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FORT GREELY MISSILE RANGE REFERENCE ATMOSPHERE.

(PART 2).

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FORT GREELY RANGE REFERENCE ATMOSPHERE

(PART II)

10 July 1971

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prepared by

Range Reference Atmosphere Committee
Meteorological Group

Published September 1971 by the

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Range Commanders Council
White Sands Missile Range, New Mexico 88002

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ABSTRACT

The IRIG Range Reference Atmosphere presented in this document continues the series of Part II published by the Inter-Range Instrumentation Group/Meteorological Working Group. Part II extends the tabulations of Part I for monthly and annual periods to 90 km for thermodynamic quantities and to 70 km for wind quantities. Thermodynamic quantities include geopotential height, temperature, pressure (mb), density, and speed of sound tabulated at 250-m intervals of geometric altitude. The wind quantities are scalar wind and zonal and meridional component values (m/sec) for 11 cumulative percentage frequencies at 1 km intervals.

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LIST OF SYMBOLS AND ABBREVIATIONS

C	speed of sound (m/sec)
ρ	mass density (g/m^3)
H	geopotential height, in standard geopotential meters (sgpm)
Z	altitude in geometric measure (m)
P	pressure (mb)
r^*	parameter to convert geopotential to geometric altitude (m)
r'	parameter to convert geopotential to geometric altitude (gpm)
T^*	virtual temperature (^oK)
T	temperature in absolute thermodynamic scales (^oK)
US-62	U.S. Standard Atmosphere, 1962
Z_i	altitude in geometric measure between Z_2 and Z_1, $Z_2 > Z_1$ (m)
P_b	pressure at 25 mb level taken from monthly IRIG Range Reference Atmosphere, Part i (mb)
gpkm	geopotential kilometers

FOREWORD

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

The IRIG Range Reference Atmosphere Committee consists of representatives from the U. S. Air Force, U. S. Army, National Aeronautics and Space Administration, U. S. Navy and National Oceanographic and Atmospheric Administration. Current active working members and their organizations include:

Mr. W. Vaughan (Co-Chairman), George C. Marshall Space Flight Center, NASA
Mr. O. E. Smith (Co-Chairman), George C. Marshall Space Flight Center, NASA
Mr. R. Leviton, Atmospheric Sciences Laboratory, AFCRL
Mr. A. Kantor, Atmospheric Sciences Laboratory, AFCRL
Mr. A. Cole, Atmospheric Sciences Laboratory, AFCRL
Mr. R. Quiroz, National Weather Service, NOAA
Mr. W. L. Webb, WSMR Atmospheric Science Laboratory
Mr. G. E. Daniels, George C. Marshall Space Flight Center, NASA
Dr. W. Nordberg, Goddard Space Flight Center, NASA
Mr. J. Spurling, Wallops Station, NASA
Mr. H. B. Tolefson, Langley Research Center, NASA
Mr. H. Wobus, Navy Weather Research Facility
Dr. S. Teweles, National Weather Service, NOAA
Mr. S. Kubinski, WSMR
Mr. B. F. Walker, ADTC, Eglin AFB
Mr. L. Mitchell, ETAC, USAF
Lt. Col. R. H. Dowd, AFETR, USAF
Maj. D. Thornley, SAMTEC, USAF
Lt. Col. L. R. Tucker, AFFTC, USAF

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

Eastern Test Range, Mr. O. E. Smith and Col. H. D. Turner
Eglin Gulf Test Range, Mr. R. Leviton and Mr. A. Kantor
Vandenberg Air Force Base, Mr. D. Lea and Mr. H. Wobus
Wallops Test Range, Mr. J. Spurling and Mr. R. Tolefson
White Sands Missile Range, Mr. W. Webb and Mr. S. Kubinski
Fort Greely, Mr. W. Webb and Mr. S. Kubinski
Fort Churchill, Mr. W. Webb and Mr. S. Kubinski

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

1. Eastern Test Range
   (a) Cape Kennedy
   (b) Ascension Island
2. Eglin Gulf Test Range
3. Vandenberg Air Force Base (SAMTEC)
   (a) Point Mugu
   (b) Eniwetok
   (c) Johnston Island
   (d) Lihue, Kauai, Hawaii
4. Wallops Test Range
5. White Sands Missile Range
6. Fort Greely
7. Fort Churchill
8. Edwards AFB, AFFTC

Readers should note that the Eastern Test Range and the Vandenberg AFB were named the Atlantic Missile Range and Pacific Missile Range, respectively, in earlier IRIG documents. This change in names does not imply a change in the locations for which Reference Atmospheres are published.

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

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

Since the appointment of the IRIG Range Reference Atmosphere Committee in November 1960, continued improvement in atmospheric measurements and more frequent atmospheric measurements are rapidly advancing a better understanding of the structure of the atmosphere. This is particularly true in the altitude region between the normal ceiling of rawinsonde measurements (30-km altitude) and that of minimum satellite levels near 200-km altitude. Due to this period of rapid growth in understanding the structure of the atmosphere between 30 and 200 km altitude, any detailed atmospheric model that is established at this time is very likely to be replaced when more and improved measurements are made. Therefore, any atmospheric model for altitudes above 30 km must be considered speculative. It is also realized that rapid advances in missile and aerospace programs cannot await the final confirmation of atmospheric models by atmospheric measurements yet to be made. For these reasons the IRIG Range Reference Atmosphere Committee is publishing the Range Reference Atmospheres in a series of separate documents. These documents are organized as follows: Part I contains thermodynamic and wind quantities for each month and annual for the first 30-km altitude. Part II extends the thermodynamic quantities up to 90-km altitude for each month and annual and the wind quantities up to 70-km altitude for each month and annual. Part III will contain information on the variability of the principal thermodynamic quantities and wind from the surface to 90 km.

Parts I have been published as separate IRIG technical documents for all of the listed locations except Edwards AFB, which is a recent addition to the list. Part II for Fort Greely is the fourth of the Part II series. Refer to page 7 for a list of Reference Atmospheres already published, or pending publication, by IRIG.

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

William W. Vaughan
Co-Chairman, IRIG Range Reference
Atmosphere Committee

Orvel E. Smith
Co-Chairman, IRIG Range Reference
Atmosphere Committee

SECTION I
THERMODYNAMIC QUANTITIES FROM 25 TO 90 KM ALTITUDE

1.0 INTRODUCTION

Monthly and annual reference atmospheres from 25 to 90 km altitude have been defined for Fort Greely Missile Range, Alaska. Idealized temperature profiles were developed using Fort Greely rocketsonde and falling sphere observations from 25 to 65 km altitude and the temperature profile developed by Kantor and Cole (ref. 1) for 60°N latitude from 25 to 80 km altitude. Values of geopotential height, temperature, pressure, density and speed of sound were computed for each 250 m from 25 to 90 km altitude. Because humidity values are extremely low at altitudes above 25 km, the tables of thermodynamic quantities do not include values for virtual temperature, relative humidity and vapor pressure, and T replaces T^* in all computations.

I.1 DETERMINATION OF THERMODYNAMIC DATA FROM 25 TO 90 KM ALTITUDE

I.1.1 BASIC DATA AND CONSTRUCTION OF PROFILES. Idealized temperature profiles such as the one shown in Figure 1 were constructed from Fort Greely Missile Range rocketsonde data and monthly temperature profiles defined by Kantor and Cole for 60°N latitude.

The rocketsonde data consisted of statistical summaries published in Data Reports, Meteorological Rocket Network Firings (ref. 2), for the period 1961-1966. Mean monthly temperatures, taken from these summaries, were used to help define the idealized temperature profiles. Rocketsonde data for 1967 and 1968 have become available since the initial computations, but tests have not disclosed significant changes that would justify re-calculating the data at this time.

In defining each profile, the following procedure was used. The 25-mb level was chosen as the most convenient tie-in point between the rocketsonde data and the IRIG Reference Atmosphere, Part I (ref. 3). Above 25 mb, the idealized profile was constructed so that the general slope of the rocketsonde data was preserved while minor variations were eliminated. Isothermal layers were placed in the 50 to 57 km and 80 to 90 km regions. The idealized profile approximately follows Kantor and Cole's temperature curve from 57 km to 80 km (79 gpkm) and is isothermal to 90 km. Slight adjustments were made so that the calculated density at 90 km would be 10 to 15% higher (ref.4) than that of the U.S. Standard Atmosphere, 1962 (ref.5).

The annual temperature profile was obtained by averaging the monthly rocketsonde data, and then following the procedure outlined above.

To facilitate the use of electronic computers, the idealized temperature profiles were segmented. Temperatures were chosen at the base and top of a segment, and a lapse rate calculated to five decimal places was considered exact. A linear equation was used to calculate the temperature at each 250 meters within the segment. The calculation necessitated adjusting the end point temperature slightly to agree with an exact lapse rate. The number of segments for each profile varied depending on the number necessary to adequately describe the temperature curve.

1.1.2 DERIVED THERMODYNAMIC QUANTITIES. This section explains the computation of thermodynamic quantities tabulated in Table I. (For derivation of the equations see appropriate Range Reference Atmosphere, Part I.)

