	7.498
1250	1252.6	887460+04	870301+03	280.98	281.81	10759+04	336.528	63	6.778
1500	1503.1	860864+04	844219+03	279.02	279.80	10511+04	335.327	66	6.194
1750	1753.6	834908+04	818766+03	277.08	277.61	10267+04	334.131	69	5.660
2000	2004.0	809428+04	793788+03	275.15	275.82	10026+04	332.933	72	5.102
2250	2254.4	784700+04	769528+03	273.28	273.89	97879+03	331.764	73	4.526
2500	2504.8	764849+04	745746+03	271.49	272.05	95496+03	330.647	73	3.996
2750	2755.2	736776+04	722530+03	269.80	270.30	93120+03	329.586	73	3.516
3000	3005.5	712854+04	700052+03	268.17	268.62	90788+03	328.559	72	3.080
3250	3255.9	691415+04	678046+03	266.57	266.97	88479+03	327.546	71	2.688
3500	3506.2	669528+04	656583+03	265.01	265.37	86195+03	326.562	70	2.333
3750	3756.5	648216+04	635683+03	263.52	263.84	83935+03	325.620	68	2.013
4000	4006.7	627476+04	615344+03	262.03	262.31	81723+03	324.674	65	1.725
4250	4257.0	607254+04	595552+03	260.48	260.72	79575+03	323.693	63	1.469
4500	4507.2	587655+04	576293+03	258.87	259.08	77490+03	322.671	61	1.242
4750	4757.5	568545+04	557552+03	257.21	257.39	75462+03	321.618	58	1.042
5000	5007.6	549951+04	539318+03	255.51	255.66	73488+03	320.536	56	0.864
5250	5257.8	531670+04	521390+03	253.79	253.92	71533+03	319.442	54	0.716
5500	5508.0	514040+04	504101+03	252.04	252.15	69646+03	318.326	52	0.596
5750	5758.1	496906+04	487258+03	250.27	250.37	67804+03	317.198	51	0.499
6000	6008.2	480070+04	470788+03	248.48	248.57	65981+03	316.058	50	0.419
6250	6258.3	463841+04	454873+03	246.67	246.74	64223+03	314.892	50	0.353
6500	6508.4	448022+04	439418+03	244.82	244.89	62510+03	313.710	51	0.305
6750	6758.5	432559+04	424235+03	242.96	243.02	60814+03	312.509	50	0.255
7000	7008.5	417676+04	409601+03	241.06	241.10	59183+03	311.274	46	0.192
7250	7258.5	403031+04	395239+03	239.15	239.18	57566+03	310.033	36	0.126
7500	7508.5	388745+04	381229+03	237.23	237.25	55979+03	308.776	24	0.069
7750	7758.5	375035+04	367784+03	235.27	235.28	54456+03	307.492	12	0.030
8000	8008.5	361588+04	354597+03	233.31	233.31	52948+03	306.201	3	0.006
8250	8258.4	348403+04	341743+03	231.40	231.40	51449+03	304.945		
8500	8508.3	335921+04	329426+03	229.51	229.51	50003+03	303.699		
8750	8758.2	323620+04	317363+03	227.64	227.64	48567+03	302.461		
9000	9008.1	311624+04	305608+03	225.83	225.83	47144+03	301.252		
9250	9258.0	299966+04	294185+03	223.76	223.76	45802+03	299.868		
9500	9507.8	288681+04	283099+03	221.88	221.88	44449+03	298.607		
9750	9757.6	277731+04	272361+03	220.45	220.45	43040+03	297.646		
10000	10007.4	267152+04	261987+03	219.59	219.59	41563+03	297.062		
10250	10257.2	256960+04	251991+03	219.29	219.29	40032+03	296.860		
10500	10507.0	247173+04	242394+03	219.81	219.81	38415+03	297.215		
10750	10756.7	237801+04	232004+03	220.62	220.62	36824+03	297.758		
11000	11006.5	228827+04	224413+03	221.51	221.51	35293+03	298.362		
11250	11256.2	220268+04	216009+03	222.40	222.40	33836+03	298.959		
11500	11505.9	212077+04	207977+03	223.21	223.21	32459+03	299.504		
11750	11755.5	204099+04	200153+03	223.98	223.98	31131+03	300.017		
12000	12005.2	196389+04	192592+03	224.65	224.65	29865+03	300.470		
12250	12254.8	188953+04	185336+03	225.20	225.20	28670+03	300.833		
12500	12504.4	182034+04	178514+03	225.52	225.52	27575+03	301.050		
12750	12754.0	175264+04	171875+03	225.73	225.73	26526+03	301.185		
13000	13003.6	168729+04	165466+03	225.83	225.83	25525+03	301.252		
13250	13253.1	162554+04	159411+03	225.84	225.84	24590+03	301.260		
13500	13502.6	156545+04	153518+03	225.83	225.83	23682+03	301.257		
13750	13752.2	150734+04	147820+03	225.83	225.83	22803+03	301.253		
14000	14001.6	145135+04	142329+03	225.82	225.82	21957+03	301.246		
14250	14251.1	139749+04	137047+03	225.80	225.80	21144+03	301.236		
14500	14500.6	134569+04	131967+03	225.78	225.78	20361+03	301.224		
14750	14750.0	129567+04	127081+03	225.77	225.77	19609+03	301.213		
15000	14999.4	124756+04	122363+03	225.75	225.75	18886+03	301.199		
15250	15248.3	120190+04	117866+03	225.73	225.73	18190+03	301.190		
15500	15496.2	115763+04	113525+03	225.73	225.73	17520+03	301.158		
15750	15747.5	111511+04	109355+03	225.74	225.74	16876+03	301.194		

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES			
			LATITUDE	LONGITUDE					
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960	FORT GREELY MISSILE RANGE LAUNCH SITE			
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgm ⁻²	mb	degrees K	degrees K	g m ⁻³	m sec ⁻¹	percent	mb
16000	15996.9	17259+04	105185+03	225.75	225.75	16232+03	301.200		
16250	16246.2	17335+04	101517+03	225.78	225.76	15631+03	301.221		
16500	16495.5	995134+03	975893+02	225.75	225.75	15260+03	301.200		
16750	16744.8	958789+03	940251+02	225.76	225.76	14509+03	301.216		
17000	16994.1	927444+03	904609+02	225.77	225.77	13959+03	301.212		
17250	17243.3	888551+03	871410+02	225.86	225.86	13441+03	301.276		
17500	17492.5	856286+03	839730+02	226.00	226.00	12944+03	301.367		
17750	17741.7	823981+03	808050+02	226.14	226.14	12448+03	301.458		
18000	17990.8	793964+03	778613+02	226.65	226.65	11967+03	301.802		
18250	18240.0	765484+03	750683+02	226.99	226.99	11521+03	302.331		
18500	18489.1	737003+03	722753+02	227.34	227.34	11075+03	302.259		
18750	18738.3	712465+03	696729+02	227.38	227.38	10674+03	302.289		
19000	18987.4	683920+03	670704+02	227.43	227.43	10274+03	302.320		
19250	19236.4	659324+03	646586+02	227.22	227.22	99135+02	302.177		
19500	19485.5	634741+03	622468+02	227.00	227.00	95528+02	302.034		
19750	19734.6	611961+03	600129+02	226.54	226.54	92286+02	301.729		
20000	19983.6	589122+03	577790+02	226.08	226.08	89030+02	301.424		
20250	20232.6	566403+03	555451+02	225.63	225.63	85762+02	301.119		
20500	20481.6	545982+03	535426+02	225.51	225.51	82714+02	301.036		
20750	20730.5	525562+03	515400+02	225.38	225.38	79664+02	300.957		
21000	20979.5	506867+03	497067+02	225.71	225.71	76718+02	301.176		
21250	21228.4	488172+03	478734+02	226.04	226.04	73782+02	301.394		
21500	21477.3	469478+03	460400+02	226.37	226.37	70853+02	301.613		
21750	21726.2	452852+03	444135+02	226.75	226.75	68235+02	301.866		
22000	21975.1	436316+03	427870+02	227.13	227.13	65626+02	302.119		
22250	22223.9	419720+03	411625+02	227.51	227.51	63026+02	302.372		
22500	22472.7	405955+03	397263+02	227.71	227.71	60777+02	302.524		
22750	22721.5	390471+03	382921+02	227.91	227.91	58532+02	302.636		
23000	22970.3	375846+03	368579+02	228.10	228.10	56290+02	302.768		
23250	23219.1	361222+03	354237+02	228.30	228.30	54053+02	302.910		
23500	23467.8	348783+03	342039+02	228.55	228.55	52136+02	303.062		
23750	23716.6	336345+03	329841+02	228.79	228.79	50223+02	303.224		
24000	23965.3	323906+03	317643+02	229.04	229.04	48314+02	303.386		
24250	24214.1	311468+03	305445+02	229.28	229.28	46409+02	303.548		
24500	24462.7	300967+03	295147+02	229.57	229.57	44788+02	303.738		
24750	24711.3	290466+03	284850+02	229.86	229.86	43172+02	303.928		
25000	24959.9	279965+03	274552+02	230.14	230.14	41559+02	304.119		
25250	25208.6	269464+03	264254+02	230.43	230.43	39950+02	304.309		
25500	25457.1	258963+03	253956+02	230.72	230.72	38345+02	304.499		
25750	25705.7	254644+03	245611+02	230.93	230.93	37051+02	304.638		
26000	25954.3	241944+03	237266+02	231.14	231.14	35760+02	304.778		
26250	26202.8	233434+03	228921+02	231.36	231.36	34470+02	304.918		
26500	26451.3	224925+03	220576+02	231.57	231.57	33183+02	305.057		
26750	26699.8	216415+03	212231+02	231.78	231.78	31899+02	305.197		
27000	26948.3	207905+03	203886+02	231.99	231.99	30616+02	305.337		
27250	27196.8	201388+03	197445+02	232.25	232.25	29616+02	305.510		
27500	27445.2	194771+03	191005+02	232.52	232.52	28617+02	305.682		
27750	27693.6	188254+03	184565+02	232.78	232.78	27621+02	305.855		
28000	27942.1	181637+03	178125+02	233.04	233.04	26627+02	306.028		
28250	28190.4	175020+03	171685+02	233.31	233.31	25636+02	306.200		
28500	28438.8	168503+03	165245+02	233.57	233.57	24646+02	306.373		
28750	28687.1	161986+03	158805+02	233.83	233.83	23659+02	306.545		
29000	28935.4	155469+03	152365+02	234.09	234.09	22674+02	306.717		
29250	29183.7	150759+03	147093+02	234.34	234.34	21685+02	307.011		
29500	29432.1	146229+03	143472+02	234.60	234.60	21259+02	307.304		
29750	29680.3	141660+03	138921+02	235.44	235.44	20556+02	307.597		
30000	29928.5	137057+03	134440+02	235.89	235.89	19855+02	307.889		

IRIG-RANGE REFERENCE ATMOSPHERE, JULY

TABLE I.7

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES			
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960	FORT GREELY MISSILE RANGE LAUNCH SITE			
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC) meters	HEIGHT (GEOPOTENTIAL) meters	PRESSURE kgfm ⁻²	PRESSURE mb	TEMPERATURE degrees K	VIRTUAL TEMPERATURE degrees K	DENSITY gm ⁻³	SPEED OF SOUND m sec ⁻¹	RELATIVE HUMIDITY percent	VAPOR PRESSURE mb
0	0.0	103028+05	101616+04	291.09	292.74	12721+04	342.993	73	15.004
250	250.6	100147+05	982110+03	289.32	290.83	11764.04	341.869	73	13.409
500	511.1	972869+04	954058+03	287.55	288.92	11504.04	340.747	73	11.965
536	537.4	968731+04	950000+03	287.29	288.65	11406+04	340.585	73	11.768
750	751.6	944475+04	926213+03	285.75	287.00	11242+04	339.615	73	10.686
1000	1002.2	916703+04	898978+03	284.06	285.20	10981.04	338.546	72	9.508
1250	1252.6	889437+04	872240+03	282.33	283.37	10723+04	337.459	72	8.442
1500	1503.1	862944+04	846259+03	280.56	281.51	10472+04	336.349	73	7.545
1750	1753.6	836959+04	820777+03	278.77	279.64	10225.04	335.232	74	6.784
2000	2004.0	811725+04	796030+03	276.99	277.81	99822.03	334.129	76	6.145
2250	2254.4	786985+04	771768+03	275.26	276.11	97408+03	333.050	78	5.561
2500	2504.8	762982+04	748229+03	273.63	274.32	95021.03	332.024	78	4.968
2750	2755.2	739468+04	725171+03	272.07	272.70	92640+03	331.042	76	4.403
3000	3005.5	716522+04	702078+03	270.60	271.17	90273+03	330.112	77	3.903
3250	3255.9	694159+04	680776+03	269.22	269.74	87922+03	329.243	76	3.490
3500	3506.2	672603+04	659598+03	267.83	268.31	85642+03	328.367	75	3.103
3750	3756.5	651467+04	638884+03	266.38	266.82	83415+03	327.454	74	2.731
4000	4006.7	630689+04	618691+03	264.90	265.29	81245+03	326.514	72	2.372
4250	4257.0	610340+04	598929+03	263.40	263.74	79125+03	325.558	69	2.032
4500	4507.2	591327+04	579894+03	261.87	262.16	77058+03	324.584	66	1.715
4750	4757.5	572141+04	561078+03	260.31	260.57	75014+03	323.595	62	1.428
5000	5007.6	552640+04	542935+03	258.71	258.92	73051+03	322.569	57	1.156
5250	5257.8	533646+04	525290+03	257.05	257.23	71141+03	321.515	52	0.927
5500	5508.0	514844+04	508125+03	255.36	255.50	69280+03	320.437	49	0.752
5750	5758.1	496240+04	491254+03	253.64	253.76	67442+03	319.339	46	0.613
6000	6008.2	478345+04	474980+03	251.87	251.98	65668+03	318.217	46	0.518
6250	6258.3	460923+04	459170+03	250.10	250.19	63935+03	317.088	46	0.448
6500	6508.4	443811+04	443634+03	248.32	248.40	62216+03	315.953	49	0.408
6750	6758.5	427117+04	428656+03	246.52	246.60	60556+03	314.822	51	0.361
7000	7008.5	422114+04	413953+03	244.70	244.77	58915+03	313.634	51	0.302
7250	7258.5	407676+04	399793+03	242.92	242.97	57322+03	312.478	42	0.212
7500	7508.5	393517+04	385902+03	241.12	241.15	55748+03	311.355	30	0.128
7750	7758.5	379689+04	372348+03	239.21	239.22	54223+03	310.259	17	0.061
8000	8008.5	366417+04	359332+03	237.04	237.04	52809+03	309.162	7	0.021
8250	8258.4	353388+04	346555+03	234.64	234.64	51453+03	307.075	2	0.005
8500	8508.3	340652+04	334066+03	232.13	232.13	50135+03	305.426		
8750	8758.2	328241+04	321694+03	229.65	229.65	48831+03	303.790		
9000	9008.1	316189+04	310056+03	227.32	227.32	47515+03	302.249		
9250	9258.0	304454+04	298744+03	225.31	225.31	46185+03	300.908		
9500	9507.8	293267+04	287597+03	223.54	223.54	44820+03	299.722		
9750	9757.6	282253+04	276796+03	222.14	222.14	43409+03	298.781		
10000	10007.4	271597+04	266339+03	221.17	221.17	41952+03	298.129		
10250	10257.2	261303+04	256251+03	220.64	220.64	40460+03	297.772		
10500	10507.0	251406+04	246545+03	220.60	220.60	38934+03	297.747		
10750	10756.7	241907+04	237230+03	220.89	220.89	37414+03	297.939		
11000	11006.5	232804+04	228303+03	221.37	221.37	35926+03	298.265		
11250	11256.2	224392+04	219759+03	221.96	221.96	34491+03	298.665		
11500	11505.9	215381+04	211215+03	222.56	222.56	33061+03	299.065		
11750	11755.5	207317+04	203308+03	223.22	223.22	31729+03	299.510		
12000	12005.2	199441+04	195634+03	223.91	223.91	30437+03	299.974		
12250	12254.8	192144+04	188390+03	224.49	224.49	29235+03	300.358		
12500	12504.4	184918+04	181343+03	224.96	224.96	28082+03	300.677		
12750	12754.0	178118+04	174674+03	225.25	225.25	27170+03	300.854		
13000	13003.6	171459+04	168183+03	225.41	225.41	25992+03	300.975		
13250	13253.1	165102+04	161910+03	225.42	225.42	25011+03	301.048		
13500	13502.6	158946+04	155873+03	225.58	225.58	24071+03	301.090		
13750	13752.2	152931+04	150073+03	225.62	225.62	23172+03	301.114		
14000	14001.6	147447+04	144596+03	225.66	225.66	22322+03	301.143		
14250	14251.1	142194+04	139273+03	225.70	225.70	21496+03	301.177		
14500	14500.6	136773+04	134129+03	225.74	225.74	20699+03	301.196		
14750	14750.1	131719+04	129173+03	225.78	225.78	19931+03	301.220		
15000	14999.4	126958+04	124405+03	225.82	225.82	19192+03	301.247		
15250	15248.8	122154+04	119823+03	225.86	225.86	18482+03	301.274		
15500	15498.2	117503+04	115241+03	225.90	225.90	17772+03	301.311		
15750	15747.5	113174+04	110854+03	225.95	225.95	17112+03	301.337		

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
			LATITUDE	LONGITUDE					
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgm ⁻²	mb	degrees K	degrees K	gm ⁻³	m sec ⁻¹	percent	mb
16000	15996.9	109010+04	106902+03	226.00	226.00	16479+03	301.365		
16250	16246.2	105013+04	102983+03	226.05	226.05	15871+03	301.471		
16500	16495.5	101179+04	992226+02	226.10	226.10	15288+03	301.434		
16750	16744.8	973448+03	954626+02	226.15	226.15	14705+03	301.467		
17000	16994.0	937727+03	919596+02	226.21	226.21	14162+03	301.509		
17250	17243.3	923588+03	886117+02	226.29	226.29	13642+03	301.559		
17500	17492.5	869449+03	852638+02	226.36	226.36	13122+03	301.639		
17750	17741.7	837716+03	821519+02	226.46	226.46	12636+03	301.672		
18000	17990.9	807454+03	791842+02	226.57	226.57	12175+03	301.747		
18250	18240.0	777192+03	762165+02	226.68	226.68	11713+03	301.823		
18500	18489.1	749004+03	734522+02	226.80	226.80	11283+03	301.899		
18750	18738.3	720817+03	706880+02	226.91	226.91	10853+03	301.974		
19000	18987.4	694764+03	681330+02	227.01	227.01	10456+03	302.042		
19250	19236.6	668710+03	655781+02	227.11	227.11	10059+03	302.119		
19500	19485.5	644650+03	632186+02	227.20	227.20	96933+02	302.168		
19750	19734.6	620561+03	608591+02	227.29	227.29	93280+02	302.226		
20000	19983.6	598384+03	586814+02	227.37	227.37	89909+02	302.281		
20250	20232.6	576177+03	565036+02	227.45	227.45	86541+02	302.336		
20500	20481.6	555114+03	544970+02	227.52	227.52	83444+02	302.378		
20750	20730.5	535252+03	524903+02	227.58	227.58	80349+02	302.420		
21000	20979.5	514750+03	504636+02	227.64	227.64	77256+02	302.463		
21250	21228.4	496525+03	486935+02	227.71	227.71	74496+02	302.504		
21500	21477.3	478280+03	469033+02	227.77	227.77	71737+02	302.545		
21750	21726.2	460225+03	451131+02	227.83	227.83	68981+02	302.587		
22000	21975.1	443841+03	435259+02	227.90	227.90	66534+02	302.632		
22250	22223.9	427656+03	419387+02	227.97	227.97	64089+02	302.677		
22500	22472.7	411471+03	403515+02	228.03	228.03	61645+02	302.722		
22750	22721.5	397135+03	389456+02	228.10	228.10	59481+02	302.763		
23000	22970.3	382759+03	375397+02	228.16	228.16	57318+02	302.804		
23250	23219.1	368462+03	361338+02	228.22	228.22	55157+02	302.844		
23500	23467.8	355845+03	348965+02	228.43	228.43	53218+02	302.986		
23750	23716.6	343228+03	336592+02	228.65	228.65	51263+02	303.126		
24000	23965.3	330611+03	324219+02	228.86	228.86	49352+02	303.270		
24250	24214.0	317954+03	311846+02	229.08	229.08	47424+02	303.412		
24500	24462.7	307259+03	301358+02	229.38	229.38	45768+02	303.614		
24750	24711.3	296604+03	290870+02	229.69	229.69	44116+02	303.817		
25000	24959.9	285919+03	280381+02	229.99	229.99	42469+02	304.019		
25250	25208.6	275214+03	270893+02	230.30	230.30	40826+02	304.221		
25500	25457.1	264519+03	259405+02	230.61	230.61	39187+02	304.423		
25750	25705.7	255845+03	250898+02	230.84	230.84	37864+02	304.678		
26000	25954.3	247171+03	242392+02	231.07	231.07	36543+02	304.732		
26250	26202.8	238497+03	233885+02	231.31	231.31	35225+02	304.886		
26500	26451.3	229822+03	225379+02	231.54	231.54	33910+02	305.041		
26750	26699.8	221148+03	216872+02	231.78	231.78	32597+02	305.195		
27000	26948.3	212474+03	208366+02	232.01	232.01	31287+02	305.349		
27250	27196.8	203799+03	201800+02	232.25	232.25	30270+02	305.506		
27500	27445.2	195084+03	195235+02	232.49	232.49	29255+02	305.663		
27750	27693.6	192389+03	188670+02	232.73	232.73	28242+02	305.820		
28000	27942.0	185655+03	182104+02	232.96	232.96	27231+02	305.976		
28250	28190.4	179000+03	175539+02	233.20	233.20	26223+02	306.133		
28500	28438.8	172305+03	168974+02	233.44	233.44	25216+02	306.290		
28750	28687.1	165610+03	162408+02	233.68	233.68	24212+02	306.446		
29000	28935.4	158916+03	155843+02	233.92	233.92	23209+02	306.602		
29250	29183.7	152245+03	151262+02	234.29	234.29	22491+02	306.846		
29500	29432.0	145574+03	146682+02	234.67	234.67	21775+02	307.092		
29750	29680.3	144903+03	142101+02	235.04	235.04	21062+02	307.337		
30000	29928.5	142222+03	137521+02	235.42	235.42	20350+02	307.582		

IRIG - RANGE REFERENCE ATMOSPHERE, AUGUST

TABLE J.8

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES			
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960	FORT GREELY MISSILE RANGE LAUNCH SITE			
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgfm ⁻²	mb	degrees K	degrees K	gm ⁻³	m sec ⁻¹	percent	mb
250	250.0	979950+04	920557+03	267.21	288.57	11836+04	340.536	76	12.185
500	501.1	971100+04	952329+03	285.71	286.98	11561+04	339.599	76	11.054
521	521.8	968720+04	950000+03	285.59	286.85	11538+04	339.522	76	10.965
750	751.6	942548+04	924324+03	284.15	285.25	11288+04	336.577	72	9.453
1000	1002.2	914649+04	896964+03	282.44	283.46	11024+04	337.510	72	8.494
1250	1252.6	887268+04	870113+03	290.62	281.56	10766+04	336.381	74	7.702
1500	1503.1	860661+04	844020+03	278.65	279.51	10519+04	335.154	75	6.850
1750	1753.6	834693+04	818554+03	276.89	277.68	10269+04	334.051	76	6.099
2000	2004.2	809245+04	793598+03	275.74	276.50	10029+03	333.341	77	5.5721
2250	2254.4	784643+04	769472+03	274.89	275.64	97251+03	332.822	79	5.490
2500	2504.8	760574+04	745868+03	273.39	274.08	94804+03	331.878	79	4.938
2750	2755.2	737061+04	722810+03	271.28	271.87	92618+03	330.541	78	4.160
3000	3005.5	714104+04	700297+03	269.21	269.71	90452+03	329.227	76	3.470
3250	3255.9	691652+04	678464+03	267.76	268.21	88125+03	328.310	73	3.019
3500	3506.2	670105+04	657148+03	266.39	266.80	85807+03	327.441	71	2.642
3750	3756.5	648994+04	636358+03	264.99	265.35	83544+03	326.555	70	2.315
4000	4006.7	628220+04	616122+03	263.57	263.90	81333+03	325.658	68	2.024
4250	4257.0	608154+04	596435+03	262.14	262.43	79175+03	324.755	66	1.753
4500	4507.2	588665+04	577283+03	260.68	260.94	77071+03	323.825	64	1.511
4750	4757.5	569671+04	558656+03	259.18	259.41	75024+03	322.875	62	1.305
5000	5007.6	551003+04	540349+03	257.64	257.84	73006+03	321.920	62	1.137
5250	5257.8	532612+04	522766+03	256.04	256.23	71068+03	320.858	61	0.990
5500	5508.0	515519+04	505552+03	254.42	254.58	69176+03	319.860	60	0.845
5750	5758.1	498517+04	488878+03	252.80	252.94	67332+03	318.824	56	0.690
6000	6008.2	481809+04	472494+03	251.16	251.27	65508+03	317.770	53	0.561
6250	6258.2	465702+04	456698+03	249.44	249.53	63758+03	316.671	50	0.461
6500	6508.4	449890+04	441191+03	247.64	247.72	62044+03	315.519	52	0.401
6750	6758.5	434652+04	426248+03	245.78	245.86	60397+03	314.330	52	0.343
7000	7008.5	419694+04	411579+03	243.94	244.00	58762+03	313.142	50	0.278
7250	7258.5	405250+04	397453+03	242.23	242.28	57150+03	312.031	40	0.190
7500	7508.5	391162+04	383599+03	240.54	240.56	55551+03	310.926	28	0.111
7750	7758.5	377356+04	370100+03	238.73	238.75	54003+03	309.750	14	0.050
8000	8008.5	364178+04	357136+03	236.95	236.66	52571+03	308.373	5	0.014
8250	8258.4	351200+04	344410+03	234.30	234.30	51208+03	306.853	1	0.003
8500	8508.3	338525+04	331980+03	231.83	231.33	49886+03	305.231		
8750	8758.2	326340+04	320030+03	229.49	229.49	48581+03	303.687		
9000	9008.1	314355+04	308316+03	227.32	227.32	47249+03	302.247		
9250	9258.0	302745+04	296891+03	225.24	225.29	45909+03	300.834		
9500	9507.8	291424+04	285789+03	223.56	223.56	44533+03	299.740		
9750	9757.6	280456+04	275033+03	222.25	222.25	43110+03	298.857		
10000	10007.4	269859+04	264641+03	221.39	221.39	41643+03	298.276		
10250	10257.2	259645+04	254625+03	220.96	220.96	40145+03	297.987		
10500	10507.0	249936+04	244996+03	221.09	221.09	38604+03	298.074		
10750	10756.7	240406+04	235758+03	221.48	221.48	37083+03	298.339		
11000	11006.5	231380+04	226906+03	221.99	221.99	35608+03	298.682		
11250	11256.2	222726+04	218431+03	222.53	222.53	34196+03	299.043		
11500	11505.9	214467+04	210320+03	223.03	223.03	32851+03	299.384		
11750	11755.5	206156+04	202209+03	223.54	223.54	31512+03	299.725		
12000	12005.2	198507+04	194064+03	223.96	223.96	30281+03	300.074		
12250	12254.8	191042+04	187348+03	224.31	224.31	29096+03	300.241		
12500	12504.4	183851+04	180296+03	224.58	224.58	27967+03	300.422		
12750	12754.0	177067+04	173646+03	224.71	224.71	26920+03	300.529		
13000	13003.6	170470+04	167171+03	224.79	224.79	25907+03	300.562		
13250	13253.1	164067+04	160917+03	224.83	224.83	24934+03	300.536		
13500	13502.6	158008+04	155012+03	224.82	224.82	24019+03	300.523		
13750	13752.2	152210+04	149267+03	224.91	224.81	23130+03	300.577		
14000	14001.8	146586+04	143712+03	224.80	224.80	22271+03	300.568		
14250	14251.1	141067+04	138350+03	224.79	224.79	21443+03	300.557		
14500	14500.0	135824+04	133208+03	224.77	224.77	20646+03	300.547		
14750	14750.0	130783+04	128255+03	224.75	224.76	19879+03	300.539		
15000	14990.4	125928+04	123444+03	224.74	224.74	19143+03	300.528		
15250	15240.6	121263+04	118815+03	224.73	224.73	18434+03	300.527		
15500	15490.2	116761+04	114293+03	224.74	224.74	17752+03	300.526		
14750	15747.5	112408+04	110127+03	224.74	224.74	17070+03	300.530		

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
			LATITUDE	LONGITUDE					
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgm ⁻²	mb	degrees K	degrees K	g m ⁻³	m sec ⁻¹	percent	mb
16000	15996.9	102197+04	100046+03	224.76	224.78	16435+03	300.552		
16250	16246.2	104144+04	102130+03	224.92	224.62	15825+03	300.563		
16500	16490.5	106314+04	983746+02	224.96	224.90	15238+03	300.633		
16750	16744.8	966446+03	947759+02	224.97	224.97	14676+03	300.684		
17000	16994.1	928749+03	911773+02	225.05	225.05	14114+03	300.735		
17250	17243.3	895484+03	878169+02	225.12	225.12	13590+03	300.779		
17500	17492.5	862841+03	846158+02	225.17	225.17	13091+03	300.815		
17750	17741.7	830195+03	814146+02	225.23	225.23	12593+03	300.852		
18000	17990.8	797711+03	784307+02	225.26	225.26	12129+03	300.874		
18250	18240.0	765343+03	754468+02	225.29	225.29	11666+03	300.895		
18500	18489.1	732975+03	724629+02	225.31	225.31	11239+03	300.913		
18750	18738.3	700607+03	700731+02	225.33	225.33	10833+03	300.923		
19000	18987.4	668239+03	674559+02	225.35	225.35	10428+03	300.936		
19250	19236.4	635871+03	652181+02	225.37	225.37	10050+03	300.946		
19500	19485.5	603503+03	625603+02	225.39	225.39	96726+02	300.961		
19750	19734.6	571135+03	601428+02	225.41	225.41	92950+02	300.974		
20000	19983.6	538767+03	579874+02	225.44	225.44	89576+02	300.994		
20250	20232.6	506399+03	557922+02	225.47	225.47	86203+02	301.015		
20500	20481.6	474031+03	537886+02	225.49	225.49	83100+02	301.028		
20750	20730.5	441663+03	517851+02	225.51	225.51	79997+02	301.042		
21000	20979.5	409295+03	499441+02	225.54	225.54	77144+02	301.051		
21250	21228.4	376927+03	481031+02	225.57	225.57	74291+02	301.079		
21500	21477.3	344559+03	462621+02	225.59	225.59	71439+02	301.097		
21750	21726.2	312191+03	446193+02	225.64	225.64	68690+02	301.125		
22000	21975.1	279823+03	429765+02	225.68	225.68	66341+02	301.152		
22250	22224.0	247455+03	413338+02	225.72	225.72	63794+02	301.179		
22500	22472.7	215087+03	398809+02	225.77	225.77	61536+02	301.212		
22750	22721.5	182719+03	384281+02	225.81	225.81	59284+02	301.244		
23000	22970.3	150351+03	369753+02	225.86	225.86	57030+02	301.276		
23250	23219.1	117983+03	355225+02	225.91	225.91	54778+02	301.309		
23500	23467.9	85615+03	340697+02	225.95	225.95	52525+02	301.339		
23750	23716.6	53247+03	326169+02	225.98	225.98	50276+02	301.368		
24000	23965.3	20879+03	311641+02	226.00	226.00	48030+02	301.393		
24250	24214.0	11798+03	297113+02	226.00	226.00	45988+02	301.427		
24500	24462.7	11798+03	282585+02	226.07	226.07	43935+02	301.452		
24750	24711.3	29555+03	268057+02	226.04	226.04	43677+02	301.456		
25000	24959.9	27994+03	27482+02	227.52	227.52	42027+02	302.390		
25250	25208.6	249282+03	264056+02	227.80	227.80	40382+02	302.564		
25500	25457.1	218610+03	253630+02	228.07	228.07	38740+02	302.748		
25750	25705.7	20034+03	245196+02	228.29	228.29	37164+02	302.894		
26000	25954.3	231437+03	235759+02	228.52	228.52	36095+02	303.001		
26250	26202.7	232841+03	226339+02	228.74	228.74	34776+02	303.187		
26500	26451.1	224245+03	219919+02	228.96	228.96	33456+02	303.334		
26750	26699.6	215648+03	211479+02	229.18	229.18	32146+02	303.460		
27000	26948.0	207052+03	203049+02	229.40	229.40	30835+02	303.577		
27250	27196.4	200426+03	196580+02	229.67	229.67	29815+02	303.683		
27500	27444.8	193800+03	190072+02	229.93	229.93	28793+02	303.978		
27750	27693.2	187174+03	183525+02	230.20	230.20	27783+02	304.154		
28000	27941.6	180548+03	177038+02	230.46	230.46	26770+02	304.330		
28250	28190.0	173922+03	170524+02	230.73	230.73	25759+02	304.505		
28500	28438.4	167296+03	164017+02	231.00	231.00	24751+02	304.681		
28750	28686.8	160670+03	157510+02	231.26	231.26	23744+02	304.856		
29000	28935.2	154044+03	151003+02	231.53	231.53	22742+02	305.032		
29250	29183.6	147418+03	144496+02	231.79	231.79	21742+02	305.214		
29500	29432.0	140792+03	137989+02	232.06	232.06	20742+02	305.397		
29750	29680.4	134166+03	131482+02	232.32	232.32	20598+02	305.579		
30000	29928.8	127540+03	124975+02	232.58	232.58	19588+02	305.761		

IRIG-RANGE REFERENCE ATMOSPHERE, SEPTEMBER TABLE I.9

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
			LATITUDE	LONGITUDE					
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgfm ⁻²	mb	degrees K	degrees K	gm ⁻³	m sec ⁻¹	percent	mb
0	0.0	112777.05	100721+04	283.15	284.16	12346+04	337.925	76	9.447
250	250.6	997729+04	978438+03	281.77	282.71	12057+04	337.068	76	8.610
497	497.2	868730+04	950000+03	280.41	281.29	11765+04	336.218	76	7.848
500	531.1	968389+04	945664+03	280.00	280.90	11778+04	335.965	76	7.570
756	751.6	938308+04	921147+03	278.95	279.74	11471+04	335.290	74	6.866
1000	1002.2	910964+04	893351+03	277.41	278.13	11169+04	334.325	74	6.132
1250	1252.6	883332+04	866253+03	275.79	276.45	10716+04	333.315	74	5.506
1500	1503.1	856358+04	839540+03	274.13	274.75	10249+04	332.293	75	4.943
1750	1753.6	829991+04	813943+03	272.48	273.05	9785+04	331.254	75	4.415
2000	2004.0	804361+04	788828+03	270.88	271.39	9326+04	330.249	75	3.913
2250	2254.4	779259+04	764230+03	269.30	269.76	8869+03	329.255	75	3.458
2500	2504.8	754397+04	740244+03	267.71	268.13	8417+03	328.259	74	3.050
2750	2755.2	731165+04	717029+03	266.15	266.53	93726+03	327.276	74	2.725
3000	3005.6	709954+04	694305+03	264.63	264.98	91280+03	326.324	75	2.426
3250	3256.0	690416+04	672163+03	263.14	263.47	88876+03	325.392	76	2.186
3500	3506.4	683444+04	650614+03	261.65	261.95	86526+03	324.452	76	1.931
3750	3756.8	647207+04	629797+03	260.12	260.39	84262+03	323.478	72	1.639
4000	4007.2	621444+04	609425+03	258.55	258.78	82041+03	322.464	70	1.402
4250	4257.6	601212+04	590587+03	256.94	257.15	79874+03	321.466	71	1.237
4500	4508.0	581316+04	570074+03	255.32	255.50	77726+03	320.436	72	1.090
4750	4758.4	562151+04	551261+03	253.68	253.84	75656+03	319.394	71	0.933
5000	5008.8	543509+04	533101+03	252.07	252.20	73624+03	318.358	69	0.752
5250	5259.2	525365+04	515227+03	250.42	250.53	71645+03	317.330	60	0.601
5500	5509.6	507747+04	497950+03	248.71	248.81	69721+03	316.208	56	0.483
5750	5760.0	491458+04	480975+03	246.98	247.06	67821+03	315.095	53	0.391
6000	6010.4	475779+04	465618+03	245.19	245.26	65994+03	313.947	53	0.326
6250	6260.8	459583+04	448736+03	243.36	243.42	64220+03	312.769	55	0.286
6500	6511.2	444167+04	433134+03	241.52	241.57	62462+03	311.578	57	0.251
6750	6761.6	428347+04	418104+03	239.66	239.71	60758+03	310.386	56	0.206
7000	7012.0	413115+04	403397+03	237.86	237.90	59096+03	309.200	52	0.159
7250	7262.4	398551+04	389178+03	236.20	236.22	57394+03	308.118	37	0.096
7500	7512.8	382677+04	375277+03	234.47	234.49	55755+03	306.971	22	0.048
7750	7763.2	368683+04	361731+03	232.62	232.63	54170+03	305.755	8	0.016
8000	8013.6	356617+04	348741+03	230.49	230.49	52710+03	304.346	3	0.005
8250	8264.0	342674+04	335994+03	228.28	228.28	51275+03	302.687	1	0.001
8500	8514.4	329047+04	323587+03	226.12	226.12	49849+03	301.450		
8750	8764.8	317625+04	311483+03	224.12	224.12	48417+03	300.111		
9000	9015.2	308951+04	299937+03	222.40	222.40	46983+03	298.955		
9250	9265.6	298344+04	288653+03	220.90	220.90	45521+03	297.949		
9500	9516.0	289167+04	277692+03	219.77	219.77	44017+03	297.138		
9750	9766.4	279362+04	267096+03	219.08	219.08	42471+03	296.720		
10000	10016.8	269953+04	256889+03	218.83	218.83	40895+03	296.549		
10250	10267.2	259959+04	247087+03	218.19	218.19	39271+03	296.793		
10500	10517.6	249370+04	237700+03	219.03	219.03	37689+03	297.224		
10750	10768.0	238257+04	228726+03	221.54	220.94	36128+03	297.778		
11000	11018.4	224473+04	220132+03	221.23	221.23	34664+03	298.169		
11250	11268.8	214717+04	211546+03	221.91	221.91	33209+03	298.630		
11500	11519.2	207617+04	203594+03	222.44	222.44	31864+03	298.986		
11750	11769.6	199741+04	195679+03	222.87	222.87	30618+03	299.271		
12000	12020.0	191113+04	188565+03	223.14	223.14	29441+03	299.456		
12250	12270.4	181764+04	181485+03	223.37	223.37	28305+03	299.539		
12500	12520.8	172764+04	174781+03	223.50	223.50	27240+03	299.693		
12750	12771.2	163931+04	168214+03	223.59	223.59	26269+03	299.754		
13000	13021.6	155304+04	161688+03	223.64	223.64	25217+03	299.792		
13250	13272.0	146873+04	156001+03	223.67	223.67	24266+03	299.814		
13500	13522.4	138641+04	150063+03	223.68	223.69	23370+03	299.823		
13750	13772.8	130593+04	144443+03	223.70	223.70	22500+03	299.830		
14000	14023.2	122782+04	139000+03	223.70	223.70	21660+03	299.834		
14250	14273.6	115164+04	133764+03	223.71	223.71	20851+03	299.834		
14500	14524.0	107787+04	128844+03	223.70	223.70	20073+03	299.832		
14750	14774.4	100657+04	124090+03	223.69	223.69	19325+03	299.824		
15000	15024.8	93784+04	119473+03	223.68	223.68	18608+03	299.814		
15250	15275.2	87163+04	115038+03	223.66	223.66	17918+03	299.804		
15500	15525.6	80794+04	110794+03	223.65	223.65	17228+03	299.794		
15750	15776.0	74676+04	106746+03	223.63	223.63	16587+03	299.785		

