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TEMPERATURES OF ORDNANCE EQUIPMENT EXPOSED AT INNISFAIL, QUEENS--ETC(U)
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DEPARTMENT OF DEFENCE
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MELBOURNE VICTORIA

REPORT

MRL-R-672

TEMPERATURES OF ORDNANCE EQUIPMENT EXPOSED
AT INNISFAIL, QUEENSLAND

Maureen E. Redman and J. A. McRae

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AT INNISFAIL, QUEENSLAND

10
Maureen E. Redman - J. A. McRae

ABSTRACT

11 Sep 76

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POSTAL ADDRESS: Chief Superintendent, Materials Research Laboratories,
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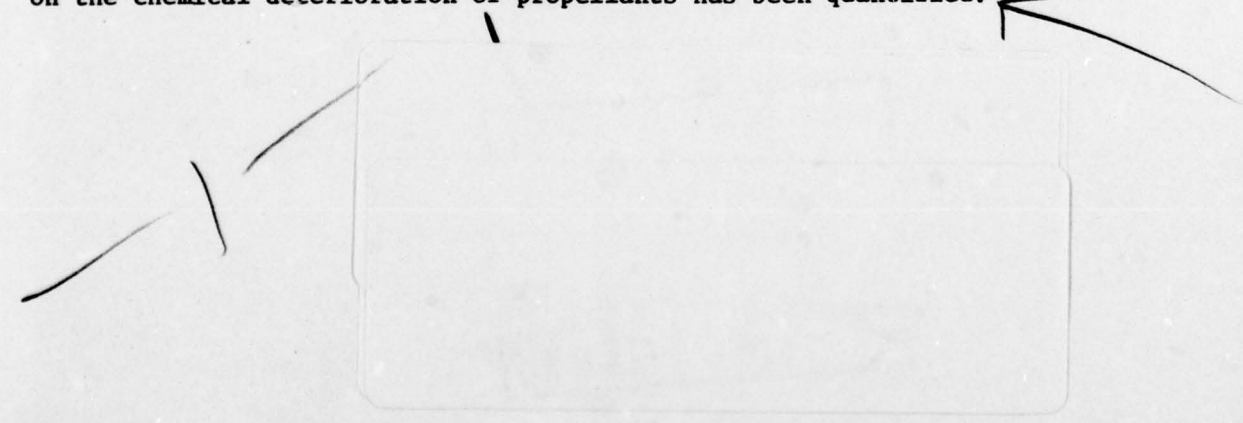
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Attached to the
end of this report

TEMPERATURES OF ORDNANCE EQUIPMENT

EXPOSED AT INNISFAIL, QUEENSLAND

INTRODUCTION

As part of a program aimed at defining the environmental factors pertinent to the design of rocket motors, TTCF Panel W4 organised the exposure of a number of inert-filled items of ordnance at the Joint Tropical Research Unit, Innisfail, Queensland (1). Temperatures reached at various locations in and on the items were recorded continuously for some eighteen months between October 1970 and June 1972. The temperatures were extracted from the analogue records and together with relevant meteorological data were assembled in a machine readable form. This report presents the analysis of the data.

DATA

The data as originally made available had the format shown in Figure 1 which gives the temperatures in $^{\circ}\text{F}$ from one of the three chart recorders used to collect the data. The readings on any line are not simultaneous, but were taken at intervals of about 3.6 minutes, the time at the beginning of the line being the time at which channel 12 was recorded. The meteorological data were collected at hourly intervals and the ambient conditions at the end of each line are those recorded on the hour nearest to the time at the beginning of the line.

The data format proved unsuitable for some calculations and secondary files were created by combining the original hourly meteorological data with temperatures calculated to "on the hour" values on the assumption that the temperature variations between readings were linear with time. At the same time the temperatures were converted to $^{\circ}\text{C}$. All subsequent processing was carried out using these secondary files.

The primary files contained a significant proportion of unlikely temperatures. When the secondary files were created temperatures greater than 80°C and temperatures which were more than 14°C less than the corresponding ambient temperature were put equal to zero. The subsequent analysis of the data showed that isolated, abnormally high readings remain but these do not significantly affect the results or conclusions.

The accuracy of the temperatures as supplied is difficult to estimate. The recorders were calibrated regularly and the reading and digitalising were accurate to within 1°F (1). It has therefore been assumed that the temperatures recorded are sufficiently representative of the temperatures experienced by the various areas of exposed ordnance equipment to allow valid conclusions to be drawn.

LAYOUT OF TRIAL

The spatial arrangement of the rocket motors at the JTRU site is shown in Figure 2 and details of the items exposed together with all known details of thermocouple positions, surface finish and fillings are given in Table 1. The motors were supported about 300 mm above the ground on wooden blocks resting on light metal frames as shown in Figure 3. A skin thermocouple was located on the top surface of all items.

METEOROLOGICAL CONDITIONS

JTRU, Innisfail is located at 17°32'S, 149°59'E and is in a relatively small area that because of topography and prevailing winds experiences abnormally high rainfall.

Meteorological data for the JTRU site are available from 1963 to 1974, and monthly averages of daily maximum and minimum temperatures, rainfall and solar radiation are shown in Table 2 together with the corresponding figures for each month of the trial period. Table 3 gives the overall averages for the trial period and compares them with weighted averages from the long term records calculated by taking single values for July, August and September and double values for the remaining months.

T A B L E 3

WEIGHTED METEOROLOGICAL AVERAGES FOR 1963-1974
AND AVERAGES FOR THE TRIAL PERIOD

	<u>1963-1974</u>	<u>Trial Period</u>
Daily Maximum (°C)	28.5	28.8
Daily Minimum (°C)	19.7	19.9
Rainfall (mm/month)	323	355
Solar Radiation (kWhr m ⁻² /month)	137	144

INNSIFAIL TEST DATA

RECORDER NO. 23(C)

6/10/70 - 13/11/70

ISSUE 28

PROGRAMME NO. 1G09, A1.09

RECORDER NO. 23C DATE 6/10/70 TRIAL COMMENCED AT 09.00 HOURS.

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AMR	RH	SOL	TEMP	WIND	RAIN
1039	70	74	79	78	74	77	77	82	72	81	124	86	86	86	87	88	88	88	90	90	90	90	90	90	81	65	51	0		
1135	91	86	89	87	80	86	86	82	90	80	89	130	89	91	90	89	90	90	91	91	91	91	91	90	83	59	62	5	E	
1302	93	90	91	88	84	88	84	82	84	90	130	89	90	90	90	90	90	90	91	91	91	91	91	90	83	51	59	5	E	
1428	88	90	89	88	89	87	88	85	91	86	89	130	90	89	90	89	90	90	89	89	89	89	89	89	83	63	52	7	SE	
1555	88	89	89	86	86	87	86	85	90	87	89	131	87	88	87	86	87	86	86	86	86	86	86	84	80	66	39			
1721	81	85	83	83	82	86	83	83	85	87	95	132	82	83	82	81	80	79	79	80	80	79	79	78	79	71	19			
1846	78	81	79	79	84	80	81	80	84	80	129	76	76	76	76	76	75	75	75	75	75	75	74	74	76	83				
2014	74	77	75	76	76	82	77	79	76	82	77	127	73	73	73	73	72	72	72	72	72	72	72	72	75	92				
2141	73	73	72	74	74	77	74	77	74	79	75	126	72	72	71	71	71	71	71	71	71	71	71	71	74	94				
2307	71	72	71	72	72	77	73	75	73	77	73	125	71	71	71	71	71	71	71	71	71	71	71	71	73	97				
2334	71	71																												
MAX	93	90	91	88	89	87	88	85	92	87	90	132	90	91	90	90	91	92	91	92	91	92	92	93	83	97	62	7	SE	
TIME	1222	1226	1229	1359	1403	1533	1244	1414	1251	1540	1258	1721	1305	1142	1313	1310	1320	1331	1200	1331	1208	1211	1215	1218	1135	2307	1135	1424		
MIN	71	71	71	72	72	74	73	75	73	72	73	124	71	71	71	71	71	71	71	71	71	71	71	71	73	59	0	0		
TIME	2228	2358	2235	2239	2242	2394	2249	2253	2257	1031	2304	1032	3112	3152	3182	3222	3252	3292	3332	3362	2132	2172	2222	2224	2307	1135	1039			

RECORDER NO. 23C DATE 7/10/70
 RECORDERS FUNCTION SATISFACTORILY, FINAL COAT OF HIGH GLOSS WHITE APPLIED TO JUNCTION BOXES. GENERALLY OVERCAST DAY, INTERMITTENT CLOUD AND BRIGHT SUN, FROM 6/10 TO 2/10, FREQUENCY CHECK AT 14.00 HOURS. 50HZ.

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AMR	RH	SOL	TEMP	WIND	RAIN
0034	69	70	69	71	72	75	72	74	72	75	73	125	70	71	70	70	70	70	70	70	70	70	70	69	69	96				
0200	68	68	68	69	68	70	72	69	72	69	71	124	68	68	68	68	68	68	68	68	68	68	68	68	71	93				
0327	68	68	68	69	68	72	69	72	69	72	69	123	68	68	68	68	68	68	68	68	68	68	68	68	72	93				
0453	67	68	67	69	68	70	68	71	68	71	68	123	68	68	68	68	68	68	68	68	68	68	68	68	68	98				
0620	67	67	67	68	67	70	67	70	67	70	68	123	68	68	68	68	68	68	68	68	68	68	68	68	68	97				
0746	70	69	70	73	71	70	71	74	74	70	73	125	78	78	78	78	79	79	81	80	80	82	81	82	77	79	30	5	SE	
0913	80	78	80	81	79	74	78	79	84	74	81	128	85	85	85	84	84	85	86	85	86	85	86	86	79	68	46	7	SE	
1039	83	84	84	83	82	79	82	81	86	79	85	128	89	88	88	88	88	89	89	89	89	89	89	89	81	60	68	6	E	
1206	89	87	89	96	87	81	86	83	93	83	92	130	94	93	93	93	94	94	93	93	93	93	94	94	84	50	86	6	E	
1332	92	94	95	91	92	98	92	86	95	87	94	130	92	91	91	88	90	88	86	88	88	86	87	87	80	61	50	0		
1458	88	88	87	84	85	97	86	84	87	86	88	131	87	88	89	88	89	89	89	89	89	89	89	89	81	59	46	5	SE	
1625	84	89	86	85	84	97	84	83	89	86	86	132	82	82	82	82	82	82	82	82	82	82	82	75	76	79	77	68	5	SE
1751	78	81	79	79	79	84	80	80	80	80	87	129	75	75	77	74	75	75	74	75	74	75	73	73	75	76	79	4		
1918	74	76	75	75	76	83	77	79	78	81	78	126	72	73	72	71	71	71	71	71	71	71	71	72	75	81				
2044	73	74	72	75	73	78	75	77	75	79	75	125	69	69	69	70	69	69	69	69	69	69	69	69	70	90				
2210	69	70	69	70	71	77	71	74	74	76	72	123	67	67	67	67	67	67	67	67	67	67	67	65	70	94				
2337	64	66	65	68	67	73	68	73	68	73	70	122	65	65	65	65	65	65	65	65	65	65	65	65	68	96				
MAX	92	94	95	91	92	88	92	86	95	87	94	132	94	93	93	93	94	94	93	93	93	93	93	94	84	98	86	7	SE	
TIME	1252	1256	1300	1303	1307	1310	1314	1318	1321	1325	1328	1625	1209	1213	1216	1220	1224	1227	1231	1234	1238	1242	1245	1249	1206	0453	1206	0913		
MIN	64	66	65	68	67	70	67	70	67	70	68	122	65	65	65	65	65	65	65	65	65	65	65	65	68	50	0	0		
TIME	2257	2301	2304	2308	2312	2350	2306	2309	2312	2315	2318	2322	2325	2328	2331	2334	2337	2340	2343	2346	2349	2352	2355	2358	2044	0453	1206	0913	1332	

RECORDER NO. 23C DATE 8/10/70
 RECORDERS FUNCTION SATISFACTORILY, FREQUENCY CHECK AT 10.30 AND 14.00HRS BOTH AT 50 HZ (+-.0.01HZ)

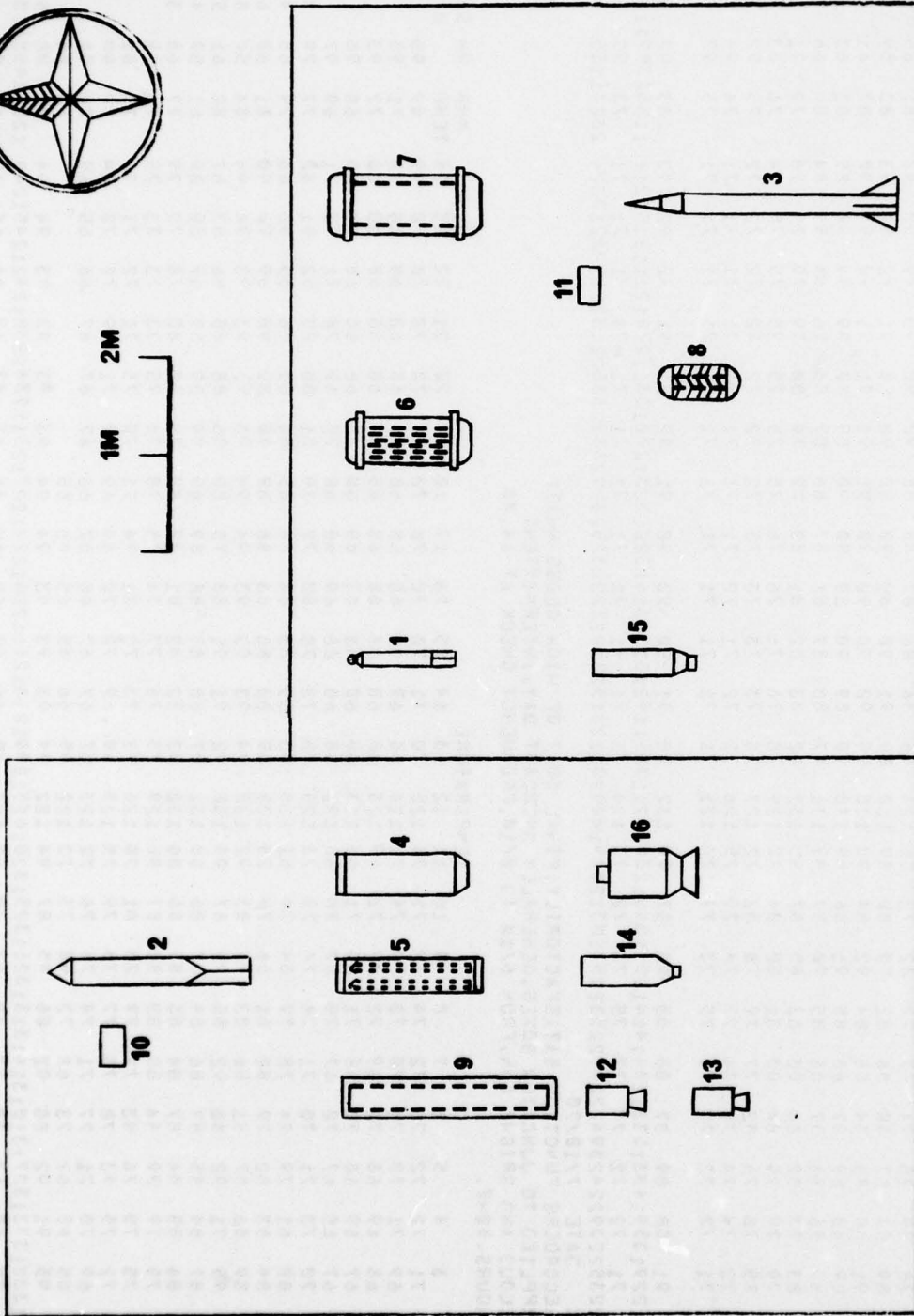
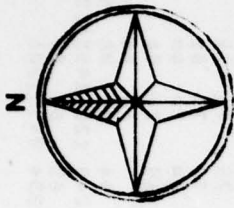


FIG-2 LAYOUT OF ROCKET MOTORS. THE NUMBERS REFER TO TABLE 1

T A B L E 1

Number	Type	Origin	Dimensions mm	Surface Finish	Filling	Thermocouple Positions
1	FFAR	US	70 diam	Standard	Ethyl Cellulose	a. Motor Skin; b. Star Point.
2	ZUNI	US	140 diam	Standard	Ethyl Cellulose	a. Motor Skin; b. Star Point.
3	SPARROW	US	200 diam	White Aluminium Fibreglass	Sand	a. Motor Skin; b. Centre filling; c. Fibreglass Skin; d. Aluminium Skin.
4	ASROC	US	300 diam	Standard	Sand	a. Motor Skin; b. Centre filling.
5	4 X FFAR IN CONTAINER	US	70 diam	Standard	Ethyl Cellulose	a. Container Surface; b. Motor Skin; c. Star Point.
6	SPARROW	US	200 diam	Standard	Ethyl Cellulose	a. Box Surface; b. Box-Motor air space; c. Motor Skin; d. Star Point; e. Centre filling.
7	ASROC	US	300 diam	Standard	Sand	a. Box Surface; b. Box-Motor air space; c. Motor Skin.
8	BULLPUP	US	300 diam	White	Sand, Glycol	a. Motor Skin; b. Cavity.
9	SIDEWINDER BOXED	US	210 x 165 rectangular	Standard	Ethyl Cellulose	a. Box Surface; b. Box-Motor air space; c. Motor Skin; d. Star point.
10	7.62 mm CARTRIDGES BOXED	US	7.62	Standard	"Inert"	a. Box Surface; b. Centre of Box.
11	200 mm CARTRIDGES BOXED	US	20	Standard	"Inert"	a. Box Surface; b. Centre of Box.

T A B L E 1

(Continued)

Number	Type	Origin	Dimensions mm	Surface Finish	Filling	Thermocouple Positions
12	LAP	UK	125 diam 600 length Light Alloy	White to DTD5555 Solar Heat Resistant (c)	IP230 (a)	Note (b)
13	LAP	UK	125 diam 600 length Light Alloy	White to DTD5555 Non Solar Heat Resistant (c)	IP230 (a)	Note (b)
14	LINNET	UK	180 diam 1050 length Steel	White to DTD5555 Solar Heat Resistant	IP230 (a)	Note (b)
15	LINNET	UK	180 diam 1050 length Steel	Light Stone DTD5555 Solar Heat Resistant	IP230 (a)	Note (b)
16	CUCKOO	UK	430 diam 1150 length Steel	White to DTD5555 Solar Heat Resistant	IP230 (a)	Note (b)

NOTES FOR TABLE 1

- (a) The formulation of the inert propellant used to fill the UK rockets (IP230) is given as

KCl	75.3 pts by weight
BaSO ₄	9.7 pts by weight
Binder/Wetting Agent	15.0 pts by weight

The Binder/Wetting Agent is stated to be a mixture of high molecular weight poly(-)isobutylene 9 pts, surfactant (unspecified) 1 pt by weight.

- (b) The thermocouples on the UK rocket motors were located as follows :

1. Two exterior thermocouples located diametrically opposite.
2. One internal thermocouple on the same diameter and 12 mm from the inner surface of the case.
3. One internal thermocouple on the same diameter and on a star point.

Each motor contained two sets of thermocouples on the parallel portion of the motor and about 150 mm from the end of the parallel portion.

- (c) The solar heat resistant finishes have one coat of primer filler PR69 epoxy as ground coat and one glossy finishing coat. The non solar heat resisting finishes have no ground coat but two finishing coats.
- (d) No details are available on either the "standard" surface finish or the "inert" filling of US ordnance items.

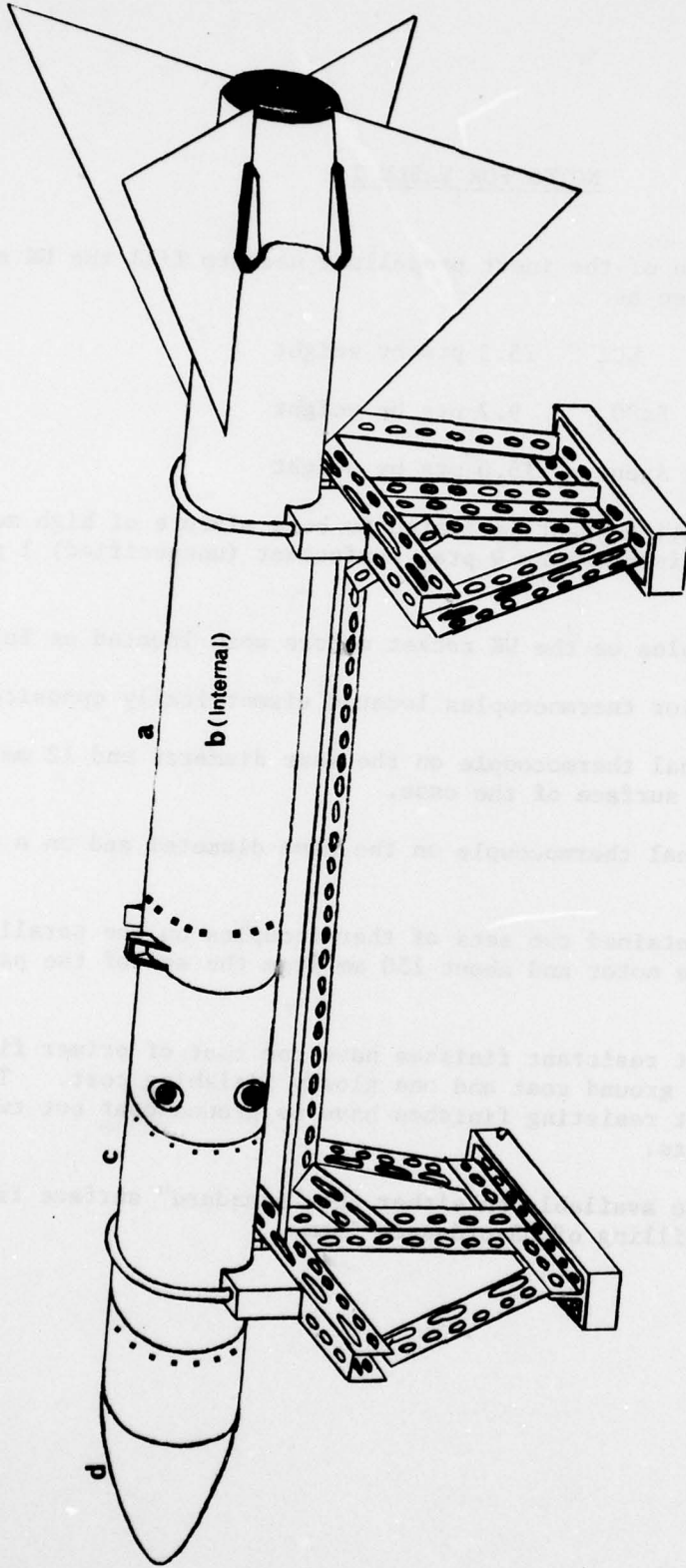


FIG.3 SPARROW ROCKET MOTOR SHOWING
METHOD. OF SUPPORT AND THERMOCOUPLE POSITIONS
TABLE 1

T A B L E 2

METEOROLOGICAL CONDITIONS AT JTRU - LONG TERM AND TRIAL PERIOD AVERAGES

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	PERIOD
Average Daily	31.5	30.5	29.5	28.0	26.0	24.5	24.0	26.0	27.0	29.0	31.0	31.0	28.2
Maximum	-	-	-	-	-	-	-	-	-	29.0	30.5	31.0	
Temperatures °C	33.0	31.0	28.0	26.5	27.0	23.5	23.0	27.0	28.5	32.0	33.5	34.0	28.7
	72	72	72	72	72	72	72	72	72	72	72	72	72
Average Daily	22.0	22.5	22.0	20.5	18.5	16.5	15.5	16.0	17.0	18.5	20.5	22.0	19.3
Minimum	-	-	-	-	-	-	-	-	-	19.5	21.0	22.0	
Temperatures °C	22.0	22.5	22.5	20.5	17.0	16.0	15.0	17.5	17.5	19.5	21.5	22.5	19.9
	72	72	72	72	72	72	72	72	72	72	72	72	72
Rain (mm)	474	592	770	361	368	159	109	215	63	96	126	256	229
	-	-	-	-	-	-	-	-	-	120	360	320	
	106	460	1226	762	54	61	78	52	11	58	36	39	355
	954	974	938	225	419	207	-	-	-	-	-	-	
Solar	184	132	130	117	114	93	112	128	144	160	159	168	137
Radiation	-	-	-	-	-	-	-	-	-	179	168	185	
	248	138	101	67	154	67	112	133	168	118	193	199	144
kWhrm ⁻²	190	139	134	129	107	104	-	-	-	-	-	-	

T A B L E 4

CUMULATIVE PROBABILITY DISTRIBUTION OF ROCKET TEMPERATURES

NO. OF TIMES THE MEASURED TEMPERATURE WAS EQUAL TO
OR GREATER THAN TEMPERATURE IN COL. 1.

DEG.	AMBIENT TEMPERATURE					WINTER	TOTAL	C.PROB
	DEC	JAN	FEB	MAR	AUT-SPRING			
1	998	984	930	1001	3555	2015	9483	1.00
2	998	984	930	1001	3555	2014	9482	1.00
3	998	984	930	1001	3555	2014	9482	1.00
4	998	984	930	1001	3555	2014	9482	1.00
5	998	984	930	1001	3555	2014	9482	1.00
6	998	984	930	1001	3555	2014	9482	1.00
7	998	984	930	1001	3555	2014	9482	1.00
8	998	984	930	1001	3555	2012	9480	1.00
9	998	984	930	1001	3555	2003	9471	1.00
10	998	984	930	1001	3555	1994	9462	1.00
11	998	984	930	1001	3555	1989	9457	1.00
12	998	984	930	1001	3554	1969	9436	1.00
13	998	984	930	1001	3552	1941	9406	0.99
14	998	984	930	1001	3547	1901	9361	0.99
15	998	984	930	1001	3529	1821	9263	0.98
16	998	984	930	1001	3520	1791	9224	0.97
17	998	984	930	1001	3476	1621	9016	0.95
18	998	983	930	1001	3390	1371	8673	0.91
19	998	981	930	995	3214	1059	8177	0.86
20	988	966	928	970	2839	813	7504	0.79
21	977	955	923	948	2713	755	7271	0.77
22	890	863	836	834	2146	555	6124	0.65
23	724	680	579	592	1632	416	4623	0.49
24	572	515	396	358	1235	285	3361	0.35
25	484	426	303	238	980	179	2610	0.28
26	445	400	277	211	872	155	2360	0.25
27	350	319	196	128	637	88	1718	0.18
28	279	253	145	63	461	28	1229	0.13
29	190	197	78	27	305	8	805	0.08
30	117	128	41	7	174	2	469	0.05
31	105	114	34	3	140	2	398	0.04
32	58	82	13	1	75	0	229	0.02
33	31	38	4	0	35	0	108	0.01
34	16	16	0	0	13	0	45	0.00
35	10	11	0	0	4	0	25	0.00
36	6	6	0	0	3	0	15	0.00
37	2	4	0	0	0	0	6	0.00
38	0	1	0	0	0	0	1	0.00
39	0	0	0	0	0	0	0	0.00

The figures in Table 3 indicate that the trial period was slightly warmer, wetter and sunnier than would have been expected from the long term averages, but the differences are insignificant. The more detailed figures in Table 2 show that this agreement is somewhat fortuitous. Although there is a natural variation from year to year in all meteorological phenomena, the Winter and early Summer of 1971 were warmer and drier than normal and the highest temperature ever recorded at JTRU (40.5°C) occurred in December 1971. March 1971 was the wettest month on record while March, April and June 1971 were exceptionally cloudy.

QSTAG 360, "Climatic Environmental Conditions Affecting Design Criteria" is a quadripartite agreement to which the Australian Army subscribes and which is intended to standardise the environmental specifications for design requirements. Geographical areas are categorised in terms of diurnal cycles of temperature and humidity that can reasonably be expected to be exceeded for about 1% of the most severe month in any year. The climate at JTRU is classed as climatic category B2 where both temperature and relative humidity are factors that must be allowed for when designing equipment for use in such areas.

In the hottest month, a climate close to that of QSTAG 360 (B2) will have on average about 7.5 hours (1%) when the temperature reaches or exceeds 34°C. The cumulative frequency distribution of ambient temperatures at JTRU for the period of the trial is given in Table 4 and from these figures the 1% temperatures, that is the temperature reached or exceeded by 1% of the readings, is 35°C for both December and January with January being marginally hotter. By taking the means of the three-hourly temperature readings on the three days in January 1971 and the one day in January 1972 when temperatures higher than 35°C were recorded, the figures in Table 5 are obtained.