(1) Temperature

$$T = \left[T_1 - \left(\frac{T_2 - T_1}{Z_2 - Z_1} \right) (Z_1) + \left(\frac{T_2 - T_1}{Z_2 - Z_1} \right) (Z_i) \right] \qquad \text{Eq. (1)}$$

(2) Geopotential Height

$$H = \frac{Zr'}{Z + r^*} \qquad \text{Eq. (2)}$$

(3) Pressure

$$P = P_{(i-1)} \exp - \left[\frac{0.03416322 \left[H_i - H_{(i-1)} \right]}{\frac{1}{2} \left[T_i + T_{(i-1)} \right]} \right] \qquad \text{Eq. (3)}$$

where: $P_{(i-1)} = P_b$ for the first computation

(4) Density

$$\rho = \frac{348.36787 \ P}{T} \qquad \text{Eq. (4)}$$

(5) Speed of Sound

$$C_s = 20.046707 \ (T)^{1/2} \qquad \text{Eq. (5)}$$

I.2 COMPARISON OF THERMODYNAMIC QUANTITIES

Because values of density and pressure with altitude vary over several orders of magnitude, it is convenient for graphical display to consider relative deviation rather than absolute values. The formula used to compute relative temperature, pressure and density deviations is

$$R.D. = \frac{X - X_{Standard}}{X_{Standard}} \times 100$$

The relative deviation between temperature, pressure and density values of the Fort Greely Missile Range reference atmosphere and those of the U. S. Standard Atmosphere, 1962, are presented in Figures 2 through 7.

The U. S. Standard Atmosphere and extensions will be used as a reference for relative deviations of each of the subsequent Range Reference Atmospheres to be published. This common reference permits easy comparison of monthly and geographic variations.

The annual relative temperature, pressure and density deviations from the U. S. Standard, 1962, are shown in Figure 8.

All the monthly relative density deviations with respect to the U. S. Standard, 1962, show the monthly and seasonal progression that is expected in the 25 to 90 km region. In a few instances, portions of the monthly relative deviations do not change uniformly and intersect with a preceding or succeeding month. Below 60 km, this is attributed to the rocketsonde data that were used to construct the temperature profiles; above 90 km, to using a 5% density range at 90 km rather than an isopycnic point. No attempt has been made to force the data to conform to a smooth monthly progression. The intersections represent small deviations and are not considered significant in view of the present knowledge of this region.

SECTION II
WIND QUANTITIES

II.0 INTRODUCTION

Wind is the most difficult of all atmospheric parameters to summarize in a statistical form to satisfy the many diverse applications of wind data for missile and space vehicle programs. The wind statistics presented in this document are monthly and annual values at selected percentiles for scalar wind, and zonal and meridional wind components. These tabulations will not satisfy all needs for information on wind quantities, but they should prove helpful as a common reference in comparing wind statistics from the several missile test ranges.

II.1 BASIC WIND DATA

All of the basic wind data are from Fort Greely Missile Range rocketsonde wind measurements which are collected and reduced at White Sands Missile Range and then made available to other users. The period over which wind data were collected varies by month and is indicated for each month in the headings of Table II.

II.2 COMPUTATIONAL PROCEDURES

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

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

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

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

II.2.2 CUMULATIVE PERCENTAGE FREQUENCIES. Cumulative percentage frequencies were computed for 11 percentiles for monthly and annual reference periods at each altitude for the scalar and wind components. These percentiles are the principal headings of Table II.

A particular feature of the tabulations for scalar wind (Tables II.1.1 through II.1.13) is that the maximum and minimum scalar winds are listed. The column heading designated as direction gives the direction from which the maximum and minimum wind speed occurred if the extreme wind value occurred only once during the period of record.

The wind statistics presented here are in general agreement with the Meteorological Rocket Network Data Reports. The data may have included a very few wild points. No adjustments have been made, so such points must be used with caution until additional information becomes available.

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3. Fort Greely Missile Range Reference Atmosphere (Part I). Prepared by Range Reference Atmosphere Committee, Meteorological Working Group for the Inter-Range Instrumentation Group, IRIG Document 104-63, October 1964.

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8. Webb, W. W., Structure of the Stratosphere and Mesosphere, Academic Press, New York, 1966.

9. Spivey, S. A., "A Preliminary Reference Atmosphere for Fort Greely Missile Range, Alaska, from 25 to 90 km Altitude," TM 54/50-99, LMSC/HREC A791100, Lockheed Missiles & Space Company, Huntsville, Ala., January 1968.

PREVIOUS RANGE REFERENCE ATMOSPHERES PUBLISHED BY IRIG

(1) Atlantic Missile Range Reference Atmosphere for Cape Kennedy, Florida (Part I), Document 104-63, April 16, 1963.

(2) White Sands Missile Range Reference Atmosphere for White Sands Missile Range, New Mexico (Part I), Document 104-63, June 28, 1964.

(3) Fort Churchill Missile Range Reference Atmosphere for Fort Churchill, Manitoba, Canada (Part I), Document 104-63, August 7, 1964.

(4) Pacific Missile Range Reference Atmosphere for Eniwetok, Marshall Islands (Part I), Document 104-63, September 1, 1964.

(5) Fort Greely Missile Range Reference Atmosphere for Fort Greely, Alaska (Part I), Document 104-63, October 6, 1964.

(6) Eglin Gulf Test Range Reference Atmosphere for Eglin AFB, Florida (Part I), Document 104-63, January 25, 1965.

(7) Pacific Missile Range Reference Atmosphere for Point Arguello, California (Part I), Document 104-63, April 1965.

(8) Wallops Island Test Range Reference Atmosphere (Part I), Document 104-63, July 10, 1965.

(9) Eastern Test Range Reference Atmosphere for Ascension Island, South Atlantic (Part I), Document 104-63, July 1966.

(10) Western Test Range Reference Atmosphere for Johnston Island (Part I), Document 104-63, publication pending.

(11) Western Test Range Reference Atmosphere for Lihue, Kauai, Hawaii (Part I), Document 104-63, publication pending.

(12) Eastern Test Range Reference Atmosphere for Cape Kennedy, Florida (Part II), Document , publication pending.

(13) White Sands Missile Range Reference Atmosphere for White Sands Missile Range, New Mexico (Part II), Document , publication pending.

(14) Wallops Island Test Range Reference Atmosphere for Wallops Island, Virginia, (Part II), Document , publication pending.

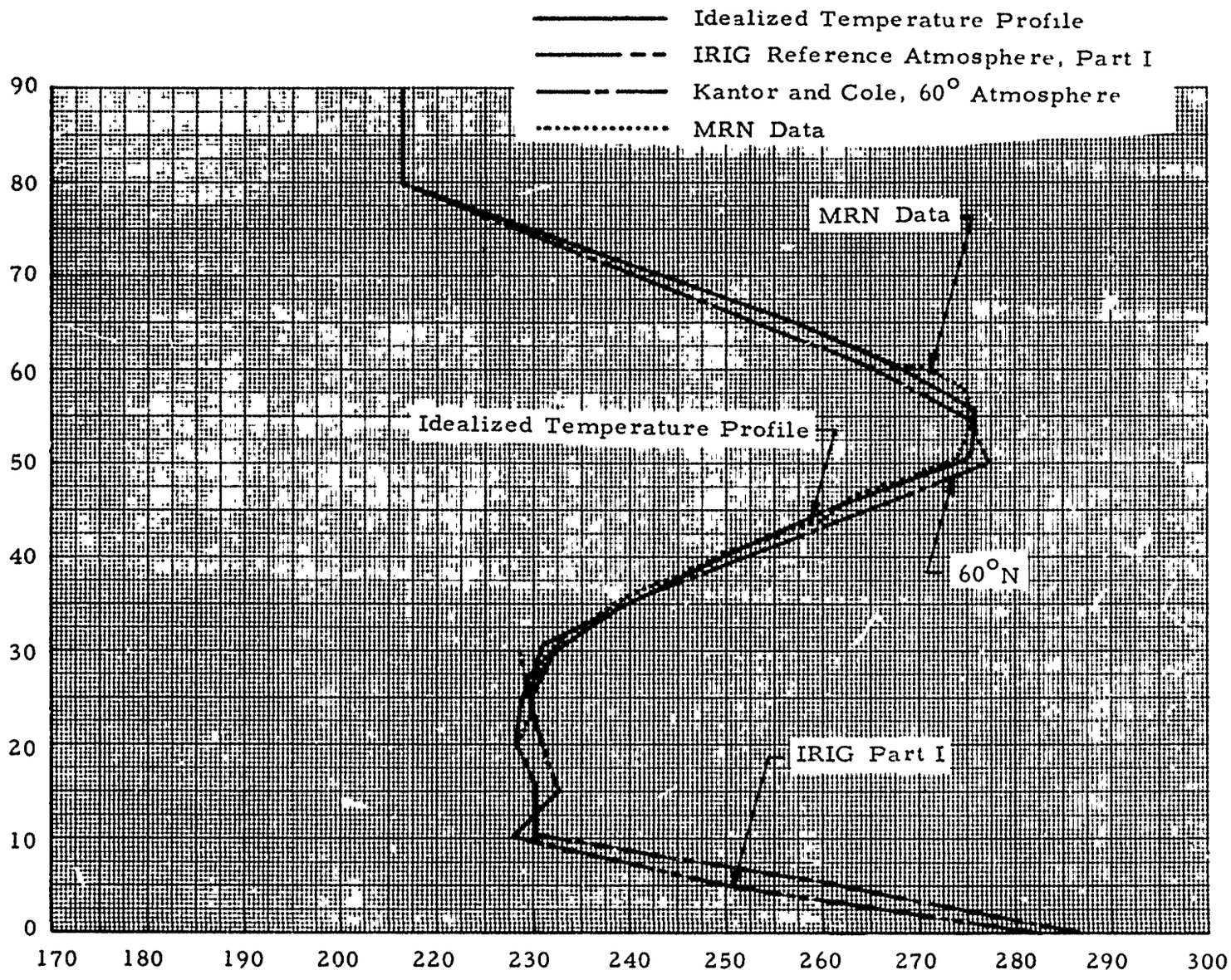

Fig. 1 - Idealized Temperature Profile Reference Atmosphere, Fort Greely Missile Range, Alaska, October