(CONTINUED) IRIG-RANGE REFERENCE ATMOSPHERE, SEPTEMBER TABLE I.9

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
			LATITUDE	LONGITUDE					
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgfm ⁻²	mb	degrees K	degrees K	gm ⁻³	m sec ⁻¹	percent	mb
1600	15996.6	104546+04	102525+03	223.62	223.62	15972+03	299.776		
16250	16246.2	100683+04	987363+02	223.62	223.62	15382+03	299.776		
16500	16495.5	969807+03	951056+02	223.61	223.61	14917+03	299.770		
16750	16744.8	932784+03	914749+02	223.60	223.60	14252+03	299.764		
17000	16994.0	898169+03	880803+02	223.57	223.57	13725+03	299.741		
17250	17243.3	865200+03	848471+02	223.51	223.51	13224+03	299.704		
17500	17492.5	832221+03	816140+02	223.46	223.46	12724+03	299.668		
17750	17741.7	801478+03	785982+02	223.38	223.38	12257+03	299.618		
18000	17990.8	770725+03	755823+02	223.31	223.31	11791+03	299.569		
18250	18240.0	742304+03	727951+02	223.21	223.21	11361+03	299.524		
18500	18489.1	713882+03	700079+02	223.12	223.12	10931+03	299.439		
18750	18738.3	687622+03	674336+02	223.01	223.01	10534+03	299.365		
19000	18987.4	662710+03	649897+02	222.90	222.90	10157+03	299.291		
19250	19236.4	637769+03	625457+02	222.78	222.78	97803+02	299.217		
19500	19485.5	612868+03	601318+02	222.67	222.67	94208+02	299.143		
19750	19734.6	590429+03	579013+02	222.57	222.57	90627+02	299.074		
20000	19983.6	567990+03	557008+02	222.47	222.47	87223+02	299.005		
20250	20232.6	547308+03	536726+02	222.40	222.40	84373+02	298.957		
20500	20481.6	526625+03	516443+02	222.33	222.33	80922+02	298.909		
20750	20730.5	507618+03	497803+02	222.28	222.28	78017+02	298.881		
21000	20979.5	489611+03	479164+02	222.24	222.24	75110+02	298.852		
21250	21228.4	469604+03	460525+02	222.20	222.20	72202+02	298.823		
21500	21477.3	452666+03	443914+02	222.20	222.20	69596+02	298.827		
21750	21726.2	435727+03	427303+02	222.21	222.21	66970+02	298.831		
22000	21975.1	418789+03	410692+02	222.22	222.22	64384+02	298.835		
22250	22223.9	403831+03	396023+02	222.27	222.27	62069+02	298.872		
22500	22472.7	388872+03	381353+02	222.33	222.33	59755+02	298.910		
22750	22721.5	373914+03	366684+02	222.38	222.38	57442+02	298.947		
23000	22970.3	358956+03	352015+02	222.44	222.44	55130+02	298.984		
23250	23219.1	346251+03	339556+02	222.47	222.47	52171+02	299.006		
23500	23467.8	333547+03	327098+02	222.50	222.50	51213+02	299.027		
23750	23716.6	320842+03	314639+02	222.53	222.53	49256+02	299.048		
24000	23965.3	308138+03	302180+02	222.56	222.56	47299+02	299.069		
24250	24214.0	297357+03	291647+02	222.56	222.58	45647+02	299.079		
24500	24462.7	286657+03	281115+02	222.59	222.59	43995+02	299.089		
24750	24711.3	275917+03	270582+02	222.61	222.61	42344+02	299.099		
25000	24959.9	265177+03	260049+02	222.63	222.63	40603+02	299.110		
25250	25208.6	256185+03	251232+02	222.67	222.67	39306+02	299.138		
25500	25457.1	247194+03	242414+02	222.71	222.71	37919+02	299.166		
25750	25705.7	238202+03	233597+02	222.75	222.75	36533+02	299.194		
26000	25954.3	229211+03	224779+02	222.79	222.79	35147+02	299.222		
26250	26202.8	220220+03	215967+02	222.83	222.83	33762+02	299.250		
26500	26451.3	211228+03	207144+02	222.88	222.88	32378+02	299.276		
26750	26699.8	204282+03	200332+02	223.02	223.02	31293+02	299.373		
27000	26948.3	197335+03	193519+02	223.16	223.16	30210+02	299.408		
27250	27196.8	190308+03	186707+02	223.30	223.30	29128+02	299.563		
27500	27445.4	183441+03	179894+02	223.44	223.44	28047+02	299.657		
27750	27693.6	176494+03	173082+02	223.58	223.58	26968+02	299.752		
28000	27942.0	169547+03	166269+02	223.72	223.72	25890+02	299.847		
28250	28190.4	162601+03	159457+02	223.87	223.87	24814+02	299.942		
28500	28438.8	155654+03	152644+02	224.01	224.01	23739+02	300.036		
28750	28687.1	150851+03	147935+02	224.29	224.29	22977+02	300.225		
29000	28935.4	146049+03	143225+02	224.57	224.57	22218+02	300.414		
29250	29183.7	141246+03	138515+02	224.85	224.85	21460+02	300.602		
29500	29432.0	136444+03	133806+02	225.14	225.14	20705+02	300.791		
29750	29680.3	131641+03	129096+02	225.42	225.42	19951+02	300.979		
30000	29928.5	126829+03	124386+02	225.70	225.70	19199+02	301.168		

IRIG - RANGE REFERENCE ATMOSPHERE, OCTOBER TABLE I.10

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kg/m ²	mb	degrees K	degrees K	g/m ³	m sec ⁻¹	percent	mb
0	0	102315+05	100337+04	272.89	273.34	12768+04	331.434	72	4.375
250	250.6	992654+04	973501+03	271.62	272.05	12466+04	330.648	72	3.987
447	447.7	968737+04	950000+03	270.3	271.03	12211+04	330.029	72	3.705
500	501.1	962235+04	943621+03	270.25	270.65	12146+04	329.797	74	3.663
750	751.6	932259+04	914273+03	269.65	270.05	11794+04	329.432	75	3.572
1000	1002.2	903223+04	885759+03	269.15	269.55	11447+04	329.129	76	3.457
1250	1250.6	875074+04	858085+03	268.31	268.70	11125+04	328.605	76	3.274
1500	1503.1	847355+04	821011+03	266.88	267.25	10833+04	327.717	78	3.012
1750	1753.6	821668+04	804801+03	265.49	265.83	10547+04	326.847	79	2.742
2000	2004.4	794724+04	779358+03	264.73	265.05	10243+04	326.371	78	2.540
2250	2254.4	769372+04	754496+03	263.70	264.00	99362+03	325.720	76	2.282
2500	2504.8	744619+04	730280+03	261.83	262.39	97069+03	324.539	74	1.913
2750	2755.2	720767+04	706826+03	259.99	260.21	94629+03	323.375	72	1.611
3000	3005.5	697308+04	683884+03	258.69	258.90	92023+03	322.550	71	1.425
3250	3255.9	674614+04	661570+03	257.52	257.71	89430+03	321.817	70	1.277
3500	3506.2	652658+04	640039+03	256.05	256.22	87022+03	320.887	69	1.118
3750	3706.5	631156+04	618992+03	254.45	254.60	84697+03	319.868	68	0.965
4000	4006.7	610285+04	598486+03	252.79	252.92	82434+03	318.813	68	0.827
4250	4257.0	589939+04	578533+03	251.10	251.22	80226+03	317.738	66	0.702
4500	4507.2	570150+04	559127+03	249.37	249.47	78077+03	316.632	64	0.585
4750	4757.5	550703+04	540056+03	247.58	247.66	75967+03	315.478	61	0.468
5000	5007.6	531972+04	521686+03	245.74	245.81	73935+03	314.298	56	0.369
5250	5257.8	513760+04	503826+03	243.95	244.01	71930+03	313.146	55	0.304
5500	5508.0	496172+04	486460+03	242.36	242.41	69913+03	312.117	59	0.282
5750	5758.1	478898+04	469638+03	240.55	240.59	68002+03	310.945	59	0.237
6000	6008.2	462023+04	453090+03	238.56	238.60	66154+03	309.653	55	0.182
6250	6258.2	445728+04	437110+03	235.94	235.96	64535+03	307.936	37	0.095
6500	6508.4	429711+04	421402+03	233.39	233.40	62898+03	306.261	19	0.038
6750	6758.5	414261+04	406251+03	231.26	231.26	61197+03	304.856	5	0.009
7000	7008.5	399114+04	391398+03	229.71	229.71	59357+03	303.834		
7250	7258.5	384606+04	377170+03	228.55	228.55	57489+03	303.065		
7500	7508.5	370415+04	363253+03	227.36	227.36	55659+03	302.272		
7750	7758.5	356826+04	349937+03	225.68	225.88	53969+03	301.291		
8000	8008.5	343546+04	336904+03	224.31	224.31	52323+03	300.240		
8250	8258.4	330612+04	324220+03	222.74	222.74	50708+03	299.187		
8500	8508.3	318077+04	311927+03	221.28	221.28	49107+03	298.205		
8750	8758.2	305959+04	300044+03	220.02	220.02	47506+03	297.357		
9000	9008.1	294427+04	288744+03	219.02	219.02	45928+03	296.675		
9250	9258.0	283211+04	277735+03	218.29	218.29	44323+03	296.183		
9500	9507.8	272350+04	267084+03	217.90	217.90	42699+03	295.922		
9750	9757.6	261851+04	256827+03	217.86	217.86	41068+03	295.891		
10000	10007.4	251853+04	246984+03	218.31	218.31	39412+03	296.197		
10250	10257.2	242242+04	237558+03	218.96	218.96	37795+03	296.640		
10500	10507.0	233048+04	228542+03	219.65	219.65	36247+03	297.166		
10750	10756.7	224255+04	219919+03	220.29	220.29	34779+03	297.533		
11000	11006.5	215463+04	211297+03	220.92	220.92	33320+03	297.960		
11250	11256.2	207327+04	203318+03	221.38	221.38	31995+03	298.271		
11500	11505.9	199427+04	195571+03	221.73	221.73	30728+03	298.504		
11750	11755.5	191958+04	188246+03	221.95	221.95	29546+03	298.659		
12000	12005.2	184689+04	181117+03	222.15	222.15	28402+03	298.793		
12250	12254.8	177803+04	174365+03	222.31	222.31	27324+03	298.898		
12500	12504.4	171102+04	167794+03	222.45	222.45	26278+03	298.990		
12750	12754.0	164621+04	161448+03	222.56	222.56	25271+03	299.064		
13000	13003.6	158411+04	155348+03	222.64	222.64	24308+03	299.117		
13250	13253.1	152545+04	149595+03	222.68	222.68	23404+03	299.143		
13500	13502.6	146841+04	144002+03	222.70	222.70	22526+03	299.159		
13750	13752.2	141300+04	138598+03	222.70	222.70	21680+03	299.162		
14000	14001.6	136022+04	133392+03	222.69	222.69	20866+03	299.152		
14250	14251.1	130917+04	128385+03	222.66	222.66	20087+03	299.133		
14500	14500.6	126009+04	123572+03	222.57	222.57	19341+03	299.074		
14750	14750.0	121202+04	118947+03	222.49	222.49	18625+03	299.017		
15000	14999.4	116761+04	114503+03	222.43	222.43	17933+03	298.980		
15250	15248.8	112229+04	110059+03	222.33	222.30	17242+03	298.942		
15500	15498.2	108007+04	105938+03	222.39	222.39	16595+03	298.952		
15750	15747.5	103954+04	101983+03	222.44	222.44	15971+03	298.988		

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
			LATITUDE	LONGITUDE					
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgm ⁻²	mb	degrees K	degrees K	gm ⁻³	m sec ⁻¹	percent	mb
16000	15996.5	170127+04	981914+02	222.60	222.60	15367+03	299.595		
16250	16246.2	964251+03	945607+02	222.75	222.75	14789+03	299.192		
16500	16495.5	927226+03	929300+02	222.89	222.89	14212+03	299.288		
16750	16744.8	892724+03	875463+02	222.95	222.95	13679+03	299.329		
17000	16994.0	859826+03	843211+02	222.94	222.94	13176+03	299.323		
17250	17243.3	826948+03	810959+02	222.93	222.93	12672+03	299.316		
17500	17492.5	796298+03	780901+02	222.74	222.74	12213+03	299.189		
17750	17741.7	765648+03	750844+02	222.55	222.55	11753+03	299.062		
18000	17990.8	737317+03	723061+02	222.35	222.35	11329+03	298.922		
18250	18240.0	711351+03	696617+02	222.16	222.16	10973+03	298.800		
18500	18489.1	683386+03	670173+02	221.98	221.98	10517+03	298.677		
18750	18738.3	658259+03	645532+02	221.83	221.83	10137+03	298.577		
19000	18987.4	633123+03	620891+02	221.69	221.69	97570+02	298.478		
19250	19236.4	609908+03	598115+02	221.59	221.59	94030+02	298.415		
19500	19485.5	586682+03	575339+02	221.50	221.50	90687+02	298.353		
19750	19734.6	563457+03	552562+02	221.41	221.41	86941+02	298.291		
20000	19983.6	542764+03	532270+02	221.24	221.24	83814+02	298.174		
20250	20232.6	522072+03	511977+02	221.06	221.06	80682+02	298.058		
20500	20481.6	503046+03	493319+02	220.77	220.77	77843+02	297.863		
20750	20730.5	484021+03	474662+02	220.48	220.48	74997+02	297.668		
21000	20979.5	464954+03	456004+02	220.20	220.20	72143+02	297.473		
21250	21228.4	448024+03	439371+02	220.04	220.04	69562+02	297.366		
21500	21477.3	431073+03	422738+02	219.88	219.88	66977+02	297.258		
21750	21726.2	414113+03	406106+02	219.72	219.72	64389+02	297.150		
22000	21975.1	399135+03	391416+02	219.80	219.80	62337+02	297.205		
22250	22223.9	384158+03	376730+02	219.88	219.88	59687+02	297.260		
22500	22472.7	369167+03	362042+02	219.96	219.96	57339+02	297.315		
22750	22721.5	356024+03	349140+02	219.94	219.94	55301+02	297.299		
23000	22970.3	342867+03	336238+02	219.92	219.92	53263+02	297.284		
23250	23219.1	329711+03	323236+02	219.89	219.89	51225+02	297.268		
23500	23467.8	316554+03	310434+02	219.87	219.87	49186+02	297.252		
23750	23716.6	303392+03	299481+02	219.77	219.77	47472+02	297.189		
24000	23965.3	294229+03	288540+02	219.68	219.68	45756+02	297.125		
24250	24214.1	283067+03	277594+02	219.59	219.59	44039+02	297.061		
24500	24462.7	271904+03	266647+02	219.49	219.49	42321+02	296.998		
24750	24711.3	260742+03	255701+02	219.40	219.40	40601+02	296.934		
25000	24959.9	251709+03	246842+02	219.44	219.44	39187+02	296.963		
25250	25208.6	242674+03	237984+02	219.49	219.49	37773+02	296.993		
25500	25457.1	233643+03	229125+02	219.53	219.53	36360+02	297.022		
25750	25705.7	224610+03	220267+02	219.57	219.57	34947+02	297.051		
26000	25954.3	215577+03	211409+02	219.61	219.61	33535+02	297.080		
26250	26202.8	206544+03	202550+02	219.66	219.66	32124+02	297.109		
26500	26451.3	199019+03	195760+02	219.71	219.71	31039+02	297.144		
26750	26699.8	192695+03	189969+02	219.76	219.76	29956+02	297.178		
27000	26948.3	186571+03	182179+02	219.81	219.81	28873+02	297.213		
27250	27196.8	178846+03	175386+02	219.86	219.86	27790+02	297.248		
27500	27445.2	171922+03	168598+02	219.91	219.91	26708+02	297.282		
27750	27693.6	164997+03	161807+02	219.96	219.96	25626+02	297.317		
28000	27942.0	158073+03	155017+02	220.02	220.02	24545+02	297.351		
28250	28190.4	152072+03	150117+02	219.87	219.87	23484+02	297.255		
28500	28438.8	146070+03	145208+02	219.73	219.73	23022+02	297.158		
28750	28687.1	140069+03	140302+02	219.59	219.59	22259+02	297.061		
29000	28935.4	134068+03	135398+02	219.44	219.44	21495+02	296.964		
29250	29183.7	128067+03	130494+02	219.30	219.30	20730+02	296.867		
29500	29432.0	122065+03	125589+02	219.16	219.16	19963+02	296.770		
29750	29680.3	116064+03	120685+02	219.01	219.01	19196+02	296.674		
30000	29928.5	110063+03	115780+02	218.87	218.87	18428+02	296.577		

IRIG - RANGE REFERENCE ATMOSPHERE, NOVEMBER TABLE I.11

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES			
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960	FORT GREELY MISSILE RANGE LAUNCH SITE			
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GECOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kg/m ²	mb	degrees K	degrees K	g/m ³	m sec ⁻¹	percent	mb
0	0.0	12446+05	100465+04	260.22	260.36	13442+04	323.469	66	1.494
250	25.6	993177+04	973974+03	261.88	262.05	12948+04	324.518	66	1.708
445	44.4	968720+04	950000+03	263.18	263.38	12566+04	325.337	66	1.894
560	501.1	961893+04	943295+03	263.67	263.87	12453+04	325.643	64	1.925
750	751.6	931303+04	913296+03	264.71	264.94	12009+04	326.298	64	2.075
1000	1002.2	901798+04	884323+03	265.21	265.46	11605+04	326.621	67	2.258
1250	1252.6	873159+04	856315+03	265.19	265.47	11237+04	326.628	71	2.389
1500	1503.1	845552+04	829233+03	264.80	265.09	10897+04	326.393	74	2.418
1750	1753.6	818551+04	802724+03	263.88	264.17	10586+04	325.826	75	2.300
2000	2004.0	792430+04	777106+03	262.06	262.31	10320+04	324.679	74	1.958
2250	2254.4	766851+04	752024+03	261.38	260.60	10053+04	323.614	73	1.676
2500	2504.8	742124+04	727775+03	259.33	259.54	97685+03	322.958	72	1.526
2750	2755.2	717971+04	704089+03	258.20	258.39	94928+03	322.239	71	1.366
3000	3005.5	694471+04	681044+03	256.67	256.84	92375+03	321.272	68	1.163
3250	3255.9	671762+04	658774+03	255.03	255.17	89938+03	320.227	66	0.973
3500	3506.2	649559+04	637000+03	253.46	253.58	87509+03	319.235	63	0.819
3750	3756.5	627938+04	615797+03	251.88	251.99	85131+03	318.227	61	0.695
4000	4006.7	626911+04	595176+03	250.24	250.33	82826+03	317.177	60	0.590
4250	4257.4	586463+04	575124+03	248.51	248.60	80594+03	316.075	60	0.503
4500	4507.2	566579+04	555624+03	246.73	246.81	78427+03	314.935	60	0.432
4750	4757.5	547243+04	536662+03	244.89	244.96	76321+03	313.755	64	0.385
5000	5007.6	528444+04	518227+03	243.07	243.12	74256+03	312.576	62	0.316
5250	5257.8	509778+04	500117+03	241.26	241.31	72201+03	311.406	56	0.238
5500	5508.0	492208+04	482691+03	239.60	239.62	70174+03	310.318	33	0.121
5750	5758.1	474956+04	465773+03	237.82	237.83	68225+03	309.156	14	0.044
6000	6008.2	458255+04	449346+03	235.86	235.86	66369+03	307.873	5	0.013
6250	6258.3	441749+04	433237+03	233.81	233.81	64546+03	306.533		
6500	6508.4	425892+04	417657+03	231.76	231.76	62781+03	305.181		
6750	6758.5	410336+04	402402+03	229.76	229.76	61012+03	303.867		
7000	7008.5	395365+04	387740+03	227.98	227.98	59249+03	302.685		
7250	7258.5	380737+04	373375+03	226.31	226.31	57476+03	301.572		
7500	7508.5	366659+04	359609+03	224.87	224.87	55712+03	300.611		
7750	7758.5	352969+04	346144+03	223.57	223.57	53936+03	299.744		
8000	8008.5	339632+04	333065+03	222.43	222.43	52165+03	298.970		
8250	8258.4	326742+04	320424+03	221.42	221.42	50412+03	298.302		
8500	8508.3	314303+04	308422+03	220.61	220.61	48704+03	297.749		
8750	8758.2	302568+04	296718+03	219.79	219.79	47031+03	297.196		
9000	9008.1	291055+04	285378+03	219.08	219.08	45380+03	296.717		
9250	9258.0	279847+04	274436+03	218.55	218.55	43745+03	296.360		
9500	9507.8	269104+04	263901+03	218.24	218.24	42126+03	296.147		
9750	9757.6	258777+04	253773+03	218.14	218.14	40528+03	296.079		
10000	10007.4	248859+04	244048+03	218.23	218.23	38958+03	296.144		
10250	10257.2	239345+04	234718+03	218.49	218.49	37424+03	296.319		
10500	10507.0	230227+04	225775+03	218.87	218.87	35925+03	296.579		
10750	10756.7	221495+04	217212+03	219.34	219.34	34498+03	296.896		
11000	11006.5	213141+04	209019+03	219.86	219.86	33120+03	297.243		
11250	11256.2	204786+04	200827+03	220.37	220.37	31748+03	297.589		
11500	11505.9	197059+04	193249+03	220.95	220.95	30469+03	297.981		
11750	11755.5	189554+04	185889+03	221.46	221.46	29242+03	298.324		
12000	12005.2	182462+04	178934+03	221.80	221.80	28104+03	298.557		
12250	12254.8	175563+04	172168+03	222.04	222.04	27013+03	298.714		
12500	12504.4	168907+04	165641+03	222.10	222.18	25972+03	298.810		
12750	12754.0	162627+04	159482+03	222.25	222.25	24998+03	298.860		
13000	13003.6	156518+04	153492+03	222.32	222.32	24051+03	298.905		
13250	13253.1	150616+04	147704+03	222.40	222.40	23137+03	298.956		
13500	13502.6	144935+04	142133+03	222.47	222.47	22257+03	299.007		
13750	13752.2	139476+04	136779+03	222.54	222.54	21412+03	299.053		
14000	14001.6	134231+04	131635+03	222.60	222.60	20601+03	299.094		
14250	14251.1	129151+04	126643+03	222.65	222.65	19823+03	299.128		
14500	14500.6	124347+04	121943+03	222.69	222.69	19076+03	299.153		
14750	14750.1	119694+04	117380+03	222.71	222.71	18360+03	299.170		
15000	14999.4	115224+04	112996+03	222.73	222.73	17674+03	299.178		
15250	15248.8	110921+04	108787+03	222.73	222.73	17015+03	299.179		
15500	15498.2	106812+04	104747+03	222.72	222.72	16384+03	299.170		
15750	15747.5	102693+04	100774+03	222.70	222.70	15753+03	299.161		

(CONTINUED) IRIG - RANGE REFERENCE ATMOSPHERE, NOVEMBER TABLE I.II

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES			
			LATITUDE	LONGITUDE					
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960	FORT GREELY MISSILE RANGE LAUNCH SITE			
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kgfm ⁻²	mb	degrees K	degrees K	gm ⁻³	m sec ⁻¹	percent	mb
16000	15996.9	98539+03	969425+02	222.68	222.68	15166+03	299.148		
16250	16246.2	951844+03	933440+02	222.64	222.64	14606+03	299.120		
16500	16495.5	916726+03	899001+02	222.57	222.57	14071+03	299.075		
16750	16744.8	881608+03	864562+02	222.51	222.51	13536+03	299.031		
17000	16994.0	848752+03	832381+02	222.41	222.41	13039+03	298.965		
17250	17243.3	815976+03	800199+02	222.31	222.31	12539+03	298.898		
17500	17492.5	785652+03	770501+02	222.16	222.16	12082+03	298.796		
17750	17741.7	756807+03	742174+02	222.01	222.01	11646+03	298.695		
18000	17990.8	727921+03	713847+02	221.86	221.86	11209+03	298.594		
18250	18240.0	701002+03	687448+02	221.71	221.71	10801+03	298.497		
18500	18489.1	674083+03	661049+02	221.57	221.57	10393+03	298.401		
18750	18738.3	649188+03	636636+02	221.44	221.44	10016+03	298.312		
19000	18987.4	624293+03	612222+02	221.31	221.31	96373+02	298.222		
19250	19236.4	601318+03	589692+02	221.19	221.19	92673+02	298.146		
19500	19485.5	578344+03	567161+02	221.08	221.08	89370+02	298.071		
19750	19734.6	557178+03	546405+02	220.95	220.95	86149+02	297.985		
20000	19983.6	536012+03	525649+02	220.83	220.83	82924+02	297.899		
20250	20232.6	514847+03	504892+02	220.70	220.70	79696+02	297.813		
20500	20481.6	495980+03	486390+02	220.56	220.56	76822+02	297.722		
20750	20730.5	477113+03	467888+02	220.43	220.43	73945+02	297.631		
21000	20979.5	459874+03	450982+02	220.31	220.31	71313+02	297.549		
21250	21228.4	442634+03	434076+02	220.19	220.19	68677+02	297.466		
21500	21477.3	425395+03	417170+02	220.06	220.06	66039+02	297.384		
21750	21726.2	408155+03	400263+02	219.94	219.94	63398+02	297.301		
22000	21975.1	393367+03	385761+02	219.79	219.79	61144+02	297.197		
22250	22223.9	378578+03	371258+02	219.63	219.63	58887+02	297.093		
22500	22472.7	363790+03	356756+02	219.48	219.48	56626+02	296.988		
22750	22721.5	350781+03	343995+02	219.36	219.36	54502+02	297.040		
23000	22970.3	337773+03	331242+02	219.63	219.63	52540+02	297.092		
23250	23219.1	324764+03	318485+02	219.71	219.71	50499+02	297.144		
23500	23467.8	311755+03	305728+02	219.79	219.79	48459+02	297.196		
23750	23716.6	300771+03	294955+02	219.92	219.92	46722+02	297.288		
24000	23965.3	289786+03	284183+02	220.06	220.06	44988+02	297.380		
24250	24214.0	278801+03	273411+02	220.19	220.19	43256+02	297.472		
24500	24462.7	267817+03	262638+02	220.33	220.33	41526+02	297.564		
24750	24711.3	256832+03	251866+02	220.47	220.47	39796+02	297.656		
25000	24959.9	247949+03	243155+02	220.31	220.31	38449+02	297.551		
25250	25208.6	239066+03	234444+02	220.16	220.16	37098+02	297.446		
25500	25457.1	230183+03	225732+02	220.00	220.00	35745+02	297.340		
25750	25705.7	221300+03	217021+02	219.84	219.84	34389+02	297.235		
26000	25954.3	212417+03	208310+02	219.69	219.69	33032+02	297.130		
26250	26202.8	203534+03	201329+02	219.38	219.38	31971+02	296.920		
26500	26451.3	194651+03	194348+02	219.07	219.07	30906+02	296.710		
26750	26699.8	185768+03	187368+02	218.76	218.76	29836+02	296.500		
27000	26948.3	180943+03	180387+02	218.45	218.45	28767+02	296.290		
27250	27196.8	176825+03	173406+02	218.14	218.14	27693+02	296.080		
27500	27445.2	169707+03	166425+02	217.83	217.83	26616+02	295.869		
27750	27693.6	162588+03	159445+02	217.52	217.52	25536+02	295.659		
28000	27942.0	155470+03	152464+02	217.21	217.21	24453+02	295.448		
28250	28190.4	148352+03	147548+02	216.97	216.97	23690+02	295.285		
28500	28438.8	145444+03	142632+02	216.73	216.73	22926+02	295.123		
28750	28687.1	142421+03	137716+02	216.49	216.49	22161+02	294.960		
29000	28935.4	135418+03	132799+02	216.25	216.25	21393+02	294.798		
29250	29183.7	130405+03	127883+02	216.01	216.01	20624+02	294.635		
29500	29432.0	125392+03	122967+02	215.78	215.78	19853+02	294.472		
29750	29680.3	120379+03	118051+02	215.54	215.54	19080+02	294.309		
30000	29928.5	115366+03	113135+02	215.30	215.30	18306+02	294.146		

IRIG-RANGE REFERENCE ATMOSPHERE, DECEMBER TABLE I.12

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kg/m ²	mb	degrees K	degrees K	g/m ³	m sec ⁻¹	percent	mb
0	0.0	102635+05	100650+04	254.89	254.98	13751+04	320.109	68	0.989
250	250.6	994301+04	975076+03	256.09	256.20	13259+04	320.872	68	1.095
449	45.5	967730+04	950030+03	257.05	257.17	12869+04	321.491	68	1.187
500	511.1	962256+04	943651+03	257.39	257.51	12766+04	321.695	65	1.172
750	751.6	937913+04	912914+03	258.61	258.75	12291+04	322.462	64	1.282
1000	1002.2	900720+04	883293+03	259.69	259.86	11841+04	323.156	69	1.501
1250	1252.6	871602+04	854749+03	260.25	260.44	11433+04	323.517	73	1.664
1500	1503.1	843466+04	827177+03	260.14	260.34	11069+04	323.453	73	1.657
1750	1753.6	816072+04	800293+03	259.60	259.79	10732+04	323.111	72	1.550
2000	2004.2	789642+04	774375+03	258.50	258.67	10429+04	322.418	68	1.339
2250	2254.4	763982+04	749210+03	257.21	257.37	10141+04	321.604	67	1.189
2500	2504.8	738090+04	724604+03	255.85	255.99	98608+03	320.742	58	1.078
2750	2755.2	714471+04	700657+03	254.42	254.55	95889+03	319.639	68	0.964
3000	3005.5	690859+04	677539+03	252.95	253.07	93268+03	318.907	66	0.815
3250	3255.9	667657+04	654944+03	251.43	251.53	90708+03	317.937	63	0.686
3500	3506.2	645422+04	632952+03	249.84	249.92	88227+03	316.918	62	0.589
3750	3756.5	623629+04	611571+03	248.17	248.25	85822+03	315.854	61	0.496
4000	4006.7	602422+04	590784+03	246.45	246.51	83490+03	314.745	57	0.394
4250	4257.0	581823+04	570573+03	244.69	244.74	81217+03	313.613	51	0.305
4500	4507.2	561786+04	550924+03	242.93	242.97	78990+03	312.480	49	0.245
4750	4757.5	542314+04	531828+03	241.21	241.24	76798+03	311.366	53	0.224
5000	5007.6	523355+04	513275+03	239.47	239.50	74659+03	310.238	51	0.184
5250	5257.8	505019+04	495255+03	237.71	237.73	72575+03	309.088	39	0.119
5500	5508.0	487178+04	477758+03	235.94	235.95	70539+03	307.929	22	0.057
5750	5758.1	469865+04	460584+03	234.17	234.18	68517+03	306.772	7	0.015
6000	6008.2	452827+04	444072+03	232.46	232.46	66548+03	305.647	1	0.002
6250	6258.3	436511+04	428071+03	230.78	230.78	64617+03	304.542		
6500	6508.4	420509+04	412376+03	229.12	229.12	62701+03	303.439		
6750	6758.5	405143+04	397210+03	227.47	227.47	60847+03	302.347		
7000	7008.5	390053+04	382550+03	225.85	225.85	59026+03	301.271		
7250	7258.5	375668+04	368404+03	224.36	224.36	57204+03	300.270		
7500	7508.5	361553+04	354563+03	222.95	222.95	55403+03	299.324		
7750	7758.5	347645+04	341119+03	221.64	221.64	53617+03	298.445		
8000	8008.5	334755+04	328321+03	220.59	220.59	51851+03	297.738		
8250	8258.4	322058+04	315831+03	219.69	219.69	50082+03	297.130		
8500	8508.3	309716+04	303726+03	218.98	218.98	48310+03	296.650		
8750	8758.2	297812+04	292054+03	218.43	218.43	46580+03	296.274		
9000	9008.1	286356+04	280820+03	218.09	218.09	44857+03	295.946		
9250	9258.1	275345+04	270021+03	217.98	217.98	43154+03	295.971		
9500	9507.8	264975+04	259852+03	218.15	218.15	41496+03	296.059		
9750	9757.6	254927+04	249998+03	218.50	218.50	39859+03	296.323		
10000	10007.4	244878+04	240143+03	218.84	218.84	38228+03	296.557		
10250	10257.2	235539+04	230935+03	219.36	219.35	36662+03	296.910		
10500	10507.0	226594+04	222213+03	219.80	219.86	35209+03	297.248		
10750	10756.7	218250+04	213609+03	220.31	220.31	33808+03	297.553		
11000	11006.5	209818+04	205762+03	220.70	220.70	32478+03	297.815		
11250	11206.2	201821+04	197919+03	221.05	221.05	31191+03	298.052		
11500	11505.9	194102+04	190349+03	221.35	221.35	29958+03	298.252		
11750	11755.5	186826+04	183214+03	221.55	221.55	28808+03	298.389		
12000	12005.2	179744+04	176269+03	221.72	221.72	27696+03	298.501		
12250	12254.8	172827+04	169692+03	221.80	221.80	26653+03	298.553		
12500	12504.4	166510+04	163291+03	221.87	221.87	25639+02	298.601		
12750	12754.0	160204+04	157106+03	221.94	221.94	24660+02	298.648		
13000	13003.6	154137+04	151157+03	222.02	222.02	23718+03	298.699		
13250	13253.1	148311+04	145444+03	222.13	222.13	22810+03	298.775		
13500	13502.6	142824+04	140063+03	222.24	222.24	21955+03	298.849		
13750	13752.2	137496+04	134837+03	222.34	222.34	21127+03	298.916		
14000	14001.8	132300+04	129791+03	222.42	222.42	20329+03	298.972		
14250	14251.1	127357+04	124933+03	222.48	222.48	19562+03	299.015		
14500	14500.6	122443+04	120076+03	222.55	222.55	18796+03	299.058		
14750	14750.1	117852+04	115573+03	222.60	222.60	18089+03	299.077		
15000	14950.4	113442+04	111248+03	222.69	222.69	17411+03	299.066		
15250	15146.8	109200+04	107100+03	222.59	222.59	16761+03	299.004		
15500	15448.2	105139+04	103106+03	222.57	222.57	16138+03	299.074		
15750	15747.5	101239+04	992613+02	222.55	222.55	15541+03	299.062		

(CONTINUED) IRIG - RANGE REFERENCE ATMOSPHERE, DECEMBER TABLE I.12

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES			
			LATITUDE	LONGITUDE		FORT GREELY MISSILE RANGE LAUNCH SITE			
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960				
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kg/m ²	mb	degrees K	degrees K	g/m ³	m sec ⁻¹	percent	mb
16000	15496.9	973382+03	954561+02	222.54	222.54	14943+03	299.050		
16250	15246.2	937062+03	918944+02	222.50	222.50	14388+03	299.025		
16500	16495.5	902344+03	864897+02	222.45	222.45	13858+03	298.992		
16750	16744.8	867626+03	850855+02	222.40	222.40	13328+03	298.959		
17000	16994.1	835383+03	819231+02	222.34	222.34	12836+03	298.917		
17.50	17.43.3	804592+03	789036+02	222.25	222.25	12368+03	298.855		
17500	17492.5	773802+03	758041+02	222.16	222.16	11960+03	298.794		
17750	17741.7	745132+03	730723+02	222.09	222.09	11462+03	298.744		
18000	17990.8	716459+03	712606+02	222.01	222.01	11025+03	298.694		
18250	18240.0	685974+03	676634+02	221.97	221.97	10619+03	298.670		
18500	18489.1	663492+03	650662+02	221.94	221.94	10213+03	298.646		
18750	18738.3	639042+03	626666+02	221.93	221.93	98371+02	298.644		
19000	18987.4	614553+03	602710+02	221.93	221.93	94608+02	298.642		
19250	19236.4	592038+03	580591+02	221.96	221.96	91124+02	298.662		
19500	19485.5	569484+03	558473+02	221.99	221.99	87641+02	298.682		
19750	19734.6	546713+03	538104+02	222.01	222.01	84438+02	298.694		
20000	19983.6	527943+02	517735+02	222.02	222.02	81235+02	298.706		
20250	20232.6	508861+03	499023+02	221.96	221.96	78323+02	298.661		
20500	20481.6	489780+03	480311+02	221.89	221.89	75409+02	298.616		
20750	20730.5	470699+03	461598+02	221.82	221.82	72493+02	298.571		
21000	20979.5	452694+03	444925+02	221.88	221.88	69855+02	298.610		
21250	21228.4	436690+03	428246+02	221.94	221.94	67219+02	298.650		
21500	21477.2	419685+03	411570+02	222.00	222.00	64585+02	298.689		
21750	21726.2	404717+03	396892+02	222.06	222.06	62169+02	298.760		
22000	21975.1	389750+03	382214+02	222.81	222.81	59761+02	299.236		
22250	22223.9	374782+03	367536+02	223.21	223.21	57362+02	299.501		
22500	22472.7	359815+03	352858+02	223.61	223.61	54972+02	299.771		
22750	22721.5	347059+03	340388+02	223.28	223.28	53109+02	299.548		
23000	22970.3	334383+03	327918+02	222.95	222.95	51240+02	299.324		
23250	23219.1	321667+02	315448+02	222.61	222.61	49365+02	299.101		
23500	23467.6	309951+03	302978+02	222.28	222.28	47484+02	298.877		
23750	23716.6	298100+03	292336+02	221.71	221.71	45933+02	298.496		
24000	23965.3	287243+03	281694+02	221.15	221.15	44375+02	298.115		
24250	24214.1	276306+03	271052+02	220.58	220.58	42806+02	297.733		
24500	24462.7	265544+03	260413+02	220.01	220.01	41233+02	297.350		
24750	24711.3	254446+03	251480+02	220.22	220.22	39783+02	297.489		
25000	24959.9	243348+03	242566+02	220.43	220.43	38336+02	297.629		
25250	25208.4	232250+03	233644+02	220.63	220.63	36891+02	297.768		
25500	25457.1	225152+03	224722+02	220.84	220.84	35449+02	297.907		
25750	25705.7	220054+03	215799+02	221.04	221.04	34010+02	298.046		
26000	25954.3	210956+03	206877+02	221.25	221.25	32574+02	298.185		
26250	26202.8	200004+03	200060+02	221.75	221.75	31430+02	298.519		
26500	26451.3	197053+03	193243+02	222.24	222.24	30291+02	298.852		
26750	26699.8	191100+03	186425+02	222.74	222.74	29157+02	299.186		
27000	26948.3	182149+03	179608+02	223.23	223.23	28029+02	299.518		
27250	27196.8	176198+03	172791+02	223.73	223.73	26905+02	299.851		
27500	27445.2	169246+03	165974+02	224.23	224.23	25786+02	300.183		
27750	27693.6	162294+03	159156+02	224.72	224.72	24673+02	300.515		
28000	27942.0	155343+03	152333+02	225.22	225.22	23564+02	300.846		
28250	28190.4	150014+03	147604+02	224.99	224.99	22855+02	300.692		
28500	28438.8	145666+03	142869+02	224.75	224.75	22145+02	300.537		
28750	28687.1	140857+03	138134+02	224.52	224.52	21433+02	300.382		
29000	28935.4	136028+03	133308+02	224.29	224.29	20719+02	300.227		
29250	29183.7	131200+03	128663+02	224.06	224.06	20004+02	300.072		
29500	29432.0	126370+03	123928+02	223.83	223.83	19288+02	299.917		
29750	29680.2	121543+03	119193+02	223.60	223.60	18570+02	299.762		
30000	29928.5	116714+03	114457+02	223.37	223.37	17851+02	299.607		