T A B L E 5
TEMPERATURES AND HUMIDITIES FOR JTRU COMPARED
WITH THOSE OF QSTAG 360 (B2)

<u>Local Time</u>	<u>Temperature (°C)</u>		<u>Relative Humidity (%)</u>	
	<u>JTRU</u>	<u>B2</u>	<u>JTRU</u>	<u>B2</u>
0300	22	26	84	100
0600	21	26	83	100
0900	30	31	63	82
1200	36	34	41	75
1500	36	34	49	70
1800	31	32	66	82
2100	27	28	79	95
2400	25	27	85	97

While ambient temperatures are very close to those of category B2, the associated relative humidities are significantly lower. On the other hand, in January 1971, the relative humidity at JTRU was above the appropriate B2 value for 272 hours or about 30% of the time but at no time did both temperature and relative humidity simultaneously exceed the B2 figures.

Solar radiation values at three hourly intervals were higher than those specified for category B2 on 37 occasions during the trial and on three occasions (1500 hours on 3/1/71, 1500 hours and 1800 hours on 20/1/72) both ambient temperature and solar radiation were simultaneously higher than the category B2 figures. On only 3 of the 37 occasions was the 1200 hour radiation value higher than the 1.12 kWm^{-2} laid down for category B2 and assuming that these readings represented a total of 9 hours in the two Januaries of the trial, the solar radiation figures are close to those specified for category B2.

Since in the trial, only temperatures were monitored and no account was taken of the effects of high humidities, it is valid to say that the rocket motors exposed at JTRU experienced ambient conditions close to those of QSTAG 360 category B2.

ANALYSIS OF RESULTS

Three separate analyses of the results have been made. Cumulative probability distributions of temperatures of all thermocouple positions have been calculated. The equivalent constant temperatures, T_c , which give a measure of the chemical deterioration occurring at each thermocouple position (2), have been computed and correlations have been made between incident solar radiation intensity and the increase in motor skin temperature above ambient under clear-sky conditions.

CUMULATIVE PROBABILITY DISTRIBUTIONS

Cumulative probability distributions giving the number of times each thermocouple recorded a temperature equal to or greater than a given temperature are given in full in Appendix A. Separate distributions were calculated for the following periods :

- (1) December, January, February and March.
- (2) Autumn-Spring and Winter as separate periods.
- (3) The whole trial period.

Table 6 gives as an example the cumulative probability distribution for the skin temperature of the ASROC motor (Table 1, Item 4, Thermocouple position a). This particular thermocouple position recorded the highest temperatures measured during the trial and it can be seen from the figures in Table 6 that the cutoff temperature of 80°C , above which readings were disregarded, is in fact reasonable. There is an isolated reading of

T A B L E 6

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPERATURES

ASROC MOTOR SKIN (UNBOXED)

RECORDER 31A. ROCKET MOTOR CHANNEL 6

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C. PROB
1	1018	1031	948	1031	3696	2031	9755	1.00
2	1018	1031	948	1031	3696	2031	9755	1.00
3	1018	1031	948	1031	3696	2031	9755	1.00
4	1018	1031	948	1031	3696	2029	9753	1.00
5	1018	1031	948	1031	3696	2025	9749	1.00
6	1018	1031	948	1031	3696	2022	9746	1.00
7	1018	1031	948	1031	3696	2018	9742	1.00
8	1018	1031	948	1031	3696	2009	9733	1.00
9	1018	1031	948	1031	3696	1992	9716	1.00
10	1018	1031	948	1031	3696	1972	9696	0.99
11	1018	1031	948	1031	3694	1961	9683	0.99
12	1018	1031	948	1031	3688	1931	9647	0.99
13	1018	1031	948	1031	3675	1892	9595	0.98
14	1018	1031	948	1031	3654	1830	9512	0.98
15	1018	1031	948	1031	3612	1742	9382	0.96
16	1017	1031	948	1031	3590	1691	9308	0.95
17	1017	1030	948	1030	3519	1566	9110	0.93
18	1017	1030	948	1018	3394	1394	8801	0.90
19	1009	1027	948	1009	3225	1212	8430	0.86
20	993	1014	948	992	2951	1035	7933	0.81
21	976	1006	945	964	2773	979	7643	0.78
22	915	965	917	901	2343	868	6909	0.71
23	798	883	780	746	1984	791	5982	0.61
24	691	781	605	553	1751	738	5119	0.52
25	616	669	506	461	1603	703	4558	0.47
26	586	617	470	427	1541	683	4324	0.44
27	538	556	416	379	1450	659	3998	0.41
28	505	509	388	339	1368	631	3740	0.38
29	471	470	364	311	1308	598	3522	0.36
30	448	445	335	297	1240	559	3324	0.34
31	435	433	324	288	1215	547	3242	0.33
32	416	410	305	268	1159	508	3066	0.31
33	399	399	294	251	1119	478	2940	0.30
34	386	383	277	237	1068	441	2792	0.29
35	371	373	266	226	1016	412	2664	0.27
36	364	363	258	219	981	403	2588	0.27
37	348	353	244	210	926	375	2456	0.25
38	328	345	234	200	867	337	2311	0.24
39	316	329	223	185	835	312	2200	0.23
40	308	321	209	174	809	279	2100	0.22
41	304	319	203	168	781	270	2045	0.21
42	296	313	194	158	731	236	1928	0.20
43	282	299	182	144	677	210	1794	0.18
44	267	294	169	130	638	179	1677	0.17
45	254	287	163	116	597	151	1574	0.16

T A B L E 6

(Cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPERATURES

ASROC MOTOR SKIN (UNBOXED)

RECORDER 31A. ROCKET MOTOR CHANNEL 6

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C. PROB
46	245	281	160	113	568	142	1509	0.15
47	231	273	147	101	518	127	1397	0.14
48	221	261	136	89	473	110	1290	0.13
49	204	243	132	82	441	96	1198	0.12
50	193	229	126	74	413	83	1118	0.11
51	186	224	124	71	395	74	1074	0.11
52	166	209	113	55	358	59	960	0.10
53	151	200	103	48	322	52	876	0.09
54	137	191	92	42	280	37	779	0.08
55	126	181	80	32	245	31	695	0.07
56	120	175	77	27	229	28	656	0.07
57	105	159	70	24	203	21	582	0.06
58	95	145	60	20	163	14	497	0.05
59	74	132	54	16	129	7	412	0.04
60	62	117	50	14	105	3	351	0.04
61	59	109	46	11	97	2	324	0.03
62	45	92	42	9	64	1	253	0.03
63	35	78	38	6	44	1	202	0.02
64	25	62	29	5	26	1	148	0.02
65	17	54	20	4	12	0	107	0.01
66	14	51	17	3	8	0	93	0.00
67	8	38	14	3	3	0	66	0.00
68	5	28	8	3	0	0	44	0.00
69	2	25	5	2	0	0	34	0.00
70	1	13	4	1	0	0	19	0.00
71	1	11	3	1	0	0	16	0.00
72	1	4	3	1	0	0	9	0.00
73	1	2	2	1	0	0	6	0.00
74	0	0	2	1	0	0	3	0.00
75	0	0	0	1	0	0	1	0.00
76	0	0	0	1	0	0	1	0.00
77	0	0	0	0	0	0	0	0.00

76°C in March which is probably erroneous since the next highest reading is 69°C.

The temperature reached or exceeded for any given percentage of the whole trial can be obtained immediately from the right hand column of Table 6. For example the temperature reached or exceeded for 1% of the time was 65°C while 58°C was reached or exceeded for 5% of the time. Similarly for any of the other periods, the 1% temperature is that temperature reached or exceeded by 1% of the readings; thus the 1% temperature for January will be the temperature recorded on $1031 \times 0.01 = 10$ readings and this can be read off as 71°C.

COMPARISON WITH STORAGE TEMPERATURES OF QSTAG 360

QSTAG 360 sets out storage temperatures that can be reasonably expected to be reached or exceeded for about 1% of the hottest month by equipment under typical field storage conditions. These are under tarpaulin covers or in railway boxcars and the storage conditions of the motors exposed in closed containers would be expected to be similar to those specified by QSTAG 360.

The temperatures reached or exceeded for 1% of the hottest month (January) at the surfaces of the items stored in enclosed boxes were obtained from the frequency distributions (Appendix A) and are given in Table 7.

T A B L E 7

1% STORAGE TEMPERATURES FOR BOXED ITEMS (°C)

<u>Item</u>	<u>1% Temperature</u>	<u>Appendix A Table</u>
ASROC	57.5	N1
7.62 mm Cartridges	56	M3
20 mm Cartridges	55.5	U1
Sparrow	55	C1
FFAR	51	H3
Sidewinder	50	B3

The maximum 1% storage temperature for category B2 of QSTAG 360 is 63°C indicating that storage conditions at JTRU are less severe than those specified for QSTAG 360 (B2).

TEMPERATURE PROFILES OF ROCKET MOTORS

The temperatures reached or exceeded for 1% and 5% of the whole trial period by the exterior thermocouples have been extracted from the cumulative frequency distributions and these are given in Table 8, where they are grouped in order of descending 1% temperature.

The 1% temperature in Table 8 show that there is a distinct gap between the five positions with the highest 1% temperature and the remainder. Four of these thermocouples were on metal surfaces coated with the U.S. standard grey finish. The high temperatures recorded on the fibreglass nose cone of the Sparrow rocket can be attributed to the poor thermal conductivity of this material. The effect of surface finish is also shown by the difference in 1% temperatures of the Linnet motors finished Light Stone (53°C) and White (46°C).

The items with the lowest 1% temperatures were all white and there is no significant difference in the solar heat resistant and non-solar heat resistant finishes. The significantly lower temperatures recorded on the surface of the Bullpup motor are thought to be due to the liquid glycol filling providing a measure of convective cooling. This is supported by a difference of only 2°C in the 1% temperatures of skin and centre of the Bullpup compared with a difference of about 25°C between the 1% temperatures of skin and centre thermocouples in the ASROC motor which is of comparable size but had a sand filling.

The 1% temperature of the skin of the exposed ASROC motor is suspiciously high, but there is no other sand-filled grey motor for comparison. The general absence of items differing by only one factor such as filling makes any conclusions tentative, but smaller items appear to remain cooler than comparable larger items while grey motors enclosed in a grey box appear to experience temperatures intermediate between those they would experience if directly exposed and those they would reach if they were painted white and exposed.

The only definite conclusion which can be drawn is that a white surface finish significantly reduces temperatures throughout the exposed store. Even the Light Stone finish on the Linnet caused significantly higher skin temperatures than were reached on the same item with a white finish.

T A B L E 8

1% AND 5% TEMPERATURES OF EXTERIOR
THERMOCOUPLES (°C)

<u>Rocket Motor</u>	<u>Temperatures</u>	
	<u>1%</u>	<u>5%</u>
ASROC BOX	69	61
SPARROW BOX	67	60
ASROC	65	58
SPARROW FIBREGLASS	63	57
SIDEWINDER BOX	60	53
LINNET (STONE)	53	48
FFAR CONTAINER	52	47
FFAR	52	48
7.62 CARTRIDGE BOX	52	46
20 mm CARTRIDGE BOX	51	47
ZUNI	51	46
SPARROW ALUMINIUM	49	45
LAP SOLAR HEAT RESISTANT	47	43
SPARROW MOTOR SKIN (WHITE)	47	43
LAP NON SOLAR HEAT RESISTANT	46	43
LINNET (WHITE)	46	42
CUCKOO NOSE	46	43
CUCKOO TAIL	44	41
SPARROW (WHITE)	43	39
BULLPUP	41	38

CORRELATIONS BETWEEN AMBIENT CONDITIONS
AND MOTOR SKIN TEMPERATURES

The temperature rise above that of the ambient air on the surface of an item exposed to solar radiation will be proportional to the intensity of the incident radiation. The constant of proportionality will be a function of a number of factors, the most important of which will be the surface finish which will determine the amount of energy absorbed, the airflow over the surface which will govern convective cooling and heat transfer from the exposed surface to the interior of the item. The surface finish and heat transfer will be relatively constant for a given item so that the skin temperature should be a function of incident solar radiation and wind speed and direction.

The meteorological data collected during the trial were insufficient to allow any estimate of the effect of wind speed on skin temperature so the linear regressions of solar radiation intensity on rise in motor skin temperature above ambient were obtained for days when clear-sky conditions prevailed. The restriction to clear-sky days is necessary because the hourly solar radiation figures that were supplied are time integrals of the intensity over the previous hour while the thermal time constant of the motor skins will be of the order of a few minutes and motor skin temperature will therefore be a function of the solar radiation intensity integrated over a few minutes prior to the temperature being recorded. On days other than those when solar radiation was uninterrupted by cloud, no correlation would be expected between hourly integrals of radiation intensity and instantaneous skin temperatures.

The days that had clear-sky conditions were selected by programming the computer to process data only on those days when each hourly solar radiation figure was above a predetermined value that had been obtained from records made at JTRU on clear-sky days in mid-summer and mid-winter. The criteria used were that each hourly radiation figure should be greater than 80% of the corresponding mid-summer figure for the summer period, greater than 70% of the corresponding mid-summer figure for the Spring and Autumn periods and more than 80% of the mid-winter figure for the Winter period. If any radiation figure on a given day between 0900 hours and 1600 hours was below the specified value, the days data was rejected. Over the period of the trial, 17% of days were selected by this procedure.

The regression equations between solar radiation and rise in motor skin temperature above ambient are summarised in Table 9 together with the rise in motor skin temperature calculated from the regression equations for a solar radiation intensity of 1.14 kWm^{-2} which is the accepted clear-sky maximum for air mass 1.

The entries in Table 9 are placed in the same order as those in Table 8 which gave 1% temperatures and it can be seen that in general, the items with high 1% temperatures had high correlation factors and high regression coefficients. This is as expected, since a high correlation factor implies that solar radiation is the dominant factor controlling skin temperature.

T A B L E 9

Correlations for the Difference between Skin Temperature and Ambient Temperature with Solar Radiation Intensity and 95% Confidence Limits for Increase of Skin Temperature above Ambient at a Solar Radiation Intensity of 1.14 kWm^{-2} .

<u>Rocket Motor</u>	<u>Correlation Factor</u>	<u>Regression Coefficient</u>	<u>Increase above Ambient ($^{\circ}\text{C}$)</u>
ASROC BOX	0.76	33.9	35 ± 13
SPARROW BOX	0.76	30.6	35 ± 12
ASROC	0.86	27.8	33 ± 7
SPARROW FIBREGLASS	0.76	29.1	31 ± 11
SIDEWINDER BOX	0.72	24.1	26 ± 10
LINNET (STONE)	0.73	16.8	20 ± 7
FFAR CONTAINER	0.62	12.1	19 ± 7
FFAR	0.74	17.2	19 ± 7
7.62 CARTRIDGE BOX	0.47	10.5	19 ± 9
20 mm CARTRIDGE BOX	0.46	9.4	21 ± 8
ZUNI	0.54	7.7	17 ± 5
SPARROW ALUMINIUM	0.59	12.4	17 ± 8
SPARROW MOTOR SKIN (WHITE)	0.52	8.4	10 ± 6
LAP SOLAR HEAT RESISTANT	0.30	5.9	13 ± 8
LAP NON SOLAR HEAT RESISTANT	0.37	6.6	13 ± 7
LINNET (WHITE)	0.43	5.9	13 ± 6
CUCKOO NOSE	0.31	5.5	13 ± 7
CUCKOO TAIL	0.21	3.5	10 ± 7
BULLPUP	0.25	3.4	8 ± 6

The low absorbance of solar radiation by white surfaces and the consequent small temperature rises, means that other factors, notably convective cooling, will have magnitudes comparable to that of solar radiation and the correlation of temperature rise with solar radiation will be poor.

The increase in skin temperature above ambient temperature at a solar radiation intensity of 1.14 kWm^{-2} was calculated in order to extend the skin temperatures, measured at JTRU, to areas experiencing higher ambient temperatures. To check whether this is possible, the temperature increases above ambient for those thermocouple positions with correlation factors above 0.7 were added to the ambient 1% temperature (33°C) for the trial period (column 9 Table 4) and these predicted 1% temperatures are compared in Table 10 with measured 1% temperatures from Table 8.

T A B L E 10
MEASURED AND PREDICTED 1% TEMPERATURES ($^{\circ}\text{C}$)

<u>Item</u>	<u>Measured</u>	<u>Predicted</u>
ASROC Box	69	67
Sparrow Box	67	67
ASROC	65	65
Sparrow Fibreglass	63	64
Sidewinder Box	60	59
Linnet (Stone)	53	53
FFAR	52	52

The 1% temperature for the whole trial period, rather than the 1% temperature for the hottest month was used because the correlations with clear-sky radiation were obtained over the whole trial period.

In extending these results to another area, the major assumption necessary is that the area has substantially the same pattern of wind speeds. The hottest parts of Australia have a 1% temperature of 44°C (3) giving a maximum 1% Skin Temperature of about 80°C . It should be noted that this is the temperature induced on the equipment by exposure to direct solar radiation and is not the storage temperature as defined in QSTAG 360 which refers to equipment stored under cover.

CALCULATION OF EQUIVALENT CONSTANT TEMPERATURES
AND EQUIVALENT LIFETIMES

It has been shown that for any given temperature cycle, it is possible to calculate a single constant temperature that gives the same amount of chemical reaction for any system (2). This constant temperature, T_c , can be used as a direct measure of the severity of chemical deterioration at any thermocouple position over the period of the whole trial since a higher value of T_c implies faster deterioration. T_c can simply be transformed to another measure, L_E , the equivalent storage lifetime (3) which compares the time taken to reach the same stage of decomposition as would be reached for a standard time at a standard temperature. If the standard conditions are taken to be 10 years at 25^o, the equation relating L_E and T_c is :

$$L_E = 10 \exp \frac{E_a}{R} \left[\frac{1}{T_c} - \frac{1}{298} \right] \text{ where } T_c \text{ is in } ^\circ\text{K}$$

and E_a is 80 kJmole⁻¹

T_c values were calculated for all thermocouple positions using measured temperatures over the whole trial period and these are given together with L_E values in Table 11.

The figures in Table 11 can be used for comparison with long term storage trials at constant temperatures. For example, an ASROC motor stored at 40^oC would be undergoing deterioration at about the same rate as would be occurring adjacent to the motor skin of a motor exposed at JTRU. Alternatively, if the ASROC were known to become unserviceable because of deterioration of the propellant after storage for 10 years at 25^oC, it would be expected to be unserviceable after 2 years in the open at JTRU or if stored at 40^oC.

Table 11 can also be used to estimate the magnitudes of thermal gradients from the case to the centre of the propellant. The worst example is the ASROC with L_E values of 2 years for the skin and 5.4 years for the centre, while the white painted Linnet has $L_E = 5.3$ years for the case, propellant and star point indicating that there is a much more even thermal gradient throughout the propellant.

T A B L E 11

T_C AND L_E VALUES FOR ALL THERMOCOUPLE POSITIONS

<u>Motor</u>	<u>Position</u>	<u>Refer Table 1</u>	<u>T_C (°C)</u>	<u>L_E Years</u>
ASROC (BOXED)	Box Surface	7a	42.8	1.5
SPARROW (BOXED)	Box Surface	6a	42.1	1.6
SPARROW	Fibreglass Skin	3c	40.8	1.8
ASROC	Motor Skin	4a	40.2	2.0
SPARROW (BOXED)	Air Space	6b	36.8	2.8
ASROC (BOXED)	Air Space	7b	36.7	2.8
SIDEWINDER (BOXED)	Box Surface	9a	36.3	2.9
20 mm CARTRIDGES	Box Surface	11a	35.0	3.4
7.62 CARTRIDGES	Box Surface	10a	34.2	3.7
ASROC (BOXED)	Motor Skin	7c	34.2	3.7
SPARROW (BOXED)	Motor Skin	6c	33.5	3.9
FFAR	Motor Skin	1a	33.2	4.1
20 mm CARTRIDGES	Centre of Box	11b	33.2	4.1
LINNET (STONE)	Motor Skin	15 Note (b)1	33.0	4.2
FFAR	Star Point	1b	32.9	4.2
FFAR IN CONTAINER	Container Skin	5a	32.7	4.3
7.62 mm CARTRIDGES	Centre of Box	10b	32.6	4.3
ZUNI	Motor Skin	2a	32.4	4.4
ZUNI	Star Point	2b	32.3	4.5
SPARROW (BOXED)	Centre Filling	6e	32.3	4.5
LAP (NSHR*)	Motor Skin Top	13 Note (b)1	32.3	4.5
SPARROW	Aluminium Skin	3d	32.2	4.6
LINNET (STONE)	Internal Propellant	15 Note (b)2	31.8	4.7
SIDEWINDER (BOXED)	Air Space	9b	31.7	4.8
LAP (SHR*)	Propellant Tail	12 Note (b)2	31.7	4.8
CUCKOO	Motor Skin Top Nose	16 Note (b)1	31.6	4.8
LAP (SHR*)	Propellant Nose	12 Note (b)1	31.5	4.9
LAP (SHR*)	Star Point Tail	12 Note (b)3	31.5	4.9
LAP (SHR*)	Star Point Nose	12 Note (b)3	31.4	4.9
LAP (SHR*)	Motor Skin Tail Top	12 Note (b)1	31.4	4.9
LAP (NSHR)	Propellant Tail	13 Note (b)2	31.4	4.9
LAP (NSHR)	Star Point Nose	13 Note (b)2	31.3	5.0

T A B L E 11

(Continued)

<u>Motor</u>	<u>Position</u>	<u>Refer Table 1</u>	<u>T_C (°C)</u>	<u>L_E Years</u>
LAP (NSHR)	Propellant Nose	13 Note (b)3	31.2	5.0
LAP (NSHR)	Motor Skin Tail Top	13 Note (b)2	31.2	5.0
LAP (SHR)	Motor Skin Tail Bottom	12 Note (b)1	31.2	5.0
LAP (NSHR)	Star Point Nose	13 Note (b)1	31.0	5.2
CUCKOO	Star Point Nose	16 Note (b)3	31.0	5.2
LINNET (WHITE)	Motor Skin Top	14 Note (b)3	30.8	5.3
SPARROW (BOXED)	Star Point	6d	30.8	5.3
LINNET (WHITE)	Propellant	14 Note (b)2	30.7	5.3
LINNET (WHITE)	Star Point	14 Note (b)3	30.7	5.3
LINNET (STONE)	Star Point	15 Note (b)3	30.5	5.4
CUCKOO	Motor Skin Top Tail	16 Note (b)1	30.5	5.4
ASROC	Centre Filling	4b	30.5	5.4
FFAR IN CONTAINER	Motor Skin	5b	30.4	5.5
CUCKOO	Star Point Tail	16 Note (b)3	30.4	5.5
CUCKOO	Propellant Tail	16 Note (b)2	30.3	5.6
ASROC (BOXED)	Centre Filling	7d	30.2	5.6
FFAR (BOXED)	Star Point	5c	30.2	5.6
SIDEWINDER (BOXED)	Motor Skin	9c	30.0	5.8
SIDEWINDER (BOXED)	Star Point	9b	29.9	5.8
LINNET (WHITE)	Motor Skin Bottom	14 Note (b)1	29.8	5.9
CUCKOO	Star Point	16 Note (b)3	29.8	5.9
CUCKOO	Motor Skin Bottom	16 Note (b)1	29.5	6.1
LINNET (STONE)	Motor Skin Bottom	15 Note (b)1	28.6	6.7
SPARROW	Centre Filling	3b	28.2	7.0
BULLPUP	Motor Skin	8a	28.0	7.2
BULLPUP	Cavity	8b	27.3	7.7
SPARROW	Motor Skin (White)	3a	27.2	7.8

*SHR Solar Heat Resistant

NSHR Non Solar Heat Resistant

CONCLUSIONS

1. Equipment with a white surface finish will have significantly lower temperatures than similar equipment with a dark surface finish.
2. Equipment exposed in a closed container will experience temperatures lower than those of the same equipment uncovered but higher than would be experienced if the exposed surface finish was white.
3. The ambient temperatures and solar radiation at Innisfail during the trial were close to those laid down for QSTAG 360 category B2.
4. The solar heat resisting finish of the UK rocket motors had no effect on temperatures.
5. Equipment with a dark surface finish exposed in the hotter areas of Australia could be expected to reach skin temperatures of about 80°C for 1% of the hottest month.
6. Assuming the propellant of a rocket motor to have a service life of 10 years if stored at 25°C, the exterior layers of the same item stored in the open at JTRU would have service lifetimes varying between 2 years if the item has a dark surface finish and 6 years if it has a white surface finish.

ACKNOWLEDGEMENTS

Thanks are due to the staff at JTRU who, apart from the original data collection, have answered a number of incidental queries that arose during the preparation of this report. The concept of 'Life Expectancy' used on pages 10 and 11 of this report was originally used, in a somewhat different form, by Mr. B.E. Furby of WRE, Salisbury.

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APPENDIX 1

TABLES A1 → X1, A2 → X2, A3 → N3

CUMULATIVE PROBABILITY DISTRIBUTIONS FOR
ROCKET MOTOR TEMPERATURES

These tables give the number of times the temperature was equal to or greater than the temperature in column one.