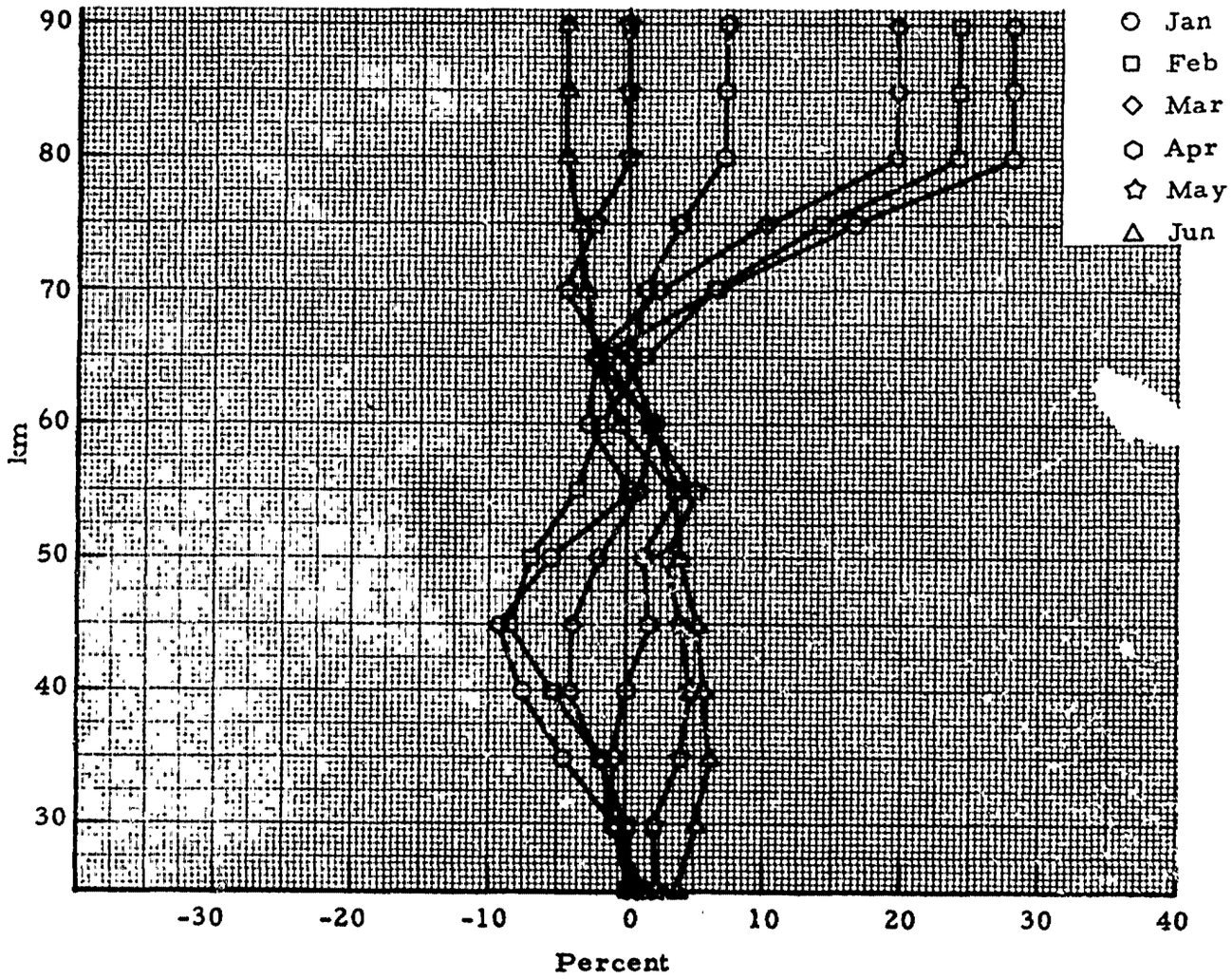

Figure 2 – Monthly Relative Temperature Deviations from U.S. Standard, 1962, January through June

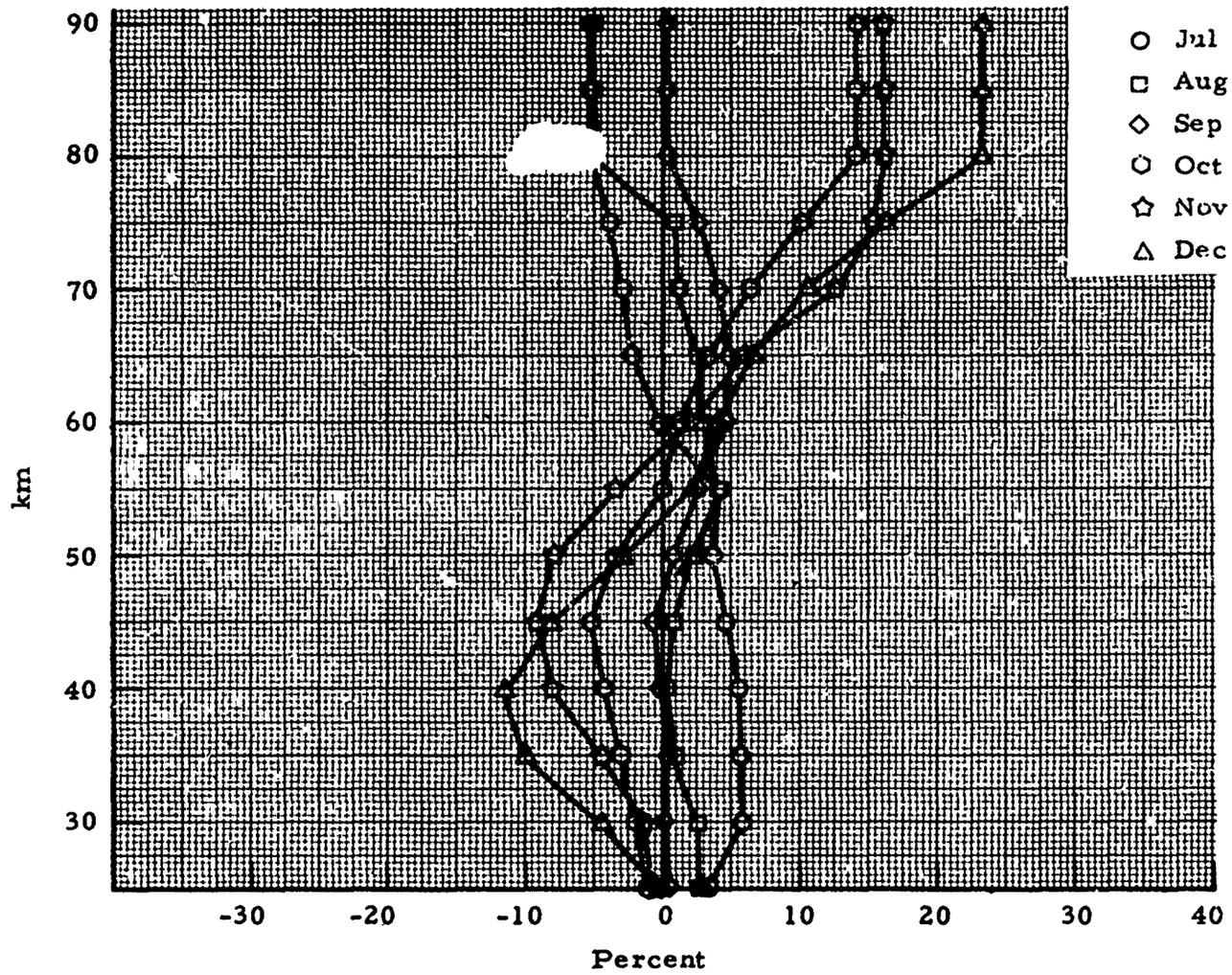

Figure 3 – Monthly Relative Temperature Deviations from U.S. Standard, 1962, July through December