IRIG-RANGE REFERENCE ATMOSPHERE, ANNUAL

TABLE I.13

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA		THERMODYNAMIC QUANTITIES		
FAIRBANKS, ALASKA		134	64°49' N	147° 52' W	OCT 1948 TO DEC 1960		FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392	63°59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS				
ALT. (GEOMETRIC)	HEIGHT (GEOPOTENTIAL)	PRESSURE	PRESSURE	TEMPERATURE	VIRTUAL TEMPERATURE	DENSITY	SPEED OF SOUND	RELATIVE HUMIDITY	VAPOR PRESSURE
meters	meters	kg/m ²	mb	degrees K	degrees K	g m ⁻³	m sec ⁻¹	percent	mb
0	0.0	102751+05	100804+04	274.93	275.38	12752+04	332.666	61	4.306
250	250.6	997613+04	978393+03	273.74	274.16	12432+04	331.930	61	3.952
489	490.5	968727+04	950000+03	272.60	273.00	12123+04	331.224	61	3.638
500	501.1	967453+04	948747+03	272.29	272.67	12121+04	331.326	61	3.499
750	751.6	937662+04	919532+03	271.51	271.7	11763+04	330.538	59	3.224
1000	1002.2	908451+04	890886+03	270.71	271.06	11450+04	330.048	59	3.018
1250	1252.6	887211+04	863192+03	269.85	270.19	11300+04	329.516	59	2.858
1500	1503.1	852776+04	836288+03	268.77	269.10	10826+04	328.850	60	2.658
1750	1753.6	826105+04	810132+03	267.49	267.80	10539+04	328.057	60	2.437
2000	2004.1	799954+04	784525+03	266.78	266.36	10261+04	327.175	61	2.214
2250	2254.4	774715+04	759735+03	264.57	264.64	99936+03	326.236	62	2.003
2500	2504.8	749978+04	735477+03	263.08	263.33	97300+03	325.305	63	1.819
2750	2755.2	725877+04	711842+03	261.57	261.60	94723+03	324.359	64	1.636
3000	3005.5	702580+04	688996+03	259.99	260.19	92249+03	323.363	64	1.434
3250	3255.9	679750+04	666646+03	258.39	258.58	89814+03	322.357	63	1.244
3500	3506.2	657524+04	644870+03	256.82	256.98	87420+03	321.361	62	1.072
3750	3756.6	635980+04	623683+03	255.27	255.41	85068+03	320.377	61	0.922
4000	4006.7	614971+04	603081+03	253.71	253.84	82767+03	319.390	60	0.792
4250	4257.1	594544+04	583049+03	252.15	252.26	80519+03	318.395	59	0.685
4500	4557.2	574685+04	563573+03	250.55	250.64	78330+03	317.375	59	0.581
4750	4757.5	555377+04	544639+03	248.89	248.97	76208+03	316.313	55	0.479
5000	5007.6	536607+04	526231+03	247.19	247.26	74141+03	315.224	52	0.390
5250	5257.8	518365+04	508342+03	245.49	245.55	72119+03	314.133	50	0.322
5500	5508.0	500448+04	490772+03	243.87	243.92	70092+03	313.089	52	0.284
5750	5758.1	482207+04	473864+03	242.19	242.23	68148+03	312.075	52	0.246
6000	6008.2	464474+04	457448+03	240.33	240.37	66298+03	310.801	48	0.187
6250	6258.2	447230+04	441321+03	238.24	238.26	64526+03	309.436	36	0.115
6500	6508.4	430462+04	425767+03	236.76	236.07	62831+03	308.008	20	0.053
6750	6758.5	414552+04	410498+03	234.98	233.96	61119+03	306.640		
7000	7008.6	400611+04	395807+03	232.32	232.22	59352+03	305.553		
7250	7258.5	388927+04	381417+03	230.82	230.62	57567+03	304.562		
7500	7508.5	374567+04	367618+03	229.31	229.31	55849+03	303.565		
7750	7758.5	361580+04	354107+03	227.73	227.73	54169+03	302.519		
8000	8008.5	347861+04	340958+03	225.84	225.84	52595+03	301.260		
8250	8258.4	334844+04	328372+03	224.02	224.02	51064+03	300.047		
8500	8508.3	322286+04	316055+03	222.40	222.40	49557+03	298.957		
8750	8758.2	310278+04	304082+03	221.05	221.05	47922+03	298.049		
9000	9008.1	298267+04	292500+03	220.12	220.12	46292+03	297.420		
9250	9258.0	286877+04	281330+03	219.52	219.52	44647+03	297.014		
9500	9507.8	275912+04	270577+03	219.18	219.18	43065+03	296.798		
9750	9757.6	265367+04	260236+03	219.07	219.07	41383+03	296.712		
10000	10007.4	255233+04	250296+03	219.14	219.14	39790+03	296.758		
10250	10257.2	245498+04	240751+03	219.21	219.21	38260+03	296.809		
10500	10507.0	236152+04	231586+03	219.47	219.47	36760+03	296.984		
10750	10756.7	227150+04	222797+03	219.89	219.89	35297+03	297.269		
11000	11006.5	218606+04	214379+03	220.44	220.44	33879+03	297.637		
11250	11256.2	210393+04	206325+03	221.06	221.06	32515+03	298.053		
11500	11505.9	202354+04	198481+03	221.75	221.75	31181+03	298.523		
11750	11755.6	194678+04	190914+03	222.45	222.45	29898+03	298.992		
12000	12005.2	187425+04	183801+03	223.00	223.00	28713+03	299.360		
12250	12254.8	180373+04	176885+03	223.44	223.44	27576+03	299.656		
12500	12504.4	173576+04	170220+03	223.70	223.70	26509+03	299.827		
12750	12754.0	167161+04	163929+03	223.80	223.80	25518+03	299.894		
13000	13003.6	160917+04	157806+03	223.86	223.86	24557+03	299.939		
13250	13253.1	154885+04	151891+03	223.90	223.90	23633+03	299.963		
13500	13502.6	149080+04	146197+03	223.93	223.93	22744+03	299.984		
13750	13752.2	143499+04	140725+03	223.95	223.95	21891+03	299.997		
14000	14001.6	138135+04	135464+03	223.96	223.96	21071+03	300.004		
14250	14251.1	132976+04	130405+03	223.96	223.96	20264+03	300.006		
14500	14500.6	128015+04	125540+03	223.96	223.96	19528+03	300.005		
14750	14750.0	123244+04	120861+03	223.95	223.95	18801+03	300.000		
15000	14999.4	118657+04	116363+03	223.95	223.95	18101+03	299.996		
15250	15248.8	114248+04	112039+03	223.94	223.94	17429+03	299.993		
15500	15498.2	110012+04	107885+03	223.94	223.94	16783+03	299.993		
15750	15747.5	105947+04	103898+03	223.95	223.95	16162+03	299.990		

(CONTINUED) IRIG - RANGE REFERENCE ATMOSPHERE, ANNUAL TABLE I.13

STATION		ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES				
			LATITUDE	LONGITUDE		FORT GREELY MISSILE RANGE LAUNCH SITE				
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	OCT 1948 TO DEC 1960					
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS					
ALT. (GEOMETRIC) meters	HEIGHT (GEOPOTENTIAL) meters	PRESSURE kgfm ⁻²	PRESSURE mb	TEMPERATURE degrees K	VIRTUAL TEMPERATURE degrees K	DENSITY g m ⁻³	SPEED OF SOUND m sec ⁻¹	RELATIVE HUMIDITY percent	VAPOR PRESSURE mb	
16000	15996.9	12047+04	10074+03	223.96	223.96	15567+03	300.003			
16250	16246.2	98146+03	962491+02	223.97	223.97	14971+03	300.011			
16500	16495.5	945021+03	926759+02	223.98	223.98	14414+03	300.020			
16750	16744.8	910265+03	892685+02	223.99	223.99	13884+03	300.026			
17000	16994.0	875540+03	858611+02	224.01	224.01	13353+03	300.036			
17250	17243.3	842200+03	826896+02	224.01	224.01	12859+03	300.041			
17500	17492.5	812411+03	796703+02	224.03	224.03	12389+03	300.051			
17750	17741.7	781622+03	766509+02	224.04	224.04	11919+03	300.061			
18000	17990.6	752923+03	738365+02	224.05	224.05	11481+03	300.066			
18250	18240.0	724224+03	710221+02	224.06	224.06	11043+03	300.071			
18500	18489.1	697692+03	684202+02	224.06	224.06	10636+03	300.068			
18750	18738.3	671160+03	658102+02	224.05	224.05	10234+03	300.056			
19000	18987.4	646666+03	634163+02	224.04	224.04	9867+02	300.060			
19250	19236.4	622173+03	610143+02	224.03	224.03	94876+02	300.054			
19500	19485.5	599573+03	587980+02	224.02	224.02	91434+02	300.047			
19750	19734.6	576974+03	565818+02	224.01	224.01	87992+02	300.039			
20000	19983.6	556158+03	545405+02	224.03	224.03	84812+02	300.049			
20250	20232.6	535343+03	524992+02	224.04	224.04	81632+02	300.059			
20500	20481.6	514528+03	504580+02	224.06	224.06	78453+02	300.070			
20750	20730.5	495927+03	486357+02	224.12	224.12	75600+02	300.110			
21000	20979.5	477446+03	468214+02	224.18	224.18	72760+02	300.150			
21250	21228.4	458705+03	450032+02	224.24	224.24	69915+02	300.191			
21500	21477.3	442500+03	433944+02	224.30	224.30	67397+02	300.234			
21750	21726.2	426055+03	417857+02	224.37	224.37	64879+02	300.278			
22000	21975.1	409650+03	401769+02	224.43	224.43	62363+02	300.321			
22250	22223.9	395100+03	387539+02	224.50	224.50	60138+02	300.363			
22500	22472.7	380669+03	373309+02	224.56	224.56	57913+02	300.405			
22750	22721.5	366158+03	359079+02	224.62	224.62	55690+02	300.447			
23000	22970.3	353367+03	346554+02	224.70	224.70	53729+02	300.499			
23250	23219.1	340615+03	334030+02	224.78	224.78	51769+02	300.552			
23500	23467.8	327844+03	321505+02	224.86	224.86	49811+02	300.604			
23750	23716.6	315072+03	308290+02	224.93	224.93	47854+02	300.656			
24000	23965.3	292440+03	298353+02	225.04	225.04	46107+02	300.726			
24250	24214.0	292408+03	287735+02	225.14	225.14	44522+02	300.795			
24500	24462.7	282576+03	277112+02	225.25	225.25	42559+02	300.864			
24750	24711.3	271744+03	266489+02	225.35	225.35	41197+02	300.934			
25000	24959.9	262911+03	255867+02	225.45	225.45	39536+02	301.003			
25250	25208.6	252134+03	247259+02	225.58	225.58	38154+02	301.091			
25500	25457.1	243356+03	238650+02	225.72	225.72	36833+02	301.179			
25750	25705.7	234578+03	230042+02	225.85	225.85	35484+02	301.267			
26000	25954.3	225800+03	221434+02	225.98	225.98	34136+02	301.355			
26250	26202.8	217022+03	212826+02	226.11	226.11	32790+02	301.444			
26500	26451.3	208244+03	204218+02	226.25	226.25	31445+02	301.532			
26750	26699.8	201466+03	197591+02	226.39	226.39	30406+02	301.626			
27000	26948.3	194729+03	190964+02	226.53	226.53	29368+02	301.720			
27250	27196.8	197971+03	184336+02	226.67	226.67	28331+02	301.814			
27500	27445.2	181213+03	177709+02	226.81	226.81	27295+02	301.908			
27750	27693.6	174455+03	171082+02	226.95	226.95	26261+02	302.002			
28000	27942.0	167697+03	164455+02	227.09	227.09	25228+02	302.096			
28250	28190.4	160929+03	157828+02	227.23	227.23	24194+02	302.190			
28500	28438.8	154162+03	151201+02	227.37	227.37	23166+02	302.283			
28750	28687.1	147403+03	144582+02	227.50	227.50	22444+02	302.365			
29000	28935.5	140643+03	141964+02	227.63	227.63	21727+02	302.446			
29250	29183.7	133884+03	137346+02	227.76	227.76	21209+02	302.527			
29500	29432.0	135345+03	132728+02	227.89	227.89	20292+02	302.608			
29750	29680.3	128586+03	128110+02	227.99	227.99	19576+02	302.689			
30000	29928.5	125927+03	123492+02	228.11	228.11	18860+02	302.770			

IRIG RANGE REFERENCE ATMOSPHERE, JANUARY TABLE II.1.1

STATION	ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA					SCALAR WINDS							
		LATITUDE		LONGITUDE		JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE					
		64° 49' N		147° 52' W		UNITS: WIND SPEED - m/sec										
FAIRBANKS, ALASKA	134	63° 59' N		145° 43' W												
LAUNCH SITE-FORT GREELY	392															
ALT (km) MSL	NO OBS.	MIN. SPEED (deg)	DIR. (deg)	1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
0.5	692	+0.0		+0.6	+0.1	+0.5	+1.1	+2.3	+0.4	+1.9	+3.0	+3.7	+4.4	+5.2	+9.0	
1.0	667	+0.0		+0.5	+0.5	+1.1	+1.8	+4.0	+6.8	+10.5	+14.0	+16.2	+18.5	+19.9	+25.0	270
1.5	636	+0.0		+0.1	+0.8	+1.5	+2.5	+4.6	+7.7	+11.9	+16.1	+18.9	+21.8	+23.6	+31.0	275
2.0	603	+0.0		+0.2	+1.1	+1.7	+2.8	+5.2	+7.9	+11.9	+16.1	+18.9	+22.7	+24.9	+34.0	111
2.5	583	+0.0		+0.6	+1.4	+2.2	+2.9	+4.7	+8.3	+12.5	+16.5	+19.4	+22.7	+25.2	+30.0	78
3.0	576	+0.0		+0.6	+1.3	+2.2	+3.3	+5.4	+9.1	+13.2	+17.8	+20.6	+23.9	+27.7	+38.0	45
4.0	519	+0.0		+1.1	+1.7	+2.6	+3.7	+6.1	+9.9	+14.0	+19.0	+21.7	+24.2	+27.2	+33.0	245
5.0	476	+1.0		+1.1	+2.0	+3.5	+4.8	+7.1	+12.1	+18.1	+23.6	+27.4	+31.0	+36.6	+42.0	240
6.0	443	+1.0	114	+1.3	+1.7	+2.7	+4.0	+6.6	+14.7	+22.2	+28.8	+34.2	+37.4	+42.1	+47.0	257
7.0	429	+0.0		+1.3	+2.0	+3.3	+4.8	+9.6	+16.8	+25.4	+34.4	+39.2	+44.2	+46.8	+60.0	356
8.0	393	+0.0		+1.3	+2.5	+4.5	+6.0	+10.6	+18.5	+27.2	+36.5	+42.6	+49.0	+55.5	+64.0	
9.0	370	+2.0		+2.8	+3.5	+5.0	+6.2	+11.0	+18.1	+29.4	+39.2	+45.3	+53.5	+58.3	+68.0	182
10.0	356	+2.0		+3.4	+4.4	+6.1	+7.7	+10.0	+16.5	+29.1	+40.0	+46.0	+51.8	+60.4	+69.0	180
11.0	334	+2.0		+2.6	+4.1	+5.5	+7.3	+9.3	+15.5	+26.9	+38.5	+43.3	+56.1	+61.6	+66.0	245
12.0	325	+1.0	114	+2.2	+4.3	+6.1	+8.1	+10.3	+15.7	+26.9	+36.3	+43.1	+47.2	+54.7	+70.0	241
13.0	309	+0.0		+1.5	+3.0	+4.1	+5.8	+8.8	+14.8	+24.7	+35.0	+40.0	+44.3	+45.9	+52.0	272
14.0	294	+0.0		+1.9	+3.9	+4.9	+6.4	+8.7	+14.3	+25.5	+32.6	+39.0	+43.2	+46.5	+57.0	290
15.0	287	+0.0		+1.8	+3.5	+5.0	+6.2	+9.1	+15.2	+25.1	+34.4	+41.3	+44.2	+46.5	+56.0	290
16.0	276	+0.0		+1.7	+3.0	+4.4	+6.5	+9.4	+18.0	+27.1	+37.1	+42.7	+46.5	+49.2	+62.0	310
17.0	269	+0.0		+1.6	+2.4	+4.4	+6.1	+9.0	+18.0	+29.9	+42.0	+46.7	+50.9	+53.6	+68.0	293
18.0	256	+2.0		+1.5	+2.9	+4.4	+5.9	+9.2	+19.0	+31.5	+43.0	+48.2	+53.1	+59.4	+76.0	300
19.0	235	+2.0		+2.6	+2.6	+4.3	+5.5	+10.3	+19.0	+33.0	+46.7	+50.8	+56.6	+62.3	+69.0	290
20.0	221	+2.0		+3.0	+3.0	+4.3	+5.6	+10.2	+20.7	+36.9	+48.6	+52.9	+59.9	+64.7	+91.0	305
21.0	205	+1.0	264	+2.8	+2.8	+4.2	+5.8	+10.4	+19.9	+39.7	+50.6	+58.7	+62.3	+67.9	+99.0	300
22.0	189	+1.0	310	+1.4	+2.4	+3.6	+4.6	+10.3	+23.1	+43.2	+55.0	+60.7	+64.6	+77.1	+87.0	295
23.0	175	+1.0	28	+1.7	+2.6	+3.6	+6.0	+10.7	+25.5	+47.1	+57.2	+61.7	+69.0	+73.2	+87.0	285
24.0	144	+2.0		+2.9	+2.9	+2.9	+5.3	+10.0	+25.0	+49.4	+59.1	+65.8	+68.7	+75.5	+80.0	313
25.0	118	+0.0		+0.1	+1.3	+2.6	+5.3	+9.6	+26.5	+52.2	+64.0	+71.1	+80.3	+83.8	+86.0	280
26.0	83	+0.0		+1.2	+2.1	+2.1	+4.4	+9.7	+20.2	+54.0	+68.3	+70.9	+73.1	+79.1	+80.0	292
27.0	55	+0.0		+0.2	+0.2	+1.7	+2.8	+7.7	+27.5	+49.2	+69.5	+73.5	+74.7	+77.4	+78.0	303
28.0	37	+3.0		+3.0	+3.0	+7.4	+3.5	+11.6	+34.5	+49.9	+74.2	+79.0	+79.5	+79.8	+80.0	
29.0	29	+4.0	227	+4.0	+4.0	+6.0	+8.8	+13.6	+37.5	+53.9	+77.0	+77.7	+86.3	+86.7	+87.0	295
30.0	22	+4.0	226	+4.0	+4.0	+6.0	+8.0	+16.5	+42.0	+53.7	+69.7	+88.8	+96.4	+96.7	+97.0	293

IRIG RANGE REFERENCE ATMOSPHERE, FEBRUARY TABLE II.1.2

STATION	ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA					SCALAR WINDS							
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE							
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE							
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec												
ALT (km) MSL	NO OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY										MAX SPEED	DIR. (deg)	
				1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0		
SFC	586	+0.0		+0.1	+1.1	+2.2	+3.7	+5.4	+7.2	+9.1	+11.0	+12.8	+14.6	+16.4	+18.2	+20.0
0.5	554	+0.0		+0.5	+1.1	+2.2	+3.7	+5.4	+7.2	+9.1	+11.0	+12.8	+14.6	+16.4	+18.2	+20.0
1.0	538	+1.0		+1.4	+2.1	+3.7	+5.4	+7.2	+9.1	+11.0	+12.8	+14.6	+16.4	+18.2	+20.0	+21.8
1.5	511	+1.0		+1.4	+2.2	+4.4	+7.2	+11.0	+15.8	+20.6	+25.4	+30.2	+35.0	+39.8	+44.6	+49.4
2.0	494	+1.0		+1.5	+2.3	+4.6	+8.2	+12.9	+19.4	+26.9	+34.4	+41.9	+49.4	+56.9	+64.4	+71.9
2.5	481	+1.0		+1.6	+2.6	+5.5	+10.9	+17.0	+24.5	+32.0	+39.5	+47.0	+54.5	+62.0	+69.5	+77.0
3.0	471	+1.0		+1.9	+3.0	+6.1	+11.8	+18.7	+26.6	+34.5	+42.4	+50.3	+58.2	+66.1	+74.0	+81.9
4.0	420	+0.0		+2.7	+4.6	+9.2	+15.1	+22.0	+28.9	+35.8	+42.7	+49.6	+56.5	+63.4	+70.3	+77.2
5.0	392	+0.0		+2.0	+3.6	+7.8	+13.7	+20.6	+27.5	+34.4	+41.3	+48.2	+55.1	+62.0	+68.9	+75.8
6.0	365	+1.0	340	+3.0	+5.1	+10.6	+17.5	+24.4	+31.3	+38.2	+45.1	+52.0	+58.9	+65.8	+72.7	+79.6
7.0	326	+1.0		+3.2	+5.1	+10.5	+17.4	+24.3	+31.2	+38.1	+45.0	+51.9	+58.8	+65.7	+72.6	+79.5
8.0	299	+1.0		+3.2	+5.0	+9.2	+14.7	+21.6	+28.5	+35.4	+42.3	+49.2	+56.1	+63.0	+69.9	+76.8
9.0	279	+1.0	270	+3.1	+5.4	+9.1	+13.9	+20.8	+27.7	+34.6	+41.5	+48.4	+55.3	+62.2	+69.1	+76.0
10.0	263	+0.0		+3.3	+5.6	+9.7	+14.5	+21.4	+28.3	+35.2	+42.1	+49.0	+55.9	+62.8	+69.7	+76.6
11.0	255	+1.0	350	+2.6	+4.0	+7.7	+11.4	+17.3	+24.2	+31.1	+38.0	+44.9	+51.8	+58.7	+65.6	+72.5
12.0	249	+0.0		+1.5	+3.7	+7.1	+11.2	+17.1	+24.0	+30.9	+37.8	+44.7	+51.6	+58.5	+65.4	+72.3
13.0	242	+0.0		+1.1	+3.4	+6.8	+11.3	+17.2	+24.1	+31.0	+37.9	+44.8	+51.7	+58.6	+65.5	+72.4
14.0	237	+0.0		+0.7	+3.3	+6.5	+10.9	+17.0	+24.0	+31.0	+38.0	+45.0	+52.0	+59.0	+66.0	+73.0
15.0	226	+0.0		+1.2	+4.0	+7.0	+12.0	+18.0	+25.0	+32.0	+39.0	+46.0	+53.0	+60.0	+67.0	+74.0
16.0	218	+0.0		+1.2	+4.1	+6.9	+11.0	+17.0	+24.0	+31.0	+38.0	+45.0	+52.0	+59.0	+66.0	+73.0
17.0	208	+0.0		+1.7	+4.0	+6.0	+10.8	+16.8	+23.8	+30.8	+37.8	+44.8	+51.8	+58.8	+65.8	+72.8
18.0	205	+1.0	150	+1.4	+3.5	+7.0	+10.4	+16.4	+23.4	+30.4	+37.4	+44.4	+51.4	+58.4	+65.4	+72.4
19.0	190	+1.0		+1.3	+3.4	+6.4	+10.0	+16.0	+23.0	+30.0	+37.0	+44.0	+51.0	+58.0	+65.0	+72.0
20.0	182	+1.0		+1.1	+3.5	+6.0	+11.0	+17.0	+24.0	+31.0	+38.0	+45.0	+52.0	+59.0	+66.0	+73.0
21.0	170	+0.0		+1.1	+3.5	+6.8	+11.5	+17.5	+24.5	+31.5	+38.5	+45.5	+52.5	+59.5	+66.5	+73.5
22.0	158	+2.0		+2.5	+4.2	+7.6	+11.5	+17.5	+24.5	+31.5	+38.5	+45.5	+52.5	+59.5	+66.5	+73.5
23.0	148	+2.0		+2.1	+4.1	+7.2	+12.8	+18.6	+25.4	+32.2	+39.0	+45.8	+52.6	+59.4	+66.2	+73.0
24.0	124	+2.0	314	+2.3	+4.3	+8.3	+14.0	+20.8	+27.6	+34.4	+41.2	+48.0	+54.8	+61.6	+68.4	+75.2
25.0	102	+2.0	222	+2.4	+4.0	+8.5	+14.6	+21.4	+28.2	+35.0	+41.8	+48.6	+55.4	+62.2	+69.0	+75.8
26.0	81	+2.0	205	+2.8	+3.5	+7.8	+15.1	+22.0	+28.9	+35.8	+42.7	+49.6	+56.5	+63.4	+70.3	+77.2
27.0	66	+2.0	263	+2.2	+3.5	+6.2	+15.0	+21.9	+28.8	+35.7	+42.6	+49.5	+56.4	+63.3	+70.2	+77.1
28.0	45	+1.0	327	+2.0	+3.5	+4.6	+12.5	+19.4	+26.3	+33.2	+40.1	+47.0	+53.9	+60.8	+67.7	+74.6
29.0	28	+2.0		+2.7	+2.7	+4.6	+13.0	+19.9	+26.8	+33.7	+40.6	+47.5	+54.4	+61.3	+68.2	+75.1
30.0	22	+3.0		+2.7	+2.7	+5.5	+15.0	+21.9	+28.8	+35.7	+42.6	+49.5	+56.4	+63.3	+70.2	+77.1

IRIG RANGE REFERENCE ATMOSPHERE, APRIL TABLE II.1.4

STATION		ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA										SCALAR WINDS		
FAIRBANKS, ALASKA		134		64° 49' N 147° 52' W		JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE: FORT GREELY		392		63° 59' N 145° 43' W		UNITS: WIND SPEED - m/sec												
ALT (km) MSL	NO. OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY										MAX SPEED	DIR. (deg)			
				1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72			99.0		
0.5	591	+0.0		+0.2	+0.5	+1.0	+1.3	+2.0	+2.3	+3.8	+4.9	+5.9	+6.8	+7.5	+10.0	270		
0.5	577	+0.0		+0.3	+0.8	+1.0	+1.3	+2.0	+3.3	+5.2	+7.6	+9.5	+10.9	+12.6	+16.0	120		
1.0	572	+0.0		+0.5	+1.1	+1.6	+1.6	+3.0	+4.1	+6.7	+9.4	+11.3	+13.9	+17.7	+37.0	265		
1.5	569	+0.0		+0.1	+0.5	+1.0	+1.0	+1.6	+4.0	+7.6	+10.4	+12.9	+15.2	+19.6	+70.0	70		
2.0	563	+0.0		+0.2	+0.5	+1.1	+1.7	+3.2	+5.5	+8.8	+12.4	+15.0	+18.2	+21.1	+25.0			
2.5	549	+0.0		+0.3	+0.8	+1.3	+2.1	+3.7	+6.1	+9.7	+13.5	+17.2	+20.4	+22.8	+31.0	241		
3.0	538	+0.0		+0.7	+1.3	+2.2	+3.8	+6.6	+10.4	+16.6	+24.6	+33.5	+42.5	+51.0	+60.0	239		
4.0	514	+0.0		+0.2	+0.7	+1.2	+2.5	+4.5	+7.5	+12.0	+17.2	+23.0	+29.6	+35.0	+42.0	265		
5.0	497	+0.0		+0.2	+1.0	+2.7	+5.5	+9.3	+14.0	+20.2	+28.2	+35.3	+42.0	+49.0	+57.0	279		
6.0	480	+0.0		+0.9	+2.1	+3.2	+6.1	+10.4	+16.3	+23.1	+32.1	+39.9	+45.2	+50.0	+60.0	215		
7.0	453	+0.0		+1.1	+1.5	+2.4	+3.5	+6.6	+11.8	+18.7	+27.6	+35.3	+42.0	+49.0	+60.0	200		
8.0	426	+1.0		+1.0	+2.4	+4.0	+7.4	+11.9	+20.9	+32.2	+45.6	+50.7	+56.0	+60.0	+70.0	270		
9.0	400	+0.0		+1.5	+2.4	+3.8	+7.3	+11.4	+19.7	+31.2	+47.8	+60.0	+66.0	+70.0	+80.0	262		
10.0	383	+1.0	195	+1.6	+2.3	+3.4	+6.0	+10.1	+17.9	+29.5	+45.1	+55.1	+60.0	+60.0	+70.0	322		
11.0	364	+0.0		+1.1	+1.6	+2.0	+5.1	+9.3	+15.1	+24.3	+35.7	+45.3	+50.0	+50.0	+60.0	270		
12.0	354	+1.0		+1.2	+1.9	+2.7	+4.6	+8.2	+13.1	+20.9	+27.0	+32.9	+39.2	+44.0	+50.0	235		
13.0	345	+0.0		+0.6	+1.4	+2.3	+4.0	+7.7	+12.2	+19.1	+23.5	+30.0	+34.5	+44.0	+50.0	279		
14.0	335	+0.0		+0.4	+1.1	+1.8	+3.2	+6.9	+11.9	+17.3	+22.4	+29.1	+36.2	+40.0	+50.0	284		
15.0	328	+0.0		+1.0	+1.3	+1.9	+3.8	+6.4	+11.1	+15.8	+20.5	+29.1	+30.7	+36.0	+40.0	279		
16.0	323	+0.0		+0.5	+1.2	+1.8	+3.3	+5.4	+9.5	+14.9	+19.9	+25.8	+27.9	+30.0	+30.0	250		
17.0	319	+0.0		+0.7	+0.7	+1.4	+2.7	+4.9	+8.3	+14.1	+20.5	+25.1	+26.8	+31.0	+30.0	285		
18.0	316	+0.0		+0.1	+1.0	+1.5	+2.9	+4.7	+7.8	+13.2	+17.7	+21.7	+27.6	+30.0	+30.0	285		
19.0	307	+0.0		+0.5	+0.9	+1.5	+2.9	+4.5	+6.9	+13.7	+17.7	+23.3	+26.6	+28.9	+30.0	305		
20.0	293	+0.0		+1.0	+1.5	+2.8	+4.7	+6.7	+10.7	+13.2	+22.0	+27.6	+31.5	+35.0	+40.0	289		
21.0	280	+0.0		+0.0	+1.1	+1.7	+3.2	+5.3	+8.0	+14.5	+19.7	+26.6	+32.2	+34.0	+40.0	290		
22.0	262	+0.0		+0.3	+1.0	+1.7	+3.2	+5.3	+8.0	+15.4	+22.9	+29.7	+34.0	+37.0	+40.0	289		
23.0	237	+0.0		+0.8	+1.4	+2.1	+3.4	+6.1	+9.6	+18.0	+21.6	+27.5	+29.8	+33.0	+40.0	270		
24.0	196	+0.0		+1.1	+1.5	+2.1	+3.8	+6.9	+10.7	+19.1	+27.2	+31.7	+35.0	+37.0	+40.0	270		
25.0	159	+0.0		+1.0	+1.6	+2.3	+4.5	+8.7	+13.6	+20.5	+30.0	+31.7	+35.0	+40.0	+50.0	270		
26.0	124	+0.0		+1.0	+1.6	+2.1	+4.3	+9.8	+15.0	+22.8	+29.2	+33.1	+37.0	+41.0	+50.0	268		
27.0	100	+0.0		+0.6	+1.3	+2.5	+4.8	+12.0	+17.6	+25.5	+33.0	+31.7	+35.0	+40.0	+50.0	285		
28.0	75	+0.0		+0.7	+1.4	+3.2	+5.9	+14.7	+20.6	+26.5	+33.2	+36.2	+39.2	+40.0	+50.0	205		
29.0	48	+0.0		+0.0	+1.3	+2.4	+6.5	+15.0	+22.0	+27.7	+35.9	+35.9	+40.5	+41.0	+50.0	72		
30.0	31	+1.0	264	+0.0	+1.5	+2.5	+6.5	+13.5	+25.2	+26.4	+29.2	+29.2	+30.0	+30.0	+40.0	88		

IRIG RANGE REFERENCE ATMOSPHERE, MAY TABLE II.1.5

STATION		ELEVATION		LOCATION		PERIOD OF DATA										SCALAR WINDS		
		MSL (meters)		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392		63° 59' N 145° 43' W		UNITS: WIND SPEED - m/sec												
ALT (km)	NO. OBS.	MIN. SPEED (deg)	DIR.	CUMULATIVE PERCENTAGE FREQUENCY										97.72	99.0	MAX SPEED	DIR. (deg)	
				1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	99.0					
SFC	608	+0.0		+1.5	+2.8	+4.1	+5.1	+6.4	+7.2	+7.9	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0	+10.0	60
0.5	602	+0.0		+2.5	+4.2	+6.4	+8.6	+10.1	+11.0	+12.3	+17.0	+17.0	+17.0	+17.0	+17.0	+17.0	+17.0	264
1.0	597	+0.0		+2.7	+4.5	+6.9	+9.4	+10.9	+13.1	+15.0	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	267
1.5	592	+0.0		+2.9	+4.6	+6.9	+9.9	+11.4	+13.4	+16.0	+23.0	+23.0	+23.0	+23.0	+23.0	+23.0	+23.0	270
2.0	581	+0.0		+2.9	+5.0	+7.7	+10.7	+12.7	+14.9	+17.3	+27.0	+27.0	+27.0	+27.0	+27.0	+27.0	+27.0	265
2.5	560	+0.0		+3.5	+5.4	+8.4	+12.5	+14.8	+16.8	+19.3	+28.0	+28.0	+28.0	+28.0	+28.0	+28.0	+28.0	200
4.0	550	+0.0		+3.8	+6.0	+9.4	+13.3	+16.3	+17.8	+20.2	+26.0	+26.0	+26.0	+26.0	+26.0	+26.0	+26.0	205
4.0	523	+0.0		+4.6	+7.3	+11.2	+15.5	+18.4	+21.0	+22.9	+29.0	+29.0	+29.0	+29.0	+29.0	+29.0	+29.0	307
5.0	494	+1.0		+4.8	+8.2	+12.8	+18.3	+22.2	+25.3	+27.3	+36.0	+36.0	+36.0	+36.0	+36.0	+36.0	+36.0	20
6.0	476	+1.5		+5.0	+9.6	+13.2	+19.6	+23.8	+29.7	+34.5	+42.0	+42.0	+42.0	+42.0	+42.0	+42.0	+42.0	151
7.0	449	+0.0		+5.6	+11.6	+17.7	+24.7	+30.1	+35.5	+41.4	+44.0	+44.0	+44.0	+44.0	+44.0	+44.0	+44.0	40
8.0	433	+0.0		+6.5	+13.1	+20.7	+29.9	+34.8	+42.0	+45.6	+73.0	+73.0	+73.0	+73.0	+73.0	+73.0	+73.0	40
9.0	408	+1.0		+7.5	+15.5	+23.3	+33.0	+38.5	+41.6	+43.9	+50.0	+50.0	+50.0	+50.0	+50.0	+50.0	+50.0	40
10.0	394	+0.0		+6.2	+11.8	+19.7	+28.8	+36.7	+41.0	+43.0	+43.0	+43.0	+43.0	+43.0	+43.0	+43.0	+43.0	218
11.0	371	+1.0		+5.2	+10.0	+15.2	+23.6	+31.2	+35.9	+39.1	+43.0	+43.0	+43.0	+43.0	+43.0	+43.0	+43.0	305
12.0	351	+0.0		+4.5	+7.9	+12.4	+17.9	+22.6	+27.9	+31.4	+44.0	+44.0	+44.0	+44.0	+44.0	+44.0	+44.0	214
13.0	342	+0.0		+4.0	+6.7	+10.2	+14.1	+16.7	+21.2	+22.5	+41.0	+41.0	+41.0	+41.0	+41.0	+41.0	+41.0	214
14.0	329	+3.0		+3.7	+6.0	+8.6	+12.5	+15.3	+18.4	+20.3	+26.0	+26.0	+26.0	+26.0	+26.0	+26.0	+26.0	220
15.0	322	+0.0		+3.2	+5.0	+7.5	+10.6	+12.9	+15.7	+16.9	+34.0	+34.0	+34.0	+34.0	+34.0	+34.0	+34.0	220
16.0	314	+0.0		+2.6	+4.4	+6.7	+9.7	+12.1	+16.9	+19.4	+27.0	+27.0	+27.0	+27.0	+27.0	+27.0	+27.0	314
17.0	307	+0.0		+2.1	+3.7	+5.9	+8.7	+10.9	+13.5	+14.9	+18.0	+18.0	+18.0	+18.0	+18.0	+18.0	+18.0	314
18.0	295	+0.0		+2.1	+3.5	+5.5	+8.0	+11.0	+12.1	+14.0	+17.0	+17.0	+17.0	+17.0	+17.0	+17.0	+17.0	314
19.0	284	+0.0		+2.2	+3.7	+5.2	+6.6	+7.8	+9.7	+11.5	+17.0	+17.0	+17.0	+17.0	+17.0	+17.0	+17.0	314
20.0	264	+0.0		+2.1	+3.4	+5.3	+7.2	+8.9	+10.3	+11.6	+17.0	+17.0	+17.0	+17.0	+17.0	+17.0	+17.0	314
21.0	254	+0.0		+2.3	+4.0	+5.6	+7.3	+9.0	+10.4	+11.7	+15.0	+15.0	+15.0	+15.0	+15.0	+15.0	+15.0	314
22.0	240	+0.0		+2.7	+4.3	+6.0	+7.8	+9.9	+9.7	+10.5	+14.0	+14.0	+14.0	+14.0	+14.0	+14.0	+14.0	95
23.0	223	+0.0		+2.7	+4.6	+6.7	+8.6	+9.5	+10.4	+12.3	+14.0	+14.0	+14.0	+14.0	+14.0	+14.0	+14.0	96
24.0	197	+0.0		+3.0	+4.9	+7.3	+9.6	+11.2	+12.7	+14.0	+17.0	+17.0	+17.0	+17.0	+17.0	+17.0	+17.0	96
25.0	174	+0.0		+3.6	+5.6	+8.7	+11.2	+13.2	+15.0	+16.2	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	95
26.0	150	+1.0		+3.7	+6.2	+9.4	+12.3	+13.8	+16.6	+19.5	+21.0	+21.0	+21.0	+21.0	+21.0	+21.0	+21.0	57
27.0	109	+0.0		+4.2	+6.4	+10.1	+12.7	+14.2	+17.2	+17.9	+21.0	+21.0	+21.0	+21.0	+21.0	+21.0	+21.0	40
28.0	86	+0.0		+4.7	+7.2	+11.1	+14.4	+16.9	+17.6	+19.1	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	50
29.0	59	+2.0		+5.6	+8.7	+12.1	+16.3	+17.3	+17.8	+18.4	+19.0	+19.0	+19.0	+19.0	+19.0	+19.0	+19.0	89
30.0	45	+2.0	220	+6.7	+10.3	+13.2	+16.7	+17.8	+18.9	+19.5	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	87

IRIG RANGE REFERENCE ATMOSPHERE, JUNE TABLE II.16

STATION	ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA		SCALAR WINDS							
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961		FORT GREELY MISSILE RANGE LAUNCH SITE							
FAIRBANKS, ALASKA	134		64° 49' N	147° 52' W	JAN 1956 TO JAN 1961									
LAUNCH SITE-FORT GREELY	392		63° 50' N	145° 43' W	UNITS: WIND SPEED - m/sec									
ALT (km)	NO. OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY										
				1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0
0.5	592	+0.0		+0.9	+2.3	+3.7	+4.8	+6.1	+7.3	+8.0	+10.6	+11.7	+17.0	20
0.5	585	+0.0		+2.1	+3.6	+5.6	+8.0	+9.3	+10.6	+11.7	+13.5	+17.0	267	
1.0	582	+0.0		+2.1	+3.9	+5.3	+8.6	+10.8	+12.5	+13.5	+15.4	+18.0	255	
1.5	574	+0.0		+2.5	+3.9	+6.3	+9.1	+10.9	+12.6	+14.0	+15.6	+18.0	290	
2.0	561	+0.0		+2.5	+4.4	+6.9	+9.4	+10.9	+13.3	+15.4	+16.5	+20.0	214	
2.5	545	+0.0		+2.8	+4.7	+7.4	+10.3	+12.7	+15.3	+16.5	+17.8	+21.0	276	
3.0	530	+0.0		+2.7	+4.7	+7.6	+11.3	+14.2	+15.9	+17.8	+17.9	+24.0	170	
4.0	506	+0.0		+3.0	+5.1	+8.2	+12.0	+14.7	+17.0	+17.9	+17.9	+24.0		
5.0	483	+0.0		+3.5	+6.5	+9.8	+14.1	+16.9	+18.9	+21.1	+28.0			
6.0	466	+0.0		+4.7	+7.7	+12.5	+17.2	+19.7	+22.8	+25.1	+43.0	272		
7.0	445	+1.0		+5.8	+9.5	+15.5	+20.7	+23.9	+26.8	+29.2	+32.0			
8.0	427	+1.0		+7.0	+10.8	+16.9	+24.1	+26.6	+31.1	+35.8	+50.0	143		
9.0	407	+1.0		+7.7	+12.3	+19.4	+26.2	+29.6	+35.4	+38.6	+62.0	159		
10.0	390	+1.0		+6.7	+11.7	+18.8	+26.1	+29.5	+30.5	+41.5	+57.0	168		
11.0	378	+1.0		+5.3	+8.8	+14.4	+23.6	+28.0	+31.4	+37.1	+46.0	16		
12.0	365	+0.0		+4.0	+6.6	+11.8	+19.3	+24.2	+28.3	+30.3	+47.0	286		
13.0	356	+0.0		+2.9	+5.4	+9.0	+14.0	+18.4	+23.8	+26.2	+34.0	256		
14.0	350	+0.0		+2.7	+4.7	+7.2	+11.5	+14.6	+19.5	+25.2	+36.0	258		
15.0	345	+0.0		+2.3	+3.9	+6.3	+9.3	+10.9	+14.1	+17.5	+25.0	251		
16.0	338	+0.0		+2.1	+3.7	+5.9	+7.8	+9.8	+12.2	+17.6	+27.0	330		
17.0	330	+0.0		+2.0	+3.6	+5.4	+6.8	+8.0	+10.4	+18.7	+29.0	154		
18.0	321	+0.0		+1.9	+3.4	+5.3	+6.8	+7.8	+9.3	+11.3	+22.0			
19.0	314	+0.0		+2.1	+3.5	+5.2	+6.8	+8.1	+9.5	+12.8	+16.0			
20.0	302	+0.0		+2.3	+3.8	+5.5	+7.1	+8.3	+11.0	+15.4	+21.0	33		
21.0	284	+0.0		+2.8	+4.2	+5.9	+7.6	+8.8	+11.2	+13.5	+21.0	105		
22.0	269	+0.0		+3.4	+4.7	+6.2	+7.7	+8.7	+10.2	+13.1	+18.0	44		
23.0	246	+0.0		+3.9	+5.5	+7.2	+9.1	+9.7	+10.6	+13.5	+29.0	75		
24.0	222	+1.0		+4.5	+6.2	+8.0	+9.8	+11.7	+13.6	+15.7	+18.0	50		
25.0	199	+0.0		+5.1	+6.9	+8.9	+10.8	+12.3	+14.2	+20.0	+29.0	85		
26.0	178	+0.0		+6.1	+7.8	+9.5	+11.6	+13.2	+15.9	+22.6	+29.0	52		
27.0	150	+0.0		+6.2	+8.5	+10.3	+12.7	+14.2	+17.5	+19.5	+25.0	92		
28.0	120	+0.0		+6.6	+8.7	+11.0	+12.5	+14.5	+16.2	+19.8	+21.0	100		
29.0	104	+1.0	296	+6.9	+9.2	+11.0	+13.2	+14.7	+18.6	+19.9	+22.0	2		
30.0	83	+4.0	76	+7.9	+10.1	+12.2	+14.3	+15.9	+20.5	+23.1	+24.0	313		