DISTRIBUTION STATEMENT A

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TABLE A1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
SPARROW CENTRE (BOXED)

RECORDER 30B. ROCKET MOTOR CHANNEL 1

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1017	1029	947	1031	3507	2031	9562.	1.00
2	1017	1029	947	1031	3506	2031	9561.	1.00
3	1017	1029	947	1031	3505	2031	9560.	1.00
4	1017	1029	947	1031	3505	2031	9560.	1.00
5	1017	1029	947	1031	3504	2031	9559.	1.00
6	1017	1029	947	1031	3504	2031	9559.	1.00
7	1017	1029	947	1031	3504	2031	9559.	1.00
8	1017	1029	947	1031	3503	2031	9558.	1.00
9	1017	1029	947	1031	3502	2031	9557.	1.00
10	1017	1029	947	1031	3501	2031	9556.	1.00
11	1017	1029	947	1031	3501	2031	9556.	1.00
12	1017	1029	947	1031	3501	2028	9553.	1.00
13	1017	1029	947	1031	3501	2025	9550.	1.00
14	1017	1029	947	1031	3501	2015	9540.	1.00
15	1017	1029	947	1031	3501	2002	9527.	1.00
16	1017	1029	947	1031	3501	1991	9516.	1.00
17	1017	1029	947	1031	3501	1959	9484.	0.99
18	1017	1029	947	1031	3501	1886	9411.	0.98
19	1017	1029	947	1031	3498	1769	9291.	0.97
20	1017	1029	947	1031	3482	1597	9103.	0.95
21	1017	1029	947	1031	3459	1478	8961.	0.94
22	1017	1029	947	1024	3355	1279	8651.	0.90
23	1017	1029	946	996	3176	1066	8230.	0.86
24	1009	1028	915	939	2919	869	7679.	0.80
25	981	995	873	822	2576	691	6938.	0.73
26	959	976	833	732	2395	615	6510.	0.68
27	895	930	744	579	2035	483	5666.	0.59
28	801	872	634	460	1723	370	4860.	0.51
29	712	789	545	378	1468	283	4175.	0.44
30	621	701	458	300	1242	209	3531.	0.37
31	583	660	423	265	1145	178	3254.	0.34
32	506	586	362	204	954	125	2737.	0.29
33	436	512	301	151	797	90	2287.	0.24
34	376	448	255	108	651	56	1894.	0.20
35	307	393	212	70	519	33	1534.	0.16
36	278	364	191	56	470	23	1382.	0.14
37	227	313	159	29	362	8	1098.	0.11
38	175	258	125	10	256	3	827.	0.09
39	128	209	85	2	165	1	590.	0.06
40	91	158	59	0	104	0	412.	0.04
41	78	129	50	0	69	0	326.	0.03
42	45	91	36	0	30	0	202.	0.02
43	26	63	25	0	8	0	122.	0.01
44	13	33	11	0	5	0	62.	0.00
45	2	20	6	0	5	0	33.	0.00

TABLE B1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
SPARROW OUTER FILLING (BOXED)

RECORDER 30B. ROCKET MOTOR CHANNEL 2

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1018	1030	948	1032	3505	2031	9564.	1.00
2	1018	1030	948	1032	3505	2031	9564.	1.00
3	1018	1030	948	1032	3505	2031	9564.	1.00
4	1018	1030	948	1032	3505	2031	9564.	1.00
5	1018	1030	948	1032	3505	2031	9564.	1.00
6	1018	1030	948	1032	3505	2031	9564.	1.00
7	1018	1030	948	1032	3505	2031	9564.	1.00
8	1017	1030	948	1032	3505	2031	9563.	1.00
9	1017	1030	948	1032	3505	2029	9561.	1.00
10	1017	1030	948	1032	3505	2026	9558.	1.00
11	1017	1030	948	1032	3505	2024	9556.	1.00
12	1017	1030	948	1032	3505	2013	9545.	1.00
13	1017	1030	948	1032	3504	2001	9532.	1.00
14	1017	1030	948	1032	3503	1990	9520.	1.00
15	1017	1030	948	1032	3503	1962	9492.	0.99
16	1017	1030	948	1032	3503	1936	9466.	0.99
17	1017	1030	948	1032	3499	1885	9411.	0.98
18	1017	1030	948	1032	3485	1777	9289.	0.97
19	1017	1030	948	1032	3458	1608	9093.	0.95
20	1017	1030	947	1031	3397	1429	8851.	0.93
21	1017	1030	946	1025	3345	1332	8695.	0.91
22	1015	1030	944	1004	3169	1129	8291.	0.87
23	1002	1028	939	966	2932	981	7848.	0.82
24	981	1019	894	883	2614	847	7238.	0.76
25	914	961	815	727	2270	728	6415.	0.67
26	871	913	756	641	2105	678	5964.	0.62
27	790	831	654	514	1854	579	5222.	0.55
28	693	743	554	416	1621	507	4534.	0.47
29	622	663	485	357	1448	413	3988.	0.42
30	561	604	419	311	1295	347	3537.	0.37
31	538	574	396	296	1221	311	3336.	0.35
32	479	517	346	257	1083	261	2943.	0.31
33	443	480	306	219	958	203	2609.	0.27
34	397	430	274	182	845	164	2292.	0.24
35	359	395	244	147	719	122	1986.	0.21
36	336	377	229	133	669	110	1854.	0.19
37	307	349	205	108	602	83	1654.	0.17
38	272	324	177	85	525	57	1440.	0.15
39	243	293	152	58	429	38	1213.	0.13
40	200	267	127	40	347	18	999.	0.10
41	184	252	119	31	318	12	916.	0.10
42	153	218	102	17	250	5	745.	0.08
43	120	186	82	10	191	2	591.	0.06
44	97	165	65	4	129	0	460.	0.05
45	71	124	48	2	85	0	330.	0.03

TABLE B1 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
SPARROW OUTER FILLING (BOXED)

		RECORDER 30B.					ROCKET MOTOR CHANNEL 2			
DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB		
46	63	110	38	2	59	0	272.	0.03		
47	41	81	31	2	23	0	178.	0.02		
48	25	60	22	2	8	0	117.	0.01		
49	10	40	13	2	5	0	70.	0.00		
50	0	24	7	2	5	0	38.	0.00		
51	0	16	5	2	5	0	28.	0.00		
52	0	10	0	2	5	0	17.	0.00		
53	0	4	0	2	5	0	11.	0.00		
54	0	1	0	2	5	0	8.	0.00		
55	0	0	0	2	5	0	7.	0.00		
56	0	0	0	1	5	0	6.	0.00		
57	0	0	0	1	5	0	6.	0.00		
58	0	0	0	1	5	0	6.	0.00		
59	0	0	0	1	5	0	6.	0.00		
60	0	0	0	1	5	0	6.	0.00		
61	0	0	0	1	5	0	6.	0.00		
62	0	0	0	1	5	0	6.	0.00		
63	0	0	0	1	5	0	6.	0.00		
64	0	0	0	1	5	0	6.	0.00		
65	0	0	0	1	3	0	4.	0.00		
66	0	0	0	0	3	0	3.	0.00		
67	0	0	0	0	3	0	3.	0.00		
68	0	0	0	0	3	0	3.	0.00		
69	0	0	0	0	3	0	3.	0.00		
70	0	0	0	0	3	0	3.	0.00		
71	0	0	0	0	3	0	3.	0.00		
72	0	0	0	0	3	0	3.	0.00		
73	0	0	0	0	3	0	3.	0.00		
74	0	0	0	0	3	0	3.	0.00		
75	0	0	0	0	3	0	3.	0.00		
76	0	0	0	0	3	0	3.	0.00		
77	0	0	0	0	2	0	2.	0.00		
78	0	0	0	0	1	0	1.	0.00		
79	0	0	0	0	0	0	0.	0.00		

TABLE C1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
SPARROW MOTOR SKIN (BOXED)

		RECORDER 30B.			ROCKET MOTOR CHANNEL 3			
DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1018	1030	948	1032	3505	2031	9564.	1.00
2	1018	1030	948	1032	3505	2031	9564.	1.00
3	1018	1030	948	1032	3505	2031	9564.	1.00
4	1018	1030	948	1032	3505	2031	9564.	1.00
5	1018	1030	948	1032	3505	2031	9564.	1.00
6	1018	1030	948	1032	3505	2031	9564.	1.00
7	1018	1030	948	1032	3505	2031	9564.	1.00
8	1018	1030	948	1032	3505	2029	9562.	1.00
9	1018	1030	948	1032	3505	2026	9559.	1.00
10	1018	1030	948	1032	3505	2020	9553.	1.00
11	1018	1030	948	1032	3505	2018	9551.	1.00
12	1018	1030	948	1032	3505	2004	9537.	1.00
13	1018	1030	948	1032	3505	1988	9521.	1.00
14	1018	1030	948	1032	3504	1969	9501.	0.99
15	1018	1030	948	1032	3502	1930	9460.	0.99
16	1018	1030	948	1032	3501	1907	9436.	0.99
17	1018	1030	948	1032	3490	1835	9353.	0.98
18	1018	1030	948	1032	3463	1700	9191.	0.96
19	1018	1030	947	1031	3425	1526	8977.	0.94
20	1018	1030	946	1023	3333	1337	8687.	0.91
21	1018	1030	944	1017	3267	1225	8501.	0.89
22	1009	1029	943	992	3056	1054	8083.	0.85
23	995	1021	935	937	2769	933	7590.	0.79
24	949	1005	881	836	2440	825	6936.	0.73
25	865	913	764	668	2116	725	6051.	0.63
26	818	861	700	595	1960	677	5611.	0.59
27	721	761	597	472	1737	609	4897.	0.51
28	644	674	511	401	1563	550	4343.	0.45
29	590	605	449	350	1407	486	3887.	0.41
30	533	556	397	310	1273	412	3481.	0.36
31	511	535	378	297	1218	383	3322.	0.35
32	466	493	333	264	1114	324	2994.	0.31
33	426	455	310	233	1019	277	2720.	0.28
34	394	421	275	205	923	229	2447.	0.26
35	366	391	249	184	828	192	2210.	0.23
36	349	377	234	176	789	171	2096.	0.22
37	315	347	216	150	706	143	1877.	0.20
38	298	322	192	124	624	110	1670.	0.17
39	273	310	175	100	560	82	1500.	0.16
40	237	287	151	78	489	66	1308.	0.14
41	228	274	147	68	452	49	1218.	0.13
42	197	255	131	52	381	30	1046.	0.11
43	169	234	113	40	318	19	893.	0.09
44	150	208	96	27	265	11	757.	0.08
45	128	188	80	14	207	4	621.	0.06

TABLE D1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
SPARROW HALFWAY BET. SKIN AND BOX

RECORDER 30B. ROCKET MOTOR CHANNEL 4

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1018	1030	948	1032	3505	2031	9564.	1.00
2	1018	1030	948	1032	3505	2031	9564.	1.00
3	1018	1030	948	1032	3505	2031	9564.	1.00
4	1018	1030	948	1032	3505	2031	9564.	1.00
5	1018	1030	948	1032	3505	2031	9564.	1.00
6	1018	1030	948	1032	3505	2031	9564.	1.00
7	1018	1030	948	1032	3505	2030	9563.	1.00
8	1018	1030	948	1032	3505	2026	9559.	1.00
9	1018	1030	948	1032	3505	2023	9556.	1.00
10	1018	1030	948	1032	3505	2014	9547.	1.00
11	1018	1030	948	1032	3505	2007	9540.	1.00
12	1018	1030	948	1032	3505	1995	9528.	1.00
13	1018	1030	948	1032	3505	1975	9508.	0.99
14	1018	1030	948	1032	3505	1945	9478.	0.99
15	1018	1030	948	1032	3502	1897	9427.	0.99
16	1018	1030	948	1032	3496	1868	9392.	0.98
17	1018	1030	948	1032	3480	1789	9297.	0.97
18	1018	1030	947	1032	3439	1650	9116.	0.95
19	1018	1030	946	1028	3378	1483	8883.	0.93
20	1018	1030	944	1019	3260	1283	8554.	0.89
21	1015	1029	943	1013	3194	1179	8373.	0.88
22	1002	1025	942	985	2949	1029	7932.	0.83
23	978	1009	937	929	2668	910	7431.	0.78
24	914	979	873	813	2319	824	6722.	0.70
25	821	886	743	654	1992	755	5851.	0.61
26	764	820	675	575	1867	724	5425.	0.57
27	669	706	570	460	1674	665	4744.	0.50
28	604	620	487	392	1537	620	4260.	0.45
29	560	564	424	356	1420	570	3894.	0.41
30	510	526	384	326	1313	524	3583.	0.37
31	491	505	370	311	1268	505	3450.	0.36
32	459	470	345	285	1191	470	3220.	0.34
33	430	439	318	256	1124	425	2992.	0.31
34	408	422	292	237	1053	387	2799.	0.29
35	383	402	275	225	986	346	2617.	0.27
36	373	385	267	220	954	322	2521.	0.26
37	360	367	240	204	903	279	2353.	0.25
38	337	358	221	183	843	244	2186.	0.23
39	321	336	204	165	780	205	2011.	0.21
40	297	317	193	149	726	170	1852.	0.19
41	288	309	183	138	686	157	1761.	0.18
42	269	295	169	119	624	131	1607.	0.17
43	248	279	152	98	562	110	1449.	0.15
44	228	268	144	81	508	90	1319.	0.14
45	208	256	133	65	461	65	1188.	0.12

TABLE E1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
SPARROW OUTER CASE

RECORDER 30B. ROCKET MOTOR CHANNEL 5

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1018	1031	948	1032	3501	2031	9561.	1.00
2	1018	1031	948	1032	3501	2031	9561.	1.00
3	1018	1031	948	1032	3501	2031	9561.	1.00
4	1018	1031	948	1032	3501	2030	9560.	1.00
5	1018	1031	948	1032	3501	2024	9554.	1.00
6	1018	1031	948	1032	3501	2022	9552.	1.00
7	1018	1031	948	1032	3501	2018	9548.	1.00
8	1018	1031	948	1032	3501	2004	9534.	1.00
9	1018	1031	948	1032	3501	1984	9514.	1.00
10	1018	1031	948	1032	3501	1961	9491.	0.99
11	1018	1031	948	1032	3501	1950	9480.	0.99
12	1018	1031	948	1032	3499	1917	9445.	0.99
13	1018	1031	948	1032	3492	1869	9390.	0.98
14	1018	1031	948	1032	3468	1804	9301.	0.97
15	1018	1031	947	1032	3427	1716	9173.	0.96
16	1018	1031	946	1031	3400	1649	9075.	0.95
17	1018	1031	945	1022	3329	1507	8852.	0.93
18	1018	1029	945	1012	3215	1331	8550.	0.89
19	1005	1025	942	997	3063	1141	8173.	0.85
20	993	1012	941	975	2834	993	7748.	0.81
21	978	1000	939	953	2660	936	7466.	0.78
22	910	960	932	890	2367	838	6897.	0.72
23	803	884	847	763	2026	777	6100.	0.64
24	693	770	680	621	1728	730	5222.	0.55
25	604	645	538	494	1552	693	4526.	0.47
26	567	583	479	436	1499	683	4247.	0.44
27	513	525	419	381	1409	657	3904.	0.41
28	486	488	375	347	1329	633	3658.	0.38
29	461	449	358	326	1271	604	3469.	0.36
30	439	429	339	302	1216	576	3301.	0.35
31	430	425	329	290	1194	556	3224.	0.34
32	415	409	311	278	1152	519	3084.	0.32
33	394	398	296	265	1113	487	2953.	0.31
34	382	386	286	254	1070	457	2835.	0.30
35	365	368	273	243	1017	429	2695.	0.28
36	355	364	268	236	985	418	2626.	0.27
37	343	351	254	228	952	391	2519.	0.26
38	335	343	237	218	913	360	2406.	0.25
39	321	338	228	204	874	334	2299.	0.24
40	309	326	219	195	835	309	2193.	0.23
41	303	322	214	191	812	296	2138.	0.22
42	290	318	205	182	773	274	2042.	0.21
43	284	312	193	172	723	250	1934.	0.20
44	269	301	185	158	682	218	1813.	0.19
45	263	285	173	141	642	196	1700.	0.18

TABLE F1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

FFAR CENTRE (UNBOXED)								
RECORDER 30B. ROCKET MOTOR CHANNEL 6								
DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C. PROB
1	1018	1030	948	1032	3504	2032	9564.	1.00
2	1018	1030	948	1032	3504	2032	9564.	1.00
3	1018	1030	948	1032	3504	2032	9564.	1.00
4	1018	1030	948	1032	3504	2032	9564.	1.00
5	1018	1030	948	1032	3504	2032	9564.	1.00
6	1018	1030	948	1032	3504	2031	9563.	1.00
7	1018	1030	948	1032	3504	2025	9557.	1.00
8	1018	1030	948	1032	3504	2021	9553.	1.00
9	1018	1030	948	1032	3504	2010	9542.	1.00
10	1018	1030	948	1032	3504	1990	9522.	1.00
11	1018	1030	948	1032	3504	1984	9516.	0.99
12	1018	1030	948	1032	3504	1961	9493.	0.99
13	1018	1030	948	1032	3503	1931	9462.	0.99
14	1018	1030	948	1032	3496	1878	9402.	0.98
15	1018	1030	948	1032	3469	1807	9304.	0.97
16	1018	1030	947	1032	3456	1758	9241.	0.97
17	1018	1030	946	1031	3405	1628	9058.	0.95
18	1018	1030	945	1017	3317	1424	8751.	0.91
19	1016	1029	942	1006	3198	1209	8400.	0.88
20	1003	1023	942	989	2981	1032	7970.	0.83
21	993	1018	942	965	2816	960	7694.	0.80
22	956	984	937	919	2483	846	7125.	0.74
23	868	927	890	806	2112	772	6375.	0.67
24	734	802	707	627	1802	718	5390.	0.56
25	626	636	530	493	1588	663	4536.	0.47
26	591	580	473	441	1506	633	4224.	0.44
27	531	527	407	366	1400	579	3810.	0.40
28	491	489	369	322	1294	533	3498.	0.37
29	458	456	338	297	1203	486	3238.	0.34
30	431	425	318	270	1121	437	3002.	0.31
31	418	417	308	255	1083	418	2899.	0.30
32	395	402	286	232	1015	374	2704.	0.28
33	373	384	267	211	950	316	2501.	0.26
34	347	359	237	195	894	265	2297.	0.24
35	330	338	223	175	817	219	2102.	0.22
36	322	328	215	167	784	204	2020.	0.21
37	305	319	201	147	721	166	1859.	0.19
38	287	304	179	127	662	146	1705.	0.18
39	269	288	166	102	596	102	1523.	0.16
40	240	273	150	74	518	81	1336.	0.14
41	231	269	146	65	473	66	1250.	0.13
42	205	252	125	50	413	46	1091.	0.11
43	190	235	110	32	352	27	946.	0.10
44	164	214	90	18	290	13	789.	0.08
45	145	192	79	10	239	5	670.	0.07

TABLE G1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

FFAR MOTOR SKIN (UNBOXED)

RECORDER 30B. ROCKET MOTOR CHANNEL 7

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1017	1032	948	1032	3500	2032	9561.	1.00
2	1017	1032	948	1032	3500	2032	9561.	1.00
3	1017	1032	948	1032	3500	2032	9561.	1.00
4	1017	1032	948	1032	3500	2032	9561.	1.00
5	1017	1032	948	1032	3500	2032	9561.	1.00
6	1017	1032	948	1032	3500	2029	9558.	1.00
7	1016	1032	948	1032	3500	2025	9553.	1.00
8	1016	1032	948	1032	3500	2021	9549.	1.00
9	1016	1032	948	1032	3500	2011	9539.	1.00
10	1016	1032	948	1032	3500	1986	9514.	1.00
11	1016	1032	948	1032	3500	1981	9509.	0.99
12	1016	1032	948	1032	3500	1957	9485.	0.99
13	1016	1032	948	1032	3498	1921	9447.	0.99
14	1016	1032	948	1032	3487	1875	9388.	0.98
15	1016	1032	948	1032	3464	1794	9286.	0.97
16	1016	1032	947	1032	3449	1747	9223.	0.96
17	1016	1032	946	1031	3398	1606	9029.	0.94
18	1016	1031	945	1016	3297	1408	8713.	0.91
19	1014	1031	942	1005	3170	1201	8363.	0.87
20	1000	1024	942	987	2955	1028	7936.	0.83
21	992	1017	942	962	2802	956	7671.	0.80
22	952	981	937	915	2467	835	7087.	0.74
23	860	922	887	797	2099	774	6339.	0.66
24	727	801	705	624	1779	710	5346.	0.56
25	615	637	526	482	1560	664	4484.	0.47
26	576	584	471	418	1493	633	4175.	0.44
27	525	521	406	358	1367	584	3761.	0.39
28	485	472	368	318	1286	542	3471.	0.36
29	453	445	342	293	1202	498	3233.	0.34
30	426	425	317	264	1126	455	3011.	0.31
31	419	416	307	257	1095	432	2926.	0.31
32	393	399	278	235	1027	390	2722.	0.28
33	365	383	254	220	952	344	2518.	0.26
34	346	368	241	203	882	289	2329.	0.24
35	331	349	227	185	818	238	2148.	0.22
36	325	344	217	175	790	225	2074.	0.22
37	309	323	206	157	725	180	1900.	0.20
38	293	308	192	136	681	147	1757.	0.18
39	271	294	170	111	615	117	1578.	0.17
40	248	286	148	86	554	90	1412.	0.15
41	238	279	144	72	507	82	1322.	0.14
42	218	262	135	56	430	52	1153.	0.12
43	192	239	122	41	367	30	991.	0.10
44	169	229	107	27	308	19	859.	0.09
45	148	205	94	21	259	14	741.	0.08

TABLE H1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
LINNET EXT. TOP (SAND)

DEG.	RECORDER 30B.					ROCKET MOTOR CHANNEL 8		TOTAL	C.PROB
	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER			
1	1017	1031	948	1032	3505	2032	9565.	1.00	
2	1017	1031	948	1032	3505	2032	9565.	1.00	
3	1017	1031	948	1032	3505	2032	9565.	1.00	
4	1017	1031	948	1032	3505	2032	9565.	1.00	
5	1017	1031	948	1032	3505	2028	9561.	1.00	
6	1017	1031	948	1032	3505	2027	9560.	1.00	
7	1017	1031	948	1032	3505	2023	9556.	1.00	
8	1017	1031	948	1032	3505	2017	9550.	1.00	
9	1017	1031	948	1032	3505	2003	9536.	1.00	
10	1017	1031	948	1032	3504	1992	9524.	1.00	
11	1017	1031	948	1032	3504	1976	9508.	0.99	
12	1017	1031	948	1032	3504	1954	9486.	0.99	
13	1017	1031	948	1032	3500	1910	9438.	0.99	
14	1017	1031	948	1032	3485	1861	9374.	0.98	
15	1017	1031	947	1032	3458	1787	9272.	0.97	
16	1017	1031	947	1032	3434	1733	9194.	0.96	
17	1017	1031	946	1028	3377	1601	9000.	0.94	
18	1017	1030	945	1016	3282	1414	8704.	0.91	
19	1009	1029	942	1009	3139	1219	8347.	0.87	
20	994	1019	942	990	2928	1028	7901.	0.83	
21	987	1008	941	970	2773	958	7637.	0.80	
22	935	971	936	914	2468	843	7067.	0.74	
23	827	902	861	779	2095	760	6224.	0.65	
24	699	779	677	622	1799	692	5268.	0.55	
25	617	641	529	485	1575	635	4482.	0.47	
26	590	588	481	430	1499	605	4193.	0.44	
27	528	531	415	361	1375	551	3761.	0.39	
28	487	486	376	316	1263	492	3420.	0.36	
29	454	449	347	284	1167	433	3134.	0.33	
30	423	419	320	258	1073	395	2888.	0.30	
31	413	408	303	241	1039	376	2780.	0.29	
32	382	387	277	220	961	325	2552.	0.27	
33	356	368	255	204	889	271	2343.	0.24	
34	334	349	233	184	818	231	2149.	0.22	
35	314	333	214	167	754	195	1977.	0.21	
36	307	323	205	160	727	178	1900.	0.20	
37	289	299	187	139	666	155	1735.	0.18	
38	271	283	176	111	602	127	1570.	0.16	
39	254	271	157	88	545	97	1412.	0.15	
40	231	259	146	67	492	78	1273.	0.13	
41	219	253	138	61	473	69	1213.	0.13	
42	202	243	123	48	403	45	1064.	0.11	
43	181	226	103	38	347	35	930.	0.10	
44	164	211	88	32	300	24	819.	0.09	
45	140	186	79	22	260	16	703.	0.07	

TABLE J1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LINNET PROP. SURFACE (SAND)

RECORDER 30B. ROCKET MOTOR CHANNEL 9

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1017	1030	948	1032	3506	2032	9565.	1.00
2	1017	1030	948	1032	3506	2032	9565.	1.00
3	1017	1030	948	1032	3506	2032	9565.	1.00
4	1017	1030	948	1032	3506	2032	9565.	1.00
5	1017	1030	948	1032	3506	2032	9565.	1.00
6	1017	1030	948	1032	3506	2031	9564.	1.00
7	1016	1030	948	1032	3506	2027	9559.	1.00
8	1016	1030	948	1032	3506	2021	9553.	1.00
9	1016	1030	948	1032	3506	2013	9545.	1.00
10	1016	1030	948	1032	3506	1998	9530.	1.00
11	1016	1030	948	1032	3506	1993	9525.	1.00
12	1016	1030	948	1032	3505	1975	9506.	0.99
13	1016	1030	948	1032	3502	1942	9470.	0.99
14	1016	1030	948	1032	3495	1895	9416.	0.98
15	1016	1030	948	1032	3475	1833	9334.	0.98
16	1016	1030	948	1032	3463	1785	9274.	0.97
17	1016	1030	947	1032	3417	1653	9095.	0.95
18	1016	1030	945	1025	3339	1467	8822.	0.92
19	1014	1030	944	1014	3224	1278	8504.	0.89
20	1002	1025	942	999	3029	1084	8081.	0.84
21	993	1018	942	980	2884	1008	7825.	0.82
22	962	989	937	926	2547	867	7228.	0.76
23	877	930	877	778	2178	772	6412.	0.67
24	746	814	680	604	1829	680	5353.	0.56
25	646	663	543	466	1619	591	4528.	0.47
26	607	619	483	407	1504	554	4174.	0.44
27	551	556	416	349	1371	479	3722.	0.39
28	508	508	368	307	1239	419	3349.	0.35
29	459	466	341	273	1120	347	3006.	0.31
30	424	426	302	240	1026	280	2698.	0.28
31	407	416	289	226	975	256	2569.	0.27
32	368	383	260	186	869	196	2262.	0.24
33	343	354	232	160	775	155	2019.	0.21
34	315	330	213	131	695	114	1798.	0.19
35	294	307	189	105	609	87	1591.	0.17
36	279	300	179	91	576	69	1494.	0.16
37	254	280	156	66	501	45	1302.	0.14
38	230	257	136	43	423	23	1112.	0.12
39	201	235	115	31	344	10	936.	0.10
40	167	205	92	10	283	5	762.	0.08
41	153	194	84	6	252	4	693.	0.07
42	116	173	74	4	194	0	561.	0.06
43	96	139	61	2	139	0	437.	0.05
44	75	106	45	1	100	0	327.	0.03
45	55	80	30	0	59	0	224.	0.02

TABLE K1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LINNET INT. PROP. CHARGE (SAND)

RECORDER 30B. ROCKET MOTOR CHANNEL 10

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1018	1030	948	1032	3506	2031	9565.	1.00
2	1018	1030	948	1032	3506	2031	9565.	1.00
3	1018	1030	948	1032	3506	2031	9565.	1.00
4	1018	1030	948	1032	3506	2031	9565.	1.00
5	1018	1030	948	1032	3506	2031	9565.	1.00
6	1018	1030	948	1032	3506	2031	9565.	1.00
7	1018	1030	948	1032	3506	2027	9561.	1.00
8	1018	1030	948	1032	3506	2023	9557.	1.00
9	1018	1030	948	1032	3506	2012	9546.	1.00
10	1018	1030	948	1032	3506	2000	9534.	1.00
11	1018	1030	948	1032	3506	1995	9529.	1.00
12	1018	1030	948	1032	3505	1972	9505.	0.99
13	1018	1030	948	1032	3503	1944	9475.	0.99
14	1018	1030	948	1032	3496	1903	9427.	0.99
15	1018	1030	948	1032	3476	1852	9356.	0.98
16	1018	1030	948	1032	3463	1812	9303.	0.97
17	1018	1030	947	1032	3422	1685	9134.	0.95
18	1018	1030	945	1025	3351	1515	8884.	0.93
19	1017	1030	944	1015	3240	1316	8562.	0.90
20	1009	1026	942	1004	3079	1131	8191.	0.86
21	1002	1019	942	987	2949	1045	7944.	0.83
22	975	999	939	942	2616	900	7371.	0.77
23	899	945	903	836	2258	807	6648.	0.70
24	775	845	737	658	1928	718	5661.	0.59
25	662	702	566	521	1687	621	4759.	0.50
26	624	633	512	456	1587	596	4408.	0.46
27	570	562	443	370	1422	545	3912.	0.41
28	516	516	390	329	1303	464	3518.	0.37
29	474	477	347	292	1178	403	3171.	0.33
30	435	440	317	264	1088	344	2888.	0.30
31	422	426	305	245	1040	319	2757.	0.29
32	392	396	277	221	942	256	2484.	0.26
33	360	363	253	191	860	205	2232.	0.23
34	336	343	224	169	781	155	2008.	0.21
35	309	319	207	148	701	131	1815.	0.19
36	297	312	196	137	670	117	1729.	0.18
37	277	289	174	110	600	84	1534.	0.16
38	252	270	157	83	530	58	1350.	0.14
39	229	248	140	66	456	32	1171.	0.12
40	203	237	121	45	393	15	1014.	0.11
41	192	231	117	38	356	12	946.	0.10
42	170	207	106	25	291	7	806.	0.08
43	142	185	80	14	226	2	649.	0.07
44	118	167	69	8	181	0	543.	0.06
45	92	135	59	5	135	0	426.	0.04

TABLE L1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LINNET EXT. BOTTOM (SAND)

RECORDER 30B. ROCKET MOTOR CHANNEL 11

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1018	1031	948	1033	3501	2031	9562.	1.00
2	1018	1031	948	1033	3501	2031	9562.	1.00
3	1018	1031	948	1033	3501	2031	9562.	1.00
4	1018	1031	948	1033	3501	2031	9562.	1.00
5	1018	1031	948	1033	3501	2031	9562.	1.00
6	1018	1031	948	1033	3501	2031	9562.	1.00
7	1018	1031	948	1033	3500	2030	9560.	1.00
8	1018	1031	948	1033	3499	2026	9555.	1.00
9	1018	1031	948	1033	3498	2021	9549.	1.00
10	1018	1031	948	1033	3498	2010	9538.	1.00
11	1018	1031	948	1033	3498	2004	9532.	1.00
12	1018	1031	948	1033	3498	1993	9521.	1.00
13	1018	1031	948	1033	3498	1968	9496.	0.99
14	1018	1031	948	1033	3497	1931	9458.	0.99
15	1018	1031	948	1033	3485	1870	9385.	0.98
16	1018	1031	948	1033	3479	1842	9351.	0.98
17	1018	1031	947	1033	3449	1731	9209.	0.96
18	1018	1031	945	1030	3392	1568	8984.	0.94
19	1018	1031	945	1020	3292	1348	8654.	0.91
20	1012	1029	942	1010	3141	1136	8270.	0.86
21	1007	1027	942	994	2997	1042	8009.	0.84
22	989	1012	941	952	2679	870	7443.	0.78
23	931	974	909	838	2310	739	6701.	0.70
24	809	883	760	652	1918	630	5652.	0.59
25	682	730	582	489	1609	537	4629.	0.48
26	646	662	519	424	1504	473	4228.	0.44
27	566	570	428	338	1319	379	3600.	0.38
28	501	516	358	279	1139	295	3088.	0.32
29	452	463	314	232	1000	209	2670.	0.28
30	410	421	278	194	868	159	2330.	0.24
31	383	404	263	168	811	137	2166.	0.23
32	341	367	229	120	703	92	1852.	0.19
33	307	332	190	87	581	55	1552.	0.16
34	271	301	168	56	484	26	1306.	0.14
35	231	275	146	22	382	13	1069.	0.11
36	217	262	131	16	340	8	974.	0.10
37	175	223	102	10	265	6	781.	0.08
38	144	185	80	5	192	3	609.	0.06
39	108	136	61	3	136	1	445.	0.05
40	73	102	41	1	82	1	300.	0.03
41	63	85	34	1	63	1	247.	0.03
42	37	60	22	1	25	1	146.	0.02
43	23	39	12	1	7	0	82.	0.00
44	11	28	4	1	2	0	46.	0.00
45	5	17	1	1	1	0	25.	0.00