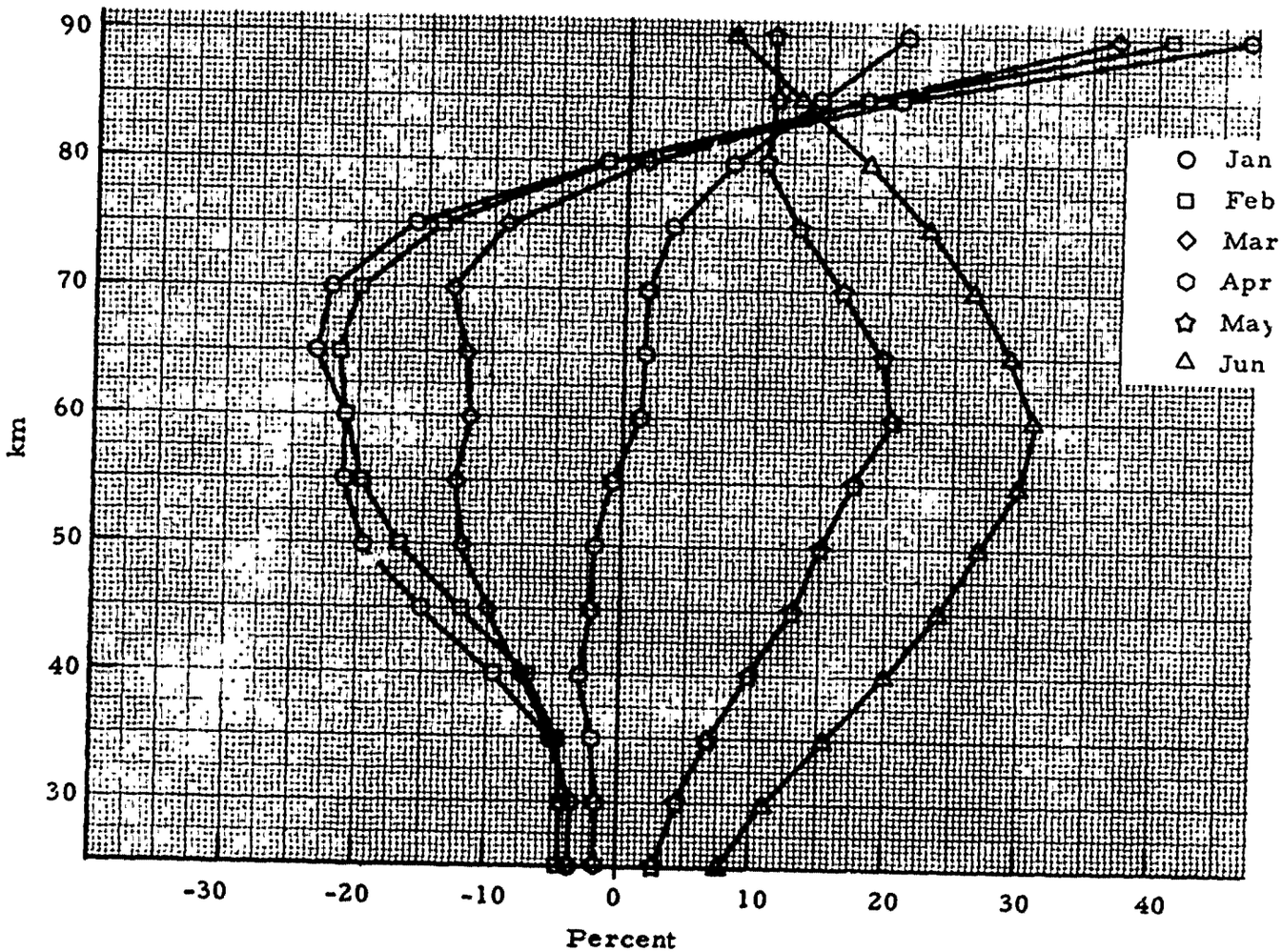

Figure 4 – Monthly Relative Pressure Deviations from U.S. Standard, 1962, January through June

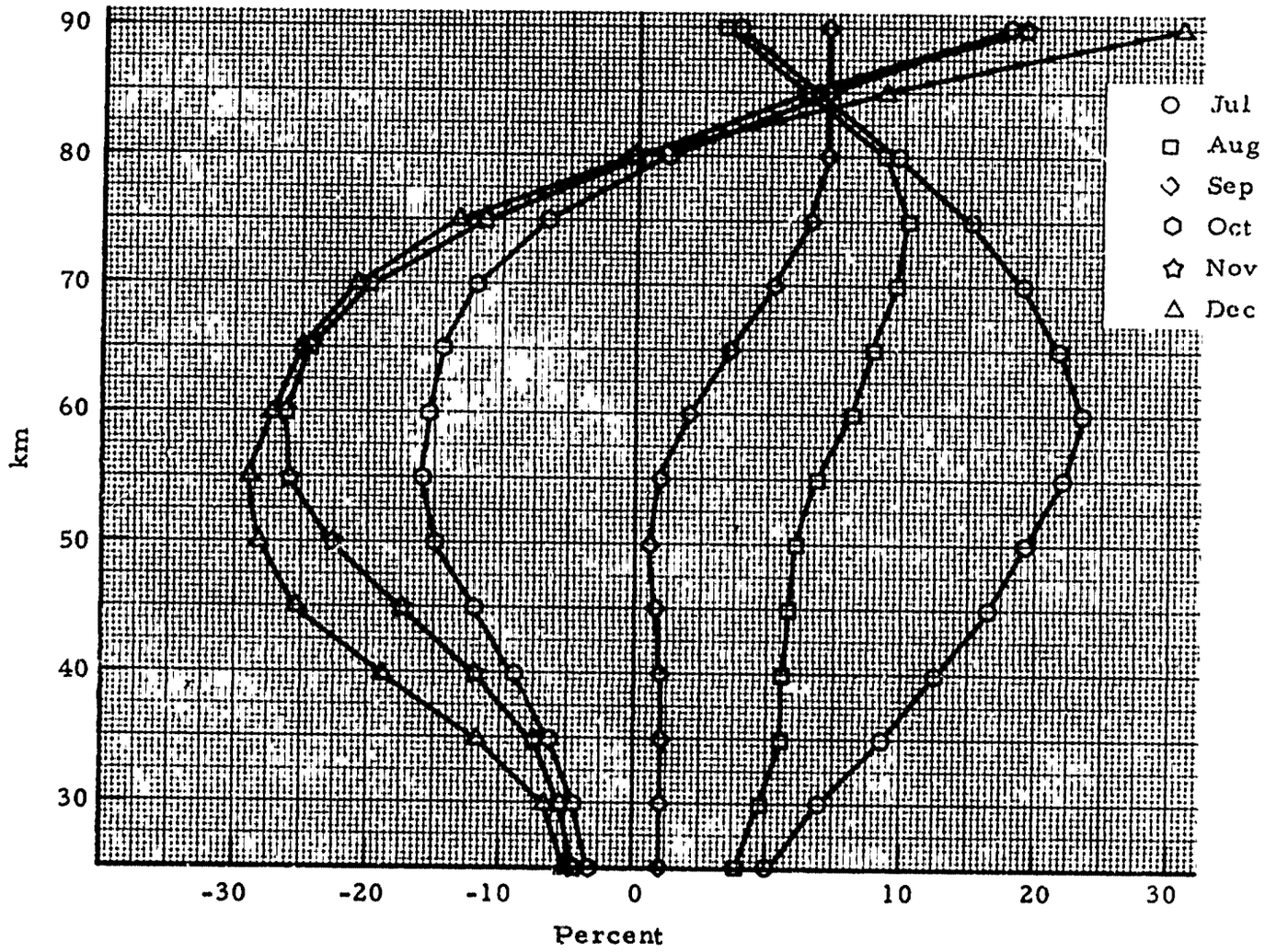

Figure 5 – Monthly Relative Pressure Deviations from U.S. Standard, 1962, July through December

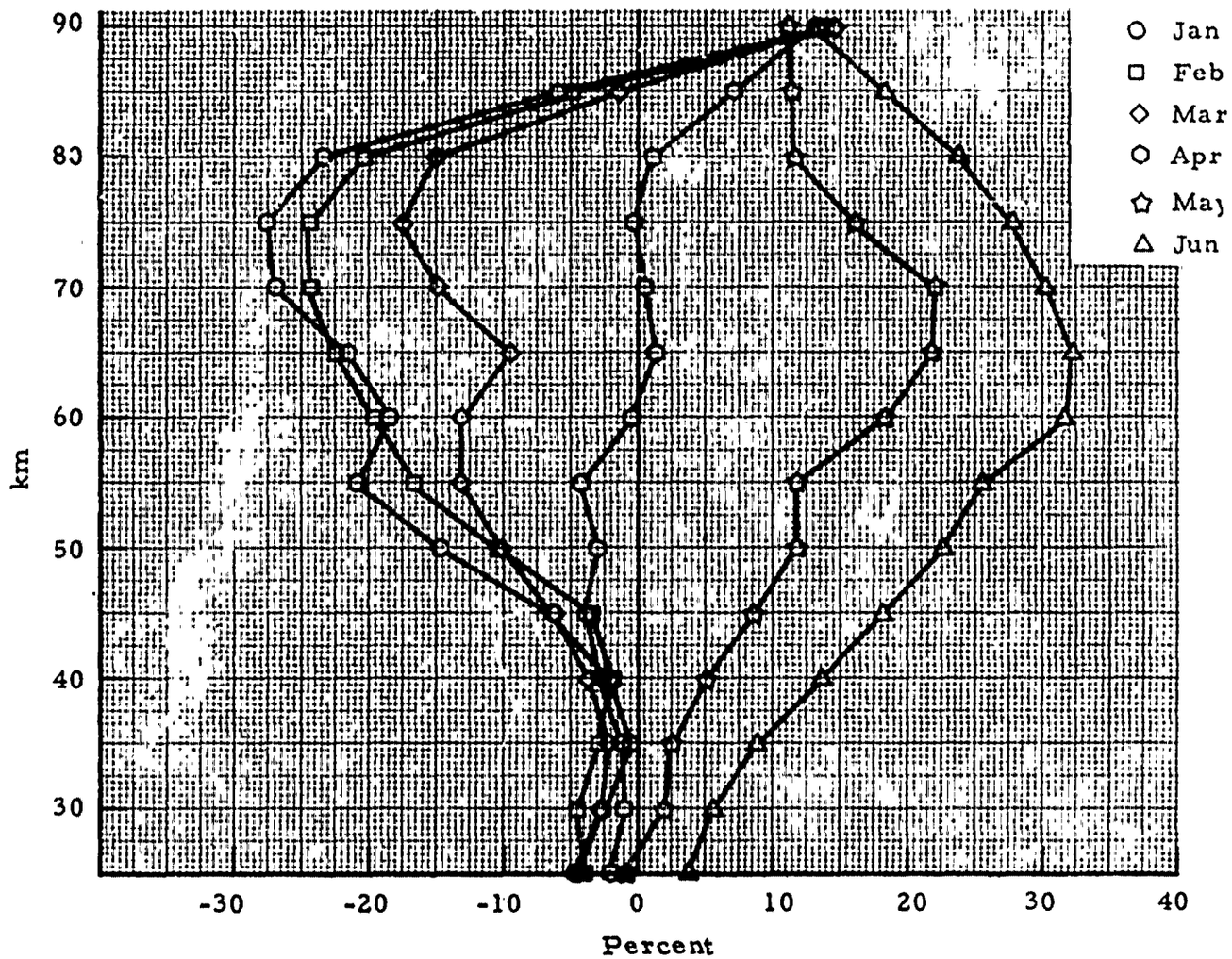

Figure 6 – Monthly Relative Density Deviations from U.S. Standard, 1962, January through June