IRIG RANGE REFERENCE ATMOSPHERE, JULY TABLE II.1.7

STATION		ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA										SCALAR WINDS	
FAIRBANKS, ALASKA		134		64° 49' N 147° 52' W		JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE	
LAUNCH SITE-FORT GREELY		392		63° 59' N 145° 43' W		UNITS: WIND SPEED - m/sec											
ALT (km)	NO OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY										MAX SPEED	DIR. (deg)		
				1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72			99.0	
SFC	594	+0.0		+1.1	+2.3	+3.8	+5.0	+5.9	+7.5	+8.2	+31.0	220					
0.5	591	+0.0		+1.0	+3.7	+6.2	+8.7	+9.9	+11.3	+14.5	+19.0	243					
1.0	585	+1.0		+1.3	+4.6	+7.6	+10.7	+12.8	+15.6	+17.7	+22.0	244					
1.5	573	+0.0		+1.5	+5.2	+8.1	+10.9	+13.3	+15.7	+17.6	+24.0	253					
2.0	557	+0.0		+2.0	+5.6	+8.6	+11.4	+13.0	+15.3	+16.8	+21.0	171					
2.5	541	+0.0		+2.2	+6.2	+9.0	+12.3	+14.6	+15.9	+17.5	+21.0	171					
3.0	528	+0.0		+2.2	+6.3	+9.1	+12.5	+14.6	+16.6	+18.2	+22.0						
4.0	494	+1.0		+2.1	+6.7	+9.7	+13.1	+14.8	+17.5	+19.4	+22.0						
5.0	464	+0.0		+2.7	+4.6	+7.5	+10.8	+14.3	+16.4	+18.9	+21.6	+26.0					
6.0	445	+0.0		+2.9	+5.4	+8.5	+12.2	+15.5	+17.9	+21.4	+24.2	+38.0					
7.0	424	+1.0		+3.4	+6.2	+10.0	+13.8	+18.1	+21.2	+25.6	+30.7	+38.0					
8.0	403	+0.0		+4.3	+7.0	+11.0	+15.8	+21.5	+24.6	+28.9	+32.9	+42.0					
9.0	389	+1.0		+4.3	+7.8	+12.2	+17.8	+24.0	+27.2	+32.1	+35.5	+57.0					
10.0	379	+2.0		+4.5	+8.0	+12.6	+19.0	+25.5	+29.8	+33.1	+39.2	+70.0					
11.0	365	+0.0		+4.0	+6.6	+11.3	+17.5	+23.8	+26.3	+34.3	+37.3	+49.0					
12.0	360	+0.0		+4.8	+5.1	+8.6	+13.4	+18.8	+21.5	+28.7	+36.4	+44.0					
13.0	345	+0.0		+2.1	+3.8	+6.7	+10.5	+14.2	+16.7	+20.7	+24.5	+33.0					
14.0	340	+0.0		+1.7	+3.3	+5.3	+8.3	+11.7	+14.2	+16.5	+19.6	+29.0					
15.0	333	+0.0		+0.5	+0.4	+0.4	+0.7	+1.2	+2.7	+4.7	+10.9	+13.7					
16.0	330	+0.0		+1.0	+2.4	+4.2	+6.3	+8.6	+11.8	+15.2	+17.0	+25.3					
17.0	321	+0.0		+1.0	+3.6	+5.7	+7.4	+9.1	+10.8	+14.7	+19.0	+19.3					
18.0	313	+0.0		+0.9	+3.2	+4.9	+6.6	+7.7	+10.3	+12.8	+20.0	261					
19.0	307	+0.0		+0.3	+1.7	+2.8	+4.5	+6.2	+7.3	+8.8	+9.5	+11.0					
20.0	299	+0.0		+0.6	+1.6	+2.9	+4.4	+6.3	+7.3	+8.4	+10.0	+15.0					
21.0	294	+0.0		+0.2	+2.0	+3.2	+4.8	+6.2	+6.9	+8.4	+9.5	+12.0					
22.0	284	+0.0		+0.5	+1.2	+2.3	+3.6	+5.2	+5.7	+7.3	+8.7	+12.0					
23.0	266	+0.0		+0.2	+1.1	+1.7	+2.8	+4.0	+5.8	+8.0	+11.1	+12.0					
24.0	252	+0.0		+0.5	+1.2	+1.8	+3.3	+4.8	+6.5	+9.1	+9.8	+13.0					
25.0	228	+0.0	+0.4	+1.1	+1.6	+2.5	+4.0	+5.1	+6.9	+8.5	+9.3	+10.6					
26.0	194	+0.0		+1.0	+1.8	+2.8	+4.3	+6.2	+7.8	+9.2	+10.0	+11.3					
27.0	166	+2.0		+2.3	+3.1	+4.0	+5.3	+7.3	+8.1	+9.4	+10.1	+10.7					
28.0	138	+2.0	103	+2.4	+3.1	+4.1	+5.9	+7.3	+8.9	+10.2	+10.9	+13.6					
29.0	110	+3.0		+3.1	+3.8	+4.5	+6.0	+7.5	+9.7	+11.0	+11.6	+12.9					
30.0	94	+4.0		+4.1	+4.1	+4.6	+6.5	+8.3	+10.4	+12.2	+12.8	+14.0					

IRIG RANGE REFERENCE ATMOSPHERE, AUGUST TABLE II.18

STATION	ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA										SCALAR WINDS		
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE		
		64° 49' N	147° 52' W	UNITS: WIND SPEED—m/sec										MAX	DIR.	
LAUNCH SITE—FORT GREELY	392	63° 59' N	145° 43' W	CUMULATIVE PERCENTAGE FREQUENCY										SPEED	(deg)	
ALT (km)	NO. OBS.	MIN. SPEED	DIR. (deg)	1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0		
0.5	573	+0.0			+0.0	+0.3	+1.0	+1.8	+2.1	+3.3	+4.6	+5.6	+7.1	+8.2	+10.0	
1.0	554	+0.0		+0.0	+0.2	+0.8	+1.3	+2.5	+4.1	+6.7	+9.8	+12.6	+16.6	+18.8	+20.0	235
1.5	537	+0.0		+0.1	+0.5	+1.1	+1.6	+3.2	+5.0	+7.5	+10.8	+14.3	+17.2	+18.9	+26.0	263
2.0	520	+0.0		+0.2	+0.7	+1.3	+2.0	+3.6	+5.7	+8.6	+12.2	+15.6	+18.6	+21.9	+26.0	
2.5	501	+0.0		+0.3	+0.9	+1.6	+2.3	+3.9	+6.4	+9.5	+13.4	+16.4	+20.9	+22.9	+31.0	202
3.0	483	+0.0		+0.2	+0.5	+1.3	+2.3	+4.0	+6.5	+9.6	+13.3	+16.9	+22.1	+32.0		
4.0	449	+0.0		+0.4	+1.1	+1.7	+2.6	+4.3	+6.7	+9.9	+14.0	+17.1	+22.8	+26.3	+36.0	256
5.0	432	+0.0		+0.5	+1.1	+1.8	+3.0	+5.0	+7.5	+11.1	+15.8	+20.2	+25.5	+29.8	+37.0	
6.0	417	+0.0		+0.6	+1.2	+2.1	+3.4	+5.8	+8.5	+13.0	+18.8	+23.1	+28.4	+34.8	+43.0	221
7.0	399	+1.0		+1.2	+1.8	+2.7	+3.9	+6.4	+10.4	+15.2	+21.6	+27.0	+33.3	+42.0	+47.0	269
8.0	382	+2.0		+2.2	+3.2	+4.5	+7.2	+12.4	+19.0	+27.2	+31.9	+37.2	+46.1	+60.0	+81	
9.0	364	+1.0		+2.2	+3.2	+4.4	+7.6	+13.4	+21.0	+29.9	+37.2	+44.7	+56.3	+64.0	284	
10.0	349	+0.0		+1.1	+2.0	+3.0	+4.2	+8.0	+13.1	+22.4	+32.3	+38.5	+51.0	+66.2	+71.0	271
11.0	340	+1.0	32	+1.3	+1.9	+2.4	+3.4	+6.5	+11.5	+18.7	+29.1	+37.0	+49.1	+54.8	+70.0	284
12.0	334	+1.0		+1.0	+1.6	+2.4	+3.4	+5.4	+9.6	+15.1	+25.3	+37.4	+41.6	+50.6	+79.0	286
13.0	320	+1.0		+1.0	+1.3	+1.9	+2.7	+4.6	+7.3	+11.7	+19.0	+25.6	+32.8	+39.8	+50.0	284
14.0	310	+0.0		+1.6	+1.5	+2.2	+2.8	+4.3	+6.3	+9.9	+15.5	+18.8	+29.9	+35.9	+44.0	262
15.0	306	+0.0		+0.2	+1.0	+1.8	+2.5	+4.1	+5.8	+8.5	+12.1	+15.6	+23.5	+28.9	+35.0	271
16.0	299	+0.0		+0.7	+0.7	+1.4	+2.2	+3.4	+4.9	+7.2	+10.2	+12.9	+21.5	+23.6	+30.0	335
17.0	299	+0.0		+0.4	+0.4	+1.1	+1.8	+3.0	+4.3	+6.3	+9.3	+13.0	+18.1	+24.0	+29.0	220
18.0	291	+0.0		+0.2	+0.8	+0.8	+1.3	+2.5	+3.9	+5.6	+7.5	+9.6	+13.6	+18.0	+34.0	219
19.0	279	+0.0		+0.3	+0.3	+1.1	+1.9	+2.0	+3.3	+4.8	+6.7	+8.8	+11.3	+13.2	+17.0	262
20.0	276	+0.0		+0.4	+0.4	+1.1	+1.9	+3.1	+4.3	+5.9	+8.2	+10.5	+13.1	+16.0	258	
21.0	270	+0.0		+0.4	+1.4	+1.4	+2.5	+3.9	+6.2	+7.7	+8.8	+9.5	+12.0	+15.0	285	
22.0	261	+0.0		+0.3	+2.4	+1.3	+2.4	+3.7	+5.3	+6.1	+7.2	+8.1	+11.0	+11.0	295	
23.0	240	+0.0		+0.0	+0.5	+1.4	+2.5	+3.7	+5.1	+6.3	+7.3	+8.6	+12.0	+30.9		
24.0	213	+0.0		+0.1	+0.5	+1.5	+2.6	+3.9	+5.5	+6.8	+7.8	+10.4	+13.0	+27.8		
25.0	183	+0.0		+0.0	+0.6	+1.8	+3.0	+4.5	+6.3	+7.7	+9.2	+9.7	+12.0	+51		
26.0	157	+0.0		+0.7	+1.7	+1.7	+3.0	+5.2	+7.1	+7.8	+10.4	+14.4	+27.0	+81		
27.0	127	+0.0		+0.5	+1.8	+1.8	+3.7	+5.5	+7.5	+8.4	+11.1	+14.7	+26.0	+83		
28.0	92	+0.0		+2.0	+0.9	+2.0	+3.6	+5.7	+7.5	+8.3	+10.0	+11.0	+11.0	+86		
29.0	74	+0.0		+0.2	+0.8	+2.1	+3.8	+6.4	+7.6	+8.1	+9.3	+10.2	+11.0	+73		
30.0	51	+0.0		+0.7	+1.3	+4.7	+7.1	+8.8	+9.7	+10.8	+12.4	+13.0	+202			

IRIG RANGE REFERENCE ATMOSPHERE, SEPTEMBER TABLE II.1.9

STATION		ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA										SCALAR WINDS	
				LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE	
FAIRBANKS, ALASKA		134		64° 49' N	147° 52' W	JAN 1956 TO JAN 1961											
LAUNCH SITE-FORT GREELY		392		63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec											
ALT (km)	NO. OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY												MAX SPEED	DIR. (deg)
				1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0			
0.5	569	+0.0		+0.0	+0.1	+0.3	+0.8	+2.0	+3.7	+4.8	+5.7	+7.1	+7.8	+11.0	210		
1.0	556	+0.0		+0.1	+0.3	+0.7	+1.3	+2.6	+4.6	+6.5	+11.1	+12.7	+14.4	+20.0	245		
1.5	551	+0.0		+0.2	+0.7	+1.2	+1.8	+3.2	+5.4	+8.1	+11.8	+16.0	+19.4	+27.0	268		
2.0	537	+0.0		+0.3	+1.0	+1.4	+2.0	+3.8	+6.4	+9.8	+12.3	+14.5	+18.2	+29.0	255		
2.5	511	+0.0		+0.4	+1.0	+1.4	+2.0	+4.2	+6.9	+9.9	+13.0	+18.2	+24.0	+20.0	200		
3.0	498	+0.0		+0.5	+1.4	+1.6	+2.4	+4.4	+7.1	+10.7	+16.1	+24.1	+30.0	+25.0	243		
4.0	482	+0.0		+0.6	+1.0	+1.7	+2.8	+5.1	+8.3	+12.5	+17.8	+24.7	+38.0	+25.1	251		
5.0	464	+0.0		+0.6	+1.3	+2.2	+3.4	+5.6	+9.5	+14.8	+21.0	+29.6	+41.0	+55.0	255		
6.0	448	+0.0		+0.5	+1.1	+1.9	+3.5	+6.3	+11.5	+17.6	+24.5	+33.8	+50.0	+56.0	256		
7.0	402	+0.0		+0.2	+1.2	+2.3	+3.8	+7.2	+13.2	+20.8	+29.4	+37.3	+43.8	+60.0	262		
8.0	379	+0.0		+0.5	+1.4	+2.6	+4.7	+8.1	+14.8	+23.2	+34.0	+41.0	+54.1	+67.0	266		
9.0	348	+0.0		+1.1	+2.1	+3.5	+4.9	+9.0	+15.5	+24.7	+38.1	+48.3	+56.5	+69.0	272		
10.0	330	+1.0	238	+1.7	+2.2	+3.0	+4.3	+8.3	+14.9	+25.0	+38.5	+47.5	+57.4	+70.0	289		
11.0	316	+2.0		+2.1	+2.6	+4.0	+4.0	+7.3	+12.5	+22.2	+33.0	+40.7	+51.9	+64.0	267		
12.0	309	+0.0		+1.5	+2.6	+3.7	+6.6	+11.1	+18.4	+29.5	+34.8	+43.4	+49.9	+64.0	290		
13.0	301	+0.0		+1.0	+1.9	+2.7	+3.8	+6.8	+10.3	+15.7	+24.1	+28.3	+37.5	+45.0	260		
14.0	293	+0.0		+2.0	+2.8	+2.8	+3.7	+6.5	+9.7	+13.8	+20.4	+23.6	+26.7	+47.0	209		
15.0	287	+1.0		+1.5	+3.0	+3.0	+4.0	+6.2	+9.2	+12.9	+18.3	+21.4	+24.2	+51.0	206		
16.0	279	+0.0		+1.8	+2.9	+2.9	+4.1	+6.1	+8.7	+11.8	+16.6	+19.0	+20.9	+42.0	222		
17.0	274	+0.0		+1.7	+2.9	+2.9	+4.1	+5.1	+8.7	+11.8	+14.8	+18.7	+20.7	+25.0	312		
18.0	272	+1.0		+2.0	+2.6	+2.6	+3.4	+5.6	+8.3	+11.1	+14.5	+16.3	+17.5	+24.0	282		
19.0	264	+0.0		+1.1	+1.8	+2.4	+3.4	+5.5	+8.2	+11.3	+13.9	+16.5	+18.6	+28.0	211		
20.0	257	+0.0		+0.5	+1.3	+2.1	+2.9	+5.2	+7.9	+10.9	+13.4	+16.3	+18.2	+26.0	219		
21.0	249	+0.0		+1.3	+2.0	+2.4	+3.2	+5.0	+7.5	+10.8	+13.4	+16.0	+16.8	+25.0	226		
22.0	227	+1.0	328	+1.2	+1.7	+2.6	+3.4	+4.9	+7.5	+11.0	+14.2	+15.7	+17.1	+18.6	232		
23.0	221	+1.0		+1.0	+1.7	+2.8	+3.5	+5.1	+7.6	+11.0	+15.1	+16.4	+17.9	+26.0	183		
24.0	190	+1.0		+1.4	+2.4	+2.4	+3.7	+6.0	+8.4	+11.5	+14.3	+16.7	+19.5	+27.0	272		
25.0	160	+1.0		+1.1	+2.0	+2.0	+3.2	+5.8	+8.5	+11.5	+15.0	+18.5	+21.1	+23.0	285		
26.0	134	+0.0		+1.3	+2.4	+2.4	+4.0	+5.8	+9.1	+12.1	+16.2	+18.7	+21.9	+22.8	250		
27.0	95	+0.0		+1.5	+2.8	+2.8	+3.8	+5.7	+9.0	+13.4	+18.5	+19.8	+21.8	+23.0	230		
28.0	73	+2.0	133	+2.6	+3.3	+4.0	+4.0	+7.1	+10.5	+14.5	+19.7	+22.7	+24.4	+25.0	293		
29.0	52	+3.0		+3.5	+5.0	+5.0	+7.3	+12.3	+16.5	+21.9	+25.4	+26.8	+29.4	+30.0	296		
30.0	41	+4.0	231	+4.2	+4.7	+4.7	+7.6	+12.8	+19.4	+23.8	+25.4	+30.0	+30.5	+31.0	296		

IRIG RANGE REFERENCE ATMOSPHERE, OCTOBER TABLE II.1.10

STATION		ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA										SCALAR WINDS	
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE			
FAIRBANKS, ALASKA		134	147° 52' W	UNITS: WIND SPEED - m/sec													
LAUNCH SITE-FORT GREELY		392	145° 43' W														
ALT. (km)	NO. OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY										MAX SPEED	DIR. (deg)		
				1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72			99.0	
0.5	523	+0.3		+0.9	+2.2	+3.4	+4.5	+5.1	+6.1	+6.8	+13.0	240					
0.5	500	+0.0		+0.9	+0.3	+0.9	+2.1	+3.8	+5.7	+6.0	+9.3	+12.5	+20.0				
1.0	485	+0.0		+0.5	+1.1	+1.7	+2.9	+5.4	+8.2	+10.8	+12.9	+15.4	+17.7	+20.0			
1.5	472	+0.0		+0.6	+1.2	+2.0	+3.6	+6.0	+9.0	+12.6	+15.0	+16.8	+21.0	+22.0			
2.0	455	+1.0		+1.0	+1.4	+2.2	+3.9	+6.5	+9.5	+13.8	+16.0	+17.7	+18.8	+25.0	292		
2.5	439	+1.0		+1.0	+1.6	+2.4	+4.6	+6.9	+10.2	+14.5	+17.3	+20.3	+21.2	+26.0	240		
3.0	430	+1.0		+1.7	+2.7	+4.7	+7.5	+10.7	+15.2	+18.0	+19.8	+23.3	+24.2	+32.0	244		
4.0	411	+0.0		+1.3	+2.3	+3.4	+5.3	+8.5	+12.5	+16.9	+19.9	+22.9	+26.4	+32.0	244		
5.0	385	+1.0		+1.1	+2.3	+3.6	+6.2	+9.8	+14.7	+19.6	+22.7	+25.6	+32.0	+40.0	248		
6.0	361	+1.0		+1.3	+2.3	+4.0	+7.5	+11.6	+16.9	+22.6	+25.9	+30.3	+33.7	+46.0	355		
7.0	335	+1.0		+2.1	+3.2	+4.2	+8.0	+13.3	+19.0	+25.6	+29.6	+37.1	+42.3	+49.0	262		
8.0	315	+1.0	205	+1.8	+3.2	+5.1	+9.0	+13.8	+20.6	+28.1	+33.0	+35.9	+41.8	+56.0	327		
9.0	295	+0.0		+2.1	+3.5	+5.4	+8.9	+14.1	+21.1	+28.1	+35.6	+44.3	+47.0	+62.0	323		
10.0	282	+0.0		+2.1	+3.6	+5.1	+8.8	+13.8	+20.4	+28.2	+34.2	+39.5	+51.0	+73.0	326		
11.0	265	+0.0		+2.3	+3.3	+4.6	+8.0	+12.7	+18.6	+26.1	+32.3	+39.9	+52.3	+62.0	293		
12.0	254	+2.0		+2.1	+2.9	+4.7	+7.8	+12.4	+18.2	+25.1	+28.1	+38.2	+44.7	+61.0	300		
13.0	274	+2.0		+2.3	+3.4	+5.2	+7.8	+12.2	+17.1	+23.7	+27.2	+32.2	+35.5	+51.0	304		
14.0	236	+2.0		+3.9	+4.7	+5.1	+8.1	+11.6	+15.9	+22.4	+26.2	+28.6	+35.6	+44.0	306		
15.0	229	+1.0	218	+3.1	+3.6	+4.7	+6.1	+12.5	+17.5	+22.3	+24.9	+28.7	+35.7	+44.0	283		
16.0	215	+0.0		+2.6	+3.5	+4.6	+8.2	+12.0	+17.1	+20.6	+23.0	+26.6	+28.8	+40.0	235		
17.0	206	+0.0		+2.2	+3.0	+4.9	+8.0	+12.0	+16.7	+20.6	+23.2	+24.8	+29.4	+34.0	291		
18.0	136	+0.0		+2.5	+3.5	+4.8	+8.1	+12.0	+16.5	+21.3	+23.3	+24.8	+28.0	+48.0	282		
19.0	188	+0.0		+2.6	+3.3	+4.1	+8.2	+12.0	+16.7	+19.9	+22.8	+24.5	+28.1	+37.0	200		
20.0	177	+0.0		+1.5	+2.5	+3.6	+8.0	+11.7	+16.4	+20.1	+22.5	+24.9	+25.7	+27.0	252		
21.0	166	+0.0		+1.9	+2.8	+3.7	+7.3	+11.6	+16.9	+20.1	+24.2	+29.2	+32.3	+44.0	240		
22.0	152	+0.0		+1.3	+1.9	+3.0	+7.3	+11.5	+15.6	+18.9	+20.8	+22.8	+31.4	+33.0	266		
23.0	134	+0.0		+0.3	+1.2	+2.2	+4.6	+12.0	+15.7	+19.3	+21.1	+24.9	+25.6	+33.0	272		
24.0	114	+0.0		+0.3	+0.3	+2.4	+4.4	+11.8	+16.7	+21.6	+23.6	+24.8	+29.8	+31.0	252		
25.0	94	+0.0		+1.4	+3.5	+1.4	+3.5	+11.3	+16.5	+22.5	+25.3	+27.9	+29.0	+30.0	255		
26.0	71	+0.0		+0.2	+1.5	+3.9	+11.7	+16.8	+21.9	+26.7	+30.3	+31.2	+32.0	+24.7			
27.0	55	+0.0		+0.7	+2.1	+4.7	+11.5	+18.0	+22.1	+23.2	+25.3	+25.7	+26.0	+28.0	321		
28.0	34	+0.0		+0.7	+2.1	+4.7	+11.5	+18.0	+22.1	+23.2	+25.3	+25.7	+26.0	+28.0	318		
29.0	22	+0.0		+1.0	+2.1	+9.7	+20.6	+23.5	+25.8	+26.9	+31.4	+31.7	+32.0	+31.7			
30.0	12	+4.0	53	+8.1	+10.0	+20.0	+26.0	+29.8	+30.3	+30.7	+30.3	+30.7	+30.8	+31.0	298		

IRIG RANGE REFERENCE ATMOSPHERE, NOVEMBER TABLE II.I.II

STATION		ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA						SCALAR WINDS					
		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961						FORT GREELY MISSILE RANGE LAUNCH SITE					
FAIRBANKS, ALASKA		134	147°52' W	64°49' N	147°52' W	JAN 1956 TO JAN 1961						FORT GREELY MISSILE RANGE LAUNCH SITE					
LAUNCH SITE-FORT GREELY		392	145°43' W	63°59' N	145°43' W	UNITS: WIND SPEED -m/sec											
ALT (km) MSL	NO OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY												MAX SPEED (deg)	DIR. (deg)
				1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0			
0.5	551	+0.0		+0.1	+1.4	+2.7	+3.7	+4.3	+4.9	+5.7	+8.0						
0.5	535	+0.0		+0.0	+0.3	+0.9	+2.0	+3.9	+5.9	+8.3	+11.8	+13.4	+15.5	+17.8	+21.0	101	
1.0	526	+0.0		+0.1	+0.5	+1.2	+1.9	+3.5	+5.9	+8.3	+11.8	+13.4	+15.5	+17.8	+21.0	138	
1.5	515	+0.0		+0.1	+0.7	+1.3	+2.2	+3.8	+6.2	+9.3	+12.7	+14.9	+16.8	+19.9	+23.0	148	
2.0	496	+0.0		+0.1	+0.4	+1.1	+2.2	+4.1	+6.6	+9.6	+13.2	+15.3	+17.5	+19.5	+23.0	148	
2.5	479	+0.0		+0.0	+0.6	+1.4	+2.5	+4.3	+6.9	+10.5	+13.7	+16.6	+19.3	+22.2	+28.0	213	
3.0	469	+0.0		+0.2	+0.9	+1.5	+2.5	+4.5	+7.4	+10.8	+14.8	+18.3	+21.1	+23.7	+29.0	188	
4.0	434	+1.0		+1.3	+2.2	+3.2	+5.2	+8.5	+12.8	+16.2	+20.0	+24.6	+27.7	+32.8	+30.0	232	
5.0	402	+1.0		+1.1	+1.3	+2.1	+3.5	+6.2	+10.0	+15.1	+20.0	+24.6	+30.6	+32.4	+38.0	254	
6.0	384	+1.0	315	+1.0	+1.6	+2.5	+3.7	+6.8	+11.7	+17.9	+23.9	+27.6	+34.6	+33.1	+45.0		
7.0	364	+1.0		+1.3	+2.0	+2.7	+4.3	+8.0	+13.6	+21.0	+29.3	+33.8	+39.7	+43.3	+58.0	211	
8.0	345	+2.0		+2.0	+2.6	+3.5	+5.2	+8.7	+14.2	+22.9	+33.2	+39.9	+45.1	+48.5	+77.0	213	
9.0	318	+0.0		+1.2	+2.1	+3.0	+4.5	+7.9	+13.5	+20.9	+32.2	+38.1	+44.9	+47.9	+71.0	213	
10.0	302	+1.0	108	+1.5	+2.1	+2.9	+4.2	+7.0	+12.2	+18.9	+26.3	+32.9	+42.1	+44.9	+65.0	292	
11.0	288	+0.0		+0.9	+1.8	+3.0	+4.4	+7.4	+11.3	+17.1	+23.7	+27.8	+36.4	+41.1	+59.0	284	
12.0	281	+2.0		+2.0	+2.3	+3.0	+4.4	+7.0	+11.5	+16.6	+21.5	+25.9	+30.7	+33.1	+45.0	296	
13.0	275	+2.0		+2.0	+2.0	+3.3	+4.8	+7.4	+12.1	+16.5	+20.8	+25.2	+27.7	+31.2	+39.0		
14.0	265	+1.0	89	+1.4	+2.2	+3.5	+5.5	+8.4	+11.9	+16.2	+20.5	+23.4	+26.9	+33.3	+36.0	272	
15.0	260	+0.0		+1.2	+2.4	+4.0	+5.1	+8.1	+12.1	+16.3	+20.2	+23.0	+26.0	+28.4	+40.0	220	
16.0	256	+0.0		+0.5	+2.3	+3.5	+5.7	+9.0	+12.6	+17.1	+21.1	+24.5	+28.0	+38.4	+49.0	232	
17.0	249	+1.0		+1.0	+1.5	+4.0	+5.4	+9.5	+12.7	+17.7	+21.5	+24.2	+27.6	+31.7	+49.0	277	
18.0	244	+2.0	332	+2.2	+2.6	+4.6	+6.7	+9.6	+13.6	+18.3	+22.2	+26.1	+28.7	+34.2	+38.0	284	
19.0	228	+0.0		+2.2	+3.5	+5.1	+6.3	+9.0	+13.8	+17.7	+23.8	+26.9	+30.8	+36.7	+38.0	264	
20.0	216	+0.0		+2.0	+2.9	+4.4	+6.1	+8.9	+14.2	+18.1	+23.4	+28.6	+32.0	+35.8	+39.0	264	
21.0	207	+2.0		+2.0	+3.7	+4.5	+5.8	+8.1	+14.3	+19.6	+26.7	+31.6	+35.2	+37.9	+43.0	261	
22.0	190	+1.0	310	+1.4	+2.6	+4.2	+5.8	+9.1	+14.2	+20.2	+27.6	+33.7	+38.5	+43.5	+45.0	286	
23.0	175	+2.0		+1.4	+4.1	+5.5	+9.5	+15.3	+21.8	+27.2	+31.6	+37.5	+45.2	+50.0	289		
24.0	162	+1.0		+1.2	+2.0	+3.3	+5.0	+9.2	+15.2	+21.5	+26.4	+35.4	+38.3	+41.3	+49.0	308	
25.0	143	+0.0		+1.4	+2.0	+3.0	+5.0	+9.5	+15.5	+23.8	+29.4	+35.8	+40.7	+44.5	+50.0	272	
26.0	127	+2.0		+1.4	+3.4	+4.7	+10.6	+17.3	+24.8	+31.3	+35.8	+45.1	+47.7	+51.0	267		
27.0	98	+1.0	247	+1.4	+3.4	+5.5	+10.3	+19.5	+26.8	+33.5	+36.0	+37.7	+42.0	+43.0	284		
28.0	69	+2.0		+4.1	+3.7	+5.6	+11.0	+21.5	+27.3	+34.0	+37.2	+38.4	+41.3	+42.0	242		
29.0	52	+4.0	163	+4.1	+8.2	+10.3	+14.6	+24.3	+29.0	+35.7	+36.7	+39.4	+39.7	+40.0			
30.0	41	+7.0	256	+10.0	+11.0	+18.1	+25.5	+29.7	+34.8	+35.9	+40.0	+40.5	+41.0	+41.0	250		

IRIG RANGE REFERENCE ATMOSPHERE, DECEMBER TABLE II.1.12

STATION		ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA										SCALAR WINDS				
			LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE				
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE				
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m./sec														
ALT. (km) MSL	NO. OBS.	MIN. SPEED (deg)	CUMULATIVE PERCENTAGE FREQUENCY										99.0						
1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	
SFC	595	+0.0	+0.0	+0.3	+0.8	+1.6	+2.9	+5.3	+8.4	+11.9	+16.9	+22.8	+30.0	+38.0	+46.0	+54.0	+62.0	+70.0	+78.0
0.5	580	+0.0	+0.4	+1.0	+1.8	+3.3	+5.6	+8.8	+12.9	+15.4	+17.6	+21.0	+26.0	+32.0	+39.0	+46.0	+54.0	+62.0	+70.0
1.0	572	+0.0	+0.9	+1.3	+2.0	+3.6	+6.4	+9.9	+14.4	+17.6	+21.0	+26.0	+32.0	+39.0	+46.0	+54.0	+62.0	+70.0	+78.0
1.5	562	+0.0	+0.6	+1.2	+2.1	+4.0	+7.3	+11.2	+15.2	+17.6	+21.0	+26.0	+32.0	+39.0	+46.0	+54.0	+62.0	+70.0	+78.0
2.0	537	+0.0	+0.7	+1.6	+2.5	+4.4	+7.6	+12.1	+16.3	+18.6	+21.0	+26.0	+32.0	+39.0	+46.0	+54.0	+62.0	+70.0	+78.0
2.5	520	+0.0	+1.2	+1.9	+2.9	+5.2	+8.4	+12.3	+16.6	+19.3	+22.1	+24.6	+28.0	+32.0	+37.0	+42.0	+47.0	+52.0	+57.0
3.0	509	+0.0	+1.1	+2.0	+3.0	+5.4	+9.4	+13.4	+18.0	+22.5	+27.2	+32.0	+37.0	+42.0	+47.0	+52.0	+57.0	+62.0	+67.0
4.0	460	+0.0	+1.3	+2.3	+3.8	+7.1	+11.0	+16.0	+23.4	+27.5	+33.1	+38.3	+43.0	+48.0	+53.0	+58.0	+63.0	+68.0	+73.0
5.0	423	+0.0	+1.2	+2.2	+3.1	+4.3	+8.7	+12.5	+18.4	+22.2	+28.3	+33.3	+38.3	+43.0	+48.0	+53.0	+58.0	+63.0	+68.0
6.0	405	+0.0	+1.4	+2.3	+3.4	+5.6	+8.6	+14.1	+21.2	+29.0	+33.1	+40.5	+48.0	+55.6	+63.0	+70.0	+77.0	+84.0	+91.0
7.0	392	+0.0	+1.4	+2.3	+3.4	+5.1	+9.2	+14.7	+24.1	+32.8	+38.3	+48.3	+55.6	+65.0	+74.0	+83.0	+92.0	+101.0	+110.0
8.0	378	+0.0	+1.5	+2.5	+3.6	+5.2	+8.5	+14.1	+22.9	+31.7	+35.3	+47.7	+54.3	+63.0	+72.0	+81.0	+90.0	+99.0	+108.0
9.0	361	+1.0	+2.0	+2.8	+3.7	+5.8	+9.1	+14.2	+20.7	+29.0	+32.7	+49.0	+54.5	+63.0	+72.0	+81.0	+90.0	+99.0	+108.0
10.0	350	+1.0	+2.5	+3.3	+4.6	+6.1	+9.8	+14.3	+20.6	+28.0	+33.1	+45.2	+52.6	+61.0	+70.0	+79.0	+88.0	+97.0	+106.0
11.0	338	+2.0	+3.3	+4.6	+6.2	+7.8	+11.2	+15.7	+20.7	+26.5	+29.8	+33.5	+36.9	+45.0	+50.0	+55.0	+60.0	+65.0	+70.0
12.0	321	+2.0	+4.1	+5.2	+6.8	+8.7	+12.1	+16.8	+22.8	+28.3	+31.5	+35.2	+37.6	+40.0	+42.0	+44.0	+46.0	+48.0	+50.0
13.0	305	+2.0	+4.6	+6.2	+7.8	+10.2	+14.9	+20.0	+26.8	+31.6	+37.6	+43.7	+49.0	+54.5	+60.0	+65.0	+70.0	+75.0	+80.0
14.0	288	+2.0	+5.3	+6.8	+8.7	+11.2	+16.0	+21.0	+27.0	+32.8	+38.8	+44.0	+49.0	+54.5	+60.0	+65.0	+70.0	+75.0	+80.0
15.0	273	+0.0	+4.5	+7.1	+9.0	+12.0	+18.0	+25.0	+31.6	+34.3	+36.0	+38.4	+40.0	+42.0	+44.0	+46.0	+48.0	+50.0	+52.0
16.0	260	+1.0	+5.9	+7.5	+8.8	+12.3	+18.0	+25.0	+31.6	+34.3	+36.0	+38.4	+40.0	+42.0	+44.0	+46.0	+48.0	+50.0	+52.0
17.0	247	+2.0	+4.8	+6.8	+8.7	+13.3	+19.4	+27.1	+32.0	+35.5	+37.4	+40.0	+42.0	+44.0	+46.0	+48.0	+50.0	+52.0	+54.0
18.0	240	+2.0	+4.2	+6.2	+8.2	+13.3	+19.4	+27.1	+32.0	+35.5	+37.4	+40.0	+42.0	+44.0	+46.0	+48.0	+50.0	+52.0	+54.0
19.0	225	+3.0	+4.2	+5.5	+7.5	+13.1	+19.1	+27.0	+32.0	+35.5	+37.4	+40.0	+42.0	+44.0	+46.0	+48.0	+50.0	+52.0	+54.0
20.0	208	+2.0	+3.9	+5.3	+6.8	+13.2	+19.1	+27.0	+32.0	+35.5	+37.4	+40.0	+42.0	+44.0	+46.0	+48.0	+50.0	+52.0	+54.0
21.0	187	+0.0	+3.1	+5.1	+6.4	+11.7	+17.6	+25.5	+30.9	+34.6	+37.0	+40.0	+42.0	+44.0	+46.0	+48.0	+50.0	+52.0	+54.0
22.0	170	+2.0	+3.4	+5.8	+7.2	+11.6	+17.6	+25.5	+30.9	+34.6	+37.0	+40.0	+42.0	+44.0	+46.0	+48.0	+50.0	+52.0	+54.0
23.0	150	+2.0	+3.1	+4.7	+7.1	+11.0	+17.0	+24.0	+33.5	+38.2	+42.0	+45.0	+48.0	+51.0	+54.0	+57.0	+60.0	+63.0	+66.0
24.0	129	+2.0	+3.1	+3.2	+7.1	+11.2	+18.0	+25.0	+32.0	+36.0	+40.0	+44.0	+48.0	+52.0	+56.0	+60.0	+64.0	+68.0	+72.0
25.0	107	+1.0	+1.4	+3.1	+6.3	+11.8	+22.1	+34.8	+54.1	+60.6	+67.2	+73.1	+79.0	+85.0	+91.0	+97.0	+103.0	+109.0	+115.0
26.0	78	+2.0	+2.9	+5.8	+13.5	+23.0	+35.5	+55.0	+73.1	+76.2	+79.2	+82.0	+85.0	+88.0	+91.0	+94.0	+97.0	+100.0	+103.0
27.0	60	+2.0	+3.0	+10.0	+17.0	+24.0	+33.5	+49.0	+59.0	+62.6	+65.3	+68.0	+70.0	+72.0	+74.0	+76.0	+78.0	+80.0	+82.0
28.0	42	+3.0	+3.0	+13.0	+17.5	+28.0	+34.5	+55.7	+64.9	+68.0	+70.0	+72.0	+74.0	+76.0	+78.0	+80.0	+82.0	+84.0	+86.0
29.0	22	+4.0	+13.0	+13.5	+23.5	+32.5	+39.5	+64.7	+67.8	+70.0	+72.0	+74.0	+76.0	+78.0	+80.0	+82.0	+84.0	+86.0	+88.0
30.0	9	+15.0	+25.2	+36.2	+45.2	+55.2	+64.7	+75.0	+75.5	+75.7	+75.9	+76.0	+76.0	+76.0	+76.0	+76.0	+76.0	+76.0	+76.0