TABLE M1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

ASROC CENTRE (BOXED)

RECORDER 30B. ROCKET MOTOR CHANNEL 13

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1015	1029	946	1021	3508	2031	9550.	1.00
2	1015	1029	945	1021	3508	2031	9549.	1.00
3	1015	1029	945	1021	3507	2031	9548.	1.00
4	1015	1029	945	1021	3506	2031	9547.	1.00
5	1015	1029	945	1021	3505	2031	9546.	1.00
6	1015	1029	945	1021	3504	2031	9545.	1.00
7	1015	1029	945	1021	3503	2031	9544.	1.00
8	1015	1029	945	1021	3503	2031	9544.	1.00
9	1015	1029	945	1021	3503	2031	9544.	1.00
10	1015	1029	945	1021	3503	2031	9544.	1.00
11	1015	1029	945	1021	3503	2031	9544.	1.00
12	1015	1029	945	1021	3503	2029	9542.	1.00
13	1015	1029	945	1021	3503	2026	9539.	1.00
14	1015	1029	945	1021	3503	2020	9533.	1.00
15	1015	1029	945	1021	3503	2004	9517.	1.00
16	1015	1029	945	1021	3503	1997	9510.	1.00
17	1015	1029	945	1021	3503	1978	9491.	0.99
18	1015	1029	945	1021	3503	1913	9426.	0.99
19	1015	1029	945	1021	3499	1802	9311.	0.97
20	1015	1029	945	1021	3489	1622	9121.	0.96
21	1015	1029	945	1021	3474	1524	9008.	0.94
22	1015	1029	945	1017	3395	1295	8696.	0.91
23	1015	1029	945	998	3232	1079	8298.	0.87
24	1010	1029	926	940	2998	846	7749.	0.81
25	990	1003	880	848	2656	657	7034.	0.74
26	971	989	849	760	2432	587	6588.	0.69
27	913	944	757	602	2055	435	5706.	0.60
28	816	883	653	471	1714	316	4853.	0.51
29	719	799	550	371	1438	228	4105.	0.43
30	624	708	447	276	1178	156	3389.	0.35
31	576	665	414	244	1067	120	3086.	0.32
32	489	578	340	173	879	80	2539.	0.27
33	410	500	276	118	697	44	2045.	0.21
34	338	427	224	74	542	17	1622.	0.17
35	272	352	179	39	393	7	1242.	0.13
36	239	322	156	20	328	3	1068.	0.11
37	173	264	120	4	218	0	779.	0.08
38	124	203	77	0	140	0	544.	0.06
39	78	137	47	0	68	0	330.	0.03
40	48	94	35	0	17	0	194.	0.02
41	36	73	27	0	10	0	146.	0.02
42	18	45	17	0	5	0	85.	0.00
43	3	22	5	0	5	0	35.	0.00
44	0	12	1	0	5	0	18.	0.00
45	0	7	0	0	5	0	12.	0.00

TABLE N1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
ASROC MOTOR SKIN (BOXED)

RECORDER 30B, ROCKET MOTOR CHANNEL 14

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1015	1029	947	1033	3505	2031	9560.	1.00
2	1015	1029	947	1033	3505	2031	9560.	1.00
3	1015	1029	947	1033	3505	2031	9560.	1.00
4	1015	1029	947	1033	3505	2031	9560.	1.00
5	1015	1029	947	1033	3505	2031	9560.	1.00
6	1015	1029	947	1033	3505	2031	9560.	1.00
7	1015	1029	947	1033	3505	2031	9560.	1.00
8	1015	1029	947	1033	3505	2030	9559.	1.00
9	1015	1029	947	1033	3505	2024	9553.	1.00
10	1015	1029	947	1033	3505	2020	9549.	1.00
11	1015	1029	947	1033	3505	2017	9546.	1.00
12	1015	1029	947	1033	3505	2005	9534.	1.00
13	1015	1029	947	1033	3505	1990	9519.	1.00
14	1015	1029	947	1033	3505	1964	9493.	0.99
15	1015	1029	947	1033	3504	1921	9449.	0.99
16	1015	1029	947	1033	3502	1886	9412.	0.98
17	1015	1029	947	1033	3489	1818	9331.	0.98
18	1015	1029	947	1033	3458	1670	9152.	0.96
19	1015	1029	946	1030	3404	1503	8927.	0.93
20	1015	1029	944	1020	3300	1292	8600.	0.90
21	1014	1028	943	1015	3236	1183	8419.	0.88
22	1004	1027	942	987	2986	1023	7969.	0.83
23	986	1015	937	928	2716	903	7485.	0.78
24	934	990	877	817	2352	801	6771.	0.71
25	836	898	757	642	2018	724	5875.	0.61
26	779	837	694	568	1864	685	5428.	0.57
27	680	729	583	448	1646	610	4696.	0.49
28	604	639	486	377	1477	558	4141.	0.43
29	551	577	428	338	1362	504	3760.	0.39
30	498	520	386	301	1247	452	3404.	0.36
31	482	494	365	293	1193	433	3260.	0.34
32	444	458	333	267	1102	382	2986.	0.31
33	408	434	296	246	1021	321	2726.	0.29
34	375	400	279	214	930	268	2466.	0.26
35	348	374	253	195	865	222	2257.	0.24
36	338	361	242	180	826	201	2148.	0.22
37	317	342	225	161	763	170	1978.	0.21
38	301	324	207	136	696	139	1803.	0.19
39	283	301	185	118	621	113	1621.	0.17
40	253	290	168	96	558	93	1458.	0.15
41	243	281	158	88	528	81	1379.	0.14
42	220	270	147	71	470	58	1236.	0.13
43	194	253	132	53	400	42	1074.	0.11
44	170	232	116	41	345	24	928.	0.10
45	147	208	103	31	290	15	794.	0.08

TABLE 01

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

ASROC HALFWAY BET. SKIN AND BOX

RECORDER 30B. ROCKET MOTOR CHANNEL 15

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1015	1029	947	1033	3505	2031	9560.	1.00
2	1015	1029	947	1033	3505	2031	9560.	1.00
3	1015	1029	947	1033	3505	2031	9560.	1.00
4	1015	1029	947	1033	3505	2031	9560.	1.00
5	1015	1029	947	1033	3505	2031	9560.	1.00
6	1015	1029	947	1033	3505	2031	9560.	1.00
7	1015	1029	947	1033	3505	2028	9557.	1.00
8	1015	1029	947	1033	3505	2026	9555.	1.00
9	1015	1029	947	1033	3505	2021	9550.	1.00
10	1015	1029	947	1033	3505	2010	9539.	1.00
11	1015	1028	947	1033	3505	2006	9534.	1.00
12	1015	1028	947	1033	3505	1990	9518.	1.00
13	1015	1028	947	1033	3505	1964	9492.	0.99
14	1015	1028	947	1033	3504	1929	9456.	0.99
15	1015	1028	947	1033	3498	1862	9383.	0.98
16	1015	1028	947	1033	3488	1828	9339.	0.98
17	1015	1028	947	1033	3458	1729	9210.	0.96
18	1015	1028	946	1031	3408	1562	8990.	0.94
19	1015	1028	944	1023	3332	1376	8718.	0.91
20	1012	1026	942	1011	3182	1184	8357.	0.87
21	1005	1025	941	1002	3075	1102	8150.	0.85
22	993	1019	940	963	2804	966	7685.	0.80
23	952	992	924	891	2485	874	7118.	0.74
24	870	938	829	751	2141	793	6322.	0.66
25	758	821	692	592	1843	735	5441.	0.57
26	695	749	624	522	1737	712	5039.	0.53
27	621	651	518	419	1563	661	4433.	0.46
28	562	576	448	374	1444	614	4018.	0.42
29	513	532	397	339	1357	569	3707.	0.39
30	474	492	353	313	1268	521	3421.	0.36
31	456	475	343	300	1223	496	3293.	0.34
32	432	452	321	273	1158	461	3097.	0.32
33	408	419	303	252	1094	417	2893.	0.30
34	382	394	284	240	1035	381	2716.	0.28
35	361	379	267	219	977	336	2539.	0.27
36	353	371	260	209	950	315	2458.	0.26
37	330	348	245	198	892	273	2286.	0.24
38	316	338	231	180	834	243	2142.	0.22
39	306	327	213	164	775	209	1994.	0.21
40	292	317	204	150	733	175	1871.	0.20
41	283	310	198	142	706	163	1802.	0.19
42	273	297	185	118	638	129	1640.	0.17
43	248	283	171	99	587	104	1492.	0.16
44	228	270	160	85	536	86	1365.	0.14
45	209	254	144	71	473	68	1219.	0.13

TABLE P1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

ASROC OUTER CASE (BOXED)

RECORDER 30B. ROCKET MOTOR CHANNEL 16

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1015	1030	947	1034	3502	2031	9559.	1.00
2	1015	1030	947	1034	3502	2031	9559.	1.00
3	1015	1030	947	1034	3502	2031	9559.	1.00
4	1015	1030	947	1034	3502	2031	9559.	1.00
5	1015	1030	947	1034	3502	2026	9554.	1.00
6	1015	1030	947	1034	3502	2024	9552.	1.00
7	1014	1030	947	1034	3502	2018	9545.	1.00
8	1014	1030	947	1034	3502	2009	9536.	1.00
9	1014	1030	947	1034	3502	1992	9519.	1.00
10	1014	1030	947	1034	3502	1976	9503.	0.99
11	1014	1030	947	1034	3502	1967	9494.	0.99
12	1014	1030	947	1034	3501	1928	9454.	0.99
13	1014	1030	947	1034	3497	1878	9400.	0.98
14	1014	1030	947	1034	3475	1830	9330.	0.98
15	1014	1030	947	1034	3443	1734	9202.	0.96
16	1014	1030	946	1033	3415	1686	9124.	0.95
17	1014	1030	945	1025	3347	1541	8902.	0.93
18	1013	1027	942	1011	3242	1372	8607.	0.90
19	1006	1025	941	1002	3084	1184	8242.	0.86
20	991	1017	940	982	2861	1020	7811.	0.82
21	979	1009	939	959	2718	958	7562.	0.79
22	926	964	933	917	2424	848	7012.	0.73
23	838	900	900	809	2092	797	6336.	0.66
24	715	792	781	657	1791	763	5499.	0.58
25	622	654	612	524	1599	719	4730.	0.49
26	579	600	544	472	1532	704	4431.	0.46
27	530	537	474	393	1436	668	4038.	0.42
28	486	489	425	358	1349	637	3744.	0.39
29	460	461	391	333	1290	607	3542.	0.37
30	438	438	367	311	1232	575	3361.	0.35
31	424	424	357	300	1213	560	3278.	0.34
32	405	415	338	287	1161	530	3136.	0.33
33	390	397	328	268	1109	494	2986.	0.31
34	376	385	313	251	1063	459	2847.	0.30
35	362	375	301	234	1032	428	2732.	0.29
36	357	368	296	230	1013	418	2682.	0.28
37	344	355	287	221	975	391	2573.	0.27
38	331	342	276	208	937	359	2453.	0.26
39	320	327	266	197	891	327	2328.	0.24
40	314	321	255	184	852	302	2228.	0.23
41	308	318	250	179	837	289	2181.	0.23
42	295	306	246	169	782	263	2061.	0.22
43	284	302	237	159	741	234	1957.	0.20
44	269	291	230	144	688	211	1833.	0.19
45	260	280	221	135	652	184	1732.	0.18

TABLE Q1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
SPARROW FIBREGLASS SKIN (UNBOXED)

RECORDER 30B. ROCKET MOTOR CHANNEL 17

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1014	1030	947	1032	3508	2031	9562.	1.00
2	1014	1030	947	1032	3508	2031	9562.	1.00
3	1014	1030	947	1032	3508	2031	9562.	1.00
4	1014	1030	947	1032	3508	2026	9557.	1.00
5	1014	1030	947	1032	3508	2024	9555.	1.00
6	1014	1030	947	1032	3508	2019	9550.	1.00
7	1014	1030	947	1032	3508	2010	9541.	1.00
8	1014	1030	947	1032	3508	1993	9524.	1.00
9	1014	1030	947	1032	3508	1981	9512.	0.99
10	1014	1030	947	1032	3508	1960	9491.	0.99
11	1014	1030	947	1032	3508	1940	9471.	0.99
12	1014	1030	947	1032	3504	1903	9430.	0.99
13	1014	1030	947	1032	3495	1845	9363.	0.98
14	1014	1030	947	1032	3467	1787	9277.	0.97
15	1014	1030	946	1032	3420	1676	9118.	0.95
16	1014	1030	946	1031	3391	1613	9025.	0.94
17	1014	1027	944	1017	3303	1458	8763.	0.92
18	1012	1025	942	1004	3173	1239	8395.	0.88
19	993	1022	941	987	2988	1081	8012.	0.84
20	981	1002	940	961	2730	930	7544.	0.79
21	955	988	939	940	2562	886	7270.	0.76
22	875	938	922	871	2231	818	6655.	0.70
23	761	844	825	740	1896	777	5843.	0.61
24	637	708	629	596	1662	753	4985.	0.52
25	555	568	483	476	1514	720	4316.	0.45
26	525	517	437	433	1464	707	4083.	0.43
27	484	476	394	379	1382	680	3795.	0.40
28	458	450	367	347	1316	653	3591.	0.38
29	437	432	342	318	1259	629	3417.	0.36
30	416	408	323	302	1215	596	3260.	0.34
31	412	402	314	293	1188	585	3194.	0.33
32	385	389	300	278	1147	547	3046.	0.32
33	370	376	291	261	1106	527	2931.	0.31
34	357	362	278	249	1060	496	2802.	0.29
35	344	353	267	235	1019	470	2688.	0.28
36	338	347	257	230	1007	452	2631.	0.28
37	327	331	246	217	964	425	2510.	0.26
38	315	318	236	205	914	393	2381.	0.25
39	308	308	222	194	869	360	2261.	0.24
40	299	301	213	179	834	337	2163.	0.23
41	291	294	208	171	816	323	2103.	0.22
42	275	288	204	158	762	293	1980.	0.21
43	259	281	194	149	719	267	1869.	0.20
44	241	272	185	139	689	243	1769.	0.19
45	233	267	173	130	653	214	1670.	0.17

TABLE R1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

SPARROW A1 SKIN (UNBOXED)

RECORDER 30B. ROCKET MOTOR CHANNEL 18

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1015	1030	947	1032	3507	2031	9562.	1.00
2	1015	1030	947	1032	3507	2031	9562.	1.00
3	1015	1030	947	1032	3507	2031	9562.	1.00
4	1015	1030	947	1032	3507	2031	9562.	1.00
5	1015	1030	947	1032	3507	2028	9559.	1.00
6	1015	1030	947	1032	3507	2027	9558.	1.00
7	1014	1030	947	1032	3507	2022	9552.	1.00
8	1012	1030	947	1032	3507	2014	9542.	1.00
9	1012	1030	947	1032	3507	1994	9522.	1.00
10	1012	1030	947	1032	3507	1981	9509.	0.99
11	1012	1030	947	1032	3507	1970	9498.	0.99
12	1012	1030	947	1032	3507	1937	9465.	0.99
13	1012	1030	947	1032	3502	1892	9415.	0.98
14	1012	1030	947	1032	3484	1838	9343.	0.98
15	1012	1030	947	1032	3454	1757	9232.	0.97
16	1012	1030	946	1032	3431	1698	9149.	0.96
17	1012	1030	945	1026	3373	1550	8936.	0.93
18	1011	1029	943	1012	3269	1343	8607.	0.90
19	1007	1026	941	999	3109	1135	8217.	0.86
20	991	1018	941	980	2880	966	7776.	0.81
21	982	1015	939	952	2712	902	7502.	0.78
22	933	969	934	897	2377	808	6918.	0.72
23	830	895	878	777	1984	757	6121.	0.64
24	697	773	678	597	1682	710	5137.	0.54
25	585	603	500	463	1494	666	4311.	0.45
26	545	551	443	413	1424	641	4017.	0.42
27	493	490	377	343	1308	595	3606.	0.38
28	452	445	343	306	1227	568	3341.	0.35
29	422	422	319	279	1162	517	3121.	0.33
30	392	399	294	259	1088	469	2901.	0.30
31	380	391	287	246	1064	456	2824.	0.30
32	360	368	268	230	997	406	2629.	0.27
33	334	346	249	215	940	360	2444.	0.26
34	322	326	233	186	871	315	2253.	0.24
35	310	314	219	170	808	269	2090.	0.22
36	299	309	214	163	781	246	2012.	0.21
37	279	294	204	142	723	200	1842.	0.19
38	261	284	182	128	665	158	1678.	0.18
39	239	272	161	97	582	128	1479.	0.15
40	211	250	143	87	494	100	1285.	0.13
41	201	243	136	77	456	89	1202.	0.13
42	167	224	118	62	388	62	1021.	0.11
43	141	202	98	39	313	36	829.	0.09
44	123	178	86	25	234	21	667.	0.07
45	89	157	77	15	159	13	510.	0.05

TABLE S1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

SPARROW CENTRE (UNBOXED)

RECORDER 30B. ROCKET MOTOR CHANNEL 19

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C,PROB
1	1015	1030	946	1033	3507	2031	9562.	1.00
2	1015	1030	946	1033	3507	2031	9562.	1.00
3	1015	1030	946	1033	3507	2031	9562.	1.00
4	1015	1030	946	1033	3507	2031	9562.	1.00
5	1015	1030	946	1033	3507	2031	9562.	1.00
6	1015	1030	946	1033	3506	2031	9561.	1.00
7	1015	1030	946	1033	3505	2026	9555.	1.00
8	1015	1030	946	1033	3505	2025	9554.	1.00
9	1015	1030	946	1033	3505	2015	9544.	1.00
10	1015	1030	946	1033	3505	2004	9533.	1.00
11	1015	1030	946	1033	3505	1999	9528.	1.00
12	1015	1030	946	1033	3505	1984	9513.	0.99
13	1015	1030	946	1033	3505	1959	9488.	0.99
14	1015	1030	946	1033	3499	1914	9437.	0.99
15	1015	1030	946	1033	3490	1871	9385.	0.98
16	1015	1030	946	1033	3480	1828	9332.	0.98
17	1015	1030	946	1033	3445	1714	9183.	0.96
18	1015	1030	945	1028	3391	1544	8953.	0.94
19	1014	1029	943	1018	3300	1332	8636.	0.90
20	1008	1028	942	1008	3141	1110	8237.	0.86
21	1001	1026	941	997	3023	1006	7994.	0.84
22	983	1011	939	953	2687	815	7388.	0.77
23	926	972	914	856	2338	678	6684.	0.70
24	816	900	784	686	1938	549	5673.	0.59
25	706	754	603	513	1587	416	4579.	0.48
26	646	670	534	434	1439	369	4092.	0.43
27	549	583	435	320	1205	279	3371.	0.35
28	480	511	353	255	1010	208	2817.	0.29
29	416	448	290	192	832	150	2328.	0.24
30	359	384	241	132	681	103	1900.	0.20
31	336	362	219	113	609	83	1722.	0.18
32	278	311	177	69	488	54	1377.	0.14
33	227	272	147	39	365	22	1072.	0.11
34	174	223	108	10	263	7	785.	0.08
35	127	168	79	1	169	3	547.	0.06
36	109	149	62	0	126	2	448.	0.05
37	66	100	35	0	71	0	272.	0.03
38	34	57	23	0	38	0	152.	0.02
39	21	35	14	0	16	0	86.	0.00
40	10	17	6	0	7	0	40.	0.00
41	6	12	2	0	5	0	25.	0.00
42	2	7	0	0	5	0	14.	0.00
43	1	3	0	0	5	0	9.	0.00
44	0	1	0	0	5	0	6.	0.00
45	0	0	0	0	5	0	5.	0.00

TABLE T1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
SPARROW WHITE SURFACE (UNBOXED)

RECORDER 30B. ROCKET MOTOR CHANNEL 20

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1015	1031	945	1034	3503	2031	9559.	1.00
2	1015	1031	945	1034	3503	2031	9559.	1.00
3	1015	1031	945	1034	3503	2031	9559.	1.00
4	1015	1031	945	1034	3503	2029	9557.	1.00
5	1015	1031	945	1034	3503	2025	9553.	1.00
6	1015	1031	945	1034	3503	2023	9551.	1.00
7	1015	1031	945	1034	3502	2017	9544.	1.00
8	1015	1031	945	1034	3502	2004	9531.	1.00
9	1015	1031	945	1034	3501	1990	9516.	1.00
10	1015	1031	945	1034	3501	1972	9498.	0.99
11	1015	1031	945	1034	3501	1957	9483.	0.99
12	1015	1031	945	1034	3499	1930	9454.	0.99
13	1015	1031	945	1034	3488	1882	9395.	0.98
14	1015	1031	945	1034	3467	1817	9309.	0.97
15	1015	1031	944	1034	3424	1736	9184.	0.96
16	1015	1031	944	1033	3399	1657	9079.	0.95
17	1015	1030	942	1023	3332	1520	8862.	0.93
18	1012	1028	940	1011	3219	1303	8513.	0.89
19	1002	1025	939	995	3059	1107	8127.	0.85
20	986	1012	938	975	2800	929	7640.	0.80
21	971	997	937	951	2635	859	7350.	0.77
22	914	952	926	882	2304	734	6712.	0.70
23	793	873	836	732	1923	642	5799.	0.61
24	665	741	636	574	1593	564	4773.	0.50
25	578	590	480	435	1384	478	3945.	0.41
26	534	554	425	374	1285	444	3616.	0.38
27	481	484	359	303	1141	384	3152.	0.33
28	422	432	316	271	1008	311	2760.	0.29
29	382	383	289	229	899	251	2433.	0.25
30	341	355	255	193	793	203	2140.	0.22
31	325	342	243	180	753	185	2028.	0.21
32	289	318	207	143	649	135	1741.	0.18
33	263	291	186	115	536	100	1491.	0.16
34	232	265	158	79	447	76	1257.	0.13
35	211	246	138	55	381	53	1084.	0.11
36	193	232	122	48	350	41	986.	0.10
37	160	209	104	35	269	21	798.	0.08
38	128	178	87	17	197	12	619.	0.06
39	95	153	64	10	132	7	461.	0.05
40	69	122	49	5	74	3	322.	0.03
41	59	106	39	3	52	2	261.	0.03
42	38	75	28	3	25	0	169.	0.02
43	23	60	22	2	16	0	123.	0.01
44	10	38	18	1	6	0	73.	0.00
45	2	25	10	1	2	0	40.	0.00

TABLE U1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CARTRIDGES 20mm INTERIOR

RECORDER 308. ROCKET MOTOR CHANNEL 21

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1015	1030	946	1033	3507	2031	9562.	1.00
2	1015	1030	946	1033	3507	2031	9562.	1.00
3	1015	1030	946	1033	3507	2031	9562.	1.00
4	1015	1030	946	1033	3507	2031	9562.	1.00
5	1015	1030	946	1033	3507	2030	9561.	1.00
6	1015	1030	946	1033	3507	2028	9559.	1.00
7	1015	1030	946	1033	3507	2023	9554.	1.00
8	1015	1030	946	1033	3507	2018	9549.	1.00
9	1015	1030	946	1033	3507	2003	9534.	1.00
10	1015	1030	946	1033	3507	1985	9516.	1.00
11	1015	1030	946	1033	3507	1978	9509.	0.99
12	1015	1030	946	1033	3507	1951	9482.	0.99
13	1015	1030	946	1033	3506	1915	9443.	0.99
14	1015	1030	946	1033	3493	1853	9370.	0.98
15	1015	1030	946	1033	3465	1774	9263.	0.97
16	1015	1030	946	1033	3448	1722	9194.	0.96
17	1015	1030	944	1029	3388	1557	8963.	0.94
18	1015	1029	943	1016	3287	1346	8636.	0.90
19	1011	1027	941	1003	3131	1160	8273.	0.87
20	997	1022	940	982	2899	993	7833.	0.82
21	986	1015	940	957	2722	929	7549.	0.79
22	935	974	934	906	2398	832	6979.	0.73
23	835	906	871	773	2023	772	6180.	0.65
24	697	768	674	606	1730	723	5198.	0.54
25	596	611	514	478	1558	682	4439.	0.46
26	562	561	456	421	1484	665	4149.	0.43
27	503	513	399	363	1381	615	3774.	0.39
28	474	472	358	322	1281	568	3475.	0.36
29	448	450	338	300	1223	534	3293.	0.34
30	420	422	319	276	1152	483	3072.	0.32
31	406	414	303	268	1109	470	2970.	0.31
32	386	385	284	248	1053	434	2790.	0.29
33	366	375	267	227	982	403	2620.	0.27
34	347	355	255	209	928	347	2441.	0.26
35	322	337	239	189	859	306	2252.	0.24
36	315	332	227	182	825	281	2162.	0.23
37	305	321	211	162	779	229	2007.	0.21
38	290	311	190	142	714	185	1832.	0.19
39	278	302	178	121	648	144	1671.	0.17
40	261	282	163	104	577	113	1500.	0.16
41	251	277	156	93	543	100	1420.	0.15
42	218	263	141	74	465	70	1231.	0.13
43	189	247	125	50	398	47	1056.	0.11
44	169	226	109	40	332	21	897.	0.09
45	136	193	95	23	257	11	715.	0.07

TABLE V1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CARTRIDGES 20mm EXTERIOR

RECORDER 30B. ROCKET MOTOR CHANNEL 22

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1015	1031	946	1033	3503	2031	9559.	1.00
2	1015	1031	946	1033	3503	2031	9559.	1.00
3	1015	1031	946	1033	3503	2031	9559.	1.00
4	1015	1031	946	1033	3503	2031	9559.	1.00
5	1015	1031	946	1033	3503	2031	9559.	1.00
6	1015	1031	946	1033	3503	2026	9554.	1.00
7	1015	1031	946	1033	3503	2024	9552.	1.00
8	1015	1031	946	1033	3503	2016	9544.	1.00
9	1015	1031	946	1033	3503	2004	9532.	1.00
10	1015	1031	946	1033	3503	1985	9513.	1.00
11	1015	1031	946	1033	3503	1975	9503.	0.99
12	1015	1031	946	1033	3503	1950	9478.	0.99
13	1015	1031	946	1033	3501	1910	9436.	0.99
14	1015	1031	946	1033	3490	1851	9366.	0.98
15	1015	1031	946	1033	3458	1785	9268.	0.97
16	1015	1031	946	1033	3444	1733	9202.	0.96
17	1015	1031	944	1032	3384	1584	8990.	0.94
18	1015	1028	943	1015	3291	1379	8671.	0.91
19	1011	1028	941	1004	3153	1181	8318.	0.87
20	996	1023	940	986	2938	1031	7914.	0.83
21	988	1018	940	963	2773	960	7642.	0.80
22	947	974	935	923	2446	863	7088.	0.74
23	845	912	893	805	2090	790	6335.	0.66
24	715	796	706	637	1784	744	5382.	0.56
25	607	623	529	510	1580	702	4551.	0.48
26	567	569	476	448	1513	689	4262.	0.45
27	518	520	418	385	1403	644	3888.	0.41
28	480	480	369	334	1311	601	3575.	0.37
29	448	454	340	305	1247	564	3358.	0.35
30	424	425	321	288	1175	527	3160.	0.33
31	414	418	314	278	1147	513	3084.	0.32
32	395	400	299	263	1094	471	2922.	0.31
33	373	380	282	245	1031	445	2756.	0.29
34	355	363	265	226	968	404	2581.	0.27
35	339	348	250	212	925	374	2448.	0.26
36	332	341	238	205	896	352	2364.	0.25
37	311	329	218	177	842	315	2190.	0.23
38	302	317	206	167	800	271	2063.	0.22
39	293	308	199	156	738	221	1915.	0.20
40	278	297	184	137	674	185	1755.	0.18
41	270	293	180	132	649	169	1693.	0.18
42	255	280	170	110	587	137	1539.	0.16
43	244	266	150	94	535	112	1401.	0.15
44	219	256	140	76	483	82	1256.	0.13
45	198	244	118	58	407	54	1079.	0.11