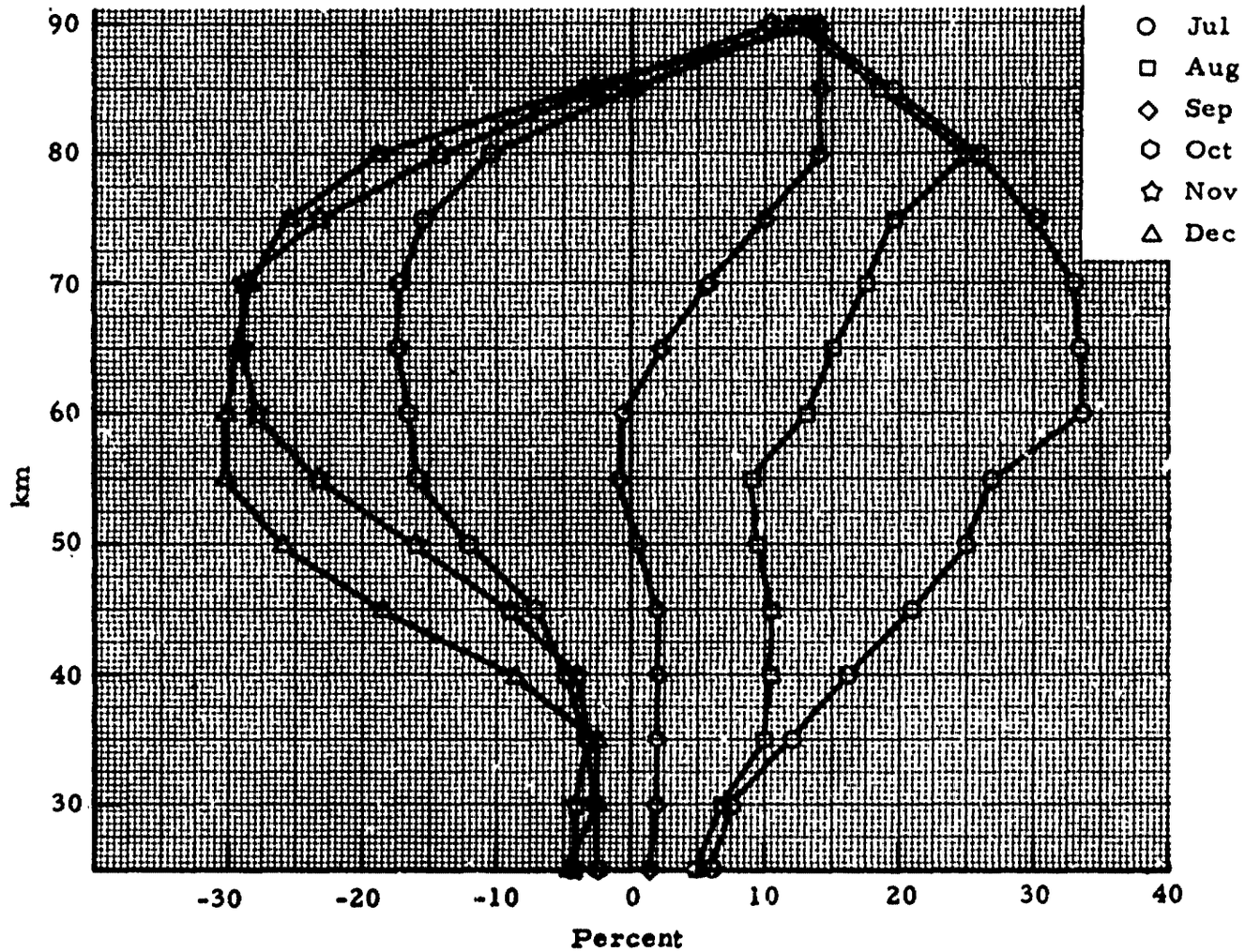

Figure 7 – Monthly Relative Density Deviations from U. S. Standard, 1962, July through December

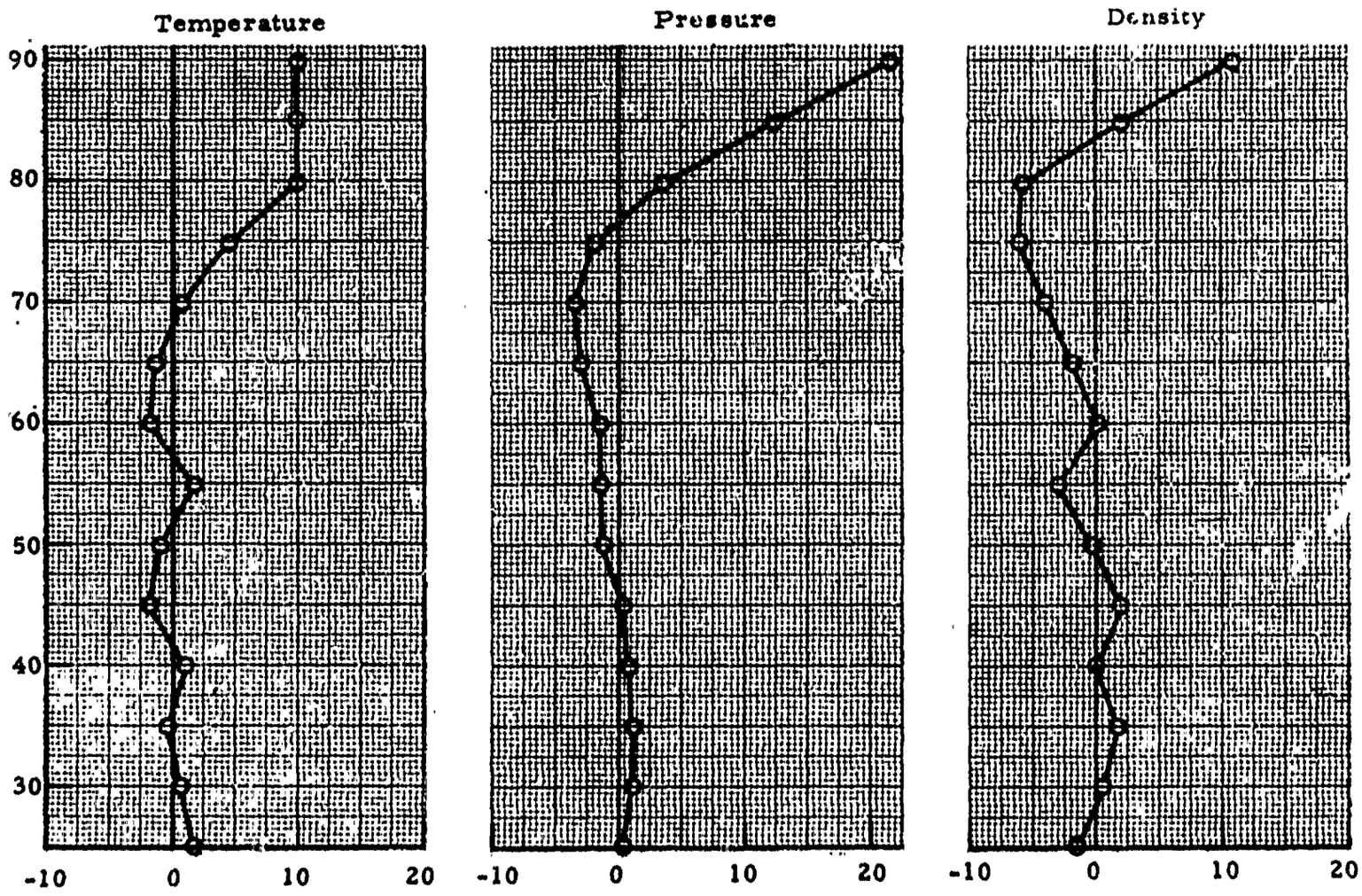

Figure 8 – Annual Fort Greely Missile Range Relative Temperature, Pressure and Density Deviations from U. S. Standard, 1962.