IRIG RANGE REFERENCE ATMOSPHERE, ANNUAL TABLE II.113

STATION		ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA										SCALAR WINDS	
FAIRBANKS, ALASKA		134		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE	
LAUNCH SITE-FORT GREELY		392		63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec											
ALT (km)	NO. OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY												MAX. SPEED	DIR. (deg)
				1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0			
0.5	6911	+0.0		+0.1	+0.4	+1.0	+2.0	+3.2	+4.5	+5.3	+6.6	+7.7	+8.8	+10.0	+11.8	+13.0	220
1.0	6803	+0.0		+0.1	+0.3	+0.9	+1.5	+2.8	+4.9	+8.5	+10.0	+11.3	+13.7	+16.2	+18.5	+25.0	270
1.5	6659	+0.0		+0.2	+0.6	+1.1	+1.8	+3.3	+5.5	+8.8	+12.4	+15.1	+18.2	+21.2	+27.0	+70.0	70
2.0	6447	+0.0		+0.2	+0.6	+1.2	+1.9	+3.6	+6.1	+9.5	+13.3	+15.9	+18.7	+22.0	+34.0	+111	
2.5	6249	+0.0		+0.2	+0.6	+1.3	+2.2	+4.0	+6.7	+10.3	+14.3	+17.0	+19.9	+22.8	+32.0		
3.0	6108	+0.0		+0.2	+0.7	+1.4	+2.3	+4.2	+7.0	+10.8	+15.0	+17.9	+20.6	+23.8	+42.0	294	
4.0	5716	+0.0		+0.4	+1.0	+1.7	+2.7	+4.7	+7.9	+12.2	+16.8	+20.0	+23.4	+26.8	+43.0	320	
5.0	5390	+0.0		+0.4	+1.1	+2.0	+3.0	+5.6	+9.3	+14.3	+20.1	+24.2	+28.6	+32.6	+55.0	320	
6.0	5137	+0.0		+0.7	+1.4	+2.3	+3.5	+6.5	+10.8	+16.7	+23.5	+28.3	+34.0	+38.6	+58.0	308	
7.0	4861	+0.0		+1.1	+1.7	+2.7	+4.1	+7.2	+12.3	+19.2	+26.9	+32.4	+39.4	+45.1	+77.0	310	
8.0	4594	+0.0		+1.2	+2.0	+3.0	+4.6	+7.9	+13.3	+21.1	+30.1	+36.3	+43.4	+49.7	+98.0	314	
9.0	4326	+0.0		+1.2	+2.1	+3.2	+4.7	+8.1	+13.5	+21.5	+31.0	+38.0	+45.4	+55.2	+88.0	282	
10.0	4143	+0.0		+1.3	+2.1	+3.0	+4.4	+7.6	+12.8	+20.4	+29.8	+37.4	+45.4	+55.6	+93.0	282	
11.0	3967	+0.0		+1.2	+1.7	+2.6	+3.9	+6.8	+11.5	+18.3	+27.0	+34.5	+41.6	+52.3	+83.0	306	
12.0	3837	+0.0		+0.9	+1.4	+2.2	+3.4	+6.0	+10.2	+16.5	+24.5	+30.4	+37.9	+44.0	+79.0	286	
13.0	3710	+0.0		+0.3	+1.1	+1.8	+2.9	+5.4	+9.4	+15.1	+22.5	+27.1	+33.5	+39.9	+52.0	272	
14.0	3588	+0.0		+0.1	+1.0	+1.7	+2.7	+5.0	+8.6	+14.2	+21.2	+26.7	+32.1	+37.5	+62.0	305	
15.0	3493	+0.0		+0.0	+0.7	+1.4	+2.4	+4.5	+8.0	+13.8	+21.5	+26.1	+31.7	+37.8	+56.0	290	
16.0	3405	+0.0		+0.2	+0.5	+1.1	+1.9	+3.7	+6.9	+13.5	+22.4	+28.6	+34.6	+40.6	+68.0	293	
17.0	3311	+0.0		+0.3	+0.3	+1.1	+1.8	+3.4	+6.7	+13.0	+22.9	+30.5	+37.3	+43.2	+76.0	300	
18.0	3223	+0.0		+0.2	+0.2	+1.0	+1.7	+3.3	+6.2	+12.9	+23.7	+30.5	+39.2	+46.4	+69.0	290	
19.0	3081	+0.0		+0.2	+0.2	+1.1	+1.7	+3.1	+5.9	+12.5	+23.6	+32.1	+40.5	+48.2	+91.0	305	
20.0	2941	+0.0		+0.1	+0.1	+1.0	+1.7	+3.3	+6.1	+12.4	+24.2	+34.0	+43.7	+50.8	+99.0	300	
21.0	2798	+0.0		+0.3	+0.3	+1.1	+1.8	+3.5	+6.2	+12.2	+24.6	+35.6	+44.7	+54.1	+87.0	295	
22.0	2627	+0.0		+0.0	+0.5	+1.3	+2.0	+3.7	+6.6	+12.9	+24.4	+36.5	+48.3	+54.9	+77.0	285	
23.0	2416	+0.0		+0.4	+0.4	+1.2	+2.1	+3.9	+7.1	+13.1	+24.4	+37.4	+50.7	+58.4	+80.0	313	
24.0	2115	+0.0		+0.5	+0.5	+1.4	+2.3	+4.4	+7.5	+13.9	+25.8	+38.7	+53.3	+63.2	+86.0	280	
25.0	1811	+0.0		+0.8	+0.8	+1.4	+2.3	+4.6	+8.0	+14.3	+26.3	+37.6	+54.1	+65.9	+80.0		
26.0	1507	+0.0		+0.6	+0.6	+1.5	+2.9	+5.0	+8.2	+15.0	+26.3	+35.1	+48.8	+62.1	+78.0		
27.0	1176	+0.0		+1.0	+1.0	+1.9	+3.0	+5.4	+8.8	+16.2	+27.5	+36.7	+49.6	+66.0	+96.0	300	
28.0	893	+0.0		+0.2	+1.1	+2.2	+3.4	+6.1	+9.6	+17.6	+31.0	+39.0	+53.1	+64.6	+87.0	295	
29.0	635	+0.0		+1.0	+1.8	+2.8	+4.1	+6.6	+10.2	+17.6	+29.8	+39.3	+52.1	+62.3	+97.0	293	
30.0	465	+0.0															

IRIG RANGE REFERENCE ATMOSPHERE, JANUARY TABLE II.2.1

STATION		ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA					WIND COMPONENTS			
				LATITUDE	LONGITUDE						FORT GREELY MISSILE RANGE LAUNCH SITE			
FAIRBANKS, ALASKA		134		64° 49' N	147° 52' W	JAN 1956 TO JAN 1961								
LAUNCH SITE-FORT GREELY		392		63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec								
ALT. (km)	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY											
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
SFC	692	-6.0	-3.6	-2.4	-1.7	-0.9	-0.5	-0.2	-0.0	+0.8	+2.0	+2.9	+9.0	
0.5	667	-16.0	-13.4	-10.4	-8.1	-5.4	-3.0	-0.8	+1.3	+3.9	+6.8	+10.0	+25.0	
1.0	648	-20.0	-17.2	-14.9	-12.4	-8.2	-3.8	-0.0	+6.3	+10.3	+13.0	+17.2	+33.0	
1.5	636	-27.0	-21.9	-19.4	-15.7	-7.7	-1.8	+3.2	+8.2	+10.9	+14.2	+18.5	+24.0	
2.0	603	-31.0	-23.2	-19.8	-14.9	-5.9	-0.5	+4.5	+9.4	+12.4	+15.0	+17.9	+27.0	
2.5	583	-30.0	-19.7	-14.6	-10.6	-4.0	+0.1	+5.4	+10.2	+13.4	+16.3	+18.0	+24.0	
3.0	576	-30.0	-16.2	-13.2	-9.0	-2.2	+1.1	+6.7	+11.8	+14.7	+17.9	+20.6	+28.0	
4.0	519	-20.0	-13.5	-10.0	-7.0	-1.9	+2.7	+7.7	+13.8	+17.1	+19.6	+24.8	+29.0	
5.0	476	-20.0	-14.0	-10.2	-6.5	-0.6	+5.4	+10.0	+16.3	+20.0	+24.5	+27.2	+37.0	
6.0	443	-30.0	-18.2	-14.8	-10.1	-5.9	+0.4	+5.4	+13.3	+20.9	+29.2	+34.2	+45.0	
7.0	429	-35.0	-19.7	-14.6	-10.5	-6.2	+0.3	+7.1	+15.4	+24.3	+34.0	+37.8	+42.0	
8.0	393	-29.0	-14.1	-11.8	-6.1	+0.1	+8.4	+16.7	+25.7	+30.8	+38.0	+43.5	+52.0	
9.0	370	-28.0	-16.5	-11.2	-4.7	+1.5	+9.4	+18.0	+30.1	+34.8	+41.7	+46.6	+60.0	
10.0	356	-24.0	-13.8	-7.1	-1.8	+2.1	+9.1	+18.2	+30.4	+38.0	+45.8	+52.4	+61.0	
11.0	334	-24.0	-9.3	-3.8	-0.7	+3.4	+10.0	+18.6	+31.3	+41.3	+49.3	+55.2	+59.0	
12.0	325	-30.0	-8.7	-5.6	-1.8	+4.2	+10.5	+19.1	+30.5	+37.9	+43.5	+50.7	+66.0	
13.0	309	-32.0	-8.9	-4.9	-0.7	+5.0	+10.8	+19.9	+31.3	+36.7	+41.9	+44.9	+51.0	
14.0	294	-27.0	-1.5	-0.2	+1.8	+3.3	+10.7	+20.2	+28.6	+36.4	+40.6	+44.0	+53.0	
15.0	287	-6.0	-0.7	+0.7	+2.1	+5.8	+11.5	+21.3	+31.6	+37.4	+40.8	+44.5	+52.0	
16.0	276	-4.0	-0.8	+1.1	+3.9	+6.4	+12.8	+23.5	+33.8	+39.5	+41.9	+46.1	+48.0	
17.0	269	-6.0	-1.3	+0.3	+2.5	+5.9	+14.0	+25.1	+35.7	+42.1	+45.0	+50.3	+62.0	
18.0	256	-3.0	-1.0	+0.3	+2.2	+6.2	+14.2	+26.8	+39.7	+44.2	+49.1	+51.7	+65.0	
19.0	235	-6.0	-1.8	+0.9	+2.1	+6.5	+14.0	+27.8	+42.2	+46.7	+53.3	+55.3	+74.0	
20.0	221	-5.0	-3.3	+1.4	+1.4	+6.2	+13.9	+30.1	+44.2	+49.9	+52.4	+58.7	+66.0	
21.0	205	-11.0	-2.7	+0.7	+1.2	+6.4	+14.1	+30.1	+43.1	+50.8	+57.3	+59.9	+85.0	
22.0	189	-8.0	-5.1	-1.9	-0.0	+5.4	+16.1	+33.1	+46.0	+52.7	+60.6	+67.1	+78.0	
23.0	175	-15.0	-8.0	-3.2	-0.2	+4.1	+14.7	+34.2	+48.5	+53.2	+58.0	+67.2	+74.0	
24.0	144	-14.0	-11.5	-6.3	-2.5	+2.6	+11.5	+35.0	+51.3	+56.5	+59.7	+65.5	+74.0	
25.0	118	-19.0	-11.3	-9.5	-5.1	+1.9	+11.0	+37.1	+52.5	+62.0	+66.1	+66.9	+84.0	
26.0	83	-12.0	-17.5	-15.8	-6.6	+1.8	+7.7	+32.2	+53.6	+51.8	+67.1	+73.1	+74.0	
27.0	55	-20.0	-16.2	-10.7	-1.0	+5.8	+28.2	+53.5	+64.6	+65.7	+69.4	+70.0	+70.0	
28.0	37	-17.0	-13.5	-7.8	+6.5	+28.7	+61.2	+68.1	+70.1	+70.6	+71.0	+71.0	+71.0	
29.0	29	-19.0	-17.7	-17.0	-12.3	+5.7	+28.7	+68.0	+73.5	+77.3	+77.7	+78.0	+78.0	
30.0	22	-21.0	-17.8	-16.8	-14.4	+4.0	+28.5	+66.7	+78.8	+80.4	+80.7	+80.7	+89.0	

IRIG RANGE REFERENCE ATMOSPHERE, FEBRUARY TABLE II.2.2

STATION	ELEVATION (MSL (meters))		LOCATION		PERIOD OF DATA		ZONAL WIND COMPONENTS								
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE			FORT GREELY MISSILE RANGE LAUNCH SITE								
FAIRBANKS, ALASKA	134	147° 52' W	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961										
LAUNCH SITE-FORT GREELY	392	145° 43' W	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec										
ALT. (msl)	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY												MAX.
			1.0	2.28	5.0	10.0	25.0	50.0	50.0	75.0	90.0	95.0	97.72	99.0	
SFC	586	-9.0	-4.5	-3.6	-2.8	-2.0	-0.9	-0.6	-0.2	+0.3	+0.3	+1.7	+3.8	+7.0	+12.0
0.5	554	-18.0	-13.8	-11.5	-9.5	-8.1	-5.0	-2.4	-0.2	+2.7	+2.7	+6.5	+8.6	+11.4	+18.0
1.0	538	-21.0	-16.8	-14.2	-14.2	-12.0	-6.7	-2.2	+2.1	+7.3	+7.3	+9.9	+14.8	+17.4	+22.0
1.5	511	-25.0	-19.8	-16.0	-12.1	-12.1	-5.3	-0.2	+4.8	+9.5	+9.5	+12.8	+17.1	+19.4	+25.0
2.0	494	-30.0	-25.6	-19.9	-16.3	-11.1	-3.4	+0.8	+6.0	+10.6	+10.6	+14.0	+18.3	+20.8	+27.0
2.5	481	-31.0	-21.1	-18.0	-15.1	-9.9	-2.2	+1.9	+7.3	+11.6	+11.6	+14.8	+18.4	+20.7	+29.0
3.0	471	-30.0	-18.8	-17.0	-13.2	-8.6	-2.1	+2.2	+6	+13.9	+13.9	+16.2	+18.5	+21.2	+38.0
4.0	420	-19.0	-17.7	-13.4	-9.5	-5.0	-0.4	+3.6	+9.7	+15.6	+15.6	+19.8	+23.2	+25.2	+38.0
5.0	392	-19.0	-15.5	-12.5	-9.1	-4.2	+0.4	+5.7	+11.7	+18.5	+18.5	+22.4	+25.0	+30.0	+37.0
6.0	365	-18.0	-14.3	-10.6	-7.2	-3.9	+0.2	+6.6	+13.5	+22.2	+22.2	+25.6	+32.1	+35.3	+48.0
7.0	326	-18.0	-12.8	-8.4	-4.5	-0.6	+0.6	+6.3	+15.2	+24.8	+24.8	+27.9	+36.1	+44.7	+58.0
8.0	279	-19.0	-12.0	-8.0	-4.0	-0.1	+1.6	+7.5	+16.4	+27.7	+27.7	+31.0	+49.1	+57.0	+70.0
9.0	279	-20.0	-16.1	-10.6	-7.0	-2.5	+2.1	+7.1	+14.1	+25.0	+25.0	+30.0	+47.6	+53.6	+62.0
10.0	263	-21.0	-11.3	-8.0	-3.9	-0.8	+1.9	+6.9	+14.4	+21.9	+21.9	+26.8	+51.0	+63.3	+69.0
11.0	255	-13.0	-11.2	-6.1	-2.2	-0.2	+3.1	+7.1	+14.4	+22.2	+22.2	+34.2	+45.1	+52.4	+67.0
12.0	249	-31.0	-5.5	-3.3	-1.2	-0.1	+2.7	+7.1	+13.4	+22.3	+22.3	+28.2	+39.3	+49.2	+56.0
13.0	242	-9.0	-3.7	-1.6	-0.7	-0.0	+3.3	+8.0	+14.1	+23.5	+23.5	+27.9	+36.1	+40.5	+45.0
14.0	231	-3.0	-2.8	-1.2	-0.6	+0.1	+2.7	+7.7	+14.7	+24.2	+24.2	+29.1	+34.6	+36.6	+50.0
15.0	226	-10.0	-3.3	-2.2	-0.8	+0.1	+3.1	+9.0	+15.5	+23.8	+23.8	+27.2	+38.8	+41.7	+49.0
16.0	218	-6.0	-5.4	-2.3	-0.8	+0.3	+3.8	+8.1	+14.7	+24.5	+24.5	+29.8	+37.3	+40.4	+52.0
17.0	208	-5.0	-1.9	-1.4	-0.5	+0.5	+4.0	+8.2	+15.8	+25.5	+25.5	+30.8	+34.1	+35.9	+41.0
18.0	205	-5.0	-3.9	-2.1	-1.1	-0.0	+4.0	+8.4	+15.9	+25.5	+25.5	+31.2	+36.1	+36.9	+41.0
19.0	190	-6.0	-4.5	-1.5	-0.9	+0.0	+3.2	+8.0	+15.5	+24.7	+24.7	+28.7	+38.3	+41.1	+43.0
20.0	182	-8.0	-3.5	-2.7	-1.4	+0.1	+3.1	+9.2	+15.0	+23.9	+23.9	+29.4	+33.9	+39.1	+43.0
21.0	170	-4.0	-3.2	-0.9	-0.4	+0.6	+4.1	+10.0	+16.0	+23.6	+23.6	+28.2	+32.3	+34.3	+39.0
22.0	158	-6.0	-4.4	-1.4	-0.4	+1.5	+4.6	+9.7	+15.9	+24.5	+24.5	+33.5	+37.1	+39.4	+48.0
23.0	148	-9.0	-1.8	-1.2	-0.3	+1.2	+4.7	+11.1	+15.8	+23.5	+23.5	+31.6	+37.6	+41.7	+45.0
24.0	124	+0.0	-0.0	+0.0	+0.0	+0.0	+4.6	+10.7	+17.4	+25.7	+25.7	+33.4	+44.0	+44.8	+46.0
25.0	102	-4.0	-3.9	-0.9	-0.4	+0.7	+5.6	+10.5	+17.1	+24.8	+24.8	+29.9	+39.6	+46.9	+51.0
26.0	81	-4.0	-3.1	-0.3	-0.3	+0.7	+4.2	+11.6	+17.9	+27.8	+27.8	+36.9	+47.1	+55.1	+56.0
27.0	66	-4.0	-3.4	-0.8	+0.4	+2.7	+9.0	+17.5	+33.1	+38.7	+38.7	+46.4	+64.3	+64.3	+85.0
28.0	45	-1.0	-0.9	-0.5	+3.0	+3.0	+3.0	+7.8	+16.9	+29.5	+29.5	+40.7	+45.9	+82.5	+83.0
29.0	28	-1.0	-0.8	-0.3	+1.0	+1.0	+1.0	+6.0	+16.0	+25.1	+25.1	+42.5	+47.3	+47.7	+48.0
30.0	22	-2.0	-1.9	-1.3	+0.7	+0.7	+0.7	+9.0	+13.5	+26.8	+26.8	+48.9	+57.4	+57.7	+58.0

IRIG RANGE REFERENCE ATMOSPHERE, MARCH TABLE II.2.3

STATION	ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA					ZONAL WIND COMPONENTS				
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE				
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE				
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec									
ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY										MAX.
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	
SFC	611	-8.0	-4.6	-3.3	-2.1	-0.9	-0.6	-0.2	+0.2	+0.9	+2.5	+3.9	+8.0
0.5	594	-15.0	-10.0	-8.1	-6.7	-4.5	-2.1	-0.4	+1.5	+4.0	+7.3	+2.6	+19.0
1.0	593	-21.0	-12.6	-10.6	-9.2	-5.6	-2.5	+0.1	+4.1	+6.9	+10.4	+14.5	+19.0
1.5	581	-24.0	-14.8	-12.2	-9.3	-5.3	-1.4	+1.8	+5.8	+8.4	+12.5	+15.2	+24.0
2.0	569	-29.0	-16.7	-12.8	-10.1	-4.7	-0.7	+2.4	+6.7	+10.1	+13.7	+17.6	+24.0
2.5	553	-25.0	-16.4	-13.2	-9.4	-3.6	-0.2	+3.2	+7.6	+10.1	+13.3	+16.7	+23.0
3.0	542	-27.0	-14.6	-11.9	-7.9	-3.0	+0.1	+3.7	+8.2	+11.9	+16.0	+16.9	+23.0
4.0	521	-24.0	-14.1	-11.1	-7.4	-2.2	+1.0	+5.6	+10.8	+14.4	+19.1	+23.7	+33.0
5.0	494	-23.0	-13.1	-10.7	-7.1	-2.1	+2.5	+7.7	+13.3	+18.5	+23.9	+28.5	+35.0
6.0	469	-34.0	-16.0	-12.1	-7.9	-2.4	+2.9	+9.4	+16.7	+21.7	+27.3	+32.6	+37.0
7.0	442	-25.0	-15.6	-12.9	-8.1	-2.2	+3.8	+11.8	+20.1	+25.9	+30.9	+37.7	+45.0
8.0	414	-21.0	-15.5	-12.7	-8.1	-1.8	+5.2	+11.9	+20.4	+24.7	+30.1	+34.9	+50.0
9.0	387	-24.0	-15.5	-12.7	-7.0	-1.2	+4.8	+12.1	+21.0	+26.8	+30.7	+38.1	+43.0
10.0	365	-21.0	-10.6	-7.3	-5.1	-0.4	+6.0	+12.8	+19.5	+25.3	+30.6	+34.3	+40.0
11.0	353	-15.0	-6.9	-5.0	-3.2	+0.2	+6.0	+12.1	+18.9	+22.6	+26.6	+35.2	+54.0
12.0	334	-19.0	-5.4	-3.6	-1.3	+0.8	+6.3	+11.1	+18.8	+22.3	+25.1	+27.3	+33.0
13.0	326	-7.0	-3.9	-1.9	-0.6	+1.8	+6.2	+11.5	+18.4	+21.5	+25.5	+30.7	+47.0
14.0	311	-5.0	-3.7	-2.0	-0.7	+2.0	+5.9	+10.9	+18.8	+23.7	+28.4	+30.9	+40.0
15.0	297	-6.0	-3.4	-1.8	-0.6	+2.0	+6.3	+10.7	+18.6	+22.8	+25.7	+29.0	+35.0
16.0	290	-14.0	-3.3	-1.8	-0.4	+2.0	+6.5	+11.1	+17.5	+23.5	+27.7	+29.3	+31.0
17.0	282	-17.0	-3.1	-1.5	-0.5	+1.7	+6.2	+11.6	+17.4	+24.4	+28.1	+29.1	+39.0
18.0	274	-5.0	-2.9	-1.4	-0.6	+1.7	+6.4	+10.8	+17.9	+21.6	+27.7	+33.2	+43.0
19.0	260	-4.0	-3.2	-1.6	-0.7	+0.9	+6.2	+10.5	+19.0	+24.0	+32.0	+38.4	+41.0
20.0	246	-5.0	-3.4	-2.1	-1.0	+1.0	+5.6	+10.5	+17.9	+23.9	+28.1	+35.5	+44.0
21.0	232	-6.0	-4.1	-2.7	-1.5	+0.7	+5.1	+11.1	+19.8	+27.2	+32.7	+44.6	+48.0
22.0	215	-6.0	-3.6	-2.4	-1.0	+0.0	+5.0	+10.7	+20.2	+28.7	+35.0	+43.8	+51.0
23.0	201	-8.0	-4.3	-3.4	-1.9	-0.0	+4.2	+11.4	+21.6	+32.9	+42.2	+45.9	+56.0
24.0	172	-7.0	-4.7	-3.7	-2.7	-0.4	+4.1	+10.5	+18.9	+33.1	+42.0	+51.2	+61.0
25.0	144	-8.0	-6.2	-4.4	-3.3	-0.8	+3.7	+11.0	+22.6	+33.8	+40.7	+58.5	+62.0
26.0	128	-14.0	-7.0	-6.3	-4.8	-1.5	+4.0	+11.5	+23.1	+36.6	+50.0	+57.7	+61.0
27.0	95	-10.0	-8.9	-7.8	-6.6	-3.4	+3.1	+9.6	+28.5	+39.1	+43.8	+67.0	+68.0
28.0	75	-10.0	-9.1	-8.1	-8.1	-5.3	+2.1	+11.2	+31.5	+42.2	+45.2	+63.2	+64.0
29.0	35	-14.0	-13.6	-8.8	-8.8	-5.1	+4.5	+21.2	+40.5	+47.1	+47.6	+47.8	+48.0
30.0	14	-13.0	-3.5	-2.2	-3.5	+16.0	+35.5	+44.5	+47.2	+47.6	+47.6	+47.8	+48.0

IRIG RANGE REFERENCE ATMOSPHERE, APRIL TABLE II.2.4

STATION		ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA						ZONAL WIND COMPONENTS				
			LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961						FORT GREELY MISSILE RANGE LAUNCH SITE				
FAIRBANKS, ALASKA		134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961						FORT GREELY MISSILE RANGE LAUNCH SITE				
LAUNCH SITE-FORT GREELY		392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec										
ALT. (km)	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY												MAX.
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0		
591	-8.0	-5.0	-3.5	-2.4	-0.9	-0.5	-0.0	+0.0	+3.2	+4.8	+5.6	+10.0			
0.5	577	-13.0	-7.0	-5.8	-3.5	-1.1	+0.8	+3.2	+5.5	+8.3	+10.0	+14.0			
1.0	572	-15.0	-9.9	-8.3	-7.0	-3.9	+1.6	+4.9	+7.7	+10.4	+13.8	+36.0			
1.5	569	-65.0	-8.0	-6.5	-3.2	-0.4	+2.9	+6.5	+8.9	+12.0	+17.3	+27.0			
2.0	563	-16.0	-8.2	-5.8	-2.4	-0.0	+4.0	+8.5	+11.1	+14.2	+19.7	+24.0			
2.5	549	-16.0	-7.2	-4.7	-2.1	+0.4	+4.5	+9.0	+11.9	+16.4	+20.2	+30.0			
3.0	538	-15.0	-6.4	-4.4	-1.8	+0.9	+4.8	+10.3	+13.2	+17.7	+22.6	+27.0			
4.0	515	-13.0	-6.6	-4.4	-1.1	+1.7	+6.1	+12.5	+15.7	+19.6	+23.9	+34.0			
5.0	497	-12.0	-7.6	-5.4	-1.3	+2.3	+8.1	+14.7	+19.3	+23.8	+28.0	+41.0			
6.0	480	-18.0	-9.0	-6.2	-2.0	+2.4	+9.0	+18.0	+22.5	+28.0	+34.1	+44.0			
7.0	453	-27.0	-10.7	-6.8	-1.9	+2.5	+10.2	+19.9	+26.7	+33.4	+37.2	+49.0			
8.0	426	-27.0	-11.1	-6.8	-2.3	+3.0	+11.2	+23.3	+30.4	+35.7	+42.7	+60.0			
9.0	400	-29.0	-9.1	-5.8	-1.6	+3.2	+11.3	+23.5	+31.1	+35.4	+43.0	+65.0			
10.0	383	-25.0	-6.9	-3.9	-0.6	+3.1	+9.6	+23.3	+28.7	+34.2	+47.1	+57.0			
11.0	364	-14.0	-5.7	-2.7	-0.0	+3.2	+9.1	+17.5	+24.8	+30.7	+33.3	+53.0			
12.0	354	-15.0	-6.6	-4.4	-0.1	+3.2	+8.1	+14.3	+21.3	+28.4	+36.4	+41.0			
13.0	345	-16.0	-6.6	-4.3	-0.2	+3.1	+7.3	+13.8	+20.5	+27.1	+32.2	+43.0			
14.0	335	-13.0	-7.7	-4.3	-1.8	+2.9	+6.5	+13.3	+19.1	+25.3	+28.8	+37.0			
15.0	328	-16.0	-8.6	-4.6	-0.1	+2.7	+6.3	+11.8	+16.4	+26.5	+28.8	+34.0			
16.0	323	-12.0	-5.9	-4.7	-0.2	+2.2	+5.3	+11.7	+16.5	+22.8	+26.9	+46.0			
17.0	319	-14.0	-5.4	-4.5	-0.7	+1.5	+4.6	+10.2	+18.0	+23.7	+24.7	+30.0			
18.0	316	-9.0	-5.9	-4.0	-0.8	+1.1	+4.3	+11.3	+18.6	+22.8	+26.4	+40.0			
19.0	307	-9.0	-6.0	-4.8	-1.5	+0.9	+3.7	+10.5	+19.3	+25.0	+27.9	+38.0			
20.0	293	-12.0	-6.7	-4.8	-2.3	+0.0	+3.4	+9.7	+18.7	+25.1	+28.5	+32.0			
21.0	280	-19.0	-7.8	-7.2	-2.9	-0.3	+2.9	+10.0	+20.0	+25.6	+29.2	+35.0			
22.0	262	-13.0	-8.8	-7.8	-4.0	-0.5	+2.5	+13.1	+19.9	+26.5	+28.3	+31.0			
23.0	237	-12.0	-11.8	-9.8	-8.6	-0.8	+2.5	+14.7	+20.3	+25.2	+28.3	+30.0			
24.0	196	-20.0	-14.3	-12.3	-9.9	-5.4	+1.1	+16.4	+25.6	+29.2	+32.5	+37.0			
25.0	159	-18.0	-17.7	-14.5	-12.5	-6.8	+1.2	+19.0	+27.0	+30.7	+34.4	+40.0			
26.0	126	-24.0	-20.1	-15.7	-14.4	-9.4	-3.0	+2.8	+25.0	+32.5	+37.7	+40.0			
27.0	100	-30.0	-21.7	-20.0	-17.1	-12.4	-3.3	+3.5	+23.0	+28.7	+35.0	+36.0			
28.0	75	-36.0	-24.2	-22.1	-20.2	-16.2	-4.1	+3.1	+20.7	+27.2	+37.2	+38.0			
29.0	48	-38.0	-25.9	-24.5	-21.7	-16.4	-4.4	+2.0	+22.2	+25.6	+26.9	+34.0			
30.0	31	-29.0	-28.4	-26.4	-26.4	-19.6	-5.4	+0.3	+8.9	+14.4	+23.2	+24.0			

IRIG RANGE REFERENCE ATMOSPHERE, MAY TABLE II.2.5

STATION	ELEVATION (MSL) (meters)	LOCATION		PERIOD OF DATA					ZONAL WIND COMPONENTS					
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE					
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE					
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec										
ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY										MAX.	
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72		99.0
5FC	608	-9.0	-6.9	-5.7	-4.7	-3.3	-1.3	-0.4	+0.4	+2.6	+3.5	+4.8	+5.6	+8.0
0.5	607	-14.0	-10.8	-9.6	-7.9	-6.4	-3.7	-0.7	+1.0	+4.7	+6.7	+8.1	+9.4	+16.0
1.0	597	-14.0	-12.3	-11.3	-8.0	-6.6	-3.9	-0.5	+2.4	+5.8	+8.0	+10.2	+12.5	+19.0
1.5	592	-12.0	-10.4	-9.4	-7.7	-5.6	-3.1	-0.3	+2.0	+5.8	+8.3	+10.3	+13.0	+23.0
2.0	581	-17.0	-12.2	-11.0	-7.7	-5.8	-2.6	-0.1	+2.6	+5.7	+9.1	+12.9	+15.5	+26.0
2.5	566	-18.0	-14.4	-11.7	-7.7	-5.5	-2.4	-0.2	+2.8	+6.2	+9.3	+13.4	+16.4	+22.0
3.0	546	-18.0	-15.1	-12.1	-7.8	-5.7	-2.7	-0.2	+3.0	+7.7	+10.6	+13.5	+16.2	+23.0
4.0	523	-23.0	-14.3	-12.0	-8.7	-6.1	-2.5	+0.0	+4.1	+9.5	+12.3	+15.5	+18.5	+25.0
5.0	494	-19.0	-15.0	-12.9	-9.3	-6.7	-2.4	+0.0	+6.0	+10.7	+15.1	+20.2	+23.5	+30.0
6.0	476	-24.0	-17.6	-15.2	-10.8	-6.9	-2.6	+0.9	+6.0	+12.9	+18.6	+23.7	+30.1	+38.0
7.0	449	-29.0	-20.7	-17.5	-13.9	-10.0	-3.5	+0.9	+7.7	+14.3	+21.2	+26.7	+34.5	+48.0
8.0	433	-46.0	-25.8	-21.3	-16.4	-10.4	-4.1	+2.8	+9.5	+17.6	+25.4	+35.0	+42.0	+60.0
9.0	408	-66.0	-25.9	-22.8	-16.5	-10.4	-4.1	+0.6	+10.3	+19.3	+26.6	+32.1	+35.4	+42.0
10.0	394	-39.0	-23.6	-21.0	-14.8	-8.1	-3.0	+1.4	+9.3	+17.8	+25.1	+31.5	+36.6	+49.0
11.0	371	-25.0	-17.6	-13.7	-10.1	-6.4	-2.1	+1.5	+7.4	+16.6	+21.1	+26.7	+33.1	+39.0
12.0	351	-17.0	-14.4	-9.7	-6.6	-4.5	-1.2	+1.3	+6.1	+12.8	+16.4	+21.4	+26.2	+33.0
13.0	342	-11.0	-10.2	-8.1	-5.4	-3.8	-1.4	+0.9	+5.0	+9.7	+12.9	+16.4	+16.8	+33.0
14.0	329	-9.0	-7.7	-6.8	-4.8	-3.6	-1.1	+0.9	+4.2	+8.2	+10.2	+13.8	+15.3	+22.0
15.0	322	-17.0	-9.2	-6.9	-5.3	-3.2	-1.2	+0.4	+3.0	+6.2	+8.9	+11.6	+12.8	+22.0
16.0	314	-11.0	-7.8	-5.4	-4.4	-3.4	-1.4	-0.0	+2.5	+5.2	+7.4	+11.6	+13.9	+21.0
17.0	307	-9.0	-6.9	-4.8	-3.9	-3.2	-1.5	-0.3	+1.5	+4.4	+6.3	+10.0	+11.7	+22.0
18.0	295	-9.0	-6.2	-4.2	-3.7	-3.7	-1.7	-0.5	+0.8	+2.9	+5.1	+7.6	+10.6	+12.0
19.0	284	-7.0	-5.9	-4.9	-4.4	-4.4	-2.5	-0.7	+0.7	+2.6	+3.7	+5.5	+6.5	+12.0
20.0	264	-9.0	-8.4	-6.4	-5.1	-3.2	-2.4	-1.4	+0.2	+1.5	+2.9	+4.9	+5.3	+12.0
21.0	254	-17.0	-9.4	-8.3	-7.0	-6.0	-4.1	-2.0	-0.4	+1.2	+2.4	+3.6	+5.7	+10.0
22.0	240	-9.0	-8.9	-8.9	-7.9	-6.5	-4.8	-2.0	-0.6	+1.0	+2.0	+4.2	+5.8	+10.0
23.0	223	-11.0	-11.7	-9.8	-9.1	-7.6	-5.7	-3.4	-0.9	+0.7	+1.8	+3.4	+4.8	+10.0
24.0	197	-16.0	-15.0	-11.8	-9.9	-8.6	-6.6	-4.0	-1.5	-0.0	+1.8	+2.9	+4.6	+7.0
25.0	174	-19.0	-15.6	-14.0	-13.0	-9.8	-7.7	-4.8	-0.1	-0.1	+1.5	+4.5	+6.5	+7.0
26.0	150	-23.0	-18.5	-14.5	-13.4	-11.3	-8.4	-5.5	-2.7	-0.3	+1.2	+3.5	+4.5	+6.0
27.0	109	-17.0	-14.7	-13.5	-13.5	-11.8	-9.2	-5.8	-3.4	-0.7	+0.2	+2.5	+3.4	+4.0
28.0	86	-17.0	-15.9	-14.1	-14.1	-10.4	-6.4	-6.4	-3.0	-0.9	+1.8	+4.5	+5.1	+6.0
29.0	59	-18.0	-17.3	-11.1	-11.1	-16.3	-11.1	-8.2	-4.9	-1.9	-0.4	+0.3	+0.7	+1.0
30.0	45	-19.0	-18.9	-16.9	-16.9	-16.1	-12.7	-9.8	-6.4	-1.7	-0.2	+0.4	+0.7	+1.0

IRIG RANGE REFERENCE ATMOSPHERE, JUNE TABLE II.2.6

STATION	ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA					WIND COMPONENTS					
	LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE							
FAIRBANKS, ALASKA	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE							
LAUNCH SITE-FORT GREELY	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec												
ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY										MAX.		
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72		99.0	
SFC	592	-10.0	-4.6	-3.4	-1.8	-0.8	-0.3	+0.3	+0.8	+2.9	+3.2	+4.5	+5.5	+6.3	+8.0
0.5	585	-12.0	-8.5	-7.4	-6.0	-4.3	-1.8	+0.0	+2.9	+5.8	+7.3	+9.1	+9.9	+16.0	+16.0
1.0	582	-12.0	-10.5	-8.2	-6.5	-4.6	-1.7	+0.2	+1.1	+6.2	+8.1	+11.7	+11.7	+20.0	+20.0
1.5	574	-11.0	-9.6	-7.7	-6.0	-4.2	-1.9	+0.0	+2.8	+5.8	+8.3	+10.3	+12.1	+16.0	+16.0
2.0	561	-12.0	-10.3	-8.6	-6.4	-4.6	-1.7	+0.0	+2.9	+5.9	+8.7	+10.8	+12.7	+16.0	+16.0
2.5	545	-14.0	-10.5	-8.7	-7.3	-4.9	-2.0	+0.0	+2.9	+6.1	+8.6	+10.3	+13.5	+19.0	+19.0
3.0	530	-17.0	-11.8	-8.9	-6.7	-4.6	-2.0	+0.0	+3.0	+6.1	+8.9	+11.8	+13.3	+19.0	+19.0
4.0	504	-14.0	-9.7	-8.7	-7.4	-5.0	-2.3	+0.0	+2.9	+7.1	+10.1	+13.2	+15.8	+23.0	+23.0
5.0	483	-19.0	-10.6	-9.8	-8.4	-6.3	-3.3	+0.0	+4.0	+8.7	+11.7	+14.5	+18.0	+27.0	+27.0
6.0	466	-24.0	-14.1	-12.3	-8.9	-6.7	-3.2	+0.1	+4.6	+10.6	+14.5	+20.6	+26.0	+42.0	+42.0
7.0	446	-25.7	-18.1	-16.2	-12.7	-8.9	-3.7	+0.3	+6.0	+12.5	+16.5	+21.4	+25.7	+30.0	+30.0
8.0	427	-28.0	-21.5	-18.1	-13.6	-9.6	-4.9	+0.6	+6.9	+13.8	+18.6	+23.7	+26.7	+36.0	+36.0
9.0	407	-29.0	-22.9	-18.7	-15.1	-10.3	-6.2	+0.5	+7.8	+16.3	+21.2	+25.3	+29.9	+51.0	+51.0
10.0	390	-27.0	-20.7	-18.0	-13.6	-9.7	-4.0	+0.5	+7.4	+14.3	+20.9	+25.0	+29.1	+39.0	+39.0
11.0	378	-21.0	-18.2	-14.6	-11.0	-7.6	-2.8	+0.5	+5.4	+11.3	+19.1	+23.1	+30.6	+35.0	+35.0
12.0	365	-18.0	-13.3	-11.8	-8.9	-6.6	-2.5	+0.0	+3.6	+8.6	+14.9	+20.6	+23.6	+45.0	+45.0
13.0	356	-16.0	-13.2	-9.2	-7.3	-5.7	-2.0	+0.2	+2.6	+5.8	+8.8	+15.2	+19.2	+32.0	+32.0
14.0	350	-11.0	-9.8	-8.8	-7.2	-5.1	-1.8	+0.3	+1.9	+4.2	+7.1	+9.6	+14.5	+35.0	+35.0
15.0	345	-10.0	-9.5	-8.2	-6.5	-4.5	-2.2	+0.5	+0.9	+3.2	+4.6	+7.2	+9.2	+23.0	+23.0
16.0	338	-12.0	-7.5	-6.6	-5.7	-4.5	-2.5	+0.7	+0.3	+2.0	+3.5	+4.8	+8.3	+24.0	+24.0
17.0	330	-12.0	-7.6	-6.6	-5.9	-4.9	-2.9	+0.9	+0.1	+1.4	+2.4	+4.6	+8.9	+19.0	+19.0
18.0	321	-11.0	-7.5	-6.8	-5.9	-5.1	-3.4	+1.6	-0.3	+0.5	+1.8	+3.3	+4.7	+10.0	+10.0
19.0	314	-13.0	-9.2	-8.2	-6.7	-5.7	-4.0	+2.2	-0.8	+0.0	+1.9	+3.2	+4.8	+7.0	+7.0
20.0	302	-16.0	-11.4	-8.5	-7.3	-6.5	-4.7	+2.7	-1.4	+0.4	+0.0	+0.7	+1.9	+8.0	+8.0
21.0	284	-20.0	-12.1	-9.2	-7.9	-7.1	-5.4	+3.6	-2.0	+0.8	+0.1	+0.8	+1.7	+10.0	+10.0
22.0	269	-12.0	-10.1	-8.9	-8.1	-7.4	-5.8	+4.3	-2.8	-1.3	+0.4	+0.0	+1.7	+10.0	+10.0
23.0	244	-28.0	-13.5	-10.4	-9.7	-9.0	-6.9	+5.2	-4.0	-1.8	+0.3	+0.0	+9.0	+9.0	+9.0
24.0	222	-16.0	-14.7	-12.9	-11.3	-9.7	-7.8	+5.8	-4.1	-2.3	+1.0	+0.8	+9.0	+9.0	+9.0
25.0	199	-28.0	-18.0	-13.4	-11.6	-10.4	-8.5	+6.5	-4.8	-3.0	+1.3	+1.0	+9.0	+9.0	+9.0
26.0	178	-22.0	-14.9	-13.0	-13.0	-10.8	-9.0	+7.6	-5.7	-2.7	+0.9	+4.2	+10.0	+10.0	+10.0
27.0	150	-24.0	-14.8	-13.6	-11.9	-9.8	-8.2	+8.2	-5.7	-3.3	+1.4	+0.4	+6.8	+12.0	+12.0
28.0	120	-20.0	-15.7	-14.8	-13.0	-10.2	-8.3	+6.3	-6.3	-3.0	+0.9	+0.2	+6.8	+10.0	+10.0
29.0	104	-18.0	-16.9	-14.8	-13.6	-12.5	-10.7	+8.7	-6.6	-4.1	+3.0	+0.1	+14.4	+15.0	+15.0
30.0	83	-20.0	-16.1	-14.7	-13.8	-12.1	-9.4	+9.4	-7.1	-4.6	+3.5	+11.1	+16.1	+17.0	+17.0