TABLE W1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

BULLPUP CENTRE

RECORDER 30B. ROCKET MOTOR CHANNEL 23

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1015	1030	948	1031	3507	2031	9562.	1.00
2	1015	1030	948	1031	3507	2031	9562.	1.00
3	1015	1030	947	1031	3507	2031	9561.	1.00
4	1015	1030	947	1031	3507	2031	9561.	1.00
5	1015	1030	947	1031	3507	2031	9561.	1.00
6	1015	1030	947	1031	3507	2031	9561.	1.00
7	1014	1030	947	1031	3507	2028	9557.	1.00
8	1014	1030	947	1031	3505	2024	9551.	1.00
9	1014	1030	947	1031	3505	2017	9544.	1.00
10	1014	1030	947	1031	3505	2007	9534.	1.00
11	1014	1030	947	1031	3505	1998	9525.	1.00
12	1014	1030	947	1031	3505	1981	9508.	0.99
13	1014	1030	947	1031	3505	1956	9483.	0.99
14	1014	1030	947	1031	3503	1917	9442.	0.99
15	1014	1030	947	1031	3492	1866	9380.	0.98
16	1014	1030	947	1031	3479	1829	9330.	0.98
17	1014	1030	947	1031	3445	1704	9171.	0.96
18	1014	1030	945	1025	3388	1524	8926.	0.93
19	1014	1030	943	1016	3286	1321	8610.	0.90
20	1006	1028	942	1004	3113	1101	8194.	0.86
21	1001	1027	942	985	2971	999	7925.	0.83
22	977	1010	940	936	2645	822	7330.	0.77
23	910	966	896	813	2271	699	6555.	0.69
24	799	865	728	634	1880	564	5470.	0.57
25	679	707	571	469	1557	464	4447.	0.47
26	627	651	506	390	1423	409	4006.	0.42
27	540	567	405	305	1213	325	3355.	0.35
28	465	493	334	242	1031	249	2814.	0.29
29	410	427	282	182	856	186	2343.	0.25
30	362	374	231	139	726	135	1967.	0.21
31	338	349	218	116	658	115	1794.	0.19
32	283	308	179	73	529	79	1451.	0.15
33	233	270	144	46	415	45	1153.	0.12
34	188	225	113	13	318	20	877.	0.09
35	144	179	81	2	231	8	645.	0.07
36	128	158	68	1	193	5	553.	0.06
37	87	109	43	0	114	2	355.	0.04
38	47	73	27	0	61	0	208.	0.02
39	25	46	15	0	30	0	116.	0.01
40	14	22	8	0	10	0	54.	0.00
41	11	12	2	0	7	0	32.	0.00
42	3	7	1	0	4	0	15.	0.00
43	1	2	1	0	4	0	8.	0.00
44	0	0	1	0	4	0	5.	0.00
45	0	0	1	0	4	0	5.	0.00

TABLE X1

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

BULLPUP MOTOR SKIN

RECORDER 30B. ROCKET MOTOR CHANNEL 24

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1015	1031	946	1033	3503	2031	9559.	1.00
2	1015	1031	946	1033	3503	2031	9559.	1.00
3	1015	1031	946	1033	3503	2031	9559.	1.00
4	1015	1031	946	1033	3503	2031	9559.	1.00
5	1015	1031	946	1033	3503	2031	9559.	1.00
6	1015	1031	946	1033	3503	2031	9559.	1.00
7	1015	1031	946	1033	3503	2027	9555.	1.00
8	1015	1031	946	1033	3502	2025	9550.	1.00
9	1015	1031	946	1033	3501	2011	9537.	1.00
10	1015	1031	946	1033	3501	1999	9525.	1.00
11	1015	1031	946	1033	3501	1992	9518.	1.00
12	1015	1031	946	1033	3501	1970	9496.	0.99
13	1015	1031	946	1033	3500	1942	9467.	0.99
14	1015	1031	946	1033	3495	1898	9418.	0.99
15	1015	1031	946	1033	3480	1841	9346.	0.98
16	1015	1031	946	1033	3467	1802	9294.	0.97
17	1015	1031	945	1033	3422	1687	9133.	0.96
18	1015	1031	943	1024	3356	1505	8874.	0.93
19	1013	1031	943	1013	3252	1299	8551.	0.89
20	1004	1028	941	999	3068	1089	8129.	0.85
21	996	1025	941	979	2922	997	7860.	0.82
22	970	1004	938	932	2598	845	7287.	0.76
23	898	952	886	813	2251	715	6515.	0.68
24	786	852	726	638	1872	601	5475.	0.57
25	663	702	565	476	1567	515	4488.	0.47
26	624	640	499	409	1442	466	4080.	0.43
27	546	561	403	318	1251	374	3453.	0.36
28	482	491	341	265	1090	315	2984.	0.31
29	423	439	292	215	929	245	2543.	0.27
30	375	392	249	168	801	196	2181.	0.23
31	355	371	236	155	738	170	2025.	0.21
32	309	331	203	119	620	122	1704.	0.18
33	269	291	168	82	503	86	1399.	0.15
34	234	252	133	50	390	63	1122.	0.12
35	186	224	108	18	316	34	886.	0.09
36	164	208	90	12	285	26	785.	0.08
37	126	171	73	2	213	9	594.	0.06
38	102	129	49	2	150	3	435.	0.05
39	65	100	33	1	88	3	290.	0.03
40	33	63	21	1	50	0	168.	0.02
41	29	48	15	1	35	0	128.	0.01
42	8	28	8	1	12	0	57.	0.00
43	5	15	1	1	5	0	27.	0.00
44	4	8	0	1	2	0	15.	0.00
45	1	4	0	1	2	0	8.	0.00

TABLE A2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LINNET EXT. TOP (WHITE)

RECORDER 23C. ROCKET MOTOR CHANNEL 1

DEG.	DEC.	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1030	1030	948	1026	3681	2031	9746.	1.00
2	1030	1030	948	1026	3681	2031	9746.	1.00
3	1030	1030	948	1026	3681	2030	9745.	1.00
4	1030	1030	948	1026	3681	2028	9743.	1.00
5	1030	1030	948	1026	3681	2021	9736.	1.00
6	1030	1030	948	1026	3681	2017	9732.	1.00
7	1030	1030	947	1026	3681	2007	9721.	1.00
8	1030	1030	947	1026	3681	1995	9707.	1.00
9	1030	1030	947	1026	3681	1965	9679.	0.99
10	1030	1030	947	1026	3681	1936	9647.	0.99
11	1030	1030	947	1026	3681	1917	9631.	0.99
12	1030	1030	947	1026	3675	1875	9583.	0.98
13	1030	1030	947	1026	3667	1818	9518.	0.98
14	1030	1030	946	1026	3652	1755	9439.	0.97
15	1030	1030	946	1026	3626	1679	9337.	0.96
16	1030	1030	946	1026	3605	1640	9277.	0.95
17	1030	1030	946	1026	3564	1547	9143.	0.94
18	1030	1030	945	1026	3497	1465	8993.	0.92
19	1030	1028	945	1026	3413	1348	8790.	0.90
20	1030	1024	945	1026	3298	1244	8567.	0.88
21	1030	1019	945	1019	3216	1185	8415.	0.86
22	1026	1011	945	988	2975	1069	8014.	0.82
23	996	988	924	911	2644	942	7425.	0.76
24	911	938	882	821	2290	836	6675.	0.68
25	812	869	803	737	1985	727	5938.	0.61
26	765	826	741	692	1828	670	5522.	0.57
27	648	730	591	596	1524	575	4652.	0.48
28	557	605	497	484	1291	491	3925.	0.40
29	493	507	422	376	1132	421	3351.	0.34
30	451	449	363	301	1019	374	2957.	0.30
31	423	420	339	267	965	348	2770.	0.28
32	387	392	289	217	868	305	2456.	0.25
33	352	359	252	179	767	264	2173.	0.22
34	318	332	221	158	651	236	1916.	0.20
35	286	298	192	133	556	195	1658.	0.17
36	272	280	173	122	528	175	1549.	0.16
37	234	253	149	104	434	146	1325.	0.14
38	228	238	135	90	376	126	1165.	0.12
39	180	193	114	76	310	95	971.	0.10
40	145	173	93	55	244	69	779.	0.08
41	138	167	84	44	211	58	722.	0.07
42	106	128	60	28	154	35	529.	0.05
43	80	102	43	15	125	20	386.	0.04
44	52	31	27	7	91	9	267.	0.03
45	35	56	14	3	50	6	164.	0.02

TABLE A2 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LINNET EXT. TOP (WHITE)

RECORDER 23C. ROCKET MOTOR CHANNEL 1

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
46	28	45	14	1	31	0	124.	0.01
47	12	24	8	0	17	0	61.	0.00
48	8	15	5	0	6	0	34.	0.00
49	4	8	3	0	4	0	19.	0.00
50	1	6	2	0	1	0	10.	0.00
51	1	5	1	0	0	0	7.	0.00
52	0	3	0	0	0	0	3.	0.00
53	0	0	0	0	0	0	0.	0.00

TABLE 52

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LINNET PROP. SURFACE (WHITE)

RECORDER 23C. ROCKET MOTOR CHANNEL 2

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1037	1030	948	1026	3681	2032	9747.	1.00
2	1030	1030	948	1026	3681	2032	9747.	1.00
3	1030	1030	948	1026	3681	2031	9746.	1.00
4	1030	1030	948	1026	3681	2030	9745.	1.00
5	1030	1030	948	1026	3681	2028	9743.	1.00
6	1030	1030	948	1026	3681	2024	9739.	1.00
7	1030	1030	948	1026	3681	2016	9731.	1.00
8	1030	1030	948	1026	3681	2006	9718.	1.00
9	1030	1030	947	1026	3681	1977	9691.	0.99
10	1030	1030	947	1026	3681	1944	9658.	0.99
11	1030	1030	947	1026	3681	1939	9653.	0.99
12	1030	1030	947	1026	3679	1901	9613.	0.99
13	1030	1030	947	1026	3671	1848	9552.	0.98
14	1030	1030	947	1026	3662	1774	9469.	0.97
15	1030	1030	946	1026	3639	1687	9356.	0.96
16	1030	1030	946	1026	3628	1639	9299.	0.95
17	1030	1030	946	1026	3583	1554	9169.	0.94
18	1030	1030	946	1026	3520	1476	9028.	0.93
19	1030	1029	945	1026	3461	1374	8865.	0.91
20	1030	1026	945	1026	3343	1274	8644.	0.89
21	1030	1025	945	1021	3266	1218	8505.	0.87
22	1030	1019	945	1001	3258	1096	8149.	0.84
23	1020	1004	934	923	2766	969	7616.	0.78
24	951	969	898	836	2435	849	6938.	0.71
25	864	906	834	760	2103	750	6217.	0.64
26	804	861	769	712	1922	694	5782.	0.59
27	694	771	642	621	1596	579	4903.	0.50
28	592	631	521	511	1359	487	4101.	0.42
29	526	526	450	396	1172	416	3486.	0.36
30	466	468	383	297	1038	370	3022.	0.31
31	451	447	367	261	977	347	2855.	0.29
32	411	406	317	217	865	296	2512.	0.26
33	353	367	260	180	750	250	2170.	0.22
34	322	337	224	151	620	219	1873.	0.19
35	288	293	195	127	533	170	1611.	0.17
36	270	277	183	117	482	156	1485.	0.15
37	232	245	154	94	410	129	1264.	0.13
38	201	217	130	80	334	100	1065.	0.11
39	170	190	108	47	253	70	844.	0.09
40	131	153	81	33	203	50	651.	0.07
41	121	138	66	26	176	36	563.	0.06
42	85	107	52	13	136	16	409.	0.04
43	62	81	27	4	89	10	273.	0.03
44	39	55	14	1	57	7	173.	0.02
45	24	35	9	0	25	3	96.	0.00

TABLE C2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LINNET INT. PROP. CHARGE (WHITE)

RECORDER 23C. ROCKET MOTOR CHANNEL 3

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1030	1030	948	545	3526	2032	9111.	1.00
2	1030	1030	948	545	3526	2032	9111.	1.00
3	1030	1030	948	545	3526	2032	9111.	1.00
4	1030	1030	948	545	3526	2030	9109.	1.00
5	1030	1030	948	545	3526	2025	9104.	1.00
6	1030	1030	948	545	3526	2020	9099.	1.00
7	1030	1030	948	545	3526	2015	9094.	1.00
8	1030	1030	947	545	3526	2006	9081.	1.00
9	1030	1030	947	545	3526	1984	9062.	0.99
10	1030	1030	947	545	3526	1952	9030.	0.99
11	1030	1030	947	545	3526	1934	9012.	0.99
12	1030	1030	947	545	3524	1903	8979.	0.99
13	1030	1030	947	545	3518	1852	8922.	0.98
14	1030	1030	947	545	3509	1787	8848.	0.97
15	1030	1030	946	545	3489	1709	8749.	0.96
16	1030	1030	946	545	3476	1668	8695.	0.95
17	1030	1030	946	545	3431	1595	8577.	0.94
18	1030	1030	945	545	3374	1503	8427.	0.92
19	1030	1028	945	545	3305	1405	8258.	0.91
20	1030	1026	945	544	3207	1305	8057.	0.88
21	1030	1020	945	542	3135	1257	7929.	0.87
22	1030	1013	945	525	2922	1112	7547.	0.83
23	1010	996	929	455	2606	971	6967.	0.76
24	946	953	884	374	2301	862	6320.	0.69
25	846	886	819	308	1946	754	5559.	0.61
26	794	849	766	260	1790	696	5172.	0.57
27	676	753	620	217	1491	590	4347.	0.48
28	587	627	514	160	1256	492	3636.	0.40
29	516	522	446	124	1097	433	3138.	0.34
30	459	465	377	101	981	385	2768.	0.30
31	439	444	347	87	927	358	2602.	0.29
32	400	404	306	72	831	311	2324.	0.26
33	365	369	257	54	731	272	2048.	0.22
34	329	331	225	41	624	232	1785.	0.20
35	293	305	192	27	527	191	1535.	0.17
36	278	292	182	22	489	176	1439.	0.16
37	238	254	156	11	410	142	1211.	0.13
38	211	229	140	9	350	115	1054.	0.12
39	181	203	115	6	268	94	867.	0.10
40	151	173	92	2	223	67	738.	0.08
41	139	156	80	2	188	55	620.	0.07
42	101	126	54	2	154	30	465.	0.05
43	75	100	43	0	121	18	357.	0.04
44	53	76	26	0	89	10	254.	0.03
45	31	51	14	0	46	6	148.	0.02

TABLE C2 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LINNET INT. PROP. CHARGE (WHITE)

RECORDER 23C. ROCKET MOTOR CHANNEL 3

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
46	25	41	11	0	31	0	113.	0.01
47	13	24	7	0	17	1	62.	0.00
48	7	11	4	0	8	1	31.	0.00
49	5	9	2	0	3	0	19.	0.00
50	1	6	2	0	0	0	9.	0.00
51	1	6	1	0	0	0	8.	0.00
52	0	2	1	0	0	0	3.	0.00
53	0	0	0	0	0	0	0.	0.00

TABLE D2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LINNET EXT. BOTTOM (WHITE)

RECORDER 23C. ROCKET MOTOR CHANNEL 4

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1030	1031	948	1028	3681	2032	9750.	1.00
2	1030	1031	948	1028	3681	2032	9750.	1.00
3	1030	1031	948	1028	3681	2032	9750.	1.00
4	1030	1031	948	1028	3681	2032	9750.	1.00
5	1030	1031	948	1028	3681	2030	9748.	1.00
6	1030	1031	948	1028	3681	2029	9747.	1.00
7	1030	1031	948	1028	3681	2019	9737.	1.00
8	1030	1031	947	1028	3681	2013	9730.	1.00
9	1030	1031	947	1028	3681	1997	9714.	1.00
10	1030	1031	947	1028	3681	1978	9695.	0.99
11	1030	1031	946	1028	3681	1953	9669.	0.99
12	1030	1031	946	1027	3681	1912	9627.	0.99
13	1030	1031	946	1027	3678	1869	9581.	0.98
14	1030	1031	946	1027	3674	1816	9524.	0.98
15	1030	1031	946	1027	3657	1733	9424.	0.97
16	1030	1031	945	1027	3647	1685	9365.	0.96
17	1030	1031	945	1027	3613	1576	9222.	0.95
18	1030	1031	945	1027	3569	1479	9081.	0.93
19	1030	1031	945	1027	3505	1387	8925.	0.92
20	1030	1030	945	1027	3430	1283	8745.	0.90
21	1030	1029	945	1026	3378	1233	8641.	0.89
22	1030	1026	945	1017	3181	1103	8302.	0.85
23	1027	1012	943	969	2883	947	7781.	0.80
24	991	965	904	876	2541	829	7125.	0.73
25	913	940	857	778	2202	720	6410.	0.66
26	859	897	806	733	1980	660	5935.	0.61
27	739	815	675	623	1625	559	5041.	0.52
28	622	680	519	523	1326	451	4126.	0.42
29	535	550	446	401	1130	377	3439.	0.35
30	474	482	370	291	958	303	2878.	0.30
31	450	457	342	236	800	289	2654.	0.27
32	398	393	290	192	746	247	2273.	0.23
33	347	364	240	150	625	205	1931.	0.20
34	302	307	194	120	517	154	1594.	0.16
35	245	264	160	101	399	116	1285.	0.13
36	231	247	143	85	357	97	1160.	0.12
37	194	211	111	56	285	63	920.	0.09
38	159	176	89	32	220	31	707.	0.07
39	123	137	64	10	166	16	516.	0.05
40	102	101	35	4	107	11	360.	0.04
41	81	86	26	3	85	8	289.	0.03
42	59	55	13	1	43	3	174.	0.02
43	34	38	8	1	23	3	107.	0.01
44	25	23	5	1	11	3	68.	0.00
45	12	13	5	1	4	2	37.	0.00

TABLE E2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CUCKOO EXT. TOP (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 5

DEG.	DEC	JAN	FEB	MAR	AJT-SPRING	WINTER	TOTAL	C.PROB
1	1030	1030	948	1027	3681	2032	9748.	1.00
2	1030	1030	948	1027	3681	2032	9748.	1.00
3	1030	1030	948	1027	3681	2031	9747.	1.00
4	1030	1030	948	1027	3681	2030	9746.	1.00
5	1030	1030	948	1027	3681	2029	9741.	1.00
6	1030	1030	948	1027	3681	2028	9739.	1.00
7	1030	1030	948	1027	3681	2019	9732.	1.00
8	1030	1030	947	1027	3681	2008	9723.	1.00
9	1030	1030	947	1027	3681	1992	9707.	1.00
10	1030	1030	946	1027	3681	1969	9674.	0.99
11	1030	1030	946	1027	3681	1948	9657.	0.99
12	1030	1030	946	1027	3679	1904	9616.	0.99
13	1030	1030	946	1027	3674	1852	9562.	0.98
14	1030	1030	946	1027	3661	1798	9492.	0.97
15	1030	1030	945	1027	3649	1723	9474.	0.96
16	1030	1030	945	1027	3634	1674	9340.	0.96
17	1030	1030	945	1027	3624	1594	9230.	0.95
18	1030	1030	945	1027	3546	1507	9085.	0.93
19	1030	1029	945	1027	3486	1418	8935.	0.92
20	1030	1028	945	1025	3396	1304	8720.	0.90
21	1030	1027	945	1024	3332	1261	8619.	0.88
22	1030	1020	945	1012	3157	1123	8287.	0.85
23	1017	1012	931	952	2882	1003	7797.	0.80
24	967	982	901	869	2582	891	7192.	0.74
25	886	935	847	775	2255	779	6477.	0.66
26	831	899	805	734	2074	727	6070.	0.62
27	734	821	664	653	1696	616	5184.	0.53
28	640	676	540	548	1411	507	4322.	0.44
29	553	562	459	427	1196	419	3616.	0.37
30	476	485	377	345	1035	362	3080.	0.32
31	453	463	356	289	972	333	2866.	0.29
32	404	414	301	228	851	279	2477.	0.25
33	362	367	253	188	719	249	2134.	0.22
34	312	319	219	148	584	203	1785.	0.18
35	268	292	178	120	481	160	1499.	0.15
36	249	266	165	109	443	141	1373.	0.14
37	212	233	136	99	369	116	1165.	0.12
38	181	202	111	74	291	97	956.	0.10
39	148	171	93	51	217	68	748.	0.08
40	108	138	70	38	155	42	543.	0.06
41	97	122	58	26	135	31	469.	0.05
42	57	91	44	13	91	14	310.	0.03
43	37	66	26	5	55	6	195.	0.02
44	18	41	15	0	26	4	104.	0.01
45	10	27	7	0	13	3	60.	0.00

TABLE E2 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CUCKOO EXT. TOP (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 5

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
46	6	18	6	0	12	2	42.	0.00
47	5	8	6	0	3	2	24.	0.00
48	2	4	5	0	1	1	13.	0.00
49	1	4	2	0	0	0	7.	0.00
50	0	4	0	0	0	0	4.	0.00
51	0	3	0	0	0	0	3.	0.00
52	0	3	0	0	0	0	3.	0.00
53	0	1	0	0	0	0	1.	0.00
54	0	0	0	0	0	0	0.	0.00

TABLE F2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CUCKOO PROP. SURFACE (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 6

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1032	1030	948	1027	3681	2032	9748.	1.00
2	1030	1030	948	1027	3681	2032	9748.	1.00
3	1030	1030	948	1027	3681	2032	9748.	1.00
4	1030	1030	948	1027	3681	2032	9748.	1.00
5	1030	1030	948	1027	3681	2031	9747.	1.00
6	1030	1030	948	1027	3681	2029	9745.	1.00
7	1030	1030	948	1027	3681	2026	9742.	1.00
8	1030	1030	948	1027	3681	2018	9734.	1.00
9	1030	1030	948	1027	3681	2007	9723.	1.00
10	1030	1030	948	1027	3681	1994	9710.	1.00
11	1030	1030	948	1027	3681	1984	9700.	1.00
12	1030	1030	948	1027	3681	1952	9668.	0.99
13	1030	1030	948	1027	3680	1898	9613.	0.99
14	1030	1030	947	1027	3678	1837	9549.	0.98
15	1030	1030	946	1027	3664	1754	9451.	0.97
16	1030	1030	945	1027	3657	1699	9388.	0.96
17	1030	1030	945	1027	3636	1608	9276.	0.95
18	1030	1030	945	1027	3602	1500	9134.	0.94
19	1030	1030	945	1027	3558	1391	8981.	0.92
20	1030	1030	945	1027	3494	1291	8817.	0.90
21	1030	1030	945	1025	3462	1244	8736.	0.90
22	1030	1028	945	1020	3333	1153	8589.	0.87
23	1030	1024	944	987	3141	1039	8165.	0.84
24	1021	1012	916	909	2861	930	7649.	0.78
25	968	993	893	828	2565	816	7063.	0.72
26	937	977	860	776	2406	758	6714.	0.69
27	853	916	776	704	2011	657	5917.	0.61
28	753	821	625	609	1842	525	4973.	0.51
29	654	679	522	489	1324	433	4101.	0.42
30	569	589	435	364	1113	355	3425.	0.35
31	531	552	401	311	1011	329	3135.	0.32
32	461	481	340	238	842	270	2632.	0.27
33	400	410	283	176	673	214	2156.	0.22
34	334	348	228	135	555	159	1759.	0.18
35	287	285	180	96	425	123	1389.	0.14
36	251	250	160	79	367	103	1210.	0.12
37	193	210	118	57	287	73	943.	0.10
38	157	163	82	31	217	45	698.	0.07
39	118	128	59	19	144	21	489.	0.05
40	73	89	36	6	91	13	308.	0.03
41	62	70	28	2	57	11	230.	0.02
42	29	41	14	0	26	6	116.	0.01
43	16	19	10	0	9	4	58.	0.00
44	9	14	6	0	5	4	38.	0.00
45	4	10	4	0	0	3	21.	0.00

TABLE F2 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CUCKOO PROP. SURFACE (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 6

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
46	3	9	3	0	0	3	18.	0.00
47	0	7	1	0	0	3	11.	0.00
48	0	6	1	0	0	1	8.	0.00
49	0	4	0	0	0	1	5.	0.00
50	0	4	0	0	0	0	4.	0.00
51	0	3	0	0	0	0	3.	0.00
52	0	3	0	0	0	0	3.	0.00
53	0	3	0	0	0	0	3.	0.00
54	0	3	0	0	0	0	3.	0.00
55	0	2	0	0	0	0	2.	0.00
56	0	2	0	0	0	0	2.	0.00
57	0	1	0	0	0	0	1.	0.00
58	0	0	0	0	0	0	0.	0.00

TABLE G2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CUCKOO INT. PROP. SURFACE (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 7

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1029	1031	948	1027	3680	2032	9747.	1.00
2	1029	1031	948	1027	3680	2032	9747.	1.00
3	1029	1031	948	1027	3680	2032	9747.	1.00
4	1029	1031	948	1027	3680	2032	9747.	1.00
5	1029	1031	948	1027	3680	2020	9740.	1.00
6	1029	1031	948	1027	3680	2020	9740.	1.00
7	1029	1031	948	1027	3680	2010	9730.	1.00
8	1029	1031	947	1027	3680	2000	9720.	1.00
9	1029	1031	947	1027	3680	1995	9719.	1.00
10	1029	1031	947	1027	3680	1969	9683.	0.99
11	1029	1031	947	1027	3679	1957	9670.	0.99
12	1029	1031	946	1027	3678	1921	9632.	0.99
13	1029	1031	946	1027	3675	1879	9587.	0.98
14	1029	1031	946	1027	3667	1821	9521.	0.98
15	1029	1031	946	1027	3656	1750	9439.	0.97
16	1029	1031	945	1027	3646	1706	9384.	0.96
17	1029	1031	945	1027	3610	1620	9265.	0.95
18	1029	1031	945	1027	3563	1526	9121.	0.94
19	1029	1031	945	1027	3496	1442	8970.	0.92
20	1029	1029	945	1026	3415	1347	8721.	0.90
21	1029	1023	945	1025	3351	1290	8673.	0.89
22	1029	1021	945	1011	3159	1172	8337.	0.86
23	1019	1012	942	956	2912	1044	7885.	0.81
24	976	991	902	874	2595	917	7255.	0.74
25	907	939	856	795	2275	790	6567.	0.67
26	847	910	814	752	2087	734	6144.	0.63
27	752	820	672	668	1713	610	5240.	0.54
28	650	698	547	572	1425	513	4425.	0.45
29	557	551	462	444	1177	416	3637.	0.37
30	490	499	390	333	1014	353	3079.	0.32
31	461	468	359	289	954	321	2852.	0.29
32	414	425	297	230	800	279	2445.	0.25
33	352	360	256	181	663	227	2047.	0.21
34	310	326	207	148	542	189	1720.	0.18
35	270	278	171	111	442	151	1423.	0.15
36	247	260	152	100	409	120	1296.	0.13
37	207	221	126	83	322	104	1063.	0.11
38	172	184	100	60	255	80	859.	0.09
39	132	154	76	39	192	56	649.	0.07
40	95	117	56	19	137	36	460.	0.05
41	78	103	44	15	106	23	369.	0.04
42	48	72	26	5	71	8	230.	0.02
43	23	45	12	1	35	0	121.	0.01
44	15	27	8	0	17	4	71.	0.00
45	6	15	6	0	8	2	37.	0.00

TABLE H2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CUCKOO EXT. BOTTOM (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 8

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1029	1031	948	1027	3681	2032	9748.	1.00
2	1029	1031	948	1027	3681	2032	9748.	1.00
3	1029	1031	946	1027	3681	2032	9748.	1.00
4	1029	1031	948	1027	3681	2032	9748.	1.00
5	1029	1031	948	1027	3681	2032	9748.	1.00
6	1029	1031	948	1027	3681	2032	9748.	1.00
7	1029	1031	948	1027	3681	2031	9747.	1.00
8	1029	1031	947	1027	3681	2026	9741.	1.00
9	1029	1031	947	1027	3681	2023	9738.	1.00
10	1029	1031	946	1027	3681	2017	9731.	1.00
11	1029	1031	946	1027	3681	2011	9725.	1.00
12	1029	1031	946	1027	3681	1993	9727.	1.00
13	1029	1031	946	1027	3681	1954	9668.	0.99
14	1029	1031	946	1027	3681	1911	9625.	0.99
15	1029	1031	946	1027	3677	1845	9555.	0.98
16	1029	1031	946	1027	3671	1795	9499.	0.97
17	1029	1031	945	1027	3659	1704	9395.	0.96
18	1029	1031	945	1027	3628	1606	9266.	0.95
19	1029	1031	945	1027	3581	1485	9098.	0.93
20	1029	1031	945	1027	3524	1382	8938.	0.92
21	1029	1031	945	1027	3489	1326	8847.	0.91
22	1029	1030	945	1024	3373	1217	8618.	0.88
23	1029	1028	944	999	3152	1091	8243.	0.85
24	1022	1018	919	921	2854	964	7698.	0.79
25	975	994	891	812	2518	828	7018.	0.72
26	943	972	850	776	2329	782	6652.	0.68
27	854	918	744	692	1909	651	5768.	0.59
28	740	798	597	588	1497	509	4729.	0.49
29	637	662	476	456	1156	379	3766.	0.39
30	529	550	384	319	923	296	3003.	0.31
31	492	515	346	257	832	264	2726.	0.28
32	414	433	284	197	651	184	2163.	0.22
33	344	342	225	142	505	130	1688.	0.17
34	268	268	158	93	369	83	1239.	0.13
35	201	205	97	49	260	43	855.	0.09
36	176	178	86	40	221	28	729.	0.07
37	133	128	55	21	156	15	511.	0.05
38	101	90	38	7	85	13	334.	0.03
39	67	59	22	1	46	10	205.	0.02
40	35	35	15	0	21	8	114.	0.01
41	23	25	11	0	11	3	78.	0.00
42	13	15	6	0	1	7	42.	0.00
43	6	9	3	0	0	5	23.	0.00
44	4	9	3	0	0	4	20.	0.00
45	1	6	2	0	0	3	12.	0.00