IRIG-RANGE REFERENCE ATMOSPHERE, JANUARY TABLE I. I

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	gm^{-3}	$m\ sec^{-1}$
25000	23959.3	224.45	26.6166000	35.1746084	300.467
25250	25178.6	224.67	23.7052528	35.7563829	300.492
25500	25657.1	224.70	22.8259666	35.3856199	300.497
25750	25705.7	224.72	21.9766010	35.0735240	300.512
26000	25956.3	224.74	21.1633957	32.8047748	300.527
26250	26292.8	224.76	20.3797455	31.5873403	300.542
26500	26451.2	224.79	19.6253743	30.4136339	300.557
26750	26699.8	224.81	18.8970399	29.2833510	300.572
27000	26958.3	224.83	18.1968076	28.1934503	300.587
27250	27196.8	224.85	17.5226523	27.1481494	300.602
27500	27445.2	224.88	16.8735866	26.1369241	300.617
27750	27693.6	224.90	16.2488726	25.1693125	300.632
28000	27942.0	224.92	15.6470075	24.2349043	300.647
28250	28190.4	224.94	15.0677229	23.3353431	300.662
28500	28438.8	224.97	14.5099514	22.4693233	300.677
28750	28687.1	224.99	13.9729793	21.6355883	300.692
29000	28935.4	225.01	13.4559416	20.8329300	300.707
29250	29183.7	225.03	12.9581227	20.0601951	300.722
29500	29432.0	225.05	12.4788050	19.3162325	300.737
29750	29680.3	225.08	12.0172973	18.5999952	300.752
30000	29928.5	225.10	11.5729363	17.9104361	300.767
30250	30176.8	225.12	11.1453803	17.2445569	300.782
30500	30425.0	225.15	10.7341150	16.6073973	300.7[illegible]
30750	30673.1	225.17	10.3384465	15.9920319	300.813
31000	30921.3	225.19	9.9545045	15.3905717	300.828
31250	31169.5	225.21	9.5857400	14.8281603	300.843
31500	31417.6	225.24	9.2326242	14.2739727	300.858
31750	31665.7	225.26	8.8914584	13.7512157	300.873
32000	31913.8	225.28	8.5633227	13.2421275	300.888
32250	32161.9	225.30	8.2471757	12.7519713	300.903
32500	32409.9	225.33	7.9427536	12.2800455	300.918
32750	32657.9	225.35	7.6496196	11.8256545	300.933
33000	32905.0	225.37	7.3673533	11.3881563	300.948
33250	33153.0	225.39	7.0955499	10.9669203	300.963
33500	33401.0	225.42	6.8338198	10.5613345	300.978
33750	33[illegible]	225.44	6.5817880	10.1708169	300.993
34000	33897.8	225.45	6.3390935	9.7948040	301.008
34250	34145.7	225.48	6.1053589	9.4327557	301.023
34500	34393.6	225.51	5.8803396	[illegible].0841535	301.038
34750	34641.5	225.55	5.6636318	8.7478217	301.053
35000	34889.4	225.72	[illegible].4550240	8.4190819	301.[illegible]
35250	35137.2	225.89	5.2542676	8.1026569	301.298
35500	35385.0	226.07	5.0610519	7.7980621	301.415
35750	35632.8	226.25	4.8751155	7.5066133	301.531
36000	35880.6	226.42	4.6961512	7.2254579	301.648
36250	36128.4	226.60	4.5234002	6.9550555	301.765
36500	36376.1	226.77	4.3561057	6.6949949	301.881
36750	36623.8	226.94	4.1935294	6.4448938	301.994
37000	36871.5	227.12	3.0650069	6.2042783	302.111
37250	37119.2	227.39	3.8970379	5.9728655	302.230
37500	37366.9	227.67	3.7548913	5.7502605	302.347
37750	37614.5	227.89	3.6177313	5.5363057	302.925
38000	37862.1	228.30	3.4860131	5.3193821	302.499
38250	38109.7	228.71	3.3593235	5.1148749	303.170
38500	38357.3	229.12	3.2374625	4.9224335	303.441
38750	38604.9	229.53	3.1202371	4.7357228	303.713
39000	38852.4	229.94	3.0074629	4.5554210	303.984
39250	39100.0	230.35	2.8989630	4.3842221	304.255
39500	39347.5	230.78	2.7945651	4.2185322	304.525
39750	39595.0	231.17	2.6941156	4.0599702	304.796
40000	39842.4	231.58	2.5974699	3.9073571	305.066
40250	40089.9	231.99	2.5038215	3.7607655	305.336
40500	40337.3	232.40	2.4148873	3.6199169	305.605
40750	40584.7	232.81	2.3287101	3.4845919	305.875
41000	40832.1	233.22	2.2457581	3.3545579	306.144
41250	41079.5	233.63	2.1658051	3.2298013	306.413
41500	41326.9	234.04	2.0890299	3.1095159	306.682
41750	41574.2	234.45	2.0150156	2.9941010	306.950
42000	41821.5	234.86	1.9437531	2.8831663	307.219
42250	42068.8	235.27	1.8751332	2.7765363	307.487
42500	42316.1	235.68	1.8090540	2.6740339	307.754
42750	42563.4	235.89	1.7454171	2.5756892	308.022
43000	42810.6	236.50	1.6841251	2.4807447	308.289

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m-3	SPEED OF SOUND m sec-1
43250	43057.8	236.91	1.6250964	2.3896474	308.557
43500	43305.0	237.32	1.5682349	2.3020506	308.823
43750	43552.2	237.73	1.5134602	2.2178139	309.099
44000	43799.4	238.14	1.4606922	2.1368029	309.356
44250	44046.5	238.55	1.4098540	2.0588884	309.623
44500	44293.6	238.96	1.3608716	1.9839469	309.889
44750	44540.7	239.37	1.3136743	1.9118600	310.154
45000	44787.8	240.00	1.2682145	1.8408549	310.562
45250	45034.9	240.79	1.2244583	1.7715266	311.071
45500	45281.9	241.58	1.1823506	1.7050313	311.580
45750	45529.0	242.36	1.1418240	1.6412390	312.087
46000	45776.0	243.15	1.1028143	1.5800332	312.594
46250	46023.0	243.94	1.0652599	1.5213009	313.099
46500	46269.9	244.73	1.0291021	1.4649345	313.604
46750	46516.9	245.51	0.9942845	1.4108315	314.109
47000	46763.8	246.30	0.9607534	1.3588941	314.612
47250	47010.7	247.09	0.9284572	1.3090288	315.115
47500	47257.6	247.88	0.8973467	1.2611467	315.616
47750	47504.5	248.66	0.8673747	1.2151630	316.117
48000	47751.3	249.45	0.8384960	1.1709965	316.617
48250	47998.2	250.24	0.8106675	1.1285699	317.117
48500	48245.0	251.03	0.7838477	1.0878095	317.615
48750	48491.8	251.81	0.7579971	1.0486487	318.113
49000	48738.6	252.60	0.7330777	1.0110084	318.610
49250	48985.3	253.39	0.7090532	0.9748363	319.106
49500	49232.1	254.18	0.6858886	0.9400671	319.602
49750	49478.8	254.96	0.6635508	0.9066425	320.097
50000	49725.5	255.75	0.6420076	0.8745057	320.591
50250	49972.2	256.54	0.6212285	0.8436040	321.084
50500	50218.8	257.33	0.6011641	0.8139850	321.576
50750	50465.5	258.11	0.5818462	0.7853030	322.068
51000	50712.1	258.90	0.5631879	0.7578083	322.559
51250	50958.7	259.69	0.5451832	0.7313572	323.049
51500	51205.3	260.48	0.5278074	0.7059070	323.539
51750	51451.9	261.26	0.5110366	0.6814171	324.027
52000	51698.4	262.05	0.4948481	0.6578484	324.515
52250	51945.9	262.84	0.4792198	0.6351635	325.003
52500	52191.4	263.63	0.4641308	0.6133268	325.489
52750	52437.9	264.41	0.4495610	0.5923941	325.975
53000	52684.4	265.20	0.4354909	0.5720627	326.460
53250	52930.8	265.99	0.4219019	0.5525714	326.944
53500	53177.3	266.50	0.4087697	0.5338423	327.259
53750	53423.7	266.50	0.3960592	0.5177272	327.259
54000	53670.1	266.50	0.3837449	0.5016300	327.259
54250	53916.5	266.50	0.3718143	0.4860344	327.259
54500	54162.8	266.50	0.3602556	0.4709249	327.259
54750	54409.2	266.50	0.3490571	0.4562852	327.259
55000	54655.5	266.50	0.3382075	0.4421036	327.259
55250	54901.8	266.50	0.3276953	0.4283630	327.259
55500	55148.0	266.50	0.3175118	0.4150504	327.259
55750	55394.3	266.50	0.3076450	0.4021525	327.259
56000	55640.5	266.50	0.2980856	0.3896564	327.259
56250	55886.8	266.50	0.2888238	0.3775495	327.259
56500	56133.0	266.50	0.2798506	0.3658127	327.259
56750	56379.2	266.50	0.2711567	0.3544551	327.259
57000	56625.3	266.50	0.2627337	0.3434445	327.259
57250	56871.5	266.50	0.2545728	0.3327767	327.259
57500	57117.6	266.50	0.2466661	0.3224411	327.259
57750	57363.7	266.50	0.2390055	0.3124272	327.259
58000	57609.8	266.50	0.2315835	0.3027251	327.259
58250	57855.8	257.91	0.2242765	0.3029351	321.943
58500	58101.9	256.57	0.2170663	0.2947359	321.101
58750	58347.9	255.22	0.2100522	0.2867179	320.257
59000	58593.9	253.87	0.2032300	0.2788781	319.410
59250	58839.9	252.52	0.1965953	0.2712133	318.561
59500	59085.9	251.18	0.1901439	0.2637200	317.710
59750	59331.8	249.83	0.1838717	0.2563958	316.857
60000	59577.8	248.48	0.1777746	0.2492392	316.001
60250	59823.7	247.13	0.1718486	0.2422447	315.143
60500	60069.6	245.79	0.1660902	0.2354104	314.283
60750	60315.5	244.44	0.1604944	0.2287330	313.420
61000	60561.3	243.09	0.1550584	0.2222114	312.555
61250	60807.2	241.74	0.1497786	0.2158411	311.688
61500	61053.0	240.40	0.1446505	0.2096199	310.818