IRIG RANGE REFERENCE ATMOSPHERE, JULY TABLE II.2.7

STATION		ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA				ZONAL WIND COMPONENTS					
AIRBANKS, ALASKA		134		64° 49' N 147° 52' W		JAN 1956 TO JAN 1961				FORT GREELY MISSILE RANGE LAUNCH SITE					
LAUNCH SITE-FORT GREELY		392		63° 59' N 145° 43' W		UNITS: WIND SPEED - m/sec									
ALT. (m)	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY												MAX.
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0		
SFC	594	-6.0	-3.9	-2.8	-1.1	-0.8	-0.2	+1.5	+3.5	+4.6	+5.9	+7.4	+19.0		
0.5	591	-11.0	-8.5	-4.5	-2.9	-0.7	+1.3	+4.3	+6.9	+8.3	+9.5	+11.6	+17.0		
1.0	585	-14.0	-8.0	-5.3	-3.1	-0.6	+2.2	+5.6	+9.1	+11.3	+12.7	+16.0	+19.0		
1.5	573	-12.0	-6.6	-5.0	-3.4	-0.6	+2.2	+5.9	+9.3	+11.2	+12.9	+16.4	+22.0		
2.0	557	-13.0	-7.8	-5.4	-3.4	-0.6	+2.2	+5.7	+9.2	+11.0	+12.7	+14.6	+20.0		
2.5	541	-14.0	-8.3	-6.2	-3.6	-0.5	+2.2	+5.8	+9.4	+11.4	+13.5	+14.7	+17.0		
3.0	528	-12.0	-7.7	-6.2	-4.0	-0.6	+2.4	+5.7	+9.6	+11.7	+14.4	+15.7	+20.0		
4.0	494	-11.0	-7.8	-6.4	-4.1	-0.8	+2.0	+6.5	+10.5	+12.7	+14.3	+17.0	+19.0		
5.0	464	-12.0	-8.6	-6.7	-5.2	-1.1	+1.8	+6.8	+11.3	+13.6	+15.3	+18.1	+24.0		
6.0	445	-17.0	-10.5	-8.8	-6.3	-2.1	+1.8	+7.3	+12.2	+14.2	+16.9	+18.6	+23.0		
7.0	424	-19.0	-12.8	-10.6	-8.0	-2.5	+2.2	+8.2	+13.4	+16.4	+19.3	+23.9	+32.0		
8.0	403	-30.0	-18.9	-17.2	-12.9	-3.4	+1.5	+8.2	+15.3	+18.9	+21.7	+23.3	+31.0		
9.0	389	-24.0	-18.0	-15.7	-11.2	-3.6	+1.6	+9.4	+16.4	+21.1	+26.0	+28.7	+35.0		
10.0	379	-28.0	-19.1	-15.0	-11.0	-4.1	+1.5	+9.6	+18.0	+23.3	+26.6	+32.6	+66.0		
11.0	365	-30.0	-15.6	-12.6	-8.8	-3.3	+1.6	+8.9	+16.5	+21.9	+24.9	+30.3	+46.0		
12.0	360	-33.0	-12.7	-9.0	-6.0	-2.3	+1.2	+6.8	+12.7	+17.0	+19.5	+24.2	+33.0		
13.0	345	-15.0	-8.7	-6.6	-4.3	-1.8	+1.1	+5.9	+10.4	+13.1	+16.1	+19.2	+22.0		
14.0	340	-11.0	-7.2	-5.5	-4.2	-1.4	+0.7	+4.3	+8.6	+11.5	+14.0	+15.8	+23.0		
15.0	333	-9.0	-6.1	-4.8	-3.5	-1.0	+0.4	+3.7	+6.7	+8.9	+10.8	+12.8	+16.0		
16.0	330	-11.0	-5.9	-3.0	-2.3	-1.3	+0.1	+3.0	+6.3	+7.7	+9.4	+11.7	+16.0		
17.0	321	-10.0	-6.3	-4.7	-3.3	-1.5	-0.1	+2.1	+4.5	+5.8	+7.7	+17.7	+15.0		
18.0	312	-10.0	-6.9	-5.5	-3.9	-1.7	-0.3	+1.3	+3.4	+4.4	+6.6	+9.8	+19.0		
19.0	307	-9.0	-7.5	-5.4	-3.9	-2.4	-0.7	+0.4	+2.2	+3.8	+5.5	+6.4	+10.0		
20.0	292	-11.0	-7.0	-6.2	-4.7	-2.9	-1.2	+0.2	+1.3	+2.6	+3.8	+6.3	+8.0		
21.0	294	-10.0	-8.0	-6.3	-5.5	-3.8	-2.1	-0.6	+0.4	+1.9	+3.2	+5.3	+7.0		
22.0	284	-11.0	-7.6	-6.9	-6.3	-4.5	-3.0	-1.2	-0.0	+1.4	+2.8	+5.0	+8.0		
23.0	266	-12.0	-8.9	-7.9	-7.0	-5.6	-4.0	-2.2	-0.8	+0.0	+1.9	+4.4	+6.0		
24.0	252	-12.0	-9.9	-9.2	-8.1	-6.3	-4.5	-2.7	-1.0	-0.2	+0.9	+1.1	+2.0		
25.0	228	-12.0	-10.6	-9.3	-8.3	-6.8	-5.0	-3.4	-1.5	-0.3	+1.2	+1.9	+6.0		
26.0	194	-13.0	-12.5	-11.6	-10.4	-9.0	-7.8	-6.1	-4.1	-2.0	-0.8	+1.0	+2.0		
27.0	166	-13.0	-10.7	-10.2	-9.4	-8.0	-6.5	-4.9	-3.3	-1.8	-1.2	+2.4	+3.0		
28.0	138	-15.0	-11.9	-10.9	-10.2	-8.7	-7.2	-5.7	-3.7	-2.7	-1.5	-0.3	+5.0		
29.0	110	-14.0	-12.4	-11.7	-11.0	-9.7	-7.4	-5.8	-4.1	-3.0	-0.5	+1.9	+4.0		
30.0	94	-13.0	-12.9	-12.9	-12.3	-10.3	-8.3	-6.4	-4.3	-3.4	-1.5	+4.0	+5.0		

IRIG RANGE REFERENCE ATMOSPHERE, AUGUST TABLE II.2.8

STATION	ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA				ZONAL WIND COMPONENTS						
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961				FORT GREELY MISSILE RANGE LAUNCH SITE						
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961				FORT GREELY MISSILE RANGE LAUNCH SITE						
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec										
ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENT WIND SPEED FREQUENCY										MAX.	
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72		99.0
0.5	573	-7.0	-4.4	-3.7	-3.0	-2.2	-1.1	-0.3	+0.8	+2.7	+3.9	+5.8	+6.6	+9.0
1.0	565	-9.0	-7.6	-6.8	-5.7	-4.3	-2.1	-0.2	+2.5	+6.1	+8.5	+11.3	+13.1	+16.0
1.5	537	-11.0	-9.8	-7.6	-5.9	-4.1	-1.4	+1.5	+4.4	+8.1	+11.7	+14.9	+17.8	+26.0
2.0	520	-12.0	-9.5	-8.0	-5.8	-4.2	-1.2	+1.5	+4.8	+8.7	+11.6	+17.0	+20.6	+25.0
2.5	501	-14.0	-10.4	-7.5	-5.9	-4.4	-0.9	+2.0	+5.3	+8.9	+11.9	+18.1	+21.4	+29.0
3.0	483	-13.0	-12.0	-8.3	-6.1	-4.0	-1.0	+2.0	+5.4	+9.0	+11.9	+16.9	+23.1	+31.0
4.0	445	-14.0	-10.5	-8.9	-7.1	-5.0	-1.5	+1.5	+4.9	+9.1	+12.7	+20.4	+25.5	+34.0
5.0	432	-17.0	-11.3	-10.1	-8.2	-6.2	-1.5	+1.3	+5.4	+9.8	+15.7	+23.1	+28.5	+36.0
6.0	417	-17.0	-13.7	-11.6	-9.1	-6.6	-2.5	+1.6	+5.9	+11.4	+17.3	+26.7	+32.8	+39.0
7.0	399	-24.0	-15.0	-13.9	-10.7	-7.8	-3.0	+1.7	+7.6	+13.6	+19.5	+26.9	+40.0	+46.0
8.0	382	-29.0	-23.1	-19.2	-13.5	-9.9	-3.4	+1.7	+8.6	+17.8	+24.2	+35.2	+43.1	+58.0
9.0	364	-42.0	-25.4	-20.2	-16.1	-11.5	-4.0	+1.4	+9.6	+20.5	+29.4	+38.7	+52.3	+63.0
10.0	349	-45.0	-23.5	-20.7	-16.7	-12.4	-4.8	+1.3	+10.1	+24.0	+31.5	+42.5	+64.5	+70.0
11.0	340	-27.0	-18.5	-15.6	-11.7	-9.6	-2.8	+2.0	+9.4	+21.0	+31.6	+38.6	+53.6	+67.0
12.0	334	-33.0	-18.6	-8.3	-7.0	-5.0	-1.1	+2.9	+9.2	+19.6	+32.3	+37.1	+49.6	+75.0
13.0	320	-21.0	-16.7	-7.7	-5.0	-3.3	-0.7	+2.9	+7.2	+14.5	+22.0	+31.7	+38.8	+48.0
14.0	310	-18.0	-8.4	-5.9	-4.4	-2.8	-0.4	+2.6	+6.3	+11.1	+15.5	+23.4	+35.9	+43.0
15.0	306	-10.0	-8.9	-5.0	-3.5	-2.1	-0.2	+2.7	+5.6	+9.5	+12.3	+21.5	+26.9	+34.0
16.0	306	-5.0	-4.9	-4.4	-2.7	-1.5	-0.1	+2.3	+4.8	+7.4	+11.1	+18.5	+22.3	+24.0
17.0	299	-7.0	-5.0	-4.7	-2.7	-1.7	-0.3	+1.9	+3.9	+6.6	+10.7	+16.1	+22.0	+27.0
18.0	291	-7.0	-6.3	-5.3	-3.5	-2.4	-0.6	+1.1	+3.3	+4.9	+7.2	+12.6	+17.0	+22.0
19.0	279	-9.0	-6.2	-5.1	-3.5	-2.4	-0.7	+0.6	+2.5	+4.4	+6.0	+8.8	+12.2	+16.0
20.0	276	-12.0	-6.2	-4.7	-3.7	-2.9	-1.0	+0.2	+2.1	+3.8	+5.4	+8.5	+10.2	+15.0
21.0	270	-9.0	-6.4	-5.2	-4.0	-3.2	-1.4	-0.3	+1.3	+3.4	+5.2	+7.2	+9.4	+11.0
22.0	261	-9.0	-6.5	-5.7	-4.6	-3.5	-1.8	-0.5	+0.9	+2.5	+3.7	+4.8	+6.3	+9.0
23.0	240	-9.0	-6.8	-5.9	-5.1	-4.2	-2.6	-0.9	+0.1	+1.6	+2.7	+4.5	+6.8	+10.0
24.0	213	-8.0	-7.4	-6.3	-5.1	-4.4	-3.0	-1.5	+0.1	+1.6	+3.2	+6.1	+7.9	+12.0
25.0	183	-9.0	-7.9	-7.9	-6.8	-5.6	-3.5	-1.9	-0.2	+1.7	+3.6	+4.9	+8.0	+9.0
26.0	157	-26.0	-12.4	-8.4	-7.6	-6.5	-4.5	-2.0	-0.3	+0.8	+3.1	+5.7	+6.4	+7.0
27.0	127	-25.0	-9.7	-8.7	-7.9	-7.3	-5.2	-2.7	-0.6	+0.8	+3.2	+4.5	+6.7	+11.0
28.0	99	-10.0	-9.7	-9.7	-8.3	-7.4	-5.4	-2.9	-0.7	+0.6	+2.5	+5.7	+7.0	+8.0
29.0	74	-10.0	-9.3	-9.3	-8.4	-7.6	-6.0	-3.2	-0.8	+0.8	+2.1	+4.3	+5.2	+6.0
30.0	51	-10.0	-9.9	-9.2	-8.6	-8.6	-6.7	-4.3	-1.8	+0.4	+2.4	+3.4	+3.7	+4.0

IRIG RANGE REFERENCE ATMOSPHERE, SEPTEMBER TABLE II.2.9

STATION	ELEVATION MSL (meters)		LOCATION				PERIOD OF DATA										ZONAL WIND COMPONENTS	
	LATITUDE	LONGITUDE	CUMULATIVE PERCENTAGE FREQUENCY										MAX.					
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72			99.0			
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE				
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec														
ALT. (Ym)	NO. OBS.	MIN.														MAX.		
SFC	569	-8.0	-6.2	-5.6	-4.5	-2.9	-1.4	-0.5	+0.2	+2.6	+3.7	+4.6	+5.3	+8.0				
0.5	556	-14.0	-11.6	-9.9	-8.4	-6.6	-3.5	-0.6	+1.9	+6.4	+8.7	+11.0	+12.3	+18.0				
1.0	551	-15.0	-12.9	-11.2	-9.3	-6.4	-2.9	-0.3	+3.0	+8.6	+10.9	+13.2	+15.7	+26.0				
1.5	537	-17.0	-12.3	-10.4	-8.0	-5.6	-1.9	+0.5	+4.3	+9.0	+11.5	+14.2	+17.6	+28.0				
2.0	511	-17.0	-11.2	-9.0	-7.3	-5.2	-1.8	+1.4	+4.9	+9.5	+11.6	+14.1	+16.6	+19.0				
2.5	498	-17.0	-10.5	-9.2	-6.8	-4.5	-1.0	+1.7	+5.4	+9.7	+11.7	+13.9	+22.0	+26.0				
3.0	482	-19.0	-12.0	-8.5	-6.2	-3.9	-0.7	+2.4	+6.3	+10.3	+13.4	+15.6	+19.1	+28.0				
4.0	464	-18.0	-10.3	-8.0	-6.2	-3.5	-0.5	+3.4	+7.8	+13.2	+15.9	+18.7	+23.3	+35.0				
5.0	448	-17.0	-10.5	-8.4	-6.3	-3.7	-0.2	+4.5	+10.0	+15.2	+19.2	+23.1	+28.5	+39.0				
6.0	426	-14.0	-10.9	-9.3	-6.1	-4.2	-0.2	+5.2	+12.2	+18.2	+23.4	+30.1	+44.9	+59.0				
7.0	402	-18.0	-14.9	-10.9	-7.9	-5.5	-0.6	+5.6	+14.2	+22.7	+29.6	+39.4	+47.6	+66.0				
8.0	379	-21.0	-14.2	-11.8	-9.2	-6.7	-0.9	+5.9	+16.1	+27.2	+35.0	+42.6	+55.5	+68.0				
9.0	346	-24.0	-17.5	-14.0	-10.3	-7.7	-1.5	+5.1	+17.0	+29.5	+40.2	+52.0	+63.0	+82.0				
10.0	330	-24.0	-16.3	-13.4	-10.3	-6.1	-0.2	+6.7	+16.4	+30.0	+40.1	+49.4	+56.8	+66.0				
11.0	316	-20.0	-13.8	-7.9	-5.7	-2.4	+1.4	+7.1	+16.0	+28.7	+36.2	+47.7	+52.8	+63.0				
12.0	309	-24.0	-13.9	-4.9	-2.6	-0.7	+2.3	+6.8	+12.9	+24.5	+31.8	+37.4	+48.9	+62.0				
13.0	301	-11.0	-6.4	-3.1	-0.9	+0.0	+3.1	+7.2	+11.7	+20.4	+25.7	+32.1	+35.9	+44.0				
14.0	293	-7.0	-6.5	-3.4	-0.6	+0.5	+3.4	+6.8	+10.9	+18.1	+21.4	+24.1	+23.0	+41.0				
15.0	287	-5.0	-3.5	-1.2	+0.0	+1.2	+3.8	+6.6	+10.1	+16.0	+19.4	+21.2	+23.5	+28.0				
16.0	273	-4.0	-2.5	-0.9	-0.2	+1.4	+3.9	+6.7	+10.2	+14.3	+17.5	+19.9	+23.4	+28.0				
17.0	274	-5.0	-2.1	-0.7	-0.1	+1.5	+3.8	+6.6	+9.5	+13.3	+16.6	+19.5	+23.4	+22.0				
18.0	272	-1.0	-0.8	-0.5	+0.2	+1.5	+3.6	+6.2	+9.2	+12.4	+14.2	+15.9	+18.1	+23.0				
19.0	264	-2.0	-0.8	-0.3	+0.5	+1.7	+3.8	+6.4	+9.4	+12.2	+13.9	+16.9	+18.6	+21.0				
20.0	257	-4.0	-2.2	-0.8	-0.1	+1.2	+3.9	+6.3	+8.9	+11.7	+14.2	+16.3	+21.0	+22.0				
21.0	249	-2.0	-1.2	-0.4	+0.5	+1.6	+3.5	+6.1	+9.1	+11.6	+13.7	+15.4	+16.5	+21.0				
22.0	237	-4.0	-2.5	-0.5	+0.6	+1.5	+3.4	+6.1	+9.4	+11.9	+13.7	+15.1	+16.6	+22.0				
23.0	221	-1.0	-0.8	-0.8	+0.1	+1.7	+3.5	+6.0	+9.6	+13.1	+14.4	+16.4	+17.7	+22.0				
24.0	190	-5.0	-2.0	-0.5	+0.6	+2.3	+4.4	+7.1	+10.2	+13.0	+16.7	+18.3	+19.5	+26.0				
25.0	160	-2.0	-0.7	-0.1	+0.5	+1.7	+4.1	+7.1	+10.2	+13.6	+16.7	+19.3	+21.2	+22.0				
26.0	134	-1.0	-0.8	+0.0	+0.7	+1.8	+4.5	+7.6	+11.0	+14.6	+17.4	+19.9	+21.6	+24.0				
27.0	95	-1.0	+0.0	+1.2	+2.3	+4.1	+7.5	+12.0	+16.4	+18.4	+19.8	+21.0	+22.0	+22.0				
28.0	73	-4.0	-1.3	+1.3	+2.7	+5.2	+8.6	+13.4	+17.7	+21.6	+23.6	+24.0	+27.0	+27.0				
29.0	52	+1.0	+1.0	+3.0	+3.4	+6.5	+10.3	+15.5	+19.9	+24.4	+25.8	+26.4	+27.0	+27.0				
30.0	41	+1.0	+1.0	+3.0	+3.6	+6.6	+11.2	+17.4	+22.8	+24.4	+26.0	+26.5	+27.0	+27.0				

IRIG RANGE REFERENCE ATMOSPHERE, OCTOBER TABLE II.2.10

STATION	ELEVATION ivSL (meters)		LOCATION		PERIOD OF DATA							ZONAL WIND COMPONENTS		
	LATITUDE	LONGITUDE	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	FORT GREELY MISSILE RANGE LAUNCH SITE		
FAIRBANKS, ALASKA	134		64° 49' N	147° 52' W	JAN 1956 TO JAN 1961									
LAUNCH SITE-FORT GREELY	392		63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec									
ALT. (km)	NO.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY										MAX.	
MSL	OBS.		1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	
SFC	523	-7.0	-5.5	-4.5	-3.2	-2.4	-1.3	-0.5	-0.0	+1.4	+2.6	+4.4	+5.6	+11.0
0.5	500	-19.0	-10.6	-9.1	-7.8	-6.5	-4.4	-1.9	-0.0	+3.4	+6.3	+8.4	+10.0	+19.0
1.0	485	-18.0	-14.2	-12.7	-10.5	-8.7	-5.6	-1.6	+1.8	+6.3	+8.6	+11.4	+15.0	+21.0
1.5	472	-19.0	-16.1	-13.0	-10.3	-7.8	-4.2	-0.2	+3.8	+7.9	+10.7	+13.3	+16.2	+23.0
2.0	455	-23.0	-14.4	-12.2	-9.4	-7.1	-3.1	+0.3	+4.5	+8.5	+12.4	+14.9	+16.6	+23.0
2.5	439	-18.0	-14.6	-10.9	-8.1	-6.0	-2.0	+1.4	+5.2	+9.1	+12.1	+16.4	+19.2	+22.0
3.0	430	-17.0	-13.3	-9.5	-7.0	-4.9	-1.1	+2.0	+5.7	+9.6	+13.5	+16.0	+18.9	+29.0
4.0	411	-15.0	-12.9	-10.3	-7.4	-4.5	-0.8	+3.0	+6.8	+11.2	+14.5	+16.8	+20.8	+28.0
5.0	385	-21.0	-14.0	-11.7	-8.9	-5.6	-0.8	+3.0	+7.8	+12.5	+15.1	+19.1	+22.3	+37.0
6.0	361	-24.0	-18.6	-14.7	-9.9	-5.9	-0.7	+3.8	+9.3	+14.7	+17.6	+21.8	+28.1	+34.0
7.0	335	-26.0	-22.6	-19.1	-11.4	-6.5	-1.6	+4.1	+10.4	+16.8	+20.2	+26.3	+31.6	+48.0
8.0	315	-35.0	-26.9	-18.8	-13.0	-7.8	-1.4	+4.6	+12.0	+18.8	+24.7	+28.9	+30.9	+43.0
9.0	295	-31.0	-28.0	-18.6	-11.4	-6.5	-1.4	+6.1	+13.1	+19.6	+24.6	+35.2	+42.0	+48.0
10.0	282	-27.0	-24.1	-18.5	-8.9	-4.8	-0.4	+6.5	+14.4	+20.4	+25.9	+33.5	+47.5	+51.0
11.0	265	-24.0	-19.3	-14.4	-5.3	-1.5	+1.9	+7.3	+14.0	+20.3	+24.5	+30.4	+51.3	+58.0
12.0	254	-19.0	-15.4	-12.2	-2.3	-0.1	+3.5	+7.6	+13.8	+20.9	+23.3	+31.2	+43.4	+52.0
13.0	244	-11.0	-10.2	-7.2	-1.7	+1.0	+4.3	+7.9	+13.7	+19.9	+23.4	+27.4	+33.5	+42.0
14.0	236	-8.0	-6.6	-4.6	-0.1	+1.7	+5.0	+8.7	+12.8	+18.8	+23.0	+25.5	+34.3	+38.0
15.0	229	-7.0	-5.8	-2.7	-0.1	+2.0	+5.3	+9.6	+14.6	+19.6	+23.0	+24.7	+28.8	+42.0
16.0	215	-6.0	-4.8	-1.0	+0.3	+2.8	+5.8	+9.6	+14.9	+18.2	+20.1	+24.0	+26.8	+32.0
17.0	206	-7.0	-4.6	-2.3	+0.1	+2.0	+5.6	+9.8	+14.7	+18.0	+19.9	+25.3	+23.9	+31.0
18.0	196	-4.0	-3.8	-0.9	+0.3	+3.1	+6.2	+9.8	+14.5	+19.1	+21.0	+22.7	+27.0	+46.0
19.0	188	-3.0	-3.0	-0.9	+0.6	+2.3	+6.7	+10.3	+14.3	+18.2	+19.5	+22.7	+27.1	+32.0
20.0	177	-3.0	-0.9	-0.6	-0.1	+1.3	+6.2	+10.2	+14.3	+18.0	+20.4	+21.9	+24.1	+25.0
21.0	166	-4.0	-2.6	-1.2	-0.1	+2.1	+5.8	+9.7	+14.5	+18.3	+22.7	+27.2	+31.3	+38.0
22.0	152	-5.0	-3.4	-2.2	-0.7	+0.5	+4.8	+9.9	+14.1	+16.7	+19.2	+21.7	+24.0	+32.0
23.0	134	-4.0	-3.8	-2.9	-1.5	-0.6	+3.5	+10.5	+14.0	+17.2	+19.2	+19.8	+23.6	+42.0
24.0	114	-4.0	-3.8	-2.7	-0.2	-0.4	+3.0	+10.6	+14.8	+18.7	+21.4	+23.7	+28.4	+29.0
25.0	94	-2.0	-1.7	-1.0	-0.6	-0.6	+1.1	+9.7	+14.5	+19.5	+22.7	+24.8	+28.0	+29.0
26.0	71	-7.0	-3.7	-3.1	-0.8	+0.6	+10.1	+10.1	+15.3	+19.2	+22.4	+28.3	+29.2	+30.0
27.0	55	-9.0	-4.8	-4.1	-2.5	+0.3	+9.6	+9.6	+16.1	+19.5	+21.5	+21.3	+22.4	+23.0
28.0	34	-8.0	-4.8	-1.6	-0.9	+1.1	+13.0	+13.0	+17.0	+20.5	+21.3	+24.2	+24.5	+25.0
29.0	22	-2.0	-3.0	-0.9	-0.3	-0.3	+7.5	+17.0	+20.8	+23.7	+24.9	+25.4	+25.1	+25.0
30.0	12	-3.0	-3.0	-0.9	+1.1	+1.0	+18.0	+18.0	+24.0	+26.8	+27.3	+27.7	+27.8	+28.0

IRIG RANGE REFERENCE ATMOSPHERE, NOVEMBER TABLE T.2.11

STATION		ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA					ZONAL WIND COMPONENTS				
FAIRBANKS, ALASKA		134		64° 49' N 147° 52' W		JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE				
LAUNCH SITE-FORT GREELY		392		63° 59' N 145° 43' W		UNITS: WIND SPEED - m/sec									
ALT. MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY												MAX.
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0		
0.5	551	-8.0	-3.4	-2.7	-1.8	-0.9	-0.5	-0.1	+0.4	+1.3	+2.4	+3.2	+6.0		
1.0	535	-17.0	-10.8	-9.1	-7.6	-5.3	-2.8	-0.5	+1.3	+2.7	+5.7	+7.2	+13.0		
1.5	526	-19.0	-13.7	-12.4	-10.1	-6.6	-2.9	+0.1	+4.0	+7.5	+9.6	+12.2	+17.0		
2.0	515	-21.0	-15.2	-12.9	-11.1	-8.9	-5.0	-0.9	+13.9	+9.7	+12.8	+13.9	+18.0		
2.5	496	-16.0	-12.3	-10.0	-7.8	-3.8	-0.2	+3.8	+7.0	+9.6	+12.7	+15.0	+20.0		
3.0	470	-19.0	-10.8	-9.3	-6.7	-2.4	+0.8	+4.9	+9.0	+10.8	+13.0	+14.6	+19.0		
3.0	469	-16.0	-9.7	-7.9	-5.1	-1.5	+1.7	+5.9	+9.9	+12.1	+13.9	+16.5	+22.0		
4.0	434	-26.0	-7.6	-6.0	-3.7	-0.3	+3.1	+7.1	+11.4	+14.5	+16.7	+19.3	+24.0		
5.0	402	-16.0	-7.6	-5.1	-3.1	+0.2	+4.6	+10.0	+14.3	+18.3	+23.2	+26.9	+36.0		
6.0	384	-18.0	-8.7	-6.1	-3.1	+0.0	+5.5	+11.7	+17.7	+20.9	+25.5	+29.5	+42.0		
7.0	364	-23.0	-14.1	-8.9	-4.7	-0.0	+6.2	+13.3	+21.1	+28.2	+34.3	+39.3	+43.0		
8.0	345	-28.0	-17.0	-11.6	-6.7	+0.0	+6.8	+14.3	+23.6	+31.8	+41.3	+46.5	+64.0		
9.0	318	-25.0	-13.5	-11.0	-5.8	+0.3	+6.7	+13.9	+22.1	+32.0	+37.1	+43.4	+64.0		
10.0	302	-32.0	-10.0	-5.9	-2.9	+1.7	+7.6	+13.3	+20.3	+24.9	+34.1	+41.9	+60.0		
11.0	288	-14.0	-5.7	-2.8	-0.3	+3.0	+7.5	+13.0	+18.1	+21.5	+27.4	+37.1	+57.0		
12.0	281	-13.0	-3.1	-1.6	-0.0	+3.8	+8.3	+12.8	+17.6	+21.9	+24.8	+30.5	+40.0		
13.0	275	-7.0	-1.8	-0.8	+0.3	+4.6	+9.3	+13.4	+17.2	+19.7	+25.7	+28.2	+37.0		
14.0	265	-9.0	-1.9	-0.4	+1.3	+6.0	+9.2	+12.4	+16.2	+19.7	+22.6	+32.1	+35.0		
15.0	260	-5.0	-0.8	+0.0	+2.0	+6.1	+9.5	+13.6	+17.5	+20.1	+22.0	+24.4	+32.0		
16.0	256	-3.0	-0.5	+0.4	+3.0	+6.3	+9.6	+14.2	+19.0	+21.0	+25.5	+29.4	+38.0		
17.0	249	-4.0	-0.2	+0.5	+3.1	+6.6	+10.2	+15.4	+18.8	+21.5	+24.7	+30.5	+48.0		
18.0	244	-5.0	+0.1	+1.5	+3.6	+6.6	+11.1	+15.9	+19.8	+21.9	+25.3	+28.5	+36.0		
19.0	228	-6.0	-0.2	+1.2	+3.9	+6.7	+10.7	+16.0	+21.4	+23.9	+26.8	+34.3	+36.0		
20.0	216	-6.0	-0.2	+0.7	+3.2	+6.3	+10.9	+15.7	+21.3	+25.2	+28.0	+34.8	+38.0		
21.0	207	-7.0	-0.8	+0.7	+2.6	+5.7	+11.3	+17.2	+23.6	+27.5	+30.2	+33.9	+42.0		
22.0	190	-8.0	-1.8	-0.1	+2.5	+5.6	+11.0	+17.7	+24.5	+29.7	+32.8	+42.0	+43.0		
23.0	175	-7.0	-5.0	-1.1	+1.0	+5.5	+11.7	+17.1	+25.2	+28.0	+31.0	+37.6	+47.0		
24.0	162	-8.0	-5.7	-1.9	+0.3	+5.2	+10.6	+17.8	+23.5	+26.6	+34.3	+37.3	+39.0		
25.0	143	-9.0	-6.8	-2.7	+0.0	+5.2	+10.9	+17.3	+25.9	+28.9	+36.7	+43.5	+49.0		
26.0	127	-12.0	-10.1	-2.9	+0.1	+4.4	+11.6	+18.4	+26.1	+30.8	+41.1	+47.7	+50.0		
27.0	98	-13.0	-5.7	-1.6	-0.6	+3.5	+11.7	+18.8	+27.0	+32.5	+36.2	+41.0	+41.0		
28.0	69	-11.0	-9.7	-1.8	-0.8	+2.7	+11.1	+20.5	+29.0	+32.5	+36.6	+37.0	+37.0		
29.0	52	-10.0	-8.3	-1.9	-0.8	+2.0	+12.0	+21.5	+28.3	+34.1	+34.9	+35.4	+36.0		
30.0	41	-12.0	-3.9	-0.4	-0.4	+4.6	+12.8	+23.7	+29.8	+32.9	+37.0	+37.5	+38.0		

IRIG RANGE REFERENCE ATMOSPHERE, DECEMBER TABLE II.2.12

STATION	ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA							ZONAL WIND COMPONENTS			
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961							FORT GREELY MISSILE RANGE LAUNCH SITE			
		64° 49' N	147° 52' W	UNITS: WIND SPEED - m/sec										
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961							FORT GREELY MISSILE RANGE LAUNCH SITE			
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec										
ALT. (km)	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY										MAX.	
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	
SFC	595	-7.0	-3.5	-2.8	-1.9	-1.4	-0.8	-0.5	-0.2	-0.0	+0.5	+1.1	+1.8	+5.0
0.5	580	-19.0	-13.5	-11.7	-9.5	-7.8	-4.7	-2.5	-0.9	-0.1	+0.7	+1.7	+2.8	+14.0
1.0	572	-25.0	-17.8	-16.7	-14.9	-12.0	-7.7	-3.9	-0.9	+2.2	+4.7	+7.5	+9.5	+18.0
1.5	562	-28.0	-21.4	-18.7	-16.1	-12.4	-7.4	-2.8	+0.4	+4.9	+7.9	+11.5	+13.3	+22.0
2.0	537	-27.0	-24.6	-18.1	-15.7	-12.5	-6.8	-1.0	+2.3	+6.2	+8.5	+11.5	+14.3	+21.0
2.5	520	-29.0	-23.7	-20.0	-16.1	-12.6	-6.8	-0.4	+3.3	+6.8	+9.5	+13.0	+15.9	+19.0
3.0	509	-31.0	-22.9	-18.4	-14.7	-11.1	-4.6	-0.0	+4.5	+8.7	+10.8	+15.1	+18.9	+24.0
4.0	460	-29.0	-23.1	-15.5	-12.5	-8.5	-3.2	+0.9	+5.8	+10.5	+14.6	+17.8	+20.8	+33.0
5.0	423	-37.0	-27.7	-21.3	-13.4	-8.6	-2.4	+1.6	+8.1	+13.6	+17.6	+23.1	+24.9	+41.0
6.0	405	-31.0	-26.9	-20.7	-13.1	-9.1	-2.8	+2.9	+10.1	+15.6	+21.8	+24.9	+33.4	+45.0
7.0	392	-34.0	-30.0	-19.0	-13.8	-8.8	-2.4	+3.9	+12.1	+19.9	+25.4	+33.0	+43.0	+61.0
8.0	378	-49.0	-29.2	-19.1	-14.0	-7.4	-0.9	+4.7	+13.9	+24.0	+30.0	+38.6	+46.2	+60.0
9.0	361	-43.0	-28.3	-20.7	-10.7	-4.6	+0.1	+5.3	+14.4	+23.1	+28.6	+38.3	+50.3	+86.0
10.0	350	-35.0	-21.4	-18.0	-7.6	-3.1	+1.5	+6.8	+14.6	+21.3	+27.5	+42.0	+51.5	+90.0
11.0	338	-24.0	-14.6	-10.6	-4.6	-0.6	+2.9	+8.5	+15.0	+21.5	+27.5	+38.2	+47.6	+66.0
12.0	321	-23.0	-7.5	-4.9	-1.9	+0.4	+4.9	+9.8	+15.6	+22.3	+25.9	+33.3	+41.7	+62.0
13.0	305	-10.0	-6.9	-5.0	-0.9	+0.9	+6.5	+10.9	+17.1	+23.0	+26.3	+32.0	+35.6	+44.0
14.0	288	-8.0	-5.0	-1.8	-0.4	+3.1	+8.0	+11.9	+17.8	+24.0	+28.2	+30.4	+36.1	+39.0
15.0	273	-7.0	-4.1	-0.9	+0.8	+4.4	+8.3	+13.3	+19.5	+25.7	+29.4	+32.7	+35.2	+39.0
16.0	260	-4.0	-3.3	-0.6	+1.4	+4.1	+8.8	+14.3	+22.1	+28.5	+31.8	+33.6	+37.4	+41.0
17.0	247	-3.0	-2.5	-0.4	+1.6	+3.9	+9.3	+16.1	+23.1	+29.4	+32.5	+33.8	+35.7	+39.0
18.0	240	-2.0	-0.5	+0.4	+2.1	+3.7	+9.6	+17.2	+26.0	+32.6	+36.5	+39.1	+39.9	+43.0
19.0	225	-2.0	-0.5	+0.5	+1.8	+3.7	+9.8	+18.2	+27.2	+33.3	+36.9	+39.6	+43.2	+44.0
20.0	208	+0.0	+0.2	+0.9	+2.3	+3.6	+9.0	+19.3	+27.5	+35.7	+41.4	+42.8	+47.4	+50.0
21.0	187	-4.0	-0.7	-0.1	+1.5	+3.0	+6.9	+18.9	+28.8	+40.1	+45.4	+47.3	+50.5	+52.0
22.0	170	-2.0	-0.6	+0.2	+1.8	+3.1	+6.1	+18.0	+27.8	+39.0	+44.5	+50.5	+51.6	+56.0
23.0	150	+0.0	+0.1	+0.6	+1.5	+3.1	+6.1	+18.3	+29.0	+39.6	+48.5	+52.5	+54.7	+57.0
24.0	129	+0.0	-1.9	-0.7	+0.4	+2.6	+6.2	+17.5	+28.5	+42.0	+53.2	+57.0	+63.7	+68.0
25.0	107	-3.0	-0.7	-0.7	+1.0	+2.2	+5.7	+17.2	+33.3	+45.4	+53.8	+62.2	+62.9	+67.0
26.0	78	-4.0	-0.8	-0.8	+0.4	+0.4	+4.8	+14.0	+31.7	+49.1	+58.1	+69.2	+71.2	+72.0
27.0	60	-2.0	-1.8	-1.0	+2.3	+2.3	+5.3	+13.0	+31.0	+43.0	+50.0	+51.6	+72.3	+73.0
28.0	42	-3.0	-0.9	-0.9	+1.1	+1.1	+5.7	+12.0	+30.5	+54.3	+56.9	+74.0	+74.5	+75.0
29.0	22	+2.0	+2.0	+2.0	+2.0	+2.0	+12.5	+23.0	+38.5	+60.7	+64.8	+65.4	+65.7	+66.0
30.0	9	+11.0	+2.0	+2.0	+5.1	+5.1	+19.2	+25.5	+36.7	+74.0	+74.5	+74.7	+74.9	+75.0

IRIG RANGE REFERENCE ATMOSPHERE, ANNUAL TABLE II.2.13

STATION	ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA					WIND COMPONENTS						
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE						
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE						
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec											
ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY										MAX.		
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72		99.0	
SFC	7085	-19.0	-5.5	-4.3	-3.2	-2.1	-0.9	-0.5	-0.2	+0.0	+1.8	+3.1	+4.5	+5.7	+19.0
0.5	6911	-19.0	-11.7	-9.9	-8.3	-6.5	-4.8	-3.9	-2.2	+0.8	+4.4	+6.6	+8.7	+10.7	+25.0
1.0	6803	-25.0	-16.1	-13.6	-11.0	-8.5	-6.4	-4.8	-2.2	+6.4	+9.1	+11.9	+14.9	+16.9	+36.0
1.5	6659	-65.0	-17.7	-14.3	-11.0	-8.0	-5.8	-3.8	-2.3	+3.5	+7.5	+10.3	+13.2	+16.3	+28.0
2.0	6447	-31.0	-17.3	-14.1	-10.6	-7.4	-5.9	-4.0	+2.9	+4.0	+8.2	+11.1	+14.0	+16.9	+27.0
2.5	6249	-31.0	-17.5	-14.2	-10.1	-6.7	-4.2	-2.3	+2.9	+4.6	+8.8	+11.6	+14.8	+17.9	+30.0
3.0	6108	-31.0	-16.4	-13.1	-9.1	-6.0	-4.1	-2.0	+1.1	+5.2	+9.7	+12.8	+15.9	+18.9	+38.0
4.0	5716	-29.0	-14.3	-11.2	-8.1	-5.5	-3.4	-1.4	+1.7	+6.2	+11.4	+14.9	+18.5	+22.2	+35.0
5.0	5390	-37.0	-14.6	-11.7	-8.7	-5.7	-3.3	-1.3	+2.4	+7.8	+13.6	+18.0	+22.5	+26.6	+41.0
6.0	5137	-34.0	-16.5	-12.9	-9.4	-6.3	-3.5	-1.5	+2.9	+9.4	+16.2	+21.3	+26.2	+32.2	+48.0
7.0	4861	-35.0	-18.5	-15.1	-11.3	-7.3	-4.3	-1.9	+3.4	+10.6	+19.0	+24.9	+31.3	+37.7	+61.0
8.0	4534	-49.0	-21.7	-17.2	-12.4	-7.9	-4.2	-1.6	+4.0	+11.9	+21.2	+27.8	+35.2	+42.7	+70.0
9.0	4326	-46.0	-23.3	-17.6	-12.5	-7.9	-4.2	-1.6	+4.2	+12.4	+22.2	+29.3	+36.9	+46.2	+86.0
10.0	4143	-45.0	-21.2	-16.5	-11.0	-6.4	-2.8	-0.8	+4.5	+12.5	+21.9	+28.9	+38.0	+48.5	+90.0
11.0	3967	-30.0	-16.2	-12.3	-8.2	-4.4	-0.2	+0.2	+4.9	+11.9	+20.2	+27.4	+35.5	+47.1	+67.0
12.0	3837	-33.0	-13.0	-8.5	-5.6	-2.9	+0.1	+0.1	+4.9	+11.4	+19.2	+24.8	+32.8	+39.8	+75.0
13.0	3710	-32.0	-9.3	-6.8	-4.4	-2.3	+0.2	+5.0	+5.0	+11.0	+18.3	+23.5	+30.6	+36.2	+51.0
14.0	3588	-18.0	-7.6	-5.2	-3.9	-1.8	+0.3	+4.8	+4.8	+10.5	+17.8	+23.3	+28.6	+34.8	+53.0
15.0	3493	-15.0	-7.2	-5.4	-3.6	-1.8	+0.2	+4.5	+4.5	+10.5	+18.2	+23.2	+28.6	+34.2	+52.0
16.0	3405	-14.0	-6.2	-4.9	-3.5	-1.8	+0.0	+4.4	+4.4	+10.6	+18.4	+24.3	+29.9	+36.5	+52.0
17.0	3311	-17.0	-6.4	-5.0	-3.4	-2.0	-0.2	+3.8	+3.8	+10.5	+18.6	+24.8	+31.5	+35.9	+62.0
18.0	3223	-11.0	-6.5	-5.4	-3.8	-2.4	-0.4	+3.4	+3.4	+10.5	+19.4	+26.1	+33.4	+39.7	+65.0
19.0	3081	-13.0	-6.8	-5.7	-4.4	-2.9	-0.7	+2.8	+2.8	+10.2	+19.6	+26.7	+34.5	+41.0	+64.0
20.0	2941	-16.0	-7.7	-6.5	-5.2	-3.6	-1.2	+2.2	+2.2	+9.9	+19.9	+27.5	+36.4	+43.1	+76.0
21.0	2798	-20.0	-8.2	-7.2	-5.9	-4.4	-1.8	+1.8	+1.8	+9.5	+20.0	+28.3	+38.2	+45.2	+85.0
22.0	2627	-13.0	-8.7	-7.6	-6.5	-5.2	-2.6	+1.3	+1.3	+9.4	+20.0	+29.3	+39.4	+47.2	+78.0
23.0	2416	-28.0	-10.2	-9.2	-7.8	-6.2	-3.4	+0.8	+0.8	+9.7	+20.0	+29.2	+40.8	+49.8	+74.0
24.0	2115	-20.0	-12.4	-10.4	-8.8	-7.0	-4.0	+0.0	+9.3	+20.1	+28.8	+40.7	+52.4	+74.0	+74.0
25.0	1811	-28.0	-14.1	-12.0	-9.8	-7.9	-4.9	-0.1	+8.9	+20.4	+30.2	+43.5	+53.6	+84.0	+84.0
26.0	1507	-26.0	-16.6	-13.9	-11.4	-8.9	-6.0	+0.6	+8.4	+18.7	+30.1	+41.8	+53.9	+74.0	+74.0
27.0	1176	-30.0	-17.8	-15.6	-11.9	-9.8	-6.7	+1.6	+7.4	+18.6	+28.2	+38.5	+50.2	+73.0	+73.0
28.0	893	-36.0	-20.1	-16.9	-13.3	-10.7	-7.7	-2.7	+7.1	+19.8	+29.0	+38.8	+58.0	+83.0	+83.0
29.0	635	-38.0	-21.2	-17.7	-14.5	-11.6	-8.6	-4.2	+7.2	+21.0	+30.1	+40.5	+55.6	+78.0	+78.0
30.0	465	-29.0	-24.3	-19.4	-15.7	-12.8	-9.6	-5.0	+5.9	+22.1	+27.9	+37.1	+57.3	+89.0	+89.0