TABLE H2 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CUCKOO EXT. BOTTOM (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 3

DEG.	DEC	JAN	FEB	MAR	AJT-SPRING	WINTER	TOTAL	C.PROB
46	1	5	1	0	0	2	9.	0.00
47	0	4	1	0	0	1	6.	0.00
48	0	3	0	0	0	1	4.	0.00
49	0	3	0	0	0	0	3.	0.00
50	0	3	0	0	0	0	3.	0.00
51	0	3	0	0	0	0	3.	0.00
52	0	3	0	0	0	0	3.	0.00
53	0	2	0	0	0	0	2.	0.00
54	0	2	0	0	0	0	2.	0.00
55	0	0	0	0	0	0	0.	0.00

TABLE J2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CUCKOO EXT. TOP (NOSE)

RECORDER 23C. ROCKET MOTOR CHANNEL 9

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1028	1032	946	1026	3681	2032	9747.	1.00
2	1028	1032	946	1026	3681	2032	9747.	1.00
3	1028	1032	946	1026	3681	2032	9747.	1.00
4	1028	1032	946	1026	3681	2031	9746.	1.00
5	1028	1032	946	1026	3681	2027	9742.	1.00
6	1028	1032	946	1026	3681	2023	9738.	1.00
7	1028	1032	946	1026	3681	2016	9731.	1.00
8	1028	1032	947	1026	3681	2013	9727.	1.00
9	1028	1032	946	1026	3681	1996	9709.	1.00
10	1028	1032	946	1026	3681	1960	9681.	0.99
11	1028	1032	945	1026	3681	1950	9670.	0.99
12	1028	1032	945	1026	3680	1920	9637.	0.99
13	1028	1032	945	1026	3675	1889	9595.	0.98
14	1028	1032	945	1026	3668	1830	9534.	0.98
15	1028	1032	945	1026	3657	1750	9438.	0.97
16	1028	1032	945	1026	3644	1709	9384.	0.96
17	1028	1032	945	1026	3613	1614	9258.	0.95
18	1028	1032	944	1026	3567	1537	9134.	0.94
19	1028	1031	944	1026	3506	1454	8989.	0.92
20	1028	1030	944	1026	3419	1363	8810.	0.90
21	1028	1030	944	1024	3357	1310	8695.	0.89
22	1028	1024	944	1014	3154	1229	8403.	0.86
23	1014	1012	933	968	2951	1090	7978.	0.82
24	978	934	906	889	2652	970	7379.	0.76
25	910	935	860	799	2334	860	6726.	0.69
26	847	897	812	760	2170	800	6294.	0.65
27	744	820	673	674	1821	722	5434.	0.56
28	646	699	556	584	1524	586	4595.	0.47
29	571	535	477	460	1285	497	3883.	0.40
30	502	502	407	368	1139	420	3343.	0.34
31	472	483	377	321	1060	390	3128.	0.32
32	425	429	321	274	946	353	2748.	0.28
33	373	389	282	221	837	309	2411.	0.25
34	335	362	234	187	736	261	2125.	0.22
35	308	321	202	148	634	210	1829.	0.19
36	286	301	191	142	594	200	1714.	0.18
37	251	270	162	122	502	166	1473.	0.15
38	218	249	143	103	423	140	1281.	0.13
39	194	217	124	90	351	117	1093.	0.11
40	158	187	101	65	282	94	887.	0.09
41	141	177	95	61	253	88	515.	0.08
42	126	142	67	44	183	61	623.	0.06
43	89	115	43	29	127	35	443.	0.05
44	57	92	36	19	93	19	316.	0.03
45	34	60	25	10	57	8	194.	0.02

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MATERIALS RESEARCH LABS ASCOT VALE (AUSTRALIA)
TEMPERATURES OF ORDNANCE EQUIPMENT EXPOSED AT INNISFAIL, QUEENS--ETC(U)
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TABLE J2 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CUCKOO EXT. TOP (NOSE)

RECORDER 23C. ROCKET MOTOR CHANNEL 9

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
46	24	46	15	7	42	5	139.	0.01
47	11	31	9	2	18	3	74.	0.00
48	5	16	6	0	8	2	37.	0.00
49	2	10	3	0	5	1	21.	0.00
50	1	6	1	0	1	0	9.	0.00
51	0	3	1	0	0	0	4.	0.00
52	0	2	0	0	0	0	2.	0.00
53	0	1	0	0	0	0	1.	0.00
54	0	1	0	0	0	0	1.	0.00
55	0	0	0	0	0	0	0.	0.00

TABLE K2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
 CUCKOO PROP. SURFACE (NOSE)

RECORDER 23C. ROCKET MOTOR CHANNEL 12

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1028	1031	949	1026	3680	2031	9745.	1.00
2	1028	1031	949	1026	3680	2031	9745.	1.00
3	1028	1031	949	1026	3680	2031	9745.	1.00
4	1028	1031	949	1026	3680	2030	9744.	1.00
5	1028	1031	949	1026	3680	2028	9742.	1.00
6	1028	1031	949	1026	3680	2027	9741.	1.00
7	1028	1031	949	1026	3680	2026	9740.	1.00
8	1028	1031	949	1026	3680	2019	9733.	1.00
9	1028	1031	949	1026	3680	2013	9727.	1.00
10	1028	1031	949	1026	3680	1992	9729.	1.00
11	1028	1031	948	1026	3680	1980	9693.	0.99
12	1028	1031	948	1026	3679	1942	9657.	0.99
13	1028	1031	948	1026	3678	1910	9621.	0.99
14	1028	1031	946	1026	3677	1850	9558.	0.98
15	1028	1031	946	1026	3668	1766	9465.	0.97
16	1028	1031	946	1026	3658	1705	9394.	0.96
17	1028	1031	946	1026	3633	1606	9270.	0.95
18	1028	1031	946	1026	3587	1520	9144.	0.94
19	1028	1031	946	1026	3534	1433	8998.	0.92
20	1028	1031	946	1025	3448	1330	8828.	0.90
21	1028	1031	946	1023	3405	1280	8719.	0.89
22	1028	1029	946	1012	3262	1170	8447.	0.87
23	1027	1024	937	958	3212	1059	8017.	0.82
24	998	1012	909	860	2732	942	7456.	0.77
25	940	977	872	787	2438	836	6850.	0.73
26	935	950	849	739	2252	784	6479.	0.66
27	811	887	736	656	1887	676	5653.	0.58
28	716	773	594	568	1495	535	4681.	0.48
29	619	643	483	435	1227	432	3842.	0.39
30	532	550	404	327	1016	357	3186.	0.33
31	491	510	366	269	912	334	2894.	0.30
32	421	449	311	210	767	262	2423.	0.25
33	361	374	249	160	591	210	1945.	0.20
34	296	312	197	120	466	152	1543.	0.16
35	237	242	149	85	344	110	1167.	0.12
36	212	217	133	68	304	92	1029.	0.11
37	153	170	97	43	230	64	750.	0.08
38	116	130	66	26	169	41	548.	0.06
39	77	90	45	11	111	17	351.	0.04
40	49	55	26	4	46	12	192.	0.02
41	34	42	20	1	33	9	139.	0.01
42	19	22	9	0	9	5	64.	0.00
43	10	11	5	0	2	4	32.	0.00
44	4	6	2	0	0	4	16.	0.00
45	0	5	1	0	0	3	9.	0.00

TABLE K2 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
 CUCKOO PROP. SURFACE (NOSE)

RECORDER 23C. ROCKET MOTOR CHANNEL 10

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
46	0	5	1	0	0	0	9.	0.00
47	0	5	1	0	0	0	9.	0.00
48	0	4	1	0	0	0	7.	0.00
49	0	4	0	0	0	0	6.	0.00
50	0	4	0	0	0	0	5.	0.00
51	0	3	0	0	0	0	4.	0.00
52	0	3	0	0	0	0	3.	0.00
53	0	3	0	0	0	0	3.	0.00
54	0	3	0	0	0	0	3.	0.00
55	0	2	0	0	0	0	2.	0.00
56	0	2	0	0	0	0	2.	0.00
57	0	1	0	0	0	0	1.	0.00
58	0	0	0	0	0	0	0.	0.00

TABLE L2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CUCKOO INT. PROP. CHARGE (NOSE)

RECORDER 23C. ROCKET MOTOR CHANNEL 11

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1029	1032	948	1028	3679	2031	9747.	1.00
2	1029	1032	948	1028	3679	2031	9747.	1.00
3	1029	1032	948	1028	3679	2031	9747.	1.00
4	1029	1032	948	1028	3679	2028	9744.	1.00
5	1029	1032	948	1028	3679	2026	9742.	1.00
6	1029	1032	948	1028	3679	2022	9741.	1.00
7	1029	1032	948	1028	3679	2021	9737.	1.00
8	1029	1032	947	1028	3679	2012	9727.	1.00
9	1029	1032	947	1028	3679	2000	9715.	1.00
10	1029	1032	947	1028	3679	1977	9692.	0.99
11	1029	1032	947	1028	3679	1971	9686.	0.99
12	1029	1032	946	1028	3678	1939	9652.	0.99
13	1029	1032	946	1028	3677	1934	9616.	0.99
14	1029	1032	946	1028	3670	1849	9554.	0.98
15	1029	1032	946	1028	3654	1770	9459.	0.97
16	1029	1032	946	1028	3653	1726	9411.	0.97
17	1029	1032	945	1028	3621	1647	9382.	0.95
18	1029	1032	945	1028	3580	1567	9181.	0.94
19	1029	1032	945	1028	3517	1492	9043.	0.93
20	1029	1030	945	1028	3442	1389	8863.	0.91
21	1029	1030	945	1028	3391	1341	8764.	0.90
22	1029	1024	945	1024	3237	1216	8475.	0.87
23	1022	1016	943	980	2988	1099	8045.	0.83
24	999	998	912	896	2694	978	7468.	0.77
25	921	954	871	810	2395	875	6835.	0.70
26	876	923	821	780	2216	816	6432.	0.66
27	767	850	711	688	1853	693	5562.	0.57
28	668	735	576	580	1515	578	4661.	0.48
29	582	607	488	458	1279	477	3891.	0.40
30	505	517	411	359	1118	404	3314.	0.34
31	481	494	372	311	1053	365	3076.	0.32
32	425	444	330	254	907	316	2676.	0.27
33	375	398	273	204	779	275	2344.	0.24
34	329	342	227	165	648	226	1937.	0.20
35	291	300	191	135	550	186	1654.	0.17
36	269	292	180	117	497	162	1517.	0.16
37	227	246	149	97	404	131	1256.	0.13
38	195	210	123	74	325	110	1037.	0.11
39	162	184	94	53	249	87	829.	0.09
40	128	145	70	37	183	64	627.	0.06
41	109	128	60	31	158	50	536.	0.05
42	70	100	44	14	110	29	367.	0.04
43	47	70	24	8	68	11	228.	0.02
44	24	48	14	3	42	7	138.	0.01
45	12	29	7	2	20	4	74.	0.00

TABLE M2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5603 EXT. TOP (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 13

DEG.	DEC.	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1026	1031	947	1027	3676	2030	9737.	1.00
2	1026	1031	947	1027	3676	2030	9737.	1.00
3	1026	1031	947	1027	3676	2030	9737.	1.00
4	1026	1031	947	1027	3676	2029	9736.	1.00
5	1026	1031	947	1027	3676	2028	9735.	1.00
6	1026	1031	947	1027	3676	2026	9730.	1.00
7	1026	1031	947	1027	3676	2014	9721.	1.00
8	1026	1030	946	1027	3676	2006	9708.	1.00
9	1026	1030	946	1027	3676	1987	9692.	1.00
10	1026	1030	946	1027	3676	1956	9661.	0.99
11	1026	1030	946	1027	3676	1935	9640.	0.99
12	1026	1030	946	1027	3674	1908	9611.	0.99
13	1026	1030	946	1027	3672	1864	9565.	0.98
14	1026	1030	946	1027	3664	1818	9511.	0.98
15	1026	1030	945	1027	3635	1739	9432.	0.97
16	1026	1030	945	1027	3621	1695	9342.	0.96
17	1026	1030	945	1027	3586	1610	9224.	0.95
18	1026	1030	945	1027	3533	1540	9101.	0.93
19	1026	1030	944	1027	3466	1454	8947.	0.92
20	1026	1028	944	1025	3370	1362	8755.	0.90
21	1026	1025	944	1023	3287	1308	8613.	0.88
22	1026	1017	944	1010	3075	1166	8238.	0.85
23	1005	994	930	945	2774	1030	7684.	0.79
24	940	955	894	846	2411	823	6939.	0.71
25	834	875	818	769	2379	791	6166.	0.63
26	776	831	767	720	1903	735	5732.	0.59
27	663	745	638	640	1583	620	4889.	0.50
28	555	627	513	537	1348	519	4099.	0.42
29	493	515	438	414	1187	454	3501.	0.36
30	451	459	382	319	1065	406	3082.	0.32
31	433	439	353	279	1006	389	2899.	0.30
32	394	398	305	234	907	340	2578.	0.26
33	363	376	256	199	804	295	2293.	0.24
34	334	351	227	165	698	250	2025.	0.21
35	304	322	196	144	594	202	1762.	0.18
36	291	306	187	130	553	184	1651.	0.17
37	260	273	166	108	471	150	1428.	0.15
38	234	253	146	89	395	119	1236.	0.13
39	201	219	124	71	307	96	1018.	0.10
40	174	198	104	40	236	62	814.	0.08
41	162	181	92	34	204	47	720.	0.07
42	138	149	71	20	157	19	554.	0.06
43	110	124	48	9	119	11	421.	0.04
44	93	106	26	5	82	6	318.	0.03
45	78	79	18	2	59	3	239.	0.02

TABLE N2 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5603 EXT. TOP (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 13

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
46	75	67	16	1	41	0	200.	0.02
47	55	50	3	0	23	0	136.	0.01
48	41	31	5	0	10	0	87.	0.00
49	22	22	3	0	3	0	50.	0.00
50	11	17	2	0	1	0	31.	0.00
51	8	11	2	0	0	0	21.	0.00
52	3	6	1	0	0	0	10.	0.00
53	2	3	1	0	0	0	6.	0.00
54	0	2	1	0	0	0	3.	0.00
55	0	1	1	0	0	0	2.	0.00
56	0	1	1	0	0	0	2.	0.00
57	0	1	1	0	0	0	2.	0.00
58	0	0	0	0	0	0	0.	0.00

TABLE N2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5603 PROP. SURFACE (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 14

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1027	1031	946	1027	3678	2030	9739.	1.00
2	1027	1031	946	1027	3678	2030	9739.	1.00
3	1027	1031	946	1027	3678	2030	9739.	1.00
4	1027	1031	946	1027	3678	2030	9739.	1.00
5	1027	1031	946	1027	3678	2026	9735.	1.00
6	1027	1031	946	1027	3678	2023	9732.	1.00
7	1027	1031	946	1027	3678	2012	9721.	1.00
8	1027	1031	946	1027	3677	2006	9711.	1.00
9	1027	1031	945	1027	3677	1989	9696.	1.00
10	1027	1031	945	1027	3677	1965	9672.	0.99
11	1027	1031	945	1027	3676	1946	9652.	0.99
12	1027	1031	945	1027	3676	1913	9619.	0.99
13	1027	1031	945	1027	3672	1859	9561.	0.98
14	1027	1031	945	1027	3667	1801	9491.	0.97
15	1027	1031	945	1027	3637	1718	9385.	0.96
16	1027	1031	945	1027	3623	1671	9324.	0.96
17	1027	1031	944	1027	3574	1585	9188.	0.94
18	1027	1031	944	1027	3523	1511	9063.	0.93
19	1027	1030	943	1027	3460	1426	8915.	0.92
20	1027	1029	943	1027	3355	1333	8714.	0.89
21	1027	1028	943	1024	3285	1282	8589.	0.88
22	1027	1018	943	1013	3075	1151	8227.	0.84
23	1015	998	931	943	2761	1021	7669.	0.79
24	956	965	897	847	2422	890	6977.	0.72
25	854	896	832	759	2111	780	6232.	0.64
26	787	856	785	717	1935	716	5796.	0.60
27	679	768	640	643	1608	616	4954.	0.51
28	575	651	512	531	1359	516	4144.	0.43
29	512	525	445	416	1195	455	3548.	0.36
30	461	457	383	320	1067	411	3097.	0.32
31	444	445	364	280	1020	385	2938.	0.30
32	426	411	319	244	922	334	2635.	0.27
33	372	382	272	202	819	285	2332.	0.24
34	339	357	235	162	716	242	2051.	0.21
35	316	322	202	140	614	204	1798.	0.18
36	293	310	196	133	557	189	1673.	0.17
37	277	273	170	111	484	149	1462.	0.15
38	244	253	149	95	399	120	1266.	0.13
39	216	230	129	80	315	99	1069.	0.11
40	181	194	104	55	253	63	855.	0.09
41	171	184	97	44	217	51	764.	0.08
42	144	148	74	25	170	25	586.	0.06
43	118	129	50	15	129	11	452.	0.05
44	98	108	33	6	87	8	340.	0.03
45	84	84	21	3	62	5	259.	0.03

TABLE N2 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5603 PROP. SURFACE (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 14

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
46	77	72	16	2	51	2	220.	4.02
47	59	55	11	1	23	0	149.	0.02
48	46	31	7	0	15	0	99.	0.01
49	29	23	6	0	4	0	62.	0.00
50	13	15	3	0	1	0	32.	0.00
51	12	11	3	0	0	0	26.	0.00
52	3	6	2	0	0	0	11.	0.00
53	1	3	2	0	0	0	6.	0.00
54	0	1	1	0	0	0	2.	0.00
55	0	1	1	0	0	0	2.	0.00
56	0	0	1	0	0	0	1.	0.00
57	0	0	0	0	0	0	0.	0.00

TABLE 02

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5603 INT. PROP. CHARGE (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 15

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1027	1031	946	1028	3675	2031	9738.	1.00
2	1027	1031	946	1028	3675	2031	9738.	1.00
3	1027	1031	946	1028	3675	2031	9738.	1.00
4	1027	1031	946	1028	3675	2028	9735.	1.00
5	1027	1031	946	1028	3675	2025	9732.	1.00
6	1027	1031	946	1028	3675	2021	9728.	1.00
7	1026	1031	946	1028	3675	2018	9722.	1.00
8	1026	1031	946	1028	3675	2007	9713.	1.00
9	1026	1031	945	1028	3675	1986	9691.	1.00
10	1026	1031	945	1028	3675	1955	9660.	0.99
11	1026	1031	945	1028	3674	1942	9646.	0.99
12	1026	1031	945	1028	3674	1893	9597.	0.99
13	1026	1031	945	1028	3668	1850	9548.	0.98
14	1026	1031	945	1028	3658	1784	9472.	0.97
15	1026	1031	945	1028	3639	1712	9381.	0.96
16	1026	1031	945	1028	3630	1661	9321.	0.96
17	1026	1031	944	1028	3573	1575	9182.	0.94
18	1026	1031	944	1028	3527	1516	9072.	0.93
19	1026	1030	943	1028	3460	1444	8931.	0.92
20	1026	1029	943	1027	3366	1329	8720.	0.90
21	1026	1028	943	1026	3300	1262	8605.	0.88
22	1026	1017	943	1015	3105	1171	8277.	0.85
23	1014	1001	930	965	2816	1053	7779.	0.80
24	974	976	904	872	2479	919	7124.	0.73
25	873	912	854	788	2146	805	6378.	0.65
26	815	870	795	753	1996	746	5975.	0.61
27	689	774	659	663	1651	651	5087.	0.52
28	583	663	527	558	1390	535	4254.	0.44
29	520	537	448	432	1235	466	3638.	0.37
30	465	467	393	338	1105	412	3188.	0.33
31	447	451	365	300	1057	393	3013.	0.31
32	400	410	322	251	943	346	2682.	0.28
33	376	384	278	206	825	292	2361.	0.24
34	343	356	243	180	728	254	2184.	0.22
35	318	328	206	146	631	216	1847.	0.19
36	304	317	199	134	585	193	1732.	0.18
37	277	283	178	116	499	161	1514.	0.16
38	249	261	157	99	416	132	1314.	0.13
39	226	229	134	84	334	106	1113.	0.11
40	186	205	110	63	258	75	897.	0.09
41	177	192	100	49	229	64	811.	0.08
42	149	158	79	30	171	33	623.	0.06
43	126	134	54	14	139	14	481.	0.05
44	104	111	31	7	103	10	366.	0.04
45	84	89	23	5	63	4	268.	0.03

TABLE 02 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5603 INT. PROP. CHARGE (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 15

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
46	79	78	18	3	55	1	234.	0.02
47	60	56	12	1	26	0	155.	0.02
48	47	36	7	0	15	0	125.	0.01
49	32	24	5	0	7	0	66.	0.00
50	16	16	3	0	1	0	36.	0.00
51	9	13	2	0	0	0	24.	0.00
52	3	5	1	0	0	0	9.	0.00
53	1	3	1	0	0	0	5.	0.00
54	0	3	1	0	0	0	4.	0.00
55	0	1	1	0	0	0	2.	0.00
56	0	0	1	0	0	0	1.	0.00
57	0	0	1	0	0	0	1.	0.00
58	0	0	0	0	0	0	0.	0.00

TABLE-P2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5603 EXT. BOTTOM (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 16

DEG.	DEC	JAN	FEB	MAR	ANT-SPRING	WINTER	TOTAL	C.PROB
1	1027	1030	947	1028	3676	2031	9739.	1.00
2	1027	1030	947	1028	3676	2031	9739.	1.00
3	1027	1030	947	1028	3676	2031	9739.	1.00
4	1027	1030	947	1028	3676	2030	9738.	1.00
5	1027	1030	947	1028	3676	2026	9734.	1.00
6	1027	1030	947	1028	3676	2024	9732.	1.00
7	1027	1030	947	1028	3676	2019	9727.	1.00
8	1027	1030	946	1028	3676	2008	9715.	1.00
9	1027	1030	946	1028	3676	1994	9701.	1.00
10	1027	1030	946	1028	3675	1964	9673.	0.99
11	1027	1030	946	1028	3675	1949	9655.	0.99
12	1027	1030	946	1028	3675	1916	9619.	0.99
13	1027	1030	946	1028	3675	1872	9575.	0.98
14	1027	1030	946	1028	3668	1826	9522.	0.98
15	1027	1030	945	1028	3644	1749	9423.	0.97
16	1027	1030	945	1028	3628	1701	9359.	0.96
17	1027	1030	945	1028	3588	1619	9237.	0.95
18	1027	1030	944	1028	3534	1538	9101.	0.93
19	1027	1030	944	1028	3476	1448	8953.	0.92
20	1027	1027	944	1027	3368	1348	8741.	0.90
21	1027	1026	944	1025	3295	1292	8609.	0.88
22	1027	1019	944	1008	3082	1160	8240.	0.85
23	1018	1002	939	948	2781	1032	7720.	0.79
24	969	969	907	857	2434	891	7027.	0.72
25	870	908	843	781	2106	781	6289.	0.65
26	810	869	787	745	1941	724	5876.	0.60
27	689	774	652	645	1592	625	4977.	0.51
28	578	659	518	539	1344	512	4150.	0.43
29	535	529	444	409	1192	438	3517.	0.36
30	459	468	382	310	1071	394	3084.	0.32
31	445	442	351	274	1025	369	2906.	0.30
32	399	390	314	228	900	316	2555.	0.26
33	367	372	272	197	799	276	2283.	0.23
34	339	349	236	163	678	230	1995.	0.20
35	306	314	203	142	588	184	1737.	0.18
36	294	300	191	132	543	166	1623.	0.17
37	250	267	169	120	452	136	1400.	0.14
38	226	241	147	106	362	105	1167.	0.12
39	198	208	125	84	277	75	967.	0.10
40	170	182	99	71	213	39	774.	0.08
41	155	162	87	60	189	20	681.	0.07
42	137	136	66	33	144	12	528.	0.05
43	106	112	41	23	100	8	390.	0.04
44	88	93	20	13	64	4	282.	0.03
45	76	69	14	6	43	1	209.	0.02

TABLE 02

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5603 PROP. SURFACE (NOSE)

RECORDER 23C. ROCKET MOTOR CHANNEL 17

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1027	1030	947	1028	3676	2031	9739.	1.00
2	1027	1030	947	1028	3676	2031	9739.	1.00
3	1027	1030	947	1028	3676	2030	9738.	1.00
4	1027	1030	947	1028	3676	2030	9738.	1.00
5	1027	1030	947	1023	3676	2020	9734.	1.00
6	1027	1030	947	1028	3676	2026	9734.	1.00
7	1026	1030	947	1028	3676	2017	9724.	1.00
8	1026	1030	946	1028	3676	2008	9714.	1.00
9	1026	1030	946	1028	3676	1995	9699.	1.00
10	1026	1030	946	1028	3676	1964	9670.	0.99
11	1026	1030	946	1023	3676	1946	9652.	0.99
12	1026	1030	946	1028	3675	1909	9614.	0.99
13	1026	1030	946	1023	3672	1870	9572.	0.98
14	1026	1030	946	1028	3661	1800	9496.	0.98
15	1026	1030	945	1028	3641	1739	9489.	0.97
16	1026	1030	945	1026	3627	1690	9351.	0.96
17	1026	1030	945	1028	3587	1602	9218.	0.95
18	1026	1030	944	1028	3523	1528	9084.	0.93
19	1026	1028	944	1023	3465	1442	8933.	0.92
20	1026	1027	944	1025	3347	1352	8721.	0.90
21	1026	1023	944	1022	3273	1308	8590.	0.88
22	1026	1014	944	990	3056	1174	8212.	0.84
23	1014	997	921	928	2754	1032	7626.	0.78
24	955	958	886	816	2415	909	6939.	0.71
25	853	891	818	742	2098	799	6281.	0.64
26	785	851	768	708	1937	751	5808.	0.63
27	670	752	619	626	1589	633	4889.	0.55
28	564	621	503	524	1365	530	4107.	0.42
29	496	513	433	417	1208	472	3539.	0.36
30	453	458	373	313	1086	420	3105.	0.32
31	441	443	344	279	1030	406	2943.	0.30
32	395	397	307	231	921	348	2599.	0.27
33	360	373	255	195	807	310	2305.	0.24
34	331	351	230	163	712	271	2053.	0.21
35	304	314	200	144	618	221	1801.	0.18
36	259	299	166	131	575	207	1687.	0.17
37	261	271	164	116	478	160	1450.	0.15
38	231	241	147	99	419	130	1272.	0.13
39	200	211	122	82	315	107	1037.	0.11
40	168	182	93	65	227	77	812.	0.08
41	160	167	85	52	203	59	726.	0.07
42	130	137	66	33	160	33	559.	0.06
43	107	113	40	22	131	10	428.	0.04
44	90	94	25	9	85	8	311.	0.03
45	77	71	17	5	51	4	225.	0.02

TABLE 02 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5603 PROP. SURFACE (NOSE)

RECORDER 23C. ROCKET MOTOR CHANNEL 17

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
46	71	60	15	3	41	2	192.	0.02
47	54	38	11	1	18	0	122.	0.01
48	35	25	8	0	10	0	78.	0.00
49	21	19	6	0	1	0	47.	0.00
50	9	9	2	0	0	0	20.	0.00
51	7	7	1	0	0	0	15.	0.00
52	1	4	1	0	3	0	6.	0.00
53	0	1	1	0	0	0	2.	0.00
54	0	0	1	0	0	0	1.	0.00
55	0	0	1	0	0	0	1.	0.00
56	0	0	1	0	0	0	1.	0.00
57	0	0	1	0	0	0	1.	0.00
58	0	0	1	0	0	0	1.	0.00
59	0	0	1	0	0	0	1.	0.00
60	0	0	1	0	0	0	1.	0.00
61	0	0	1	0	0	0	1.	0.00
62	0	0	1	0	0	0	1.	0.00
63	0	0	1	0	0	0	1.	0.00
64	0	0	1	0	0	0	1.	0.00
65	0	0	1	0	0	0	1.	0.00
66	0	0	1	0	0	0	1.	0.00
67	0	0	0	0	0	0	0.	0.00

TABLE R2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5603 INT. PROP. SURFACE (NOSE)