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
61750	61298.8	239.05	0.1396711	0.2035451	309.945
62000	61544.6	237.70	0.1348369	0.1976140	309.071
62250	61790.3	236.35	0.1301443	0.1918240	308.193
62500	62036.1	235.01	0.1255899	0.1861725	307.313
62750	62281.8	234.80	0.1211809	0.1797955	307.178
63000	62527.5	234.76	0.1169248	0.1735085	307.153
63250	62773.2	234.72	0.1128179	0.1674409	307.129
63500	63018.9	234.68	0.1088549	0.1615850	307.104
63750	63264.5	234.65	0.1050309	0.1559334	307.080
64000	63510.1	234.61	0.1013408	0.1504791	307.055
64250	63755.7	234.57	0.0977802	0.1452151	307.031
64500	64001.3	234.54	0.0943443	0.1401349	307.006
64750	64246.9	234.50	0.0910289	0.1352320	306.981
65000	64492.5	234.46	0.0878298	0.1305002	306.957
65250	64738.0	234.42	0.0847429	0.1259337	306.932
65500	64983.5	234.39	0.0817642	0.1215266	306.908
65750	65229.0	234.35	0.0788899	0.1172734	306.883
66000	65474.5	234.31	0.0761165	0.1131687	306.859
66250	65719.9	234.27	0.0734404	0.1092073	306.834
66500	65965.4	234.24	0.0708581	0.1053843	306.810
66750	66210.8	234.20	0.0683665	0.1016949	306.785
67000	66456.2	234.16	0.0659622	0.0981343	306.760
67250	66701.6	234.12	0.0636424	0.0946981	306.736
67500	66946.9	234.09	0.0614039	0.0913819	306.711
67750	67192.3	234.05	0.0592440	0.0881817	306.687
68000	67437.6	234.01	0.0571599	0.0850932	306.662
68250	67682.9	233.97	0.0551489	0.0821127	306.638
68500	67928.2	233.93	0.0532086	0.0792364	306.613
68750	68173.4	233.90	0.0513363	0.0764605	306.588
69000	68418.7	233.86	0.0495298	0.0737817	306.564
69250	68663.9	233.82	0.0477867	0.0711966	306.539
69500	68909.1	233.79	0.0461049	0.0687018	306.515
69750	69154.3	233.75	0.0444820	0.0662943	306.490
70000	69399.5	233.71	0.0429162	0.0639709	306.466
70250	69644.6	233.67	0.0414054	0.0617288	306.441
70500	69889.8	233.64	0.0399476	0.0595650	306.416
70750	70134.9	233.60	0.0385411	0.0574770	306.392
71000	70380.0	233.56	0.0371840	0.0554620	306.367
71250	70625.1	233.52	0.0358745	0.0535175	306.343
71500	70870.1	233.49	0.0346111	0.0516409	306.318
71750	71115.1	233.45	0.0333920	0.0498301	306.293
72000	71360.2	233.41	0.0322158	0.0480826	306.269
72250	71605.2	233.37	0.0310810	0.0463962	306.244
72500	71850.1	233.34	0.0299860	0.0447689	306.220
72750	72095.1	233.30	0.0289295	0.0431985	306.195
73000	72340.1	233.26	0.0279101	0.0416831	306.170
73250	72585.0	233.22	0.0269266	0.0402207	306.146
73500	72829.9	233.18	0.0259777	0.0388095	306.121
73750	73074.8	233.15	0.0250621	0.0374477	306.097
74000	73319.6	233.11	0.0241788	0.0361336	306.072
74250	73564.5	233.07	0.0233265	0.0348655	306.047
74500	73809.3	233.04	0.0225041	0.0336418	306.023
74750	74054.1	233.00	0.0217107	0.0324610	305.998
75000	74298.9	232.96	0.0209453	0.0313215	305.973
75250	74543.7	232.92	0.0202067	0.0302219	305.949
75500	74788.4	232.89	0.0194941	0.0291608	305.924
75750	75033.2	232.85	0.0188066	0.0281369	305.900
76000	75277.9	232.81	0.0181433	0.0271489	305.875
76250	75522.6	232.77	0.0175033	0.0261955	305.850
76500	75767.3	232.74	0.0168859	0.0252755	305.826
76750	76011.9	232.70	0.0162902	0.0243877	305.801
77000	76256.5	232.66	0.0157154	0.0235311	305.776
77250	76501.2	232.62	0.0151609	0.0227045	305.752
77500	76745.8	232.59	0.0146259	0.0219068	305.727
77750	76990.3	232.55	0.0141098	0.0211371	305.702
78000	77234.9	232.51	0.0136118	0.0203944	305.678
78250	77479.5	232.47	0.0131313	0.0196777	305.653
78500	77724.0	232.43	0.0126678	0.0189862	305.628
78750	77968.5	232.40	0.0122206	0.0183189	305.604
79000	78213.0	232.36	0.0117892	0.0176750	305.579
79250	78457.4	232.32	0.0113729	0.0170537	305.554
79500	78701.9	232.29	0.0109713	0.0164542	305.530
79750	78946.3	232.25	0.0105839	0.0158757	305.505
80000	79190.7	232.15	0.0102100	0.0153213	305.441

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m^{-3}	SPEED OF SOUND m sec^{-1}
80250	79435.1	232.15	0.0098494	0.0147601	305.441
80500	79679.5	232.15	0.0095015	0.0142580	305.441
80750	79923.9	232.15	0.0091659	0.0137544	305.441
81000	80168.2	232.15	0.0088421	0.0132687	305.441
81250	80412.5	232.15	0.0085299	0.0128001	305.441
81500	80656.8	232.15	0.0082287	0.0123481	305.441
81750	80901.1	232.15	0.0079381	0.0119121	305.441
82000	81145.3	232.15	0.0076579	0.0114915	305.441
82250	81389.6	232.15	0.0073875	0.0110858	305.441
82500	81633.8	232.15	0.0071267	0.0106944	305.441
82750	81878.0	232.15	0.0068751	0.0103169	305.441
83000	82122.2	232.15	0.0066325	0.0099528	305.441
83250	82366.4	232.15	0.0063984	0.0096015	305.441
83500	82610.5	232.15	0.0061726	0.0092627	305.441
83750	82854.6	232.15	0.0059548	0.0089358	305.441
84000	83098.7	232.15	0.0057447	0.0086205	305.441
84250	83342.8	232.15	0.0055420	0.0083164	305.441
84500	83586.9	232.15	0.0053464	0.0080230	305.441
84750	83830.9	232.15	0.0051578	0.0077399	305.441
85000	84075.0	232.15	0.0049759	0.0074669	305.441
85250	84319.0	232.15	0.0048004	0.0072035	305.441
85500	84563.0	232.15	0.0046311	0.0069495	305.441
85750	84807.0	232.15	0.0044678	0.0067044	305.441
86000	85050.9	232.15	0.0043102	0.0064680	305.441
86250	85294.9	232.15	0.0041582	0.0062399	305.441
86500	85538.8	232.15	0.0040116	0.0060199	305.441
86750	85782.7	232.15	0.0038702	0.0058076	305.441
87000	86026.6	232.15	0.0037337	0.0056029	305.441
87250	86270.4	232.15	0.0036021	0.0054054	305.441
87500	86514.3	232.15	0.0034752	0.0052149	305.441
87750	86758.1	232.15	0.0033527	0.0050311	305.441
88000	87001.9	232.15	0.0032345	0.0048538	305.441
88250	87245.7	232.15	0.0031205	0.0046827	305.441
88500	87489.5	232.15	0.0030106	0.0045177	305.441
88750	87733.2	232.15	0.0029045	0.0043585	305.441
89000	87976.9	232.15	0.0028022	0.0042050	305.441
89250	88220.6	232.15	0.0027035	0.0040566	305.441
89500	88464.3	232.15	0.0026082	0.0039139	305.441
89750	88708.0	232.15	0.0025163	0.0037761	305.441
90000	88951.7	232.15	0.0024277	0.0036431	305.441