IRIG RANGE REFERENCE ATMOSPHERE, JANUARY TABLE II.3.1

STATION	ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA						MERIDIONAL WIND COMPONENTS				
	LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961						FORT GREELY MISSILE RANGE LAUNCH SITE						
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961						FORT GREELY MISSILE RANGE LAUNCH SITE					
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec											
ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY												MAX
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0		
0.5	692	-6.0	-4.9	-4.2	-3.6	-2.9	-1.6	-0.7	-0.5	-0.2	-0.0	+0.6	+1.4	+2.1	+5.0
1.0	667	-11.0	-7.4	-5.4	-4.2	-3.2	-1.7	-0.5	+0.5	+0.5	+2.1	+3.3	+4.6	+5.6	+8.0
1.5	648	-10.0	-7.8	-6.4	-4.3	-2.8	-0.9	+0.3	+3.0	+3.0	+5.4	+7.3	+7.5	+10.9	+17.0
2.0	636	-11.0	-9.1	-7.3	-5.5	-4.3	-1.5	+0.6	+4.1	+4.1	+7.4	+9.4	+11.8	+14.8	+19.0
2.5	603	-15.0	-12.4	-9.5	-7.1	-5.4	-2.2	+0.4	+4.5	+4.5	+8.1	+11.3	+14.4	+17.3	+21.0
3.0	583	-20.0	-13.5	-11.2	-9.3	-7.2	-2.8	+0.4	+4.4	+4.4	+9.1	+11.8	+14.3	+17.0	+21.0
4.0	576	-26.0	-16.0	-13.8	-11.2	-8.9	-3.5	+0.2	+5.1	+5.1	+9.5	+12.4	+15.9	+18.1	+29.0
5.0	519	-23.0	-17.9	-16.5	-14.8	-11.4	-4.7	+0.7	+5.6	+5.6	+10.6	+13.3	+15.7	+18.1	+29.0
6.0	476	-39.0	-25.7	-23.5	-20.0	-14.4	-6.9	+0.7	+6.6	+6.6	+13.7	+15.9	+20.0	+22.7	+36.0
7.0	443	-37.0	-32.5	-27.6	-23.9	-18.4	-7.9	+0.8	+8.7	+8.7	+15.7	+19.6	+25.4	+35.5	+44.0
8.0	429	-59.0	-39.8	-34.2	-27.1	-22.1	-9.0	+0.5	+10.3	+10.3	+19.5	+23.7	+29.0	+33.7	+57.0
9.0	393	-60.0	-43.2	-37.0	-29.3	-23.2	-9.4	+0.1	+10.3	+10.3	+18.9	+23.8	+29.5	+44.0	+63.0
10.0	370	-56.0	-40.8	-33.9	-28.3	-21.7	-9.7	+0.5	+6.7	+6.7	+18.2	+26.0	+30.4	+40.4	+69.0
11.0	334	-38.0	-36.6	-32.3	-24.4	-17.9	-7.7	+0.3	+7.3	+7.3	+15.4	+24.1	+31.3	+36.6	+58.0
12.0	325	-37.0	-32.7	-28.2	-21.5	-15.6	-6.7	-0.1	+6.3	+6.3	+12.7	+18.9	+26.5	+32.7	+42.0
13.0	309	-32.0	-25.9	-21.9	-18.8	-15.5	-6.8	-0.4	+5.5	+5.5	+10.8	+14.8	+18.9	+24.4	+33.0
14.0	294	-27.0	-26.5	-22.1	-19.0	-14.7	-8.5	-0.8	+4.7	+4.7	+9.9	+13.1	+17.6	+21.0	+31.0
15.0	287	-32.0	-26.1	-22.8	-20.5	-16.8	-8.2	-0.9	+4.8	+4.8	+8.4	+11.8	+14.6	+16.1	+23.0
16.0	276	-39.0	-29.2	-24.9	-22.8	-18.9	-10.4	-1.8	+3.6	+3.6	+7.6	+12.1	+15.6	+16.7	+24.0
17.0	269	-39.0	-35.3	-27.7	-25.9	-22.0	-10.9	-2.3	+3.7	+3.7	+7.7	+10.5	+14.9	+19.3	+30.0
18.0	256	-40.0	-32.4	-31.0	-28.2	-24.3	-13.3	-3.2	+2.8	+2.8	+7.4	+8.9	+13.1	+15.2	+21.0
19.0	235	-41.0	-36.6	-33.5	-30.7	-25.6	-14.5	-4.3	+2.2	+2.2	+7.0	+9.4	+11.6	+14.6	+22.0
20.0	221	-52.0	-44.7	-38.9	-34.4	-27.9	-16.3	-5.4	+1.3	+1.3	+5.6	+7.4	+8.9	+10.8	+26.0
21.0	205	-49.0	-45.3	-40.7	-36.2	-31.7	-17.7	-6.2	+1.3	+1.3	+5.8	+7.9	+12.6	+15.9	+22.0
22.0	189	-64.0	-49.3	-42.7	-36.2	-31.7	-17.7	-6.2	+1.5	+1.5	+5.6	+7.5	+13.2	+16.1	+19.0
23.0	175	-63.0	-60.2	-51.0	-44.1	-39.8	-24.0	-10.2	-0.0	-0.0	+4.3	+6.7	+8.0	+19.6	+22.0
24.0	144	-64.0	-54.7	-50.7	-42.2	-38.0	-28.0	-12.3	-0.6	-0.6	+2.8	+6.2	+8.7	+9.7	+15.0
25.0	118	-64.0	-63.8	-61.3	-54.5	-47.5	-34.1	-15.0	-0.6	-0.6	+3.0	+6.0	+7.3	+8.4	+9.0
26.0	83	-68.0	-62.1	-55.8	-49.6	-42.4	-32.4	-19.2	-0.9	-0.9	+1.5	+4.9	+8.1	+10.1	+11.0
27.0	55	-71.0	-55.7	-51.7	-49.7	-44.1	-34.1	-11.4	-0.8	-0.8	+1.8	+7.2	+8.7	+10.4	+11.0
28.0	37	-55.0	-53.5	-50.2	-49.7	-43.7	-37.9	-23.4	-3.7	-3.7	+2.3	+8.0	+8.5	+8.8	+9.0
29.0	29	-57.0	-55.5	-52.0	-43.7	-43.7	-43.7	-24.4	-3.2	-3.2	+5.1	+7.5	+8.3	+8.7	+9.0
30.0	22	-59.0	-53.8	-49.7	-42.4	-42.4	-42.4	-37.0	-1.4	-1.4	+4.8	+6.9	+16.4	+16.7	+17.0

IRIG RANGE REFERENCE ATMOSPHERE, FEBRUARY TABLE II.3.2

STATION	ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA												MERIDIONAL WIND COMPONENTS	
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961												FORT GREELY MISSILE RANGE LAUNCH SITE	
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961												FORT GREELY MISSILE RANGE LAUNCH SITE	
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec													
ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY												99.0	MAX.	
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72					
SFC	586	-9.0	-5.7	-5.0	-3.9	-3.3	-3.3	-1.9	-0.7	-0.2	+0.3	+1.3	+2.4	+3.2	+6.0		
0.5	554	-7.0	-6.2	-5.4	-4.5	-3.3	-1.6	-0.5	-0.5	+0.3	+1.6	+2.5	+3.3	+4.2	+10.0		
1.0	538	-13.0	-6.3	-5.1	-3.7	-2.5	-0.8	-0.2	+0.2	+2.5	+4.4	+5.5	+7.1	+9.2	+12.0		
1.5	511	-13.0	-7.9	-6.9	-5.4	-3.8	-1.0	-0.2	+0.2	+3.2	+6.3	+7.8	+9.6	+10.7	+19.0		
2.0	494	-14.0	-10.7	-9.1	-7.4	-5.2	-2.0	-0.2	+0.2	+3.6	+7.6	+10.4	+12.7	+14.5	+17.0		
2.5	481	-24.0	-13.5	-11.6	-9.6	-6.9	-2.7	-0.1	+0.1	+4.6	+8.2	+10.9	+12.0	+16.0	+23.0		
3.0	471	-34.0	-16.6	-15.2	-12.4	-9.5	-3.3	+0.6	+0.6	+4.6	+8.0	+10.9	+13.8	+16.4	+25.0		
4.0	420	-23.0	-22.2	-18.6	-16.3	-11.8	-4.1	+1.1	+1.1	+5.4	+9.0	+12.0	+15.0	+17.8	+25.0		
5.0	392	-31.0	-28.0	-23.5	-20.0	-15.2	-4.0	+1.2	+1.2	+7.1	+11.5	+14.1	+17.0	+20.0	+31.0		
5.0	365	-38.0	-30.4	-26.8	-21.9	-17.2	-4.7	+1.4	+1.4	+8.0	+13.9	+18.2	+20.9	+27.1	+34.0		
7.0	326	-49.0	-33.7	-28.5	-23.1	-17.0	-4.2	+2.4	+2.4	+9.1	+15.3	+21.7	+26.5	+30.7	+36.0		
8.0	299	-48.0	-33.0	-27.3	-21.4	-15.2	-4.2	+2.2	+2.2	+9.4	+16.1	+20.0	+24.3	+29.0	+52.0		
9.0	273	-43.0	-33.6	-27.6	-21.5	-13.7	-3.0	+2.9	+2.9	+9.6	+14.4	+18.0	+23.8	+33.6	+55.0		
10.0	269	-47.0	-27.7	-25.0	-19.7	-10.3	-2.1	+2.6	+2.6	+8.3	+12.9	+15.4	+22.0	+29.3	+52.0		
11.0	255	-48.0	-29.4	-28.0	-18.2	-9.7	-2.2	+2.2	+2.2	+7.7	+11.8	+14.0	+19.1	+20.4	+22.0		
12.0	249	-34.0	-23.9	-23.2	-14.5	-7.8	-1.3	+2.2	+2.2	+6.9	+10.0	+12.5	+13.7	+16.5	+20.0		
13.0	242	-31.0	-27.2	-23.2	-14.6	-7.6	-1.8	+1.3	+1.3	+6.1	+10.2	+11.9	+12.9	+14.2	+16.0		
14.0	237	-35.0	-23.8	-17.7	-14.0	-6.5	-1.7	+1.5	+1.5	+5.9	+10.0	+11.1	+13.3	+15.3	+18.0		
15.0	226	-26.0	-23.5	-19.9	-15.3	-6.4	-2.2	+1.6	+1.6	+6.1	+9.6	+11.7	+14.2	+15.3	+18.0		
16.0	218	-27.0	-24.8	-21.5	-16.5	-8.0	-2.5	+1.1	+1.1	+5.4	+8.9	+11.5	+14.3	+16.8	+22.0		
17.0	208	-35.0	-25.9	-21.6	-16.2	-8.5	-2.3	+1.1	+1.1	+5.0	+8.2	+11.8	+15.6	+18.4	+22.0		
18.0	205	-34.0	-27.9	-21.1	-16.7	-7.7	-1.8	+0.6	+0.6	+4.2	+7.9	+12.5	+17.3	+17.9	+20.0		
19.0	190	-26.0	-25.0	-20.6	-15.5	-7.0	-2.4	+0.0	+0.0	+4.1	+7.3	+10.5	+14.3	+16.1	+19.0		
20.0	182	-24.0	-23.1	-20.9	-17.2	-8.8	-2.8	-0.2	-0.2	+3.3	+6.8	+8.9	+12.6	+16.1	+21.0		
21.0	170	-31.0	-24.2	-22.1	-14.7	-9.0	-3.6	-0.3	-0.3	+3.4	+6.5	+10.2	+13.1	+17.3	+25.0		
22.0	158	-23.0	-22.4	-20.8	-18.0	-9.5	-4.3	-0.7	-0.7	+2.8	+6.0	+7.5	+13.6	+20.4	+26.0		
23.0	148	-25.0	-26.6	-22.6	-18.5	-10.5	-4.8	-1.1	-1.1	+2.2	+6.5	+8.7	+12.6	+14.7	+21.0		
24.0	124	-33.0	-32.7	-26.5	-22.8	-12.8	-6.6	-1.1	-1.1	+3.1	+6.8	+10.4	+13.1	+15.7	+22.0		
25.0	102	-36.0	-30.9	-27.6	-23.9	-15.3	-8.2	-0.8	-0.8	+3.0	+6.9	+8.4	+10.6	+18.4	+29.0		
26.0	81	-39.0	-26.0	-29.1	-23.9	-20.6	-8.9	-0.8	-0.8	+1.5	+6.4	+8.9	+10.5	+20.1	+21.0		
27.0	66	-42.0	-32.4	-23.6	-19.7	-12.4	-12.4	-1.6	-1.6	+1.8	+4.8	+11.7	+18.2	+18.6	+19.0		
28.0	45	-47.0	-34.9	-26.7	-22.5	-13.7	-13.7	-0.7	-0.7	+2.1	+4.5	+6.7	+11.9	+13.5	+14.0		
29.0	28	-43.0	-33.5	-31.1	-22.0	-31.1	-22.0	-0.4	-0.4	+2.2	+3.6	+5.3	+5.6	+5.8	+6.0		
30.0	22	-48.0	-37.8	-31.7	-24.7	-31.7	-24.7	-0.6	-0.6	+2.5	+5.2	+5.6	+5.8	+5.9	+6.0		

IRIG RANGE REFERENCE ATMOSPHERE, MARCH TABLE II.3.3

STATION	ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA							MERIDIONAL WIND COMPONENTS		
	134	134	LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961							FORT GREELY MISSILE RANGE LAUNCH SITE		
			64° 49' N	147° 52' W	UNITS: WIND SPEED - m/sec									
LAUNCH SITE-FORT GREELY	392	392	63° 59' N	145° 43' W										
ALT. (km)	NO. OBS	MIN.	CUMULATIVE PERCENTAGE FREQUENCY											MAX
MSL			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	
SFC	611	-10.0	-6.9	-5.8	-4.7	-3.9	-2.2	-0.7	-0.2	+0.7	+1.8	+2.6	+2.9	+5.0
0.5	599	-12.0	-7.0	-5.8	-4.6	-3.5	-1.9	-0.7	-0.0	+1.8	+3.0	+4.2	+5.2	+7.0
1.0	593	-10.0	-7.0	-5.1	-4.2	-3.0	-1.2	-0.2	+1.8	+3.0	+6.3	+8.0	+9.5	+13.0
1.5	581	-12.0	-7.9	-7.0	-5.5	-3.8	-1.3	+0.3	+3.3	+6.4	+8.5	+10.5	+13.1	+21.0
2.0	569	-14.0	-10.4	-9.3	-7.6	-5.6	-2.0	+0.7	+3.9	+6.9	+9.5	+13.2	+14.8	+25.0
2.5	553	-15.0	-12.8	-10.7	-9.0	-6.9	-2.1	+0.7	+4.7	+8.5	+11.6	+14.0	+15.7	+31.0
3.0	542	-20.0	-14.3	-12.6	-10.2	-7.8	-2.3	+0.9	+5.1	+8.8	+11.4	+14.6	+17.1	+20.0
4.0	521	-32.0	-20.4	-16.1	-12.8	-8.8	-2.5	+1.4	+6.0	+10.7	+14.7	+16.6	+19.3	+26.0
5.0	494	-42.0	-22.5	-20.2	-15.7	-10.9	-3.2	+1.6	+7.8	+13.6	+17.2	+20.6	+26.0	+38.0
6.0	469	-45.0	-32.1	-23.0	-17.7	-12.6	-3.5	+2.6	+9.9	+15.4	+18.9	+23.0	+26.3	+39.0
7.0	447	-47.0	-37.5	-24.9	-19.2	-13.5	-3.4	+2.4	+9.6	+17.5	+21.9	+26.9	+29.8	+40.0
8.0	414	-51.0	-36.9	-26.7	-20.7	-13.1	-3.7	+2.0	+9.8	+17.7	+22.0	+27.1	+33.2	+45.0
9.0	387	-59.0	-41.1	-31.1	-19.8	-12.7	-3.5	+1.9	+7.8	+15.5	+21.6	+27.1	+35.1	+49.0
10.0	365	0	-34.3	-25.6	-18.7	-11.5	-3.9	+1.2	+6.3	+13.1	+17.8	+22.3	+26.3	+34.0
11.0	353	0	-35.4	-21.9	-16.6	-10.5	-3.6	+1.0	+6.7	+11.8	+17.3	+21.4	+25.4	+38.0
12.0	334	-44.0	-21.6	-20.0	-15.1	-11.5	-3.6	+1.0	+5.4	+12.2	+15.8	+19.1	+20.5	+23.0
13.0	326	-27.0	-24.7	-16.5	-13.2	-9.9	-4.2	+0.8	+5.5	+11.3	+14.9	+16.7	+19.3	+30.0
14.0	311	-21.0	-18.4	-15.9	-12.0	-10.0	-3.7	+0.4	+5.2	+10.7	+13.7	+15.7	+19.4	+40.0
15.0	297	-25.0	-24.0	-16.2	-12.6	-9.7	-4.2	+0.1	+4.7	+10.0	+13.7	+16.6	+18.5	+27.0
16.0	290	-26.0	-24.0	-16.6	-12.6	-8.8	-4.1	+0.3	+4.6	+11.5	+13.9	+18.6	+21.1	+25.0
17.0	282	-31.0	-25.1	-17.5	-11.9	-8.9	-3.9	+0.0	+5.3	+11.1	+14.9	+16.7	+18.5	+27.0
18.0	274	-28.0	-27.1	-18.7	-12.4	-9.0	-4.0	-0.0	+4.5	+9.4	+13.0	+14.5	+18.2	+36.0
19.0	260	-33.0	-28.6	-24.5	-14.0	-9.2	-4.0	-0.3	+4.2	+9.3	+12.0	+14.6	+15.8	+20.0
20.0	246	-35.0	-30.2	-27.3	-14.8	-10.1	-4.4	-0.3	+3.9	+8.5	+11.7	+14.5	+15.7	+19.0
21.0	232	-35.0	-33.5	-29.7	-14.7	-11.3	-5.0	-0.4	+3.8	+7.8	+11.4	+14.4	+14.9	+18.0
22.0	215	-39.0	-36.8	-32.5	-17.4	-13.2	-5.3	-0.7	+3.4	+8.1	+10.7	+14.0	+15.9	+19.0
23.0	201	-44.0	-38.9	-32.7	-17.9	-14.2	-5.6	-0.5	+3.8	+6.9	+9.9	+12.7	+14.9	+21.0
24.0	172	-41.0	-40.2	-37.0	-22.3	-15.9	-7.0	-0.6	+3.4	+6.7	+7.9	+13.0	+13.7	+17.0
25.0	144	-45.0	-41.7	-37.0	-22.7	-19.0	-9.2	-1.1	+3.4	+6.7	+8.9	+12.3	+14.5	+26.0
26.0	128	-51.0	-48.7	-44.0	-26.5	-21.5	-9.5	-2.3	+2.6	+7.3	+9.6	+13.0	+14.7	+24.0
27.0	95	-47.0	-34.8	-24.1	-20.5	-15.5	-9.7	-1.8	+3.4	+6.9	+8.4	+9.8	+25.0	+26.0
28.0	75	-54.0	-44.2	-29.6	-24.2	-15.2	-12.1	-2.1	+3.2	+7.2	+10.1	+12.2	+23.2	+24.0
29.0	35	-44.0	-23.0	-33.2	-23.0	-5.2	-23.0	-5.2	+0.2	+11.5	+16.2	+25.2	+25.6	+26.0
30.0	14	-41.0	-36.5	-27.4	-36.5	-27.4	-36.5	-27.4	-3.4	+2.6	+11.3	+11.6	+11.8	+12.0

IRIG RANGE REFERENCE ATMOSPHERE, APRIL TABLE II.3.4

STATION	ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA					MERIDIONAL WIND COMPONENTS						
	LATITUDE	LONGITUDE	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.				
FAIRBANKS, ALASKA	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE								
LAUNCH SITE-FORT GREELY	392	145° 43' W	UNITS: WIND SPEED - m/sec													
ALT. (km)	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY										MAX.			
SFC	591	-8.0	1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0			
0.5	577	-8.0	-6.5	-5.8	-5.3	-4.4	-2.6	-0.6	+0.0	+2.0	+2.8	+3.7	+4.5	+6.0	+10.0	
1.0	572	-10.0	-6.7	-5.6	-4.5	-3.6	-1.9	-0.6	+0.5	+1.8	+3.2	+5.3	+7.6	+10.0	+15.0	
1.5	569	-23.0	-6.6	-5.2	-3.8	-2.7	-1.1	+0.7	+2.8	+5.6	+7.8	+9.2	+11.4	+17.0	+20.0	
2.0	563	-8.0	-6.7	-4.7	-3.5	-2.2	-0.4	+1.5	+3.9	+6.8	+9.8	+12.7	+14.1	+20.0	+24.0	
2.5	549	-13.0	-7.7	-5.4	-4.0	-2.5	-0.5	+1.9	+5.0	+8.8	+11.6	+14.8	+18.5	+24.0	+27.0	
3.0	538	-17.0	-8.6	-6.9	-4.4	-2.9	-0.5	+2.0	+5.5	+9.4	+12.5	+16.1	+20.5	+27.0	+32.0	
4.0	515	-22.0	-14.8	-8.6	-6.4	-4.3	-0.8	+2.3	+6.2	+10.3	+14.2	+17.7	+21.4	+27.0	+32.0	
5.0	497	-25.0	-21.0	-12.3	-8.7	-5.8	-1.5	+2.7	+7.3	+11.3	+15.6	+19.8	+24.6	+39.0	+44.0	
6.0	480	-33.0	-23.1	-16.8	-10.7	-7.9	-2.3	+2.1	+8.5	+13.7	+18.0	+24.0	+34.2	+44.0	+47.0	
7.0	453	-41.0	-28.4	-24.2	-14.3	-9.7	-2.9	+2.9	+8.9	+15.2	+18.5	+25.6	+33.4	+47.0	+55.0	
8.0	426	-48.0	-34.7	-27.1	-17.3	-10.1	-4.2	+2.7	+9.0	+16.1	+20.9	+30.1	+39.7	+55.0	+66.0	
9.0	400	-50.0	-29.9	-19.9	-16.0	-10.6	-4.4	+2.7	+8.4	+15.1	+21.0	+29.8	+49.0	+55.0	+57.0	
10.0	383	-47.0	-30.0	-19.4	-12.9	-8.3	-2.9	+2.2	+7.7	+12.9	+19.9	+28.2	+38.1	+49.0	+57.0	
11.0	364	-43.0	-19.3	-15.9	-11.7	-8.3	-2.9	+1.7	+6.4	+11.6	+16.4	+25.2	+29.3	+49.0	+57.0	
12.0	354	-25.0	-20.2	-13.6	-10.4	-7.5	-2.4	+1.5	+5.5	+10.7	+14.4	+18.9	+26.4	+37.0	+47.0	
13.0	345	-22.0	-15.7	-13.5	-8.9	-6.7	-2.7	+0.8	+5.2	+9.7	+13.2	+19.0	+21.5	+29.0	+35.0	
14.0	335	-19.0	-14.8	-11.3	-8.6	-6.4	-1.9	+0.4	+4.1	+9.5	+12.0	+14.3	+21.6	+25.0	+32.0	
15.0	328	-19.0	-12.8	-9.7	-7.6	-5.6	-2.3	-0.0	+4.0	+8.3	+11.6	+14.1	+19.8	+20.0	+25.0	
16.0	323	-17.0	-12.3	-8.8	-7.6	-5.6	-2.0	-0.1	+3.2	+8.3	+10.5	+11.8	+11.8	+11.8	+25.0	
17.0	319	-17.0	-11.9	-8.9	-6.4	-4.7	-2.1	-0.2	+3.0	+6.5	+8.7	+10.3	+12.8	+23.0	+23.0	
18.0	316	-17.0	-12.8	-8.7	-5.7	-4.6	-2.8	-0.3	+3.0	+5.8	+7.5	+10.6	+11.9	+21.0	+21.0	
19.0	307	-18.0	-11.9	-8.0	-6.6	-5.1	-2.6	-0.4	+1.8	+5.3	+7.4	+10.0	+12.9	+19.0	+19.0	
20.0	293	-20.0	-14.0	-8.5	-6.4	-5.2	-2.7	-0.7	+1.4	+4.6	+7.3	+10.7	+12.0	+19.0	+19.0	
21.0	280	-16.0	-13.1	-8.4	-6.6	-5.5	-3.0	-0.8	+1.3	+4.9	+7.5	+8.9	+10.6	+17.0	+17.0	
22.0	262	-18.0	-12.3	-7.6	-6.4	-5.2	-3.3	-0.7	+1.5	+4.3	+6.3	+9.6	+13.3	+16.0	+16.0	
23.0	237	-20.0	-13.3	-9.9	-8.0	-5.8	-3.7	-0.7	+1.2	+4.2	+5.9	+11.2	+12.8	+20.0	+20.0	
24.0	194	-24.0	-13.0	-10.5	-8.5	-6.5	-4.0	-0.8	+1.0	+5.3	+6.8	+10.7	+14.5	+16.0	+16.0	
25.0	159	-15.0	-13.4	-11.7	-9.7	-7.6	-4.4	-1.0	+0.5	+4.5	+6.0	+11.3	+15.4	+20.0	+20.0	
26.0	126	-14.0	-12.6	-11.7	-9.7	-7.6	-4.4	-1.0	+0.5	+4.5	+6.0	+11.3	+15.4	+20.0	+20.0	
27.0	100	-16.0	-15.9	-14.0	-11.5	-8.6	-5.1	-1.1	+1.1	+4.7	+10.3	+15.1	+20.7	+23.0	+23.0	
28.0	75	-17.0	-16.7	-16.0	-10.8	-5.7	-5.7	-1.7	+0.2	+6.5	+12.2	+16.2	+23.2	+24.0	+24.0	
29.0	48	-17.0	-16.9	-13.5	-11.5	-5.7	-5.7	-1.5	+0.6	+11.2	+14.6	+15.9	+17.5	+18.0	+18.0	
30.0	31	-21.0	-17.4	-11.0	-4.2	-4.2	-1.2	-1.2	+1.0	+5.9	+18.2	+18.6	+18.8	+19.0	+19.0	

IRIG RANGE REFERENCE ATMOSPHERE, MAY TABLE II.3.5

STATION	ELEVATION MSL. (meters)		LOCATION		PERIOD OF DATA						MERIDIONAL WIND COMPONENTS			
	LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961						FORT GREELY MISSILE RANGE LAUNCH SITE					
FAIRBANKS, ALASKA	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961						FORT GREELY MISSILE RANGE LAUNCH SITE					
LAUNCH SITE-FORT GREELY	392	145° 43' W	UNITS: WIND SPEED - m/sec											
ALT. (km)	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY											
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX
SFC	608	-8.0	-6.6	-6.0	-5.3	-4.5	-2.9	-0.7	+0.3	+2.1	+2.8	+3.7	+4.9	+7.0
0.5	602	-10.0	-7.9	-6.9	-5.9	-4.5	-2.3	-0.4	+1.0	+2.8	+4.1	+5.7	+7.3	+12.0
1.0	597	-10.0	-5.8	-4.9	-4.1	-3.1	-1.2	-0.0	+1.8	+3.9	+5.8	+6.9	+7.7	+14.0
1.5	592	-15.0	-5.9	-5.2	-3.9	-2.7	-0.9	+0.1	+2.7	+5.5	+7.1	+8.7	+10.2	+15.0
2.0	581	-9.0	-6.4	-4.9	-3.8	-2.6	-0.8	+0.5	+3.6	+6.9	+8.4	+9.9	+12.2	+15.0
2.5	560	-14.0	-6.5	-5.6	-4.6	-3.4	-0.8	+1.4	+4.4	+8.5	+10.5	+12.2	+15.2	+18.0
3.0	550	-12.0	-8.6	-7.4	-6.2	-4.0	-0.9	+1.9	+5.0	+8.6	+11.4	+15.0	+16.5	+24.0
4.0	523	-19.0	-14.7	-11.8	-8.9	-6.3	-1.4	+2.3	+6.1	+10.0	+12.8	+15.6	+18.7	+26.0
5.0	494	-26.0	-21.0	-15.3	-10.4	-7.5	-1.7	+2.3	+7.2	+11.6	+14.4	+18.8	+23.3	+31.0
6.0	476	-42.0	-22.6	-18.8	-15.0	-10.0	-2.3	+2.5	+8.3	+13.1	+17.0	+21.7	+23.6	+29.0
7.0	449	-35.0	-29.5	-21.1	-16.7	-10.6	-3.0	+2.9	+9.3	+15.6	+21.2	+28.5	+38.0	
8.0	433	-55.0	-29.6	-23.5	-19.0	-13.6	-4.1	+2.7	+10.4	+18.0	+24.6	+31.1	+35.2	+40.0
9.0	408	-55.0	-32.9	-24.6	-19.6	-14.3	-4.4	+3.0	+11.0	+19.0	+27.1	+32.6	+38.9	+42.0
10.0	394	-35.0	-28.0	-22.0	-18.0	-12.7	-4.1	+2.9	+9.5	+17.9	+24.1	+32.5	+36.5	+47.0
11.0	371	-35.0	-23.2	-18.5	-14.4	-10.4	-3.4	+2.1	+8.0	+13.6	+20.0	+23.5	+33.2	+40.0
12.0	351	-28.0	-15.7	-13.7	-11.7	-7.9	-2.8	+1.5	+6.0	+10.7	+13.4	+16.4	+23.4	+34.0
13.0	342	-23.0	-14.8	-12.6	-9.2	-6.1	-1.3	+1.3	+5.4	+8.9	+10.8	+12.8	+14.7	+19.0
14.0	329	-18.0	-13.9	-13.0	-9.2	-5.9	-0.2	+1.5	+4.5	+7.3	+8.7	+11.8	+14.7	+23.0
15.0	322	-15.0	-13.7	-11.6	-7.7	-4.6	-1.5	+1.2	+4.0	+6.4	+7.8	+9.8	+11.8	+22.0
16.0	314	-15.0	-12.9	-10.8	-6.2	-3.8	-0.9	+0.8	+3.5	+6.0	+7.8	+9.7	+12.9	+26.0
17.0	307	-15.0	-11.6	-9.5	-6.5	-3.5	-0.9	+0.7	+2.8	+5.4	+6.7	+8.7	+10.4	+14.0
18.0	295	-12.0	-10.0	-8.0	-6.0	-3.9	-1.1	+0.2	+2.5	+4.8	+6.7	+8.7	+11.0	+16.0
19.0	284	-11.0	-9.0	-6.2	-5.0	-3.7	-0.9	+0.2	+1.3	+4.0	+4.9	+7.2	+9.1	+15.0
20.0	264	-11.0	-8.3	-6.2	-4.5	-3.4	-1.3	-0.0	+1.6	+3.6	+5.2	+7.4	+10.1	+15.0
21.0	254	-11.0	-9.4	-6.6	-4.7	-3.4	-1.9	+0.0	+1.8	+3.8	+5.3	+6.7	+8.8	+11.0
22.0	240	-9.0	-8.5	-7.1	-5.0	-3.5	-1.4	-0.0	+1.3	+3.3	+5.2	+6.5	+8.3	+10.0
23.0	223	-10.0	-7.6	-6.9	-5.4	-3.9	-1.3	-0.0	+1.3	+3.1	+4.7	+6.4	+8.3	+10.0
24.0	197	-11.0	-8.1	-6.9	-5.4	-4.3	-2.0	-0.4	+1.1	+3.0	+4.0	+5.5	+9.0	+11.0
25.0	174	-12.0	-11.2	-9.3	-6.7	-4.7	-1.9	-0.4	+1.1	+2.8	+3.9	+6.0	+6.7	+11.0
26.0	150	-11.0	-9.7	-7.3	-5.0	-2.1	-0.5	+0.9	+0.9	+2.7	+4.7	+6.2	+7.5	+11.0
27.0	109	-14.0	-11.9	-10.5	-7.3	-4.7	-2.0	-0.5	+0.7	+3.0	+4.7	+6.5	+9.9	+11.0
28.0	86	-12.0	-9.0	-7.6	-4.3	-2.1	-0.8	+1.2	+3.5	+6.3	+8.5	+9.1	+10.0	
29.0	59	-10.0	-7.5	-5.5	-3.5	-1.9	-0.8	+1.0	+3.0	+7.0	+8.6	+9.4	+10.0	
30.0	45	-10.0	-9.9	-7.7	-6.6	-2.9	-1.1	+0.3	+2.2	+3.7	+4.9	+7.5	+8.0	

IRIG RANGE REFERENCE ATMOSPHERE, JUNE TABLE II.3.6

STATION	ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA						MERIDIONAL WIND COMPONENTS			
	LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961						FORT GREELY MISSILE RANGE LAUNCH SITE					
FAIRBANKS, ALASKA	134	147° 52' W	JAN 1956 TO JAN 1961						FORT GREELY MISSILE RANGE LAUNCH SITE					
LAUNCH SITE-FORT GREELY	392	145° 43' W	UNITS: WIND SPEED -- m/sec											
ALT. (km)	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY											
SFC			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
0.5	572	-28.0	-6.2	-5.6	-4.8	-3.8	-2.1	-0.6	+0.2	+2.0	+2.8	+3.7	+4.8	+7.0
1.0	585	-10.0	-7.0	-6.1	-5.1	-3.8	-1.9	-0.5	+0.6	+2.3	+3.3	+4.3	+5.7	+8.0
1.5	582	-12.0	-7.6	-6.3	-5.1	-3.9	-1.8	-0.5	+0.7	+2.8	+4.4	+5.9	+7.7	+12.0
2.0	574	-14.0	-7.6	-6.2	-5.1	-4.2	-1.9	-0.4	+1.4	+3.5	+5.0	+6.6	+10.5	+13.0
2.5	561	-14.0	-7.7	-6.5	-5.1	-4.2	-2.2	-0.3	+1.9	+5.0	+6.8	+8.5	+9.8	+15.0
3.0	545	-11.0	-9.1	-7.7	-6.0	-4.6	-2.1	+0.1	+2.6	+5.6	+7.9	+10.6	+11.7	+17.0
4.0	530	-15.0	-10.2	-8.5	-6.3	-4.5	-1.7	+0.0	+2.9	+5.9	+9.0	+11.2	+14.5	+20.0
5.0	506	-17.0	-12.2	-9.1	-7.0	-5.1	-2.4	+0.6	+3.5	+6.7	+8.5	+11.3	+14.9	+23.0
6.0	483	-17.0	-13.7	-10.7	-8.7	-6.2	-3.8	+0.8	+6.0	+8.2	+9.8	+14.3	+18.3	+24.0
7.0	466	-25.0	-17.1	-13.6	-10.7	-7.5	-4.7	+1.3	+6.0	+10.4	+13.7	+16.3	+18.4	+25.0
8.0	446	-24.0	-20.5	-16.8	-13.4	-10.0	-6.2	+1.1	+6.8	+13.0	+16.9	+20.2	+22.7	+29.0
9.0	427	-30.0	-24.6	-21.6	-15.6	-12.0	-6.4	+2.0	+8.4	+14.7	+18.5	+23.3	+25.7	+47.0
10.0	407	-38.0	-27.9	-26.2	-19.4	-14.0	-7.5	+2.0	+9.1	+15.7	+20.2	+25.8	+28.9	+57.0
11.0	390	-43.0	-32.0	-27.0	-21.2	-14.5	-8.5	+2.5	+9.0	+15.1	+19.3	+24.5	+34.5	+55.0
12.0	378	-44.0	-29.5	-25.1	-18.6	-12.2	-6.8	+2.1	+6.4	+11.0	+17.7	+22.6	+24.8	+29.0
13.0	365	-39.0	-26.3	-21.6	-16.5	-11.3	-5.9	+1.9	+5.1	+9.7	+13.2	+17.2	+23.3	+27.0
14.0	356	-25.0	-19.4	-14.8	-12.6	-8.8	-4.9	+1.3	+4.3	+7.1	+9.8	+13.6	+19.2	+25.0
15.0	350	-23.0	-17.4	-14.0	-10.1	-5.0	-0.8	+1.3	+3.7	+5.9	+8.2	+10.9	+16.5	+22.0
16.0	345	-21.0	-14.5	-11.0	-8.3	-4.2	-0.7	+1.0	+2.9	+5.2	+7.2	+9.5	+10.8	+23.0
17.0	338	-23.0	-11.8	-9.1	-6.6	-4.1	-0.7	+1.0	+3.0	+5.1	+6.4	+8.7	+10.8	+23.0
18.0	330	-19.0	-9.8	-6.7	-5.3	-4.0	+0.6	+2.0	+2.9	+4.3	+5.4	+7.1	+8.7	+26.0
19.0	321	-21.0	-8.8	-6.7	-5.1	-3.1	-0.7	+0.5	+2.4	+4.1	+5.2	+6.1	+6.7	+9.0
20.0	314	-15.0	-9.4	-6.2	-3.9	-2.7	-0.7	+0.2	+1.8	+3.6	+4.7	+5.9	+7.2	+11.0
21.0	302	-17.0	-8.9	-5.8	-4.4	-2.7	-0.7	+0.0	+1.8	+3.3	+4.6	+5.6	+6.6	+11.0
22.0	284	-13.0	-9.1	-5.5	-4.2	-2.3	-0.7	+0.1	+1.7	+3.1	+4.2	+5.1	+6.1	+8.0
23.0	269	-12.0	-5.9	-5.9	-4.1	-2.6	-0.9	-0.1	+1.3	+2.8	+3.6	+4.6	+6.1	+10.0
24.0	246	-8.0	-7.5	-5.6	-4.3	-2.8	-0.8	-0.1	+1.3	+2.8	+3.8	+4.5	+4.9	+7.0
25.0	222	-11.0	-9.7	-7.4	-4.1	-2.5	-0.9	-0.1	+1.3	+2.8	+3.7	+4.6	+5.2	+9.0
26.0	199	-11.0	-9.8	-9.2	-4.7	-3.2	-1.2	-0.2	+1.5	+2.9	+4.1	+4.9	+7.0	+8.0
27.0	178	-17.0	-12.2	-6.9	-5.2	-3.2	-0.9	+0.0	+1.6	+3.2	+5.0	+5.8	+6.4	+7.0
28.0	150	-16.0	-13.5	-7.5	-4.3	-2.7	-0.7	-0.0	+1.4	+4.1	+5.1	+6.5	+7.7	+9.0
29.0	120	-19.0	-11.7	-6.6	-4.3	-3.0	-0.9	+0.1	+1.9	+4.0	+5.0	+5.8	+7.4	+8.0
30.0	104	-21.0	-12.9	-6.6	-4.9	-3.5	-1.6	-0.2	+1.5	+3.7	+4.6	+5.6	+6.4	+7.0
30.0	83	-20.0	-16.1	-5.9	-4.5	-3.0	-1.8	-0.6	+0.6	+2.6	+4.4	+5.4	+6.1	+7.0