RECORDER 23C. ROCKET MOTOR CHANNEL 18

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1027	1031	947	1029	3675	2031	9742.	1.00
2	1027	1031	947	1029	3675	2031	9740.	1.00
3	1027	1031	947	1029	3675	2031	9740.	1.00
4	1027	1031	947	1029	3675	2030	9739.	1.00
5	1027	1031	947	1029	3675	2027	9736.	1.00
6	1027	1031	947	1029	3675	2022	9731.	1.00
7	1027	1031	947	1029	3675	2015	9725.	1.00
8	1027	1031	946	1029	3675	2026	9714.	1.00
9	1027	1031	946	1029	3675	1983	9691.	0.99
10	1027	1031	946	1029	3675	1961	9669.	0.99
11	1027	1031	946	1029	3675	1941	9649.	0.99
12	1027	1031	946	1029	3674	1893	9600.	0.99
13	1027	1031	946	1029	3666	1843	9542.	0.98
14	1027	1031	946	1029	3654	1781	9468.	0.97
15	1027	1031	945	1029	3633	1701	9366.	0.96
16	1027	1031	945	1029	3616	1650	9326.	0.96
17	1027	1031	945	1029	3581	1583	9196.	0.94
18	1027	1031	945	1029	3522	1500	9062.	0.93
19	1027	1031	944	1029	3459	1424	8913.	0.92
20	1027	1027	944	1029	3355	1319	8771.	0.89
21	1027	1027	944	1027	3292	1271	8588.	0.86
22	1027	1017	944	1014	3080	1154	8236.	0.85
23	1016	993	927	963	2300	1017	7721.	0.79
24	962	964	896	867	2455	894	7038.	0.72
25	854	897	841	785	2122	792	6291.	0.65
26	822	847	791	744	1943	742	5869.	0.60
27	676	764	656	652	1618	633	4999.	0.51
28	573	637	513	540	1369	520	4157.	0.43
29	493	519	446	417	1220	462	3562.	0.37
30	455	463	375	324	1095	416	3128.	0.32
31	441	443	350	287	1044	394	2964.	0.30
32	403	404	314	246	934	343	2644.	0.27
33	366	375	270	231	826	310	2348.	0.24
34	336	352	259	173	718	266	2084.	0.21
35	305	321	213	149	629	216	1836.	0.19
36	294	301	200	138	590	201	1724.	0.18
37	263	274	176	117	493	164	1487.	0.15
38	236	247	152	98	409	139	1281.	0.13
39	203	214	127	81	317	108	1050.	0.11
40	176	186	104	66	239	86	857.	0.09
41	162	174	98	52	217	67	770.	0.08
42	142	143	73	31	171	33	593.	0.06
43	114	118	50	19	138	17	456.	0.05
44	94	102	31	7	93	7	334.	0.03
45	79	77	22	5	57	3	243.	0.02

TABLE S2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5604 EXT. TOP (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 19

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1027	1030	947	1028	3674	2031	9737.	1.00
2	1027	1030	947	1028	3674	2031	9737.	1.00
3	1027	1030	947	1028	3674	2031	9737.	1.00
4	1027	1030	947	1028	3674	2030	9736.	1.00
5	1027	1030	947	1028	3674	2026	9732.	1.00
6	1027	1030	947	1028	3674	2025	9731.	1.00
7	1027	1030	946	1028	3674	2020	9725.	1.00
8	1027	1030	946	1028	3674	2012	9717.	1.00
9	1027	1030	946	1028	3674	1979	9684.	0.99
10	1027	1030	946	1028	3674	1954	9659.	0.99
11	1027	1030	946	1028	3673	1935	9639.	0.99
12	1027	1030	946	1028	3672	1894	9597.	0.99
13	1027	1030	946	1028	3666	1846	9543.	0.98
14	1027	1030	946	1028	3659	1787	9477.	0.97
15	1027	1030	946	1028	3628	1704	9363.	0.96
16	1027	1030	946	1028	3622	1659	9312.	0.96
17	1027	1030	945	1028	3573	1572	9175.	0.94
18	1027	1030	945	1028	3514	1486	9030.	0.93
19	1027	1030	944	1028	3444	1413	8886.	0.91
20	1027	1026	944	1027	3316	1316	8656.	0.89
21	1027	1025	944	1025	3238	1265	8524.	0.88
22	1027	1017	944	1011	3028	1126	8153.	0.84
23	1014	995	932	930	2719	1002	7592.	0.78
24	943	952	896	839	2380	887	6897.	0.71
25	834	885	828	759	2061	774	6141.	0.63
26	779	841	783	725	1915	718	5761.	0.59
27	647	739	629	637	1589	621	4862.	0.50
28	569	611	515	542	1347	521	4105.	0.42
29	494	513	440	418	1193	453	3511.	0.36
30	448	457	374	325	1076	409	3089.	0.32
31	423	432	344	287	1022	390	2898.	0.30
32	397	400	305	241	923	347	2613.	0.27
33	367	361	269	200	823	299	2319.	0.24
34	328	334	246	172	708	254	2042.	0.21
35	297	312	212	153	607	211	1792.	0.18
36	284	291	199	142	560	191	1667.	0.17
37	250	270	173	121	476	152	1442.	0.15
38	218	244	154	103	405	122	1246.	0.13
39	196	217	135	89	324	96	1057.	0.11
40	166	195	118	70	252	68	869.	0.09
41	154	178	102	65	220	51	770.	0.08
42	117	143	81	45	165	22	573.	0.06
43	89	104	64	28	116	12	413.	0.04
44	68	88	48	19	74	9	306.	0.03
45	39	68	29	8	46	5	195.	0.02

TABLE T2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5604 PROP. SURFACE (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 20

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1028	1030	947	1028	3674	2030	9737.	1.00
2	1028	1030	947	1028	3674	2030	9737.	1.00
3	1028	1030	947	1028	3674	2030	9737.	1.00
4	1028	1030	947	1028	3674	2029	9736.	1.00
5	1028	1030	947	1028	3674	2022	9729.	1.00
6	1028	1030	947	1028	3674	2020	9727.	1.00
7	1028	1030	947	1028	3674	2008	9715.	1.00
8	1028	1030	946	1028	3674	1998	9704.	1.00
9	1028	1030	946	1028	3674	1981	9687.	0.99
10	1028	1030	946	1028	3674	1943	9649.	0.99
11	1028	1030	946	1028	3674	1925	9631.	0.99
12	1028	1030	946	1028	3673	1884	9589.	0.98
13	1028	1030	946	1028	3666	1833	9531.	0.98
14	1028	1030	946	1028	3655	1764	9451.	0.97
15	1028	1030	946	1028	3630	1678	9340.	0.96
16	1028	1030	946	1028	3620	1640	9292.	0.95
17	1028	1030	945	1028	3572	1555	9158.	0.94
18	1028	1030	945	1028	3518	1470	9019.	0.93
19	1028	1029	944	1028	3444	1393	8866.	0.91
20	1028	1027	944	1026	3340	1297	8662.	0.89
21	1028	1025	944	1025	3276	1249	8547.	0.88
22	1028	1017	944	1014	3065	1132	8200.	0.84
23	1020	998	932	954	2785	1003	7692.	0.79
24	957	972	900	861	2447	884	7021.	0.72
25	859	904	847	784	2126	774	6294.	0.65
26	799	859	794	746	1965	726	5889.	0.60
27	679	756	640	655	1638	613	4981.	0.51
28	583	637	519	533	1382	508	4162.	0.43
29	506	517	446	415	1210	449	3543.	0.36
30	453	458	384	329	1097	401	3122.	0.32
31	432	439	354	299	1035	372	2931.	0.30
32	400	404	312	246	934	333	2629.	0.27
33	369	373	280	201	833	291	2347.	0.24
34	336	341	242	172	722	251	2064.	0.21
35	303	314	209	150	617	208	1801.	0.18
36	290	301	199	136	576	185	1687.	0.17
37	251	277	174	115	491	149	1457.	0.15
38	223	243	151	102	404	119	1242.	0.13
39	194	218	132	81	316	100	1041.	0.11
40	167	192	110	64	240	73	846.	0.09
41	147	179	100	58	212	53	749.	0.08
42	120	139	75	40	163	26	563.	0.06
43	88	110	56	26	118	14	412.	0.04
44	64	89	37	16	80	9	295.	0.03
45	41	61	22	8	46	5	183.	0.02

TABLE U2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5604 INT. PROP. CHARGE (TAIL)

RECORDER 23C. ROCKET MOTOR CHANNEL 21

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1028	1030	947	1028	3674	2030	9737.	1.00
2	1028	1030	947	1028	3674	2030	9737.	1.00
3	1028	1030	947	1028	3674	2030	9737.	1.00
4	1028	1030	947	1028	3674	2029	9736.	1.00
5	1028	1030	947	1028	3674	2028	9735.	1.00
6	1028	1030	947	1028	3674	2024	9731.	1.00
7	1028	1030	946	1028	3674	2016	9722.	1.00
8	1028	1030	946	1028	3674	2007	9713.	1.00
9	1028	1030	946	1028	3674	1979	9685.	0.99
10	1028	1030	946	1028	3674	1935	9641.	0.99
11	1028	1030	946	1028	3674	1914	9620.	0.99
12	1028	1030	946	1028	3671	1880	9583.	0.98
13	1028	1030	946	1028	3665	1839	9536.	0.98
14	1028	1030	946	1028	3659	1765	9456.	0.97
15	1028	1030	945	1028	3629	1677	9337.	0.96
16	1028	1030	945	1028	3614	1635	9280.	0.95
17	1028	1030	945	1028	3573	1557	9161.	0.94
18	1028	1030	945	1028	3518	1483	9032.	0.93
19	1028	1029	944	1028	3462	1391	8882.	0.91
20	1028	1026	944	1026	3372	1297	8693.	0.89
21	1028	1025	944	1024	3301	1249	8571.	0.88
22	1028	1018	944	1011	3114	1143	8258.	0.85
23	1019	1000	929	949	2808	1006	7711.	0.79
24	964	969	897	859	2497	882	7068.	0.73
25	875	912	851	779	2172	781	6370.	0.65
26	815	867	811	741	2027	727	5988.	0.61
27	690	764	654	663	1703	619	5093.	0.52
28	590	651	530	552	1417	520	4260.	0.44
29	511	525	445	440	1236	454	3611.	0.37
30	461	466	386	351	1117	404	3185.	0.33
31	442	446	357	309	1063	381	2998.	0.31
32	404	407	315	253	955	330	2664.	0.27
33	372	376	281	206	862	292	2389.	0.25
34	341	339	250	172	745	250	2097.	0.22
35	307	314	218	153	643	216	1851.	0.19
36	290	302	205	144	595	192	1728.	0.18
37	258	275	179	120	514	160	1506.	0.15
38	227	248	154	106	423	127	1285.	0.13
39	201	218	138	89	336	102	1084.	0.11
40	170	198	116	65	265	76	890.	0.09
41	154	183	102	60	226	60	785.	0.08
42	123	146	73	41	167	30	580.	0.06
43	93	113	60	29	131	13	439.	0.05
44	66	93	38	18	86	9	310.	0.03
45	40	66	22	9	49	4	190.	0.02

TABLE V2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
LAP. 5604 EXT. BOTTOM (TAIL)

DEG.	RECORDER 23C.					ROCKET MOTOR CHANNEL 22		TOTAL	C.PROB
	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER			
1	884	514	464	1027	3390	2030	8309.	1.00	
2	884	514	464	1027	3390	2030	8309.	1.00	
3	884	514	464	1027	3390	2030	8309.	1.00	
4	884	514	464	1027	3390	2029	8308.	1.00	
5	884	514	464	1027	3390	2028	8307.	1.00	
6	884	514	464	1027	3390	2025	8304.	1.00	
7	884	514	463	1027	3390	2017	8295.	1.00	
8	884	514	463	1027	3390	2005	8283.	1.00	
9	884	514	463	1027	3390	1986	8264.	0.99	
10	884	514	463	1027	3390	1951	8229.	0.99	
11	884	514	463	1027	3390	1933	8211.	0.99	
12	884	514	463	1027	3389	1896	8173.	0.98	
13	884	514	463	1027	3382	1846	8116.	0.98	
14	884	514	463	1027	3375	1788	8051.	0.97	
15	884	514	462	1027	3347	1706	7940.	0.96	
16	884	514	462	1027	3330	1655	7872.	0.95	
17	884	514	462	1027	3292	1579	7758.	0.93	
18	884	514	461	1027	3227	1498	7611.	0.92	
19	884	514	461	1027	3151	1415	7452.	0.90	
20	884	512	461	1026	3054	1333	7270.	0.87	
21	884	511	461	1025	2995	1283	7159.	0.86	
22	884	502	461	1011	2801	1153	6812.	0.82	
23	874	489	451	951	2521	1027	6313.	0.76	
24	829	460	416	860	2245	920	5730.	0.69	
25	731	405	352	766	1962	819	5035.	0.61	
26	691	376	322	727	1796	755	4667.	0.56	
27	600	316	274	640	1483	638	3951.	0.48	
28	511	270	251	547	1234	548	3361.	0.40	
29	450	243	217	420	1081	466	2877.	0.35	
30	397	222	178	335	966	396	2494.	0.30	
31	380	209	164	291	914	379	2337.	0.28	
32	345	189	137	239	829	337	2076.	0.25	
33	319	180	119	196	720	292	1826.	0.22	
34	289	165	108	161	614	240	1577.	0.19	
35	257	152	91	141	525	201	1367.	0.16	
36	246	142	86	135	477	183	1269.	0.15	
37	213	120	78	112	409	146	1078.	0.13	
38	183	101	71	99	326	120	900.	0.11	
39	160	88	60	77	244	93	722.	0.09	
40	130	66	41	59	179	63	538.	0.06	
41	113	60	37	46	155	45	456.	0.05	
42	87	42	26	32	112	21	320.	0.04	
43	65	33	16	19	70	13	216.	0.03	
44	45	21	6	7	38	10	127.	0.02	
45	28	13	3	1	15	4	64.	0.00	

TABLE W2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5604 PROP. SURFACE (NOSE)

RECORDER 23C. ROCKET MOTOR CHANNEL 23

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1028	1030	947	1027	3675	2030	9737.	1.00
2	1028	1030	947	1027	3675	2030	9737.	1.00
3	1028	1030	947	1027	3675	2029	9736.	1.00
4	1028	1030	947	1027	3675	2027	9734.	1.00
5	1028	1030	947	1027	3675	2021	9728.	1.00
6	1028	1030	946	1027	3675	2019	9725.	1.00
7	1028	1030	946	1027	3675	2011	9717.	1.00
8	1028	1030	946	1027	3675	1998	9704.	1.00
9	1028	1030	946	1027	3675	1970	9676.	0.99
10	1028	1030	946	1027	3675	1934	9640.	0.99
11	1028	1030	946	1027	3675	1915	9621.	0.99
12	1028	1030	946	1027	3672	1870	9573.	0.98
13	1028	1030	946	1027	3663	1817	9511.	0.98
14	1028	1030	945	1027	3651	1757	9438.	0.97
15	1028	1030	945	1027	3631	1677	9338.	0.96
16	1028	1030	945	1027	3610	1641	9281.	0.95
17	1028	1030	945	1027	3561	1540	9131.	0.94
18	1028	1030	944	1027	3506	1457	8992.	0.92
19	1028	1029	944	1027	3432	1375	8835.	0.91
20	1028	1026	944	1026	3328	1275	8627.	0.89
21	1028	1024	944	1020	3248	1235	8499.	0.87
22	1028	1017	944	998	3037	1114	8138.	0.84
23	1016	997	923	923	2714	984	7557.	0.78
24	954	951	883	830	2384	879	6881.	0.71
25	850	893	831	748	2083	769	6174.	0.63
26	804	855	783	709	1908	718	5777.	0.59
27	667	754	652	636	1570	618	4897.	0.50
28	574	624	519	536	1369	527	4149.	0.43
29	505	508	440	404	1204	458	3519.	0.36
30	447	450	371	317	1078	409	3072.	0.32
31	425	428	348	284	1028	384	2897.	0.30
32	396	394	303	238	931	331	2593.	0.27
33	361	358	267	199	818	293	2296.	0.24
34	323	329	235	168	718	256	2029.	0.21
35	289	303	201	141	615	212	1761.	0.18
36	283	287	190	132	567	190	1649.	0.17
37	242	262	171	108	477	159	1419.	0.15
38	214	237	152	94	392	125	1214.	0.12
39	187	204	128	75	299	103	996.	0.10
40	154	183	97	59	229	74	796.	0.08
41	138	161	90	48	197	61	695.	0.07
42	103	122	68	33	149	27	502.	0.05
43	80	96	47	23	108	15	369.	0.04
44	59	74	26	10	66	7	242.	0.02
45	35	47	18	5	31	4	140.	0.01

TABLE X2

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

LAP. 5604 INT. PROP. CHARGE (NOSE)

RECORDER 23c. ROCKET MOTOR CHANNEL 24

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1028	1031	947	1027	3676	2030	9739.	1.00
2	1028	1031	947	1027	3676	2030	9739.	1.00
3	1028	1031	947	1027	3676	2030	9739.	1.00
4	1028	1031	947	1027	3676	2028	9737.	1.00
5	1028	1031	947	1027	3676	2024	9733.	1.00
6	1028	1031	946	1027	3676	2021	9729.	1.00
7	1028	1031	946	1027	3676	2010	9718.	1.00
8	1028	1031	946	1027	3676	1995	9703.	1.00
9	1028	1031	946	1027	3676	1977	9685.	0.99
10	1028	1031	946	1027	3676	1941	9649.	0.99
11	1028	1031	946	1027	3676	1925	9633.	0.99
12	1028	1031	946	1027	3673	1890	9595.	0.99
13	1028	1031	946	1027	3668	1843	9543.	0.98
14	1028	1031	945	1027	3659	1788	9478.	0.97
15	1028	1031	945	1027	3642	1706	9379.	0.96
16	1028	1031	945	1027	3627	1655	9313.	0.96
17	1028	1031	945	1027	3580	1566	9177.	0.94
18	1028	1031	944	1027	3520	1482	9032.	0.93
19	1028	1030	944	1027	3453	1408	8890.	0.91
20	1028	1028	944	1025	3350	1308	8683.	0.89
21	1028	1026	944	1022	3276	1246	8542.	0.88
22	1028	1017	944	1008	3089	1119	8205.	0.84
23	1019	1001	933	944	2776	999	7672.	0.79
24	964	965	900	850	2453	887	7019.	0.72
25	863	905	840	760	2119	777	6264.	0.64
26	815	861	803	729	1959	720	5887.	0.60
27	680	764	647	639	1633	614	4977.	0.51
28	586	639	520	543	1387	523	4198.	0.43
29	507	521	442	421	1214	468	3573.	0.37
30	456	459	378	333	1089	418	3133.	0.32
31	438	437	359	295	1034	393	2956.	0.30
32	396	398	319	252	943	347	2655.	0.27
33	364	367	280	200	845	308	2364.	0.24
34	333	335	241	167	737	261	2074.	0.21
35	297	310	215	145	638	211	1816.	0.19
36	285	298	196	138	587	196	1700.	0.17
37	254	272	168	109	498	154	1455.	0.15
38	221	244	150	96	418	126	1255.	0.13
39	192	213	135	78	315	106	1039.	0.11
40	160	186	103	64	240	70	829.	0.09
41	147	166	95	51	214	61	734.	0.08
42	105	130	64	36	160	33	528.	0.05
43	86	108	49	23	119	16	401.	0.04
44	63	80	29	13	72	11	268.	0.03
45	38	50	18	6	34	0	152.	0.02

TABLE A3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
 SIDEWINDER CENTRE (BOXED)

DEG.	RECORDER 31A.					ROCKET MOTOR CHANNEL 1		TOTAL	C. PROB
	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER			
1	1019	1030	949	1031	3697	2032	9758.	1.00	
2	1019	1030	949	1031	3697	2032	9758.	1.00	
3	1019	1030	949	1031	3697	2032	9758.	1.00	
4	1019	1030	949	1031	3697	2032	9758.	1.00	
5	1019	1030	949	1031	3697	2032	9758.	1.00	
6	1019	1030	949	1031	3697	2032	9758.	1.00	
7	1019	1030	949	1031	3697	2029	9755.	1.00	
8	1019	1030	949	1031	3697	2025	9751.	1.00	
9	1019	1030	949	1031	3697	2019	9745.	1.00	
10	1019	1030	949	1031	3696	2007	9732.	1.00	
11	1019	1030	949	1031	3696	2000	9725.	1.00	
12	1019	1030	949	1031	3695	1984	9708.	0.99	
13	1019	1030	949	1031	3692	1964	9685.	0.99	
14	1019	1030	949	1031	3684	1923	9636.	0.99	
15	1019	1030	949	1031	3670	1869	9568.	0.98	
16	1019	1030	949	1031	3655	1826	9510.	0.97	
17	1018	1030	949	1031	3618	1717	9363.	0.96	
18	1018	1030	949	1029	3550	1557	9133.	0.94	
19	1018	1029	949	1021	3442	1366	8825.	0.90	
20	1013	1028	949	1012	3213	1158	8373.	0.86	
21	1006	1025	949	1002	3077	1084	8143.	0.83	
22	975	1008	946	950	2869	946	7583.	0.77	
23	900	965	876	825	2248	806	6620.	0.68	
24	793	881	692	630	1933	704	5633.	0.58	
25	700	741	566	494	1702	603	4806.	0.49	
26	658	689	517	448	1592	559	4463.	0.46	
27	590	618	452	366	1428	487	3941.	0.40	
28	535	555	401	322	1268	401	3462.	0.36	
29	483	513	351	282	1124	324	3077.	0.32	
30	439	471	300	248	1012	250	2720.	0.28	
31	426	452	291	225	937	227	2555.	0.26	
32	392	418	267	190	823	180	2260.	0.23	
33	357	384	231	164	694	130	1958.	0.20	
34	312	353	202	131	604	113	1715.	0.18	
35	280	323	177	96	511	72	1459.	0.15	
36	266	308	165	85	467	58	1349.	0.14	
37	227	278	137	63	380	43	1137.	0.12	
38	196	253	122	36	327	20	957.	0.10	
39	163	216	101	27	253	12	772.	0.08	
40	140	183	84	16	191	7	621.	0.06	
41	120	166	77	9	163	4	539.	0.06	
42	88	138	58	3	111	1	399.	0.04	
43	58	99	46	2	63	0	268.	0.03	
44	43	72	31	2	40	0	186.	0.02	
45	28	54	22	0	26	0	130.	0.01	

TABLE B3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS
 SIDEWINDER MOTOR SKIN (BOXED)

DEG.	RECORDER 31A.					ROCKET MOTOR CHANNEL 2		TOTAL	C.PROB
	DEC	JAN	FEB	MAR	APR-SPRING	WINTER			
1	1019	1030	949	1030	3697	2032	9757.	1.00	
2	1019	1030	949	1030	3697	2032	9757.	1.00	
3	1019	1030	949	1030	3697	2032	9757.	1.00	
4	1019	1030	949	1030	3697	2032	9757.	1.00	
5	1019	1030	949	1030	3697	2032	9757.	1.00	
6	1019	1030	949	1030	3697	2032	9757.	1.00	
7	1019	1030	949	1030	3697	2029	9754.	1.00	
8	1019	1030	949	1030	3697	2022	9750.	1.00	
9	1019	1030	949	1030	3697	2019	9744.	1.00	
10	1019	1030	949	1030	3696	2006	9732.	1.00	
11	1019	1030	949	1030	3696	1998	9722.	1.00	
12	1019	1030	949	1030	3696	1981	9725.	0.99	
13	1019	1030	949	1030	3693	1965	9684.	0.99	
14	1019	1030	949	1030	3682	1910	9626.	0.99	
15	1019	1030	949	1030	3667	1861	9556.	0.98	
16	1019	1030	949	1030	3654	1822	9504.	0.97	
17	1018	1030	949	1030	3615	1789	9351.	0.96	
18	1018	1030	949	1028	3548	1548	9121.	0.93	
19	1018	1022	949	1021	3434	1350	8831.	0.93	
20	1012	1023	949	1011	3208	1161	8369.	0.86	
21	1005	1025	949	1008	3059	1075	8111.	0.83	
22	972	1009	947	957	2649	930	7472.	0.77	
23	893	955	868	822	2235	802	6575.	0.67	
24	775	862	692	634	1910	698	5571.	0.57	
25	691	732	558	500	1685	599	4765.	0.49	
26	656	676	518	442	1589	561	4440.	0.46	
27	588	607	450	373	1410	485	3913.	0.40	
28	531	553	397	314	1259	405	3462.	0.35	
29	482	511	348	278	1140	322	3081.	0.32	
30	437	464	305	248	1000	256	2710.	0.28	
31	420	444	294	227	942	228	2555.	0.26	
32	384	413	263	192	821	185	2256.	0.23	
33	354	362	252	163	722	139	1972.	0.20	
34	316	347	213	141	606	111	1734.	0.18	
35	285	319	179	103	524	82	1492.	0.15	
36	261	306	167	86	476	69	1365.	0.14	
37	233	277	146	63	396	42	1157.	0.12	
38	197	251	119	39	333	25	964.	0.10	
39	169	221	104	33	267	14	808.	0.09	
40	140	186	88	19	199	6	638.	0.07	
41	123	173	80	11	176	5	568.	0.06	
42	96	137	63	5	115	2	415.	0.04	
43	60	104	49	2	69	0	284.	0.03	
44	47	80	36	2	47	0	212.	0.02	
45	29	60	27	1	30	0	147.	0.02	

TABLE C3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

SIDEWINDER HALFWAY BET. SKIN AND BOX

RECORDER 31A. ROCKET MOTOR CHANNEL 3

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1019	1030	948	1030	3697	2032	9756.	1.00
2	1019	1030	948	1030	3697	2032	9756.	1.00
3	1019	1030	948	1030	3697	2032	9756.	1.00
4	1019	1030	948	1030	3697	2032	9756.	1.00
5	1019	1030	948	1030	3697	2032	9756.	1.00
6	1019	1030	948	1030	3697	2030	9754.	1.00
7	1019	1030	948	1030	3697	2025	9749.	1.00
8	1019	1030	948	1030	3697	2020	9744.	1.00
9	1019	1030	948	1030	3697	2012	9736.	1.00
10	1019	1030	948	1030	3697	1993	9717.	1.00
11	1019	1030	948	1030	3697	1981	9705.	0.99
12	1019	1030	948	1030	3695	1958	9680.	0.99
13	1019	1030	948	1030	3688	1922	9637.	0.99
14	1019	1030	948	1030	3676	1871	9574.	0.98
15	1019	1030	948	1030	3638	1805	9470.	0.97
16	1018	1030	948	1030	3623	1742	9391.	0.96
17	1018	1030	948	1029	3563	1621	9229.	0.94
18	1018	1029	948	1021	3464	1440	8926.	0.91
19	1017	1028	948	1012	3302	1240	8551.	0.88
20	1000	1021	948	996	3046	1050	8061.	0.83
21	988	1012	947	982	2866	989	7784.	0.80
22	927	980	935	914	2421	853	7010.	0.72
23	832	913	819	768	2007	747	6084.	0.62
24	703	794	616	562	1735	672	5087.	0.52
25	628	656	504	446	1547	604	4385.	0.45
26	588	608	465	407	1461	575	4124.	0.42
27	537	549	410	351	1322	529	3698.	0.38
28	495	494	361	303	1206	455	3314.	0.34
29	453	465	316	269	1110	398	3011.	0.31
30	413	432	294	236	1027	349	2751.	0.28
31	396	415	282	222	982	323	2620.	0.27
32	371	391	260	209	891	292	2414.	0.25
33	344	368	224	185	806	243	2170.	0.22
34	314	344	213	166	731	199	1967.	0.20
35	295	326	197	141	647	165	1771.	0.18
36	283	310	186	130	608	150	1667.	0.17
37	262	293	168	117	543	124	1500.	0.15
38	244	273	154	84	486	94	1335.	0.14
39	212	249	143	67	414	74	1159.	0.12
40	193	229	124	58	357	49	1010.	0.10
41	180	223	114	57	335	43	952.	0.10
42	149	204	101	45	285	33	817.	0.08
43	122	187	94	31	227	23	684.	0.07
44	101	155	83	26	181	17	563.	0.06
45	86	132	74	19	150	9	470.	0.05