IRIG RANGE REFERENCE ATMOSPHERE, JULY TABLE II.3.7

STATION	ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA					MERIDIONAL WIND COMPONENTS					
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE					
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE					
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec										
ALT. (Kms)	NO OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY											
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
594	594	-8.0	-5.8	-4.9	-3.7	-2.8	-1.5	-0.4	+1.0	+2.5	+3.3	+3.9	+4.8	+23.0
591	591	-8.0	-6.6	-5.5	-3.7	-2.4	-0.8	-0.1	+1.2	+2.7	+4.0	+5.9	+7.2	+19.0
585	585	-7.0	-6.8	-5.7	-4.0	-3.1	-1.1	-0.1	+1.6	+3.5	+5.3	+6.9	+8.5	+13.0
573	573	-9.0	-6.7	-5.3	-4.2	-3.1	-1.2	+0.1	+2.3	+5.1	+6.6	+8.3	+9.8	+13.0
557	557	-11.0	-7.1	-6.3	-4.6	-3.4	-1.1	+0.4	+2.8	+5.6	+7.7	+10.1	+11.7	+20.0
541	541	-12.0	-9.2	-7.6	-5.7	-4.8	-0.9	+0.7	+3.5	+6.8	+8.5	+11.5	+13.8	+20.0
528	528	-13.0	-10.3	-7.9	-6.3	-4.3	-0.9	+0.7	+3.8	+6.7	+8.6	+10.9	+13.3	+18.0
494	494	-15.0	-11.5	-9.9	-7.7	-4.9	-1.3	+0.9	+4.1	+6.9	+8.7	+11.2	+12.4	+17.0
464	464	-20.0	-13.6	-11.6	-8.8	-5.8	-1.4	+1.1	+4.7	+8.0	+9.8	+13.0	+14.1	+19.0
445	445	-33.0	-16.5	-13.2	-9.9	-6.6	-1.9	+1.1	+5.5	+9.6	+11.7	+14.2	+15.8	+21.0
424	424	-34.0	-24.2	-17.6	-12.6	-8.0	-2.8	+1.1	+6.3	+10.6	+13.9	+15.8	+18.3	+23.0
403	403	-37.0	-24.9	-17.4	-11.9	-6.6	-3.2	+1.5	+7.3	+12.0	+15.9	+19.9	+22.9	+31.0
389	389	-53.0	-30.1	-24.5	-17.5	-11.4	-4.4	+1.4	+7.7	+13.0	+16.9	+21.0	+24.5	+31.0
379	379	-47.0	-30.2	-25.6	-17.8	-13.3	-5.5	+0.6	+7.2	+12.6	+18.5	+23.1	+26.1	+32.0
365	365	-45.0	-30.3	-23.2	-18.1	-12.6	-6.1	-0.0	+6.2	+10.8	+14.9	+20.4	+24.6	+36.0
360	360	-40.0	-20.1	-16.9	-11.3	-9.5	-4.7	-0.1	+4.4	+8.7	+11.8	+14.7	+27.4	+53.0
345	345	-30.0	-16.5	-13.1	-11.5	-7.4	-3.8	-0.4	+3.3	+6.7	+8.7	+10.6	+14.5	+30.0
340	340	-27.0	-12.7	-10.8	-8.2	-5.9	-3.1	-0.2	+2.6	+5.3	+7.3	+8.2	+9.6	+23.0
333	333	-20.0	-10.3	-8.6	-7.0	-5.0	-2.3	-0.3	+2.2	+5.1	+6.6	+7.9	+8.7	+18.0
330	330	-8.0	-6.6	-5.2	-4.2	-3.4	-1.7	-0.2	+2.0	+4.4	+5.6	+7.2	+7.9	+14.0
321	321	-10.0	-6.9	-4.7	-3.4	-3.2	-1.6	-0.1	+1.7	+4.3	+5.7	+7.2	+8.5	+18.0
313	313	-7.0	-5.9	-4.9	-4.1	-3.4	-1.4	-0.1	+1.3	+3.4	+4.7	+5.7	+6.9	+12.0
307	307	-6.0	-5.3	-4.2	-3.1	-3.1	-1.4	-0.2	+1.2	+2.8	+4.0	+5.4	+6.3	+9.0
299	299	-7.0	-6.0	-5.2	-3.9	-3.0	-1.3	-0.3	+0.9	+2.6	+3.9	+5.5	+7.5	+14.0
294	294	-11.0	-4.7	-4.7	-3.8	-2.8	-1.2	-0.4	+0.7	+2.4	+3.4	+4.8	+7.0	+10.0
284	284	-7.0	-5.1	-4.6	-3.8	-2.7	-1.3	-0.3	+0.7	+2.2	+3.3	+4.5	+6.0	+8.0
266	266	-7.0	-5.5	-4.7	-3.7	-2.8	-1.2	-0.4	+0.6	+1.7	+2.8	+4.4	+5.4	+8.0
252	252	-6.0	-4.6	-4.0	-3.4	-2.5	-1.0	-0.3	+0.5	+1.8	+2.8	+4.5	+5.4	+7.0
228	228	-6.0	-4.9	-4.5	-3.7	-2.7	-1.4	-0.4	+0.4	+2.1	+3.2	+4.9	+5.5	+7.0
194	194	-7.0	-5.5	-4.6	-3.6	-2.8	-1.6	-0.6	+0.2	+2.1	+2.8	+3.8	+7.0	+8.0
166	166	-6.0	-5.8	-5.3	-3.9	-2.7	-1.5	-0.5	+0.4	+2.3	+3.5	+4.7	+5.4	+6.0
138	138	-6.0	-4.9	-4.4	-3.6	-2.7	-1.2	-0.3	+0.6	+2.4	+3.6	+4.9	+6.6	+8.0
110	110	-4.0	-3.9	-3.6	-2.9	-2.1	-1.0	-0.3	+0.7	+2.1	+3.7	+4.8	+5.4	+6.0
94	94	-4.0	-3.9	-3.9	-3.0	-2.2	-1.2	-0.4	+0.6	+2.4	+4.3	+6.9	+8.0	+9.0

IRIG RANGE REFERENCE ATMOSPHERE, AUGUST TABLE II.3.8

STATION	ELEVATION MSL (meter)		LOCATION		PERIOD OF DATA					MERIDIONAL WIND COMPONENTS				
	FAIRBANKS, ALASKA	134	LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE				
LAUNCH SITE: FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec										
ALT. (km)	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY										MAX.	
SFC	573	-5.0	1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	99.0
3.5	565	-6.0	-4.9	-4.6	-3.9	-3.0	-1.6	-0.5	+0.4	+2.1	+2.8	+3.7	+4.6	+6.0
1.0	5	-6.0	-5.0	-4.4	-3.5	-2.5	-1.0	-0.2	+1.0	+2.6	+3.9	+5.1	+6.1	+11.0
1.5	537	-4.0	-4.8	-4.3	-3.5	-2.5	-0.8	+0.1	+2.0	+4.0	+5.3	+7.3	+8.8	+13.0
2.0	520	-8.0	-5.3	-4.5	-3.2	-2.1	-0.6	+1.0	+3.4	+5.8	+7.2	+8.6	+9.9	+18.0
2.5	501	-11.0	-7.4	-5.7	-3.7	-2.3	-0.4	+2.2	+5.2	+8.6	+10.6	+13.7	+15.9	+28.0
3.0	483	-10.0	-9.0	-6.3	-4.5	-2.6	-0.4	+2.1	+5.4	+8.7	+11.5	+12.7	+14.5	+22.0
4.0	449	-21.0	-11.2	-7.6	-5.9	-4.1	-0.6	+2.2	+5.6	+8.9	+11.5	+12.7	+14.5	+22.0
5.0	432	-19.0	-13.6	-11.2	-8.0	-5.3	-0.9	+2.7	+6.4	+10.2	+12.3	+14.7	+16.5	+23.0
6.0	417	-28.0	-16.9	-15.2	-10.7	-6.8	-1.4	+2.5	+7.1	+12.1	+15.3	+17.7	+22.4	+32.0
7.0	399	-28.0	-25.0	-18.6	-13.5	-9.0	-2.5	+2.8	+8.0	+14.0	+17.3	+19.6	+27.0	+33.0
8.0	382	-36.0	-29.1	-26.1	-15.2	-11.3	-3.7	+2.5	+8.9	+15.7	+19.9	+26.7	+31.1	+38.0
9.0	364	-39.0	-27.6	-25.2	-18.3	-11.3	-4.2	+2.8	+10.2	+16.1	+21.7	+28.7	+33.3	+42.0
10.0	349	-34.0	-26.7	-21.3	-18.2	-12.2	-4.3	+2.6	+9.5	+16.0	+21.7	+33.3	+35.7	+46.0
11.0	340	-25.0	-24.2	-20.2	-16.0	-10.6	-4.0	+2.0	+8.7	+15.0	+19.5	+26.1	+31.6	+38.0
12.0	334	-32.0	-21.6	-17.4	-11.0	-8.2	-2.8	+1.5	+6.2	+12.2	+16.2	+20.1	+29.6	+39.0
13.0	320	-24.0	-17.7	-11.3	-10.1	-7.0	-2.4	+1.0	+4.8	+8.2	+12.0	+16.3	+19.8	+22.0
14.0	310	-25.0	-11.8	-10.2	-8.0	-5.8	-1.8	+1.2	+4.2	+7.6	+10.1	+13.9	+14.9	+18.0
15.0	306	-27.0	-9.6	-8.3	-6.9	-5.0	-1.4	+1.0	+3.7	+6.0	+7.9	+10.3	+11.9	+22.0
16.0	306	-27.0	-8.9	-6.8	-5.8	-3.7	-1.4	+1.0	+2.9	+4.9	+6.3	+7.6	+8.9	+18.0
17.0	299	-10.0	-8.3	-6.5	-5.1	-3.7	-1.4	+0.6	+2.5	+4.4	+5.2	+7.2	+10.0	+22.0
18.0	291	-7.0	-6.3	-5.7	-4.6	-3.1	-0.9	+0.4	+2.2	+3.9	+5.4	+6.3	+7.0	+26.0
19.0	279	-9.0	-5.4	-4.7	-3.8	-2.7	-0.9	+0.1	+1.9	+3.4	+4.0	+4.9	+5.8	+10.0
20.0	276	-9.0	-5.8	-5.1	-3.8	-2.8	-0.7	+0.2	+1.6	+2.8	+3.5	+3.9	+5.2	+9.0
21.0	270	-7.0	-6.1	-4.7	-3.4	-2.4	-0.9	-0.2	+1.0	+2.6	+3.5	+4.4	+5.1	+6.0
22.0	261	-5.0	-4.3	-3.5	-2.7	-2.1	-0.9	-0.2	+0.8	+2.3	+3.1	+4.0	+5.1	+7.0
23.0	240	-7.0	-5.5	-3.8	-3.0	-2.3	-1.0	-0.3	+0.7	+1.9	+2.7	+3.7	+4.4	+5.0
24.0	213	-7.0	-4.9	-4.0	-2.9	-2.1	-1.1	-0.4	+0.5	+1.9	+2.7	+3.3	+3.8	+5.0
25.0	183	-7.0	-6.1	-4.4	-3.4	-2.5	-1.2	-0.4	+0.5	+1.6	+2.1	+2.9	+4.1	+6.0
26.0	157	-7.0	-6.4	-5.2	-3.5	-2.6	-1.1	-0.4	+0.4	+1.5	+2.0	+3.4	+6.4	+8.0
27.0	127	-4.0	-3.8	-3.4	-2.6	-2.6	-1.1	-0.4	+0.2	+1.7	+2.6	+3.5	+4.7	+12.0
28.0	99	-4.0	-3.6	-3.0	-2.4	-2.4	-0.9	-0.4	+0.3	+1.6	+2.6	+3.2	+3.6	+4.0
29.0	74	-5.0	-4.3	-3.1	-1.9	-1.9	-0.9	-0.4	+0.4	+1.6	+2.7	+2.8	+4.2	+5.0
30.0	51	-4.0	-2.7	-1.0	-0.4	-0.4	-0.9	-0.4	+0.3	+0.9	+1.8	+2.8	+11.4	+12.0

IRIG RANGE REFERENCE ATMOSPHERE, SEPTEMBER TABLE II.3.9

STATION	ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA					MERIDIONAL WIND COMPONENTS					
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE					
		64° 49' N	147° 52' W	UNITS: WIND SPEED - m/sec										
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE					
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec										
ALT. (km)	NO.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY										MAX	
MSL	OBS.		10	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	
SFC	569	-7.0	-6.0	-5.5	-4.6	-3.7	-2.2	-0.7	+0.1	+2.1	+2.7	+3.7	+4.7	+9.0
0.5	556	-8.0	-6.5	-5.0	-3.9	-2.8	-0.9	-0.2	+0.9	+2.6	+3.8	+5.4	+5.9	+11.0
1.0	551	-10.0	-6.1	-4.7	-3.5	-2.4	-0.7	+0.3	+2.5	+5.1	+6.8	+8.6	+11.4	+23.0
1.5	537	-10.0	-6.6	-4.8	-3.0	-2.1	-0.6	+1.2	+4.0	+7.3	+8.8	+11.3	+13.6	+25.0
2.0	511	-9.0	-7.2	-5.0	-3.7	-2.0	-0.4	+1.8	+5.3	+8.6	+10.4	+12.2	+13.9	+25.0
2.5	498	-12.0	-8.0	-5.8	-4.1	-2.2	-0.3	+2.1	+5.6	+9.2	+11.0	+13.8	+16.6	+19.0
3.0	482	-14.0	-7.3	-5.8	-4.4	-2.4	-0.2	+2.3	+5.6	+10.2	+12.7	+14.5	+19.0	+25.0
4.0	464	-16.0	-10.3	-7.2	-5.8	-3.2	-0.5	+2.7	+6.6	+11.2	+14.9	+18.6	+21.1	+30.0
5.0	448	-19.0	-12.2	-9.2	-6.2	-4.0	-0.7	+2.9	+7.6	+13.7	+18.4	+23.2	+26.1	+30.0
6.0	426	-23.0	-13.7	-9.7	-7.7	-4.6	-0.9	+3.0	+9.0	+16.3	+24.7	+29.3	+42.0	
7.0	402	-22.0	-15.9	-12.9	-10.4	-6.6	-1.6	+3.2	+9.8	+17.8	+23.4	+29.8	+35.4	+51.0
8.0	379	-26.0	-20.1	-16.6	-13.5	-8.9	-2.4	+3.3	+11.2	+19.3	+26.2	+31.8	+37.6	+53.0
9.0	348	-28.0	-20.7	-17.6	-15.5	-10.5	-3.5	+3.0	+11.3	+20.8	+24.9	+37.0	+47.5	+61.0
10.0	330	-35.0	-28.2	-21.4	-14.5	-9.3	-3.3	+2.5	+11.3	+19.4	+25.2	+37.4	+47.7	+61.0
11.0	316	-35.0	-22.8	-14.9	-11.7	-8.4	-2.4	+2.1	+7.1	+15.0	+22.0	+29.3	+32.8	+50.0
12.0	309	-30.0	-20.9	-12.9	-10.5	-6.7	-2.1	+1.4	+6.7	+13.7	+18.5	+22.4	+27.9	+34.0
13.0	301	-21.0	-12.9	-11.0	-8.2	-5.2	-0.9	+1.1	+5.7	+10.9	+15.9	+20.0	+22.9	+28.0
14.0	293	-14.0	-9.6	-8.1	-6.5	-4.2	-1.1	+1.2	+5.2	+10.3	+12.8	+16.4	+20.3	+41.0
15.0	287	-10.0	-8.1	-7.4	-5.5	-3.8	-0.9	+0.9	+4.8	+9.0	+11.7	+15.1	+17.1	+45.0
16.0	279	-10.0	-8.6	-5.9	-4.6	-3.2	-1.8	+1.3	+4.2	+8.4	+10.4	+13.6	+14.8	+31.0
17.0	274	-16.0	-5.8	-5.3	-4.3	-3.0	-0.7	+1.2	+4.0	+7.0	+9.3	+10.9	+13.6	+18.0
18.0	272	-6.0	-4.5	-3.7	-3.7	-2.6	-0.6	+1.2	+3.4	+6.7	+7.9	+10.5	+12.1	+21.0
19.0	264	-12.0	-7.3	-5.9	-3.5	-2.3	-0.7	+0.7	+3.2	+6.2	+8.3	+9.7	+12.3	+24.0
20.0	257	-9.0	-7.6	-6.5	-3.8	-2.1	-0.6	+0.8	+2.7	+5.8	+7.5	+8.5	+11.4	+20.0
21.0	249	-8.0	-7.7	-5.3	-3.7	-2.4	-0.6	+0.7	+2.7	+5.2	+7.5	+9.6	+11.5	+21.0
22.0	237	-10.0	-8.6	-5.5	-4.2	-2.6	-0.6	+0.7	+2.6	+4.4	+6.7	+9.8	+13.6	+23.0
23.0	221	-9.0	-7.3	-5.9	-4.7	-2.8	-0.6	+0.9	+2.9	+4.8	+6.5	+8.7	+10.8	+25.0
24.0	190	-9.0	-7.0	-5.8	-4.5	-3.1	-0.7	+0.7	+2.5	+4.7	+5.7	+6.6	+9.0	+10.0
25.0	160	-9.0	-6.1	-5.1	-3.5	-2.9	-0.7	+0.2	+2.3	+4.5	+6.0	+6.8	+7.7	+11.0
26.0	134	-9.0	-8.4	-5.6	-2.9	-2.9	-0.7	+0.5	+3.1	+4.6	+5.7	+6.5	+6.9	+9.0
27.0	95	-14.0	-8.9	-5.6	-3.9	-3.9	-1.4	+0.3	+2.6	+4.9	+5.8	+7.8	+8.5	+9.0
28.0	73	-10.0	-9.3	-6.5	-4.6	-4.6	-1.1	+1.0	+2.9	+4.9	+6.6	+7.5	+8.2	+9.0
29.0	52	-11.0	-8.3	-6.5	-4.9	-4.9	-1.3	-0.1	+2.8	+7.2	+8.4	+10.4	+10.7	+11.0
30.0	41	-13.0	-6.9	-4.6	-4.6	-1.6	-0.6	+0.1	+3.8	+6.4	+7.9	+12.0	+12.5	+13.0

IRIG RANGE REFERENCE ATMOSPHERE, OCTOBER TABLE II.3.10

STATION	ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA					MERIDIONAL WIND COMPONENTS			
	ALT. (km)	NO. OBS.	MIN.	LATITUDE	LONGITUDE	CUMULATIVE PERCENTAGE FREQUENCY					WIND COMPONENTS		
						1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0
FAIRBANKS, ALASKA		134		64° 49' N	147° 52' W	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE		
LAUNCH SITE-FORT GREELY		392		63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec							
SFC	523	-7.0		-4.9	-4.2	-2.8	-0.9	-0.1	+1.2	+2.2	+2.9	+3.6	+6.0
0.5	500	-10.0		-3.9	-3.3	-1.6	-0.5	+0.5	+1.9	+3.0	+4.4	+5.3	+11.0
1.0	485	-9.0		-3.5	-2.4	-0.8	+0.3	+2.6	+5.0	+6.5	+7.8	+9.0	+14.0
1.5	472	-10.0		-4.4	-2.9	-0.8	+1.0	+3.6	+6.5	+8.9	+10.6	+11.8	+15.0
2.0	455	-10.0		-5.3	-3.7	-0.8	+1.3	+4.6	+8.2	+9.8	+11.7	+13.4	+20.0
2.5	439	-14.0		-5.8	-4.4	-0.8	+2.0	+5.6	+9.9	+12.2	+14.3	+17.2	+20.0
3.0	430	-17.0		-7.4	-5.7	-0.9	+2.1	+6.3	+10.0	+13.0	+15.5	+16.9	+20.0
4.0	411	-24.0		-9.8	-6.8	-0.8	+2.8	+7.0	+11.3	+14.1	+16.5	+18.6	+28.0
5.0	385	-33.0		-12.7	-8.1	-0.8	+3.1	+8.3	+13.0	+15.9	+20.0	+21.3	+23.0
6.0	361	-45.0		-14.4	-9.6	-1.1	+3.8	+10.0	+15.7	+18.3	+21.3	+23.3	+35.0
7.0	335	-46.0		-16.0	-11.0	-1.8	+3.8	+11.5	+17.4	+21.5	+23.3	+27.5	+32.0
8.0	315	-53.0		-15.8	-10.8	-2.5	+3.8	+10.7	+17.8	+23.2	+27.6	+33.8	+35.0
9.0	295	-49.0		-18.7	-12.8	-3.1	+3.4	+10.8	+16.8	+21.4	+26.2	+35.5	+43.0
10.0	282	-60.0		-17.8	-11.1	-2.5	+3.7	+9.4	+15.7	+19.9	+22.7	+33.1	+39.0
11.0	265	-26.0		-15.9	-10.0	-2.1	+3.0	+7.8	+11.9	+16.6	+28.9	+33.3	+37.0
12.0	254	-30.0		-12.6	-8.3	-1.1	+3.1	+7.2	+11.7	+14.6	+20.2	+35.4	+37.0
13.0	244	-28.0		-11.8	-7.9	-1.3	+3.4	+7.1	+10.7	+12.7	+16.1	+17.2	+35.0
14.0	236	-25.0		-10.0	-6.6	-0.9	+2.6	+6.3	+9.9	+12.5	+14.3	+16.8	+18.0
15.0	229	-22.0		-8.9	-5.8	-0.8	+2.5	+6.2	+9.4	+11.7	+14.7	+17.7	+27.0
16.0	215	-22.0		-7.6	-5.2	-0.7	+1.8	+5.3	+8.9	+11.0	+12.0	+16.8	+22.0
17.0	206	-20.0		-8.8	-5.2	-0.7	+2.0	+4.9	+7.9	+10.5	+12.5	+13.9	+16.0
18.0	196	-14.0		-9.0	-4.8	-0.8	+1.5	+4.6	+8.0	+10.0	+11.8	+15.0	+17.0
19.0	188	-18.0		-9.5	-4.7	-0.9	+1.1	+3.8	+7.2	+9.5	+11.8	+14.5	+15.0
20.0	177	-17.0		-9.0	-5.5	-1.1	+0.8	+3.7	+7.3	+9.3	+11.9	+14.2	+17.0
21.0	166	-18.0		-7.4	-5.5	-1.9	+0.2	+3.3	+6.6	+10.5	+13.1	+14.3	+22.0
22.0	152	-14.0		-8.8	-6.1	-3.0	-0.4	+2.5	+5.6	+8.0	+8.9	+11.4	+15.0
23.0	134	-16.0		-9.2	-4.9	-2.6	-0.6	+1.5	+5.7	+7.3	+9.3	+9.8	+15.0
24.0	114	-17.0		-9.6	-6.1	-2.8	-0.7	+1.2	+5.6	+8.6	+10.7	+11.8	+14.0
25.0	94	-21.0		-10.6	-5.2	-2.9	-0.6	+1.1	+4.9	+7.1	+8.8	+10.0	+11.0
26.0	71	-24.0		-13.2	-6.9	-4.1	-1.0	+0.3	+3.7	+7.4	+11.1	+11.6	+12.0
27.0	55	-19.0		-12.6	-6.5	-3.7	-0.9	+0.5	+3.2	+5.2	+8.7	+13.4	+14.0
28.0	34	-21.0		-19.2	-9.5	-5.2	-3.0	-0.2	+2.2	+6.3	+13.2	+13.6	+14.0
29.0	22	-23.0		-21.8	-12.8	-9.4	-6.0	-0.7	+2.8	+3.9	+6.4	+6.7	+7.0
30.0	12	-19.0		-14.8	-14.0	-8.0	-8.0	-4.0	-2.1	+4.4	+4.7	+4.8	+5.0

IRIG RANGE REFERENCE ATMOSPHERE, NOVEMBER TABLE II.3.11

STATION		ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA					MERIDIONAL WIND COMPONENTS		
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE				
FAIRBANKS, ALASKA		134	147° 52' W	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE				
LAUNCH SITE-FORT GREELY		392	145° 43' W	UNITS: WIND SPEED - m/sec									
ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY										MAX.
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	
0.5	535	-8.0	-5.0	-4.5	-3.7	-2.3	-0.8	-0.2	+0.4	+1.2	+1.9	+3.4	+5.0
1.0	526	-7.0	-4.4	-3.5	-2.6	-1.2	-0.4	+0.6	+2.0	+3.4	+4.8	+6.6	+10.0
1.5	515	-10.0	-3.6	-2.7	-1.7	-0.5	+1.1	+3.2	+5.7	+7.2	+8.8	+10.8	+16.0
2.0	496	-11.0	-4.7	-3.6	-2.5	-0.7	+1.3	+4.5	+7.6	+9.4	+11.9	+14.8	+20.0
2.5	479	-12.0	-6.2	-4.8	-3.4	-0.8	+1.7	+5.3	+9.1	+11.0	+14.3	+17.2	+24.0
3.0	469	-11.0	-7.1	-5.0	-3.4	-0.7	+2.1	+5.8	+9.6	+13.0	+15.5	+19.2	+24.0
4.0	434	-18.0	-8.2	-5.8	-4.0	-0.6	+2.4	+6.3	+10.5	+14.1	+17.4	+18.8	+28.0
5.0	402	-24.0	-10.2	-8.3	-6.5	-0.3	+3.3	+7.6	+11.6	+13.9	+18.0	+20.6	+24.0
6.0	384	-33.0	-12.6	-10.2	-8.9	-0.4	+3.7	+8.5	+13.2	+16.3	+19.9	+24.9	+32.0
7.0	364	-38.0	-15.8	-12.6	-7.3	-0.6	+3.6	+9.5	+16.2	+20.2	+24.6	+27.1	+37.0
8.0	345	-62.0	-23.1	-15.8	-8.7	-0.9	+4.4	+11.0	+18.4	+23.1	+24.9	+26.7	+49.0
9.0	318	-50.0	-20.8	-15.0	-8.2	-0.7	+3.7	+9.3	+15.8	+22.7	+28.8	+34.8	+59.0
10.0	302	-42.0	-18.1	-11.9	-6.3	-0.4	+3.4	+7.7	+14.1	+18.6	+28.1	+30.9	+42.0
11.0	288	-40.0	-17.4	-9.7	-4.5	-0.5	+2.9	+7.0	+12.5	+15.7	+19.4	+29.1	+36.0
12.0	281	-29.0	-16.2	-8.9	-5.3	-0.8	+2.8	+5.9	+11.2	+13.9	+15.8	+22.1	+33.0
13.0	275	-22.0	-10.9	-8.1	-4.5	-0.6	+2.6	+6.1	+11.3	+13.8	+17.5	+20.6	+25.0
14.0	265	-18.0	-10.5	-7.8	-4.6	-0.6	+2.3	+6.5	+11.7	+14.1	+16.9	+22.3	+27.0
15.0	260	-16.0	-11.0	-8.4	-4.7	-0.9	+1.8	+6.0	+10.2	+12.0	+14.5	+18.4	+30.0
16.0	256	-21.0	-12.1	-8.7	-5.2	-1.5	+1.9	+6.1	+10.2	+12.4	+16.0	+20.4	+30.0
17.0	249	-19.0	-10.8	-8.9	-6.6	-2.1	+1.3	+5.6	+9.6	+12.3	+13.8	+15.5	+23.0
18.0	244	-17.0	-13.2	-10.4	-7.1	-3.4	+1.1	+5.8	+9.8	+11.9	+15.2	+16.7	+19.0
19.0	228	-21.0	-14.5	-11.7	-8.0	-4.3	-0.1	+5.8	+8.9	+12.3	+15.0	+18.8	+23.0
20.0	216	-21.0	-14.0	-12.0	-8.2	-4.5	-0.2	+4.8	+8.9	+12.3	+15.0	+18.8	+23.0
21.0	207	-27.0	-19.2	-13.8	-10.3	-5.4	-0.3	+4.3	+9.1	+11.9	+16.2	+19.9	+29.0
22.0	190	-28.0	-20.6	-12.8	-11.4	-7.0	-0.8	+4.2	+9.0	+11.6	+16.6	+19.0	+30.0
23.0	175	-25.0	-17.0	-15.7	-12.9	-7.9	-0.9	+3.7	+8.6	+11.2	+19.0	+26.2	+30.0
24.0	162	-40.0	-22.1	-18.4	-15.2	-9.4	-2.0	+2.6	+8.8	+11.4	+17.3	+25.3	+31.0
25.0	143	-27.0	-26.5	-22.9	-18.6	-9.3	-1.8	+2.8	+8.1	+11.9	+16.7	+29.5	+33.0
26.0	127	-32.0	-28.7	-25.8	-17.6	-12.1	-2.4	+2.6	+6.8	+11.6	+20.1	+24.7	+31.0
27.0	98	-36.0	-31.7	-27.5	-25.7	-13.2	-5.4	+2.8	+6.2	+13.0	+13.9	+20.0	+21.0
28.0	69	-37.0	-36.4	-31.7	-27.5	-17.7	-3.7	+1.4	+9.1	+12.5	+15.4	+18.3	+19.0
29.0	52	-36.0	-34.8	-32.3	-28.7	-19.6	-10.0	+0.5	+9.7	+15.1	+15.6	+16.0	+16.0
30.0	41	-33.0	-31.9	-28.9	-28.9	-18.7	-8.4	+0.1	+5.9	+14.9	+14.0	+16.5	+17.0

IRIG RANGE REFERENCE ATMOSPHERE, DECEMBER TABLE II.3.12

STATION		ELEVATION MSL (meters)		LOCATION		PERIOD OF DATA										MERIDIONAL WIND COMPONENTS	
		LATITUDE		LONGITUDE		JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE	
FAIRBANKS, ALASKA		i34		147° 52' W		JAN 1956 TO JAN 1961										FORT GREELY MISSILE RANGE LAUNCH SITE	
LAUNCH SITE-FORT GREELY		392		145° 43' W		UNITS: WIND SPEED - m/sec											
ALT (km) MSL	NO OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY												MAX		
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0				
SFC	595	-7.0	-4.7	-4.0	-3.0	-1.3	-0.6	-0.2	-0.0	+0.4	+1.1	+1.8	+4.0				
0.5	580	-8.0	-5.4	-4.1	-3.0	-1.5	-0.6	-0.0	+1.0	+1.9	+3.0	+3.9	+11.0				
1.0	577	-5.0	-4.6	-3.7	-2.7	-1.2	-0.1	+4.5	+6.4	+7.9	+10.2	+15.0	+15.0				
1.5	562	-10.0	-6.5	-5.2	-3.6	-1.5	+2.2	+3.2	+7.2	+9.8	+11.6	+14.1	+19.0				
2.0	537	-18.0	-9.5	-7.5	-4.8	-1.7	+0.4	+4.3	+8.2	+11.0	+12.6	+14.3	+22.0				
2.5	520	-19.0	-11.0	-9.0	-6.0	-1.8	+1.3	+5.1	+9.2	+11.1	+14.0	+15.9	+23.0				
3.0	509	-24.0	-12.6	-10.2	-6.8	-1.6	+1.6	+5.6	+9.8	+11.8	+13.8	+17.4	+21.0				
4.0	460	-38.0	-19.5	-12.4	-7.8	-1.3	+2.2	+6.7	+11.5	+13.2	+16.1	+18.8	+23.0				
5.0	423	-31.0	-24.3	-14.6	-9.8	-1.0	+3.9	+8.0	+12.9	+16.7	+19.8	+26.3	+33.0				
6.0	405	-41.0	-27.4	-18.2	-10.5	-1.4	+4.8	+9.9	+15.4	+18.7	+22.8	+27.3	+36.0				
7.0	392	-53.0	-29.5	-20.5	-11.3	-1.6	+5.2	+11.1	+16.2	+20.1	+24.6	+29.0	+34.0				
8.0	378	-53.0	-31.1	-22.0	-12.5	-0.9	+5.2	+11.4	+18.6	+22.7	+25.3	+29.6	+38.0				
9.0	361	-61.0	-29.7	-17.9	-11.3	-0.9	+4.8	+11.0	+19.2	+21.9	+26.5	+31.6	+41.0				
10.0	350	-37.0	-25.0	-17.5	-11.4	-0.8	+4.2	+10.4	+16.4	+21.7	+26.5	+32.5	+52.9				
11.0	338	-28.0	-20.8	-15.0	-10.3	-0.8	+3.7	+9.6	+16.0	+19.7	+22.2	+28.3	+46.0				
12.0	321	-27.0	-18.8	-14.7	-9.8	-1.9	+3.9	+9.0	+14.1	+17.9	+20.8	+27.7	+38.0				
13.0	305	-24.0	-18.0	-13.9	-10.0	-0.9	+3.7	+8.7	+14.0	+16.3	+18.0	+20.9	+33.0				
14.0	288	-26.0	-19.1	-14.2	-9.1	-2.1	+3.4	+8.1	+12.1	+15.0	+16.4	+18.5	+24.0				
15.0	273	-26.0	-18.7	-15.1	-11.6	-2.8	+2.9	+7.5	+11.6	+14.3	+16.9	+19.2	+23.0				
16.0	260	-24.0	-20.5	-17.7	-12.0	-3.4	+2.4	+7.8	+12.0	+14.2	+15.6	+17.2	+20.0				
17.0	247	-28.0	-25.3	-18.8	-14.0	-5.2	+2.1	+8.4	+12.6	+14.9	+16.6	+20.5	+24.0				
18.0	240	-32.0	-28.1	-22.0	-13.7	-6.6	+1.2	+7.7	+12.0	+14.8	+19.5	+23.6	+31.0				
19.0	225	-34.0	-29.4	-21.7	-16.8	-6.7	+0.1	+6.7	+11.9	+15.3	+17.9	+22.7	+29.0				
20.0	208	-52.0	-29.2	-22.5	-16.3	-6.3	+0.0	+7.0	+12.4	+14.9	+18.4	+19.9	+28.0				
21.0	187	-42.0	-28.7	-25.1	-19.5	-7.6	-0.8	+6.6	+13.4	+14.9	+16.8	+20.1	+25.0				
22.0	170	-43.0	-30.6	-27.5	-22.5	-9.1	-2.0	+6.7	+12.8	+15.5	+17.1	+21.3	+26.0				
23.0	150	-37.0	-34.1	-29.2	-21.0	-8.8	-1.8	+5.7	+13.6	+17.2	+20.2	+22.5	+24.0				
24.0	129	-45.0	-34.0	-29.5	-20.0	-9.8	-2.7	+4.9	+14.0	+17.7	+21.0	+22.7	+29.0				
25.0	107	-50.0	-35.5	-30.3	-20.6	-12.1	-4.7	+3.1	+14.7	+17.6	+19.5	+22.9	+27.0				
26.0	78	-58.0	-53.2	-31.0	-23.3	-14.7	-5.1	+3.5	+17.1	+22.0	+23.2	+27.2	+33.0				
27.0	60	-38.0	-32.6	-29.0	-22.0	-16.6	-7.0	+6.5	+19.0	+26.0	+30.6	+32.4	+38.0				
28.0	42	-53.0	-34.4	-28.7	-18.1	-18.1	-2.4	+6.5	+19.7	+23.9	+33.0	+33.5	+34.0				
29.0	22	-47.0	-32.8	-19.7	-12.2	-12.2	+2.0	+9.5	+24.3	+24.9	+26.4	+26.7	+27.0				
30.0	9	-1.0	-1.0	-1.0	+2.2	+2.2	+4.5	+8.7	+30.0	+30.5	+30.7	+30.9	+31.0				

IRIG RANGE REFERENCE ATMOSPHERE, ANNUAL TABLE II.3.13

STATION	ELEVATION MSL (meters)	LOCATION		PERIOD OF DATA					MERIDIONAL WIND COMPONENTS					
		LATITUDE	LONGITUDE	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE					
		64° 49' N	147° 52' W	UNITS: WIND SPEED - m/sec										
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1956 TO JAN 1961					FORT GREELY MISSILE RANGE LAUNCH SITE					
LAUNCH SITE-FORT GREELY	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec										
ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY											
			1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
SFC	7085	-28.0	-5.9	-5.4	-4.	-3.7	-2.0	-0.7	-0.1	+1.5	+2.4	+3.2	+4.0	+23.0
0.5	6911	-12.0	-6.7	-5.6	-	-3.3	-1.5	-0.4	+0.6	+2.2	+3.3	+4.7	+6.0	+13.0
1.0	6803	-13.0	-6.6	-5.1	-	-2.7	-0.9	-0.0	+2.2	+4.5	+6.1	+7.8	+9.6	+23.0
1.5	6659	-23.0	-7.3	-5.9	-	-3.1	-1.0	+0.5	+3.2	+6.2	+8.2	+10.2	+12.1	+25.0
2.0	6447	-18.0	-9.1	-7.4	-	-3.8	-1.1	+0.8	+4.0	+7.4	+9.8	+12.1	+14.4	+25.0
2.5	6249	-24.0	-11.0	-9.0	-	-4.4	-1.1	+1.2	+4.7	+8.6	+11.0	+13.7	+16.4	+31.0
3.0	6108	-34.0	-13.2	-10.7	-	-5.1	-1.4	+1.4	+5.1	+8.9	+11.6	+14.7	+17.2	+29.0
4.0	5716	-38.0	-17.2	-14.0	-	-6.5	-1.4	+1.8	+5.8	+10.0	+12.8	+15.7	+18.9	+32.0
5.0	5390	-42.0	-22.5	-18.2	-	-8.0	-1.8	+2.1	+6.9	+11.7	+15.2	+18.6	+22.7	+39.0
6.0	5137	-45.0	-26.6	-20.8	-	-9.6	-2.4	+2.3	+8.1	+14.0	+17.6	+21.8	+26.1	+44.0
7.0	4861	-59.0	-30.5	-24.1	-	-10.9	-3.1	+2.6	+9.0	+15.8	+20.4	+25.0	+29.4	+57.0
8.0	4594	-68.0	-33.4	-25.7	-	-12.4	-3.8	+2.7	+9.7	+16.9	+22.0	+27.3	+33.5	+64.0
9.0	4326	-61.0	-34.4	-26.6	-	-12.9	-4.0	+2.8	+9.5	+16.4	+22.2	+28.3	+36.1	+67.0
10.0	4143	-62.0	-30.7	-25.2	-	-12.2	-3.8	+2.5	+8.6	+15.5	+20.8	+28.3	+35.3	+69.0
11.0	3967	-48.0	-28.6	-22.8	-	-10.7	-3.2	+2.0	+7.3	+13.1	+18.0	+23.8	+30.0	+58.0
12.0	3837	-40.0	-23.7	-19.2	-	-9.3	-2.7	+1.7	+6.1	+11.3	+15.0	+19.7	+25.9	+43.0
13.0	3710	-32.0	-21.2	-16.3	-	-7.9	-2.4	+1.2	+5.5	+10.0	+13.1	+16.6	+19.9	+35.0
14.0	3588	-35.0	-19.1	-14.9	-	-7.1	-2.1	+1.1	+4.9	+9.2	+11.9	+14.8	+17.6	+41.0
15.0	3493	-32.0	-19.8	-15.4	-	-6.8	-2.1	+0.8	+4.5	+8.3	+10.9	+14.0	+16.5	+45.0
16.0	3405	-39.0	-21.7	-16.9	-	-6.4	-2.0	+0.7	+3.9	+7.9	+10.8	+13.5	+16.4	+31.0
17.0	3311	-39.0	-24.6	-17.4	-	-6.2	-2.0	+0.4	+3.7	+7.3	+10.2	+13.4	+16.4	+30.0
18.0	3223	-40.0	-26.6	-18.0	-	-6.2	-2.1	+0.2	+3.2	+6.8	+9.5	+12.8	+15.6	+36.0
19.0	3081	-41.0	-27.2	-20.1	-	-6.2	-2.1	-0.0	+2.7	+6.2	+9.1	+12.0	+15.0	+29.0
20.0	2941	-52.0	-28.8	-21.3	-	-6.7	-2.3	-0.1	+2.2	+5.8	+8.4	+11.9	+14.6	+28.0
21.0	2798	-49.0	-31.7	-23.2	-	-7.2	-2.5	-0.2	+2.1	+5.4	+8.2	+11.9	+14.9	+29.0
22.0	2627	-64.0	-33.8	-25.0	-	-8.0	-2.7	-0.3	+1.8	+4.9	+7.8	+11.6	+15.2	+30.0
23.0	2416	-63.0	-38.2	-25.7	-	-8.8	-2.8	-0.4	+1.6	+4.7	+7.3	+10.8	+15.6	+30.0
24.0	2115	-64.0	-40.5	-29.9	-	-10.0	-2.9	-0.5	+1.4	+4.4	+6.9	+10.7	+14.6	+31.0
25.0	1811	-64.0	-43.6	-33.3	-	-11.5	-3.5	-0.5	+1.3	+4.1	+6.6	+9.8	+15.3	+33.0
26.0	1527	-68.0	-46.9	-31.3	-	-12.7	-3.6	-0.6	+1.3	+4.1	+6.9	+10.7	+16.9	+31.0
27.0	1176	-71.0	-42.6	-32.0	-	-13.4	-3.5	-0.6	+1.1	+4.5	+6.8	+11.5	+18.3	+33.0
28.0	893	-55.0	-47.5	-34.8	-	-15.5	-3.4	-0.6	+1.3	+4.3	+7.2	+12.1	+16.5	+34.0
29.0	635	-57.0	-45.6	-36.2	-	-17.1	-3.6	-0.6	+1.0	+4.0	+7.3	+12.8	+16.6	+27.0
30.0	465	-59.0	-45.3	-39.3	-	-17.3	-3.2	-0.7	+0.7	+4.0	+6.2	+12.3	+16.6	+31.0