TABLE D3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

SIDEWINDER OUTER CASE

RECORDER 31A. ROCKET MOTOR CHANNEL 4

DEG.	DEC.	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1018	1031	949	1030	3696	2032	9756.	1.00
2	1018	1031	949	1030	3696	2032	9756.	1.00
3	1018	1031	949	1030	3696	2032	9756.	1.00
4	1018	1031	949	1030	3696	2030	9754.	1.00
5	1018	1031	949	1030	3696	2025	9749.	1.00
6	1018	1031	949	1030	3696	2024	9748.	1.00
7	1018	1031	947	1030	3696	2020	9744.	1.00
8	1018	1031	949	1030	3696	2009	9733.	1.00
9	1018	1031	949	1030	3696	1983	9727.	0.99
10	1018	1031	949	1030	3694	1962	9684.	0.99
11	1018	1031	949	1030	3693	1949	9670.	0.99
12	1018	1031	949	1030	3686	1916	9630.	0.99
13	1018	1031	947	1030	3669	1868	9565.	0.98
14	1018	1031	949	1030	3636	1790	9454.	0.97
15	1017	1031	949	1030	3596	1698	9321.	0.96
16	1017	1031	949	1029	3562	1635	9223.	0.95
17	1017	1029	949	1024	3458	1493	8978.	0.92
18	1015	1028	949	1010	3322	1308	8632.	0.88
19	1003	1020	949	999	3109	1104	8184.	0.84
20	978	1003	947	971	2796	945	7642.	0.78
21	945	988	944	939	2593	893	7310.	0.75
22	867	927	903	865	2138	739	6489.	0.67
23	729	820	732	702	1785	724	5492.	0.56
24	635	711	539	516	1580	674	4655.	0.48
25	562	574	458	414	1448	643	4091.	0.42
26	534	546	406	380	1391	621	3878.	0.40
27	494	487	375	334	1296	578	3564.	0.37
28	455	452	345	298	1215	539	3304.	0.34
29	424	424	318	271	1136	498	3071.	0.31
30	401	402	291	248	1081	458	2881.	0.30
31	392	394	265	242	1052	445	2810.	0.29
32	374	376	259	227	989	412	2637.	0.27
33	353	363	238	216	928	374	2472.	0.25
34	338	350	223	207	875	348	2341.	0.24
35	324	338	217	194	827	317	2217.	0.23
36	317	334	215	187	802	307	2162.	0.22
37	300	321	204	173	755	281	2034.	0.21
38	291	310	196	160	707	247	1911.	0.20
39	271	300	185	140	665	225	1786.	0.18
40	256	286	169	126	621	197	1655.	0.17
41	251	280	164	120	599	183	1597.	0.16
42	238	267	151	108	558	155	1477.	0.15
43	225	256	145	93	514	129	1362.	0.14
44	212	247	132	85	463	112	1251.	0.13
45	198	235	125	72	416	93	1139.	0.12

TABLE E3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

ASROC INTERIOR (UNBOXED)

RECORDER 31A. ROCKET MOTOR CHANNEL 5

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1018	1730	950	1029	3697	2032	9756.	1.00
2	1018	1730	950	1029	3697	2032	9756.	1.00
3	1018	1730	950	1029	3697	2032	9756.	1.00
4	1018	1730	950	1029	3697	2032	9756.	1.00
5	1018	1730	950	1029	3697	2032	9756.	1.00
6	1018	1730	950	1029	3697	2032	9756.	1.00
7	1018	1730	950	1029	3697	2032	9756.	1.00
8	1018	1730	950	1029	3697	2032	9756.	1.00
9	1018	1730	950	1029	3696	2032	9755.	1.00
10	1018	1730	950	1029	3696	2029	9752.	1.00
11	1018	1730	950	1029	3696	2027	9750.	1.00
12	1018	1730	950	1029	3696	2020	9743.	1.00
13	1018	1730	950	1029	3694	2009	9730.	1.00
14	1018	1730	950	1029	3693	1997	9717.	1.00
15	1018	1730	950	1029	3693	1972	9692.	0.99
16	1018	1730	950	1029	3691	1951	9669.	0.99
17	1018	1730	950	1029	3686	1934	9617.	0.99
18	1018	1730	950	1029	3673	1883	9583.	0.97
19	1018	1730	950	1029	3645	1662	9334.	0.96
20	1018	1730	950	1029	3576	1456	9059.	0.93
21	1018	1730	950	1028	3511	1377	8914.	0.91
22	1018	1730	950	1014	3281	1189	8482.	0.87
23	1010	1729	945	976	2944	992	7895.	0.81
24	979	1720	868	827	2562	833	7389.	0.73
25	916	959	771	654	2236	695	6231.	0.64
26	886	926	721	581	2075	620	5829.	0.60
27	818	860	619	485	1803	501	5056.	0.52
28	720	782	535	422	1562	400	4421.	0.45
29	651	704	453	331	1352	305	3796.	0.39
30	572	632	385	278	1161	226	3254.	0.33
31	542	599	363	253	1078	190	3033.	0.31
32	483	540	318	199	904	143	2587.	0.27
33	433	488	274	155	741	107	2198.	0.23
34	375	433	232	118	629	77	1864.	0.19
35	330	387	196	86	523	46	1568.	0.16
36	305	357	180	64	470	31	1407.	0.14
37	248	317	152	38	369	13	1137.	0.12
38	199	275	118	28	291	6	917.	0.09
39	160	223	84	17	195	2	681.	0.07
40	117	170	60	4	123	0	482.	0.05
41	101	154	54	2	96	0	407.	0.04
42	67	115	34	1	48	0	265.	0.03
43	41	75	16	1	15	0	148.	0.02
44	17	50	9	1	4	0	81.	0.02
45	5	31	4	1	3	0	44.	0.02

TABLE F3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

ASROC MOTOR SKIN (UNBOXED)

DEG.	RECORDER 31A.					ROCKET MOTOR CHANNEL 6		TOTAL	C. PROB
	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER			
1	1018	1031	948	1031	3696	2031	9755.	1.00	
2	1018	1031	948	1031	3696	2031	9755.	1.00	
3	1018	1031	948	1031	3696	2031	9755.	1.00	
4	1018	1031	948	1031	3696	2029	9753.	1.00	
5	1018	1031	948	1031	3696	2025	9749.	1.00	
6	1018	1031	948	1031	3696	2022	9746.	1.00	
7	1018	1031	948	1031	3696	2010	9742.	1.00	
8	1018	1031	948	1031	3696	2009	9733.	1.00	
9	1018	1031	948	1031	3696	1992	9716.	1.00	
10	1018	1031	948	1031	3696	1972	9696.	0.99	
11	1018	1031	948	1031	3694	1961	9683.	0.99	
12	1018	1031	948	1031	3688	1931	9647.	0.99	
13	1018	1031	948	1031	3675	1892	9595.	0.98	
14	1018	1031	948	1031	3654	1830	9512.	0.98	
15	1018	1031	948	1031	3612	1742	9382.	0.96	
16	1017	1031	948	1031	3590	1691	9308.	0.95	
17	1017	1030	948	1030	3519	1566	9110.	0.93	
18	1017	1030	948	1018	3394	1394	8821.	0.90	
19	1009	1027	948	1009	3225	1212	8430.	0.86	
20	993	1014	948	992	2951	1035	7933.	0.81	
21	976	1006	945	964	2773	979	7643.	0.78	
22	915	965	917	901	2343	868	6909.	0.71	
23	798	883	780	746	1984	791	5982.	0.61	
24	691	781	605	553	1751	730	5119.	0.52	
25	616	669	506	461	1603	703	4558.	0.47	
26	586	617	470	427	1541	683	4324.	0.44	
27	533	556	416	379	1450	659	3998.	0.41	
28	505	509	388	339	1368	631	3740.	0.38	
29	471	470	364	311	1308	590	3522.	0.36	
30	443	445	335	297	1240	559	3324.	0.34	
31	435	433	324	268	1215	547	3242.	0.33	
32	416	410	305	260	1159	500	3066.	0.31	
33	399	399	294	251	1119	470	2940.	0.30	
34	386	383	277	237	1068	441	2792.	0.29	
35	371	373	266	226	1016	412	2664.	0.27	
36	364	363	258	219	981	400	2583.	0.27	
37	348	353	244	210	926	375	2456.	0.25	
38	328	345	234	200	867	337	2311.	0.24	
39	316	329	223	185	835	312	2200.	0.23	
40	308	321	209	174	809	279	2100.	0.22	
41	304	319	203	168	781	270	2045.	0.21	
42	296	313	194	158	731	236	1928.	0.20	
43	282	299	182	144	677	210	1794.	0.18	
44	267	294	169	130	638	179	1677.	0.17	
45	254	287	163	116	597	157	1574.	0.16	

TABLE G3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

FFAR INTERIOR (BOXED)

RECORDER 31A. ROCKET MOTOR CHANNEL 7

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1016	1030	949	1030	3695	2031	9753.	1.00
2	1018	1030	949	1030	3695	2031	9753.	1.00
3	1018	1030	949	1030	3695	2031	9753.	1.00
4	1018	1030	949	1030	3695	2031	9753.	1.00
5	1018	1030	949	1030	3695	2031	9753.	1.00
6	1016	1030	949	1030	3695	2031	9753.	1.00
7	1018	1030	949	1030	3695	2029	9747.	1.00
8	1018	1030	949	1030	3695	2021	9743.	1.00
9	1018	1030	949	1030	3695	2014	9736.	1.00
10	1016	1030	949	1030	3695	1996	9718.	1.00
11	1018	1030	949	1030	3695	1986	9708.	1.00
12	1018	1030	949	1030	3695	1969	9691.	0.99
13	1018	1030	949	1030	3686	1938	9651.	0.99
14	1018	1030	949	1030	3672	1891	9590.	0.98
15	1018	1030	949	1030	3652	1822	9501.	0.97
16	1016	1030	949	1030	3635	1776	9438.	0.97
17	1017	1030	949	1030	3581	1648	9255.	0.95
18	1017	1030	949	1024	3496	1449	8965.	0.92
19	1016	1029	949	1015	3345	1256	8610.	0.88
20	1005	1024	949	1003	3274	1071	8126.	0.85
21	997	1019	949	983	2901	1007	7856.	0.81
22	936	992	941	912	2434	874	7091.	0.73
23	845	922	812	748	2065	778	6165.	0.63
24	726	802	614	558	1787	686	5173.	0.53
25	652	673	515	441	1604	612	4497.	0.46
26	619	629	476	407	1520	563	4214.	0.43
27	560	575	423	341	1372	501	3772.	0.39
28	513	528	361	310	1248	427	3412.	0.35
29	471	489	335	272	1132	363	3062.	0.31
30	426	459	306	243	1019	301	2754.	0.28
31	415	439	289	227	952	266	2588.	0.27
32	387	407	257	191	851	216	2309.	0.24
33	353	375	235	163	748	163	2037.	0.21
34	323	344	209	137	659	133	1825.	0.19
35	297	322	187	118	551	104	1579.	0.16
36	287	312	176	100	518	90	1483.	0.15
37	254	289	148	69	452	64	1276.	0.13
38	213	265	125	53	378	40	1074.	0.11
39	185	235	108	38	309	25	920.	0.09
40	150	210	91	21	250	11	733.	0.08
41	136	189	81	17	226	9	658.	0.07
42	116	157	70	8	156	4	511.	0.05
43	93	133	52	2	105	1	363.	0.04
44	57	97	36	1	57	0	248.	0.03
45	34	68	28	1	35	0	166.	0.02

TABLE H3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

FFAR MOTOR SKIN (BOXED)

RECORDER 31A. ROCKET MOTOR CHANNEL B

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1619	1030	949	1030	3696	2031	9755.	1.00
2	1019	1030	949	1030	3696	2031	9755.	1.00
3	1019	1030	949	1030	3696	2031	9755.	1.00
4	1019	1030	949	1030	3696	2031	9755.	1.00
5	1019	1030	949	1030	3696	2031	9755.	1.00
6	1019	1030	949	1030	3696	2031	9755.	1.00
7	1019	1030	949	1030	3696	2020	9749.	1.00
8	1019	1030	949	1030	3696	2020	9744.	1.00
9	1019	1030	949	1030	3696	2014	9738.	1.00
10	1019	1030	949	1030	3696	1999	9723.	1.00
11	1019	1030	949	1030	3696	1908	9712.	1.00
12	1019	1030	949	1030	3696	1968	9692.	0.99
13	1019	1030	949	1030	3687	1941	9656.	0.99
14	1019	1030	949	1030	3675	1890	9593.	0.93
15	1019	1030	949	1030	3655	1833	9516.	0.98
16	1019	1030	949	1030	3643	1783	9454.	0.97
17	1018	1030	949	1030	3582	1650	9265.	0.95
18	1013	1030	949	1023	3498	1457	8975.	0.92
19	1017	1029	949	1014	3355	1250	8622.	0.88
20	1003	1025	949	1002	3286	1070	8145.	0.83
21	998	1018	949	984	2918	1008	7875.	0.81
22	950	991	939	916	2440	883	7119.	0.73
23	838	919	806	757	2064	771	6155.	0.63
24	724	815	615	568	1799	687	5208.	0.53
25	648	685	506	448	1619	623	4529.	0.46
26	618	626	474	411	1528	584	4241.	0.43
27	559	572	426	348	1397	514	3816.	0.39
28	517	523	380	306	1247	448	3421.	0.35
29	475	490	359	279	1140	386	3189.	0.32
30	440	456	303	252	1036	322	2809.	0.29
31	415	443	209	235	989	284	2655.	0.27
32	386	409	264	197	888	226	2370.	0.24
33	358	381	234	165	773	186	2097.	0.21
34	333	352	217	142	679	149	1872.	0.19
35	302	326	190	125	584	111	1638.	0.17
36	289	317	177	100	541	103	1536.	0.16
37	256	293	152	83	476	72	1332.	0.14
38	223	270	140	61	395	50	1144.	0.12
39	192	241	115	43	336	33	956.	0.10
40	162	216	94	30	271	17	793.	0.08
41	145	200	87	25	249	11	725.	0.07
42	123	172	76	13	181	4	569.	0.06
43	96	142	60	4	126	3	431.	0.04
44	72	115	52	1	74	0	314.	0.03
45	45	80	30	1	45	0	201.	0.02

TABLE J3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

FFAR OUTER CASE (BOXED)

RECORDER 31A. ROCKET MOTOR CHANNEL 9

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1019	1031	947	1031	3692	2031	9751.	1.00
2	1019	1031	947	1031	3692	2031	9751.	1.00
3	1019	1031	947	1031	3692	2031	9751.	1.00
4	1019	1031	947	1031	3692	2031	9751.	1.00
5	1019	1031	947	1031	3692	2027	9747.	1.00
6	1019	1031	947	1031	3692	2024	9744.	1.00
7	1019	1031	947	1031	3692	2021	9741.	1.00
8	1019	1031	947	1031	3692	2014	9734.	1.00
9	1019	1031	947	1031	3692	2000	9720.	1.00
10	1019	1031	947	1031	3692	1980	9700.	0.99
11	1019	1031	947	1031	3691	1972	9691.	0.99
12	1019	1031	947	1031	3685	1944	9657.	0.99
13	1019	1031	947	1031	3675	1905	9608.	0.99
14	1019	1031	947	1031	3655	1834	9517.	0.98
15	1019	1031	947	1031	3616	1755	9399.	0.96
16	1018	1031	947	1031	3597	1695	9319.	0.96
17	1018	1030	947	1031	3522	1545	9092.	0.93
18	1018	1030	947	1017	3391	1332	8735.	0.90
19	1012	1027	947	1006	3189	1135	8316.	0.85
20	991	1016	947	983	2862	978	7777.	0.80
21	969	1005	946	955	2666	923	7464.	0.77
22	894	944	912	866	2177	817	6610.	0.68
23	766	851	731	671	1837	745	5621.	0.57
24	651	727	532	497	1626	688	4721.	0.48
25	585	599	444	402	1487	629	4141.	0.42
26	551	565	415	374	1428	604	3937.	0.40
27	504	514	373	326	1326	559	3602.	0.37
28	471	473	343	297	1239	502	3325.	0.34
29	439	448	315	270	1155	462	3089.	0.32
30	411	420	290	254	1083	415	2851.	0.30
31	391	407	283	245	1049	396	2773.	0.28
32	366	387	272	223	980	348	2578.	0.26
33	354	374	257	208	907	315	2415.	0.25
34	341	348	240	190	823	278	2220.	0.23
35	316	334	216	166	758	235	2027.	0.21
36	307	323	206	150	722	215	1923.	0.20
37	291	312	198	132	661	178	1772.	0.18
38	273	293	185	117	610	153	1631.	0.17
39	254	277	172	96	541	122	1462.	0.15
40	237	266	151	86	488	93	1321.	0.14
41	224	260	141	75	452	82	1234.	0.13
42	198	241	126	62	396	61	1084.	0.11
43	179	226	108	55	333	49	953.	0.10
44	164	201	97	41	276	31	810.	0.08
45	138	182	86	33	229	20	688.	0.07

TABLE K3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

ZUNI MOTOR SKIN

		RECORDER 31A.			ROCKET MOTOR CHANNEL 10			
DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1019	1029	949	1031	3696	2031	9755.	1.00
2	1019	1029	949	1031	3696	2031	9755.	1.00
3	1019	1029	949	1031	3696	2031	9755.	1.00
4	1019	1029	949	1031	3696	2031	9755.	1.00
5	1019	1029	949	1031	3696	2031	9755.	1.00
6	1019	1029	949	1031	3696	2031	9755.	1.00
7	1019	1029	949	1031	3696	2024	9748.	1.00
8	1019	1029	949	1031	3696	2018	9742.	1.00
9	1019	1029	949	1031	3696	2010	9734.	1.00
10	1019	1029	949	1031	3696	1989	9713.	1.00
11	1019	1029	949	1031	3696	1977	9701.	0.99
12	1019	1029	949	1031	3695	1959	9682.	0.99
13	1019	1029	949	1031	3685	1924	9637.	0.99
14	1019	1029	949	1031	3667	1870	9565.	0.98
15	1019	1029	949	1031	3644	1801	9473.	0.97
16	1019	1029	949	1031	3620	1746	9391.	0.96
17	1018	1029	949	1030	3557	1615	9198.	0.94
18	1018	1028	949	1022	3445	1397	8859.	0.91
19	1016	1027	949	1013	3284	1200	8495.	0.87
20	1001	1019	949	997	3000	1040	8006.	0.82
21	986	1009	948	973	2905	987	7728.	0.79
22	921	976	935	894	2322	870	6918.	0.71
23	800	887	773	731	1975	787	5953.	0.61
24	686	770	568	528	1748	720	5028.	0.51
25	617	638	477	443	1608	668	4451.	0.46
26	586	597	448	399	1542	638	4210.	0.43
27	539	542	402	362	1418	580	3850.	0.39
28	501	505	373	318	1314	534	3545.	0.36
29	467	471	339	291	1212	476	3256.	0.33
30	444	441	313	264	1131	426	3019.	0.31
31	432	433	305	256	1086	400	2910.	0.30
32	395	417	280	227	1018	352	2689.	0.28
33	371	380	258	202	936	288	2443.	0.25
34	355	369	231	187	863	238	2243.	0.23
35	333	348	220	162	786	206	2052.	0.21
36	328	340	213	154	746	182	1963.	0.20
37	305	324	193	132	662	140	1764.	0.18
38	285	307	174	110	596	122	1594.	0.16
39	263	292	157	85	526	96	1419.	0.15
40	241	275	140	63	449	70	1238.	0.13
41	228	260	131	56	417	56	1148.	0.12
42	197	243	115	41	353	41	990.	0.10
43	168	226	99	33	312	25	863.	0.09
44	145	201	87	18	255	17	723.	0.07
45	125	175	72	11	205	6	594.	0.06

TABLE L3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

ZUNI INTERIOR

RECORDER 31A. ROCKET MOTOR CHANNEL 11

DEG.	DEC.	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1019	1030	949	1032	3693	2031	9754.	1.00
2	1019	1030	949	1032	3693	2031	9754.	1.00
3	1019	1030	949	1032	3693	2031	9754.	1.00
4	1019	1030	949	1032	3693	2031	9754.	1.00
5	1019	1030	949	1032	3693	2031	9754.	1.00
6	1019	1030	949	1032	3693	2030	9753.	1.00
7	1019	1030	949	1032	3693	2025	9748.	1.00
8	1019	1030	949	1032	3693	2018	9741.	1.00
9	1019	1030	949	1032	3693	2009	9732.	1.00
10	1019	1030	949	1032	3693	1992	9715.	1.00
11	1019	1030	949	1032	3693	1978	9701.	0.99
12	1019	1030	949	1032	3692	1961	9683.	0.99
13	1019	1030	949	1032	3683	1927	9640.	0.99
14	1019	1030	949	1032	3664	1876	9570.	0.98
15	1019	1030	949	1032	3641	1801	9472.	0.97
16	1018	1030	949	1032	3619	1742	9390.	0.96
17	1018	1030	949	1031	3557	1606	9191.	0.94
18	1018	1029	949	1022	3438	1401	8857.	0.91
19	1016	1028	949	1012	3281	1205	8491.	0.87
20	999	1021	949	997	2999	1036	8071.	0.82
21	986	1011	948	976	2793	937	7721.	0.79
22	921	975	927	895	2317	875	6912.	0.71
23	798	891	762	728	1979	785	5943.	0.61
24	685	771	564	547	1750	722	5032.	0.52
25	614	642	476	439	1605	666	4442.	0.46
26	584	595	450	404	1544	637	4214.	0.43
27	537	545	408	361	1423	578	3852.	0.39
28	499	504	374	316	1310	537	3540.	0.36
29	475	475	337	288	1204	481	3255.	0.33
30	443	443	312	264	1115	426	3000.	0.31
31	424	433	300	258	1080	401	2896.	0.30
32	394	418	278	227	1009	348	2674.	0.27
33	369	396	257	207	933	291	2453.	0.25
34	353	374	230	185	853	231	2226.	0.23
35	337	355	221	161	783	197	2054.	0.21
36	328	344	212	150	734	177	1945.	0.20
37	325	325	186	134	658	145	1753.	0.18
38	284	308	168	109	586	121	1576.	0.16
39	261	293	155	84	510	97	1400.	0.14
40	237	276	134	61	436	63	1207.	0.12
41	222	267	129	59	403	53	1133.	0.12
42	192	242	113	39	349	38	973.	0.10
43	165	224	97	32	300	25	843.	0.09
44	141	197	81	19	248	14	700.	0.07
45	121	177	68	11	189	5	571.	0.06

TABLE M3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CARTRIDGES 7.62mm INTERIOR

RECORDER 31A. ROCKET MOTOR CHANNEL 18

DEG.	DEC	JAN	FEB	MAR	APR-SPRING	WINTER	TOTAL	C.PROB
1	1017	1030	948	1031	3693	2031	9750.	1.00
2	1017	1030	948	1031	3693	2031	9750.	1.00
3	1017	1030	948	1031	3693	2031	9750.	1.00
4	1017	1030	948	1031	3693	2031	9750.	1.00
5	1017	1030	948	1031	3693	2030	9749.	1.00
6	1017	1030	948	1031	3693	2029	9748.	1.00
7	1017	1030	948	1031	3693	2020	9744.	1.00
8	1017	1030	948	1031	3693	2019	9738.	1.00
9	1017	1030	948	1031	3693	2000	9724.	1.00
10	1017	1030	948	1031	3693	1984	9703.	1.00
11	1017	1030	948	1031	3693	1970	9694.	0.99
12	1017	1030	948	1031	3691	1951	9668.	0.99
13	1017	1030	948	1031	3684	1917	9627.	0.99
14	1017	1030	948	1031	3662	1849	9537.	0.98
15	1017	1030	948	1031	3635	1771	9432.	0.97
16	1017	1030	948	1031	3611	1708	9345.	0.96
17	1017	1030	948	1030	3541	1550	9121.	0.94
18	1017	1029	948	1018	3422	1332	8766.	0.90
19	1014	1026	948	1006	3233	1141	8365.	0.86
20	997	1010	948	986	2915	930	7845.	0.80
21	985	1013	948	961	2714	930	7556.	0.77
22	914	971	931	879	2202	837	6734.	0.69
23	773	873	758	682	1878	776	5740.	0.59
24	669	729	537	510	1665	728	4838.	0.50
25	588	601	449	417	1549	690	4299.	0.44
26	562	560	416	385	1495	669	4037.	0.42
27	514	512	381	349	1402	626	3734.	0.39
28	490	483	347	314	1319	580	3538.	0.36
29	461	457	323	295	1252	535	3323.	0.34
30	432	432	307	266	1182	486	3105.	0.32
31	419	421	299	257	1140	450	2986.	0.31
32	399	405	283	242	1064	400	2798.	0.29
33	375	386	267	222	1000	350	2605.	0.27
34	356	371	241	201	933	300	2407.	0.25
35	337	359	221	180	853	252	2212.	0.23
36	326	352	214	171	814	244	2121.	0.22
37	304	335	200	151	717	208	1915.	0.20
38	276	315	187	124	653	166	1721.	0.18
39	253	296	166	96	571	114	1495.	0.15
40	228	280	143	82	482	90	1305.	0.13
41	217	270	135	73	440	70	1210.	0.12
42	184	233	119	59	368	40	1088.	0.10
43	157	212	101	41	293	29	833.	0.09
44	130	180	81	33	238	26	683.	0.07
45	110	159	63	29	191	14	566.	0.06

TABLE M3 (cont.)

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CARTRIDGES 7.62mm INTERIOR

RECORDER 31A. ROCKET MOTOR CHANNEL 1S

DEG.	DEC	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
46	94	148	61	23	173	12	511.	0.05
47	84	134	43	20	130	9	420.	0.04
48	65	118	35	11	102	5	336.	0.03
49	57	98	29	4	76	2	266.	0.03
50	42	81	24	0	46	1	194.	0.02
51	36	77	22	0	37	0	172.	0.02
52	27	58	13	0	14	0	112.	0.01
53	17	43	9	2	9	0	78.	0.00
54	6	27	7	0	5	0	45.	0.00
55	5	15	2	2	2	0	24.	0.00
56	5	12	1	2	1	0	19.	0.00
57	1	4	1	0	1	0	7.	0.00
58	0	0	0	0	1	0	1.	0.00
59	0	0	0	0	1	0	1.	0.00
60	0	0	0	0	1	0	1.	0.00
61	0	0	0	0	1	0	1.	0.00
62	0	0	0	2	1	0	1.	0.00
63	0	0	0	2	1	0	1.	0.00
64	0	0	0	2	1	0	1.	0.00
65	0	0	0	0	0	0	0.	0.00

TABLE N3

CUMULATIVE PROBABILITY DISTRIBUTION FOR ROCKET MOTOR TEMPS

CARTRIDGES 7.62mm EXTERIOR

RECORDER 31A. ROCKET MOTOR CHANNEL 19

DEG.	DEC.	JAN	FEB	MAR	AUT-SPRING	WINTER	TOTAL	C.PROB
1	1018	1031	947	1032	3692	2031	9751.	1.00
2	1018	1031	947	1032	3692	2031	9751.	1.00
3	1018	1031	947	1032	3692	2031	9751.	1.00
4	1018	1031	947	1032	3692	2031	9751.	1.00
5	1018	1031	947	1032	3692	2030	9750.	1.00
6	1018	1031	947	1032	3692	2027	9747.	1.00
7	1018	1031	947	1032	3692	2024	9744.	1.00
8	1018	1031	947	1032	3692	2017	9737.	1.00
9	1018	1031	947	1032	3692	2001	9721.	1.00
10	1018	1031	947	1032	3692	1980	9700.	0.99
11	1018	1031	947	1032	3692	1970	9690.	0.99
12	1018	1031	947	1032	3689	1944	9661.	0.99
13	1018	1031	947	1032	3678	1927	9613.	0.99
14	1018	1031	947	1032	3659	1840	9527.	0.98
15	1018	1031	947	1032	3628	1754	9410.	0.97
16	1018	1031	947	1032	3601	1691	9320.	0.96
17	1018	1031	947	1031	3529	1547	9173.	0.93
18	1018	1029	947	1018	3396	1316	8724.	0.89
19	1017	1029	947	1005	3204	1120	8319.	0.85
20	993	1017	947	986	2883	973	7799.	0.80
21	977	1008	947	959	2663	931	7485.	0.77
22	895	963	927	881	2181	830	6679.	0.68
23	763	865	753	688	1859	770	5700.	0.58
24	656	720	524	507	1652	734	4793.	0.49
25	579	594	443	423	1541	690	4276.	0.44
26	550	550	414	386	1485	679	4064.	0.42
27	515	508	377	349	1410	634	3793.	0.39
28	488	482	347	324	1334	594	3569.	0.37
29	459	451	326	304	1256	550	3351.	0.34
30	433	428	312	281	1198	506	3163.	0.32
31	428	423	302	272	1162	492	3079.	0.32
32	401	400	290	253	1088	448	2868.	0.30
33	377	392	277	228	1025	392	2691.	0.28
34	365	377	258	211	971	353	2535.	0.26
35	349	360	233	194	914	307	2357.	0.24
36	342	357	226	184	884	280	2278.	0.23
37	323	339	212	171	820	252	2114.	0.22
38	295	324	201	158	754	211	1943.	0.20
39	276	317	185	140	678	171	1767.	0.18
40	259	296	175	111	601	139	1581.	0.16
41	257	287	167	99	570	121	1581.	0.15
42	234	275	150	79	514	96	1348.	0.14
43	206	255	129	68	445	60	1171.	0.12
44	191	232	114	56	379	44	1015.	0.10
45	166	220	104	42	314	31	877.	0.09