IRIG-RANGE REFERENCE ATMOSPHERE, FEBRUARY TABLE I. 2

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49'N	147°52'W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59'N	145°43'W	UNITS SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY gm-3	SPEED OF SOUND m sec-1
25000	24959.9	221.45	24.4354000	38.4398657	298.319
25250	25208.6	221.73	23.5165239	36.9476451	298.508
25500	25457.1	222.01	22.6333641	35.5152320	298.696
25750	25705.7	222.29	21.7844873	34.1401567	298.884
26000	25954.3	222.57	20.9685196	32.8200500	299.072
26250	26202.8	222.85	20.1841441	31.5526465	299.260
26500	26451.3	223.13	19.4300978	30.3357765	299.448
26750	26699.8	223.41	18.7051702	29.1673619	299.636
27000	26948.3	223.69	18.0082004	28.0454129	299.824
27250	27196.8	223.97	17.3380752	26.9680240	300.012
27500	27445.2	224.25	16.6937272	25.9333698	300.199
27750	27693.6	224.53	16.0741327	24.9397023	300.386
28000	27942.0	224.81	15.4783099	23.9853470	300.574
28250	28190.4	225.09	14.9053173	23.0686999	300.761
28500	28438.8	225.37	14.3542518	22.1882284	300.948
28750	28687.1	225.65	13.8242470	21.3424484	301.135
29000	28935.4	225.93	13.3144719	20.5299616	301.321
29250	29183.7	226.21	12.8241293	19.7394126	301.508
29500	29432.0	226.49	12.3524345	18.9993067	301.695
29750	29680.3	226.77	11.8987137	18.2790032	301.881
30000	29928.5	227.05	11.4622029	17.5867131	302.067
30250	30176.8	227.33	11.0422466	16.9214970	302.254
30500	30425.0	227.61	10.6381965	16.2822620	302.440
30750	30673.1	227.89	10.2494306	15.6679640	302.626
31000	30921.3	228.17	9.8753521	15.0773972	302.811
31250	31169.5	228.45	9.5153879	14.5102010	302.997
31500	31417.6	228.73	9.1689883	13.9648534	303.183
31750	31665.7	229.01	8.8356255	13.4406709	303.368
32000	31913.8	229.29	8.5147929	12.9368060	303.554
32250	32161.9	229.57	8.2060042	12.4524467	303.739
32500	32409.9	229.85	7.9087926	11.9868141	303.924
32750	32657.9	230.13	7.6227099	11.5391613	304.109
33000	32906.0	230.41	7.3473258	11.1087724	304.294
33250	33153.9	230.69	7.0822274	10.6949606	304.479
33500	33401.9	230.97	6.8270178	10.2970673	304.664
33750	33649.9	231.25	6.5813161	9.9144609	304.848
34000	33897.5	231.53	6.3447555	9.5465357	305.033
34250	34145.7	231.81	6.1169884	9.1927105	305.217
34500	34393.8	232.09	5.8976737	8.8524280	305.402
34750	34641.5	232.37	5.6864887	8.5251536	305.586
35000	34889.4	232.65	5.4831222	8.2103744	305.770
35250	35137.2	232.93	5.2872753	7.9075982	305.954
35500	35385.0	233.21	5.0986810	7.6163529	306.138
35750	35632.8	233.49	4.9170033	7.3361856	306.321
36000	35880.6	233.77	4.7420375	7.0666617	306.505
36250	36128.4	234.01	4.5734934	6.8086137	306.660
36500	36376.1	234.21	4.4111031	6.5610785	306.795
36750	36623.8	234.42	4.2546262	6.3227666	306.930
37000	36871.5	234.63	4.1038419	6.0933262	307.065
37250	37119.2	234.83	3.9585381	5.8724189	307.200
37500	37366.9	235.04	3.8185106	5.6597196	307.335
37750	37614.5	235.24	3.6835630	5.4549165	307.470
38000	37862.1	235.45	3.5535066	5.2577087	307.604
38250	38109.7	235.66	3.4281596	5.0678081	307.739
38500	38357.3	235.86	3.3073473	4.8849373	307.874
38750	38604.9	236.07	3.1909015	4.7088290	308.008
39000	38852.4	236.27	3.0786606	4.5392294	308.143
39250	39100.0	236.48	2.9704688	4.3758890	308.277
39500	39347.5	236.69	2.8661766	4.2185744	308.412
39750	39595.0	236.89	2.7656398	4.0670556	308.546
40000	39842.4	237.10	2.6687199	3.9211146	308.680
40250	40089.9	237.31	2.5752838	3.7805412	308.814
40500	40337.3	237.51	2.4852024	3.6451331	308.949
40750	40584.7	237.72	2.3983530	3.5146959	309.083
41000	40832.1	237.93	2.3146165	3.3890428	309.217
41250	41079.5	238.13	2.2338785	3.2679941	309.351
41500	41326.9	238.34	2.1560291	3.1513768	309.485
41750	41574.2	238.54	2.0809623	3.0390249	309.619
42000	41821.5	238.75	2.0085762	2.9307786	309.752
42250	42068.8	238.96	1.9387726	2.8264883	309.886
42500	42316.1	239.16	1.8714571	2.7259940	310.020
42750	42563.4	239.37	1.8065389	2.6291459	310.154
43000	42810.6	239.57	1.7439305	2.5358629	310.287

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	FERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
43250	43057.8	239.78	1.6835475	2.4459539	310.421
43500	43305.0	239.99	1.6253090	2.3593123	310.554
43750	43552.2	240.19	1.5691369	2.2750165	310.688
44000	43799.4	240.40	1.5149561	2.1953495	310.821
44250	44046.5	240.61	1.4626941	2.1177988	310.954
44500	44293.6	240.81	1.4122809	2.0430894	311.085
44750	44540.7	241.29	1.3636771	1.9688252	311.397
45000	44787.8	241.78	1.3168417	1.8974061	311.709
45250	45034.9	242.26	1.2717072	1.8287176	312.020
45500	45281.9	242.74	1.2282083	1.7626500	312.331
45750	45529.0	243.22	1.1862826	1.6990982	312.642
46000	45776.0	243.71	1.1458702	1.6379616	312.952
46250	46023.0	244.19	1.1069134	1.5791437	313.262
46500	46269.9	244.67	1.0693571	1.5225520	313.572
46750	46516.9	245.16	1.0331481	1.4680981	313.882
47000	46763.8	245.64	0.9982356	1.4156970	314.191
47250	47010.7	246.12	0.9645707	1.3652675	314.500
47500	47257.6	246.61	0.9321062	1.3167315	314.808
47750	47504.5	247.09	0.9007972	1.2700144	315.117
48000	47751.3	247.57	0.8706003	1.2250445	315.425
48250	47998.2	248.06	0.8414738	1.1817532	315.732
48500	48245.0	248.54	0.8133778	1.1400745	316.040
48750	48491.6	249.02	0.7862738	1.0999454	316.347
49000	48738.6	249.51	0.7601250	1.0613053	316.654
49250	48985.3	249.99	0.7348958	1.0240962	316.960
49500	49232.1	250.47	0.7105521	0.9882623	317.266
49750	49478.8	250.96	0.6870613	0.9537503	317.572
50000	49725.5	251.44	0.6643917	0.9205086	317.878
50250	49972.2	251.92	0.6425132	0.8884887	318.183
50500	50218.8	252.41	0.6213967	0.8576429	318.488
50750	50465.5	252.89	0.6010142	0.8279261	318.793
51000	50712.1	253.37	0.5813387	0.7992948	319.097
51250	50958.7	253.86	0.5623445	0.7717074	319.402
51500	51205.3	254.34	0.5440066	0.7451238	319.705
51750	51451.9	254.82	0.5263012	0.7195058	320.009
52000	51698.4	255.31	0.5092053	0.6948163	320.312
52250	51944.9	255.75	0.4926955	0.6711214	320.591
52500	52191.4	255.75	0.4767359	0.6493821	320.591
52750	52437.9	255.75	0.4612944	0.6283480	320.591
53000	52684.4	255.75	0.4463542	0.6079979	320.591
53250	52930.8	255.75	0.4318990	0.5883078	320.591
53500	53177.3	255.75	0.4179130	0.5692569	320.591
53750	53423.7	255.75	0.4043809	0.5508243	320.591
54000	53670.1	255.75	0.3912880	0.5329899	320.591
54250	53916.5	255.75	0.3786200	0.5157343	320.591
54500	54162.8	255.75	0.3663631	0.4990386	320.591
54750	54409.2	255.75	0.3545038	0.4828846	320.591
55000	54655.5	255.75	0.3430293	0.4672547	320.591
55250	54901.8	255.75	0.3319271	0.4521319	320.591
55500	55148.0	255.75	0.3211850	0.4374997	320.591
55750	55394.3	255.75	0.3107914	0.4233421	320.591
56000	55640.5	255.75	0.3007349	0.4096436	320.591
56250	55886.8	255.75	0.2910045	0.3963895	320.591
56500	56133.0	255.75	0.2815897	0.3835656	320.591
56750	56379.2	255.75	0.2724801	0.3711567	320.591
57000	56625.3	255.75	0.2636660	0.3591505	320.591
57250	56871.5	255.75	0.2551376	0.3475337	320.591
57500	57117.6	255.60	0.2468833	0.3364875	320.497
57750	57363.7	255.15	0.2388874	0.3261638	320.214
58000	57609.8	254.70	0.2311377	0.3161403	319.932
58250	57855.8	254.25	0.2236269	0.3064088	319.649
58500	58101.9	253.80	0.2163481	0.2969611	319.366
58750	58347.9	253.35	0.2092944	0.2877894	319.083
59000	58593.9	252.90	0.2024593	0.2788862	318.799
59250	58839.9	252.45	0.1958363	0.2702440	318.516
59500	59085.9	252.00	0.1894193	0.2618555	318.232
59750	59331.8	251.55	0.1832021	0.2537138	317.947
60000	59577.8	251.10	0.1771788	0.2458120	317.663
60250	59823.7	250.65	0.1713437	0.2381434	317.378
60500	60069.6	250.20	0.1656913	0.2307015	317.093
60750	60315.5	249.75	0.1602160	0.2234800	316.808
61000	60561.3	249.30	0.1549128	0.2164726	316.522
61250	60807.2	248.85	0.1497763	0.2096735	316.236
61500	61053.0	248.40	0.1448017	0.2030767	315.950

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
61750	61298.8	247.95	0.1399841	0.1956766	315.664
62000	61544.6	247.50	0.1353188	0.1904676	315.377
62250	61790.3	247.05	0.1308013	0.1844444	315.091
62500	62036.1	246.60	0.1264271	0.1788016	314.804
62750	62281.8	246.15	0.1221920	0.1729342	314.516
63000	62527.5	245.70	0.1180916	0.1674372	314.229
63250	62773.2	245.25	0.1141220	0.1621058	313.941
63500	63018.9	244.80	0.1102792	0.1569352	313.652
63750	63264.5	244.35	0.1065594	0.1519209	313.364
64000	63510.1	243.90	0.1029588	0.1470584	313.075
64250	63755.7	243.45	0.0994738	0.1423433	312.786
64500	64001.3	243.00	0.0961009	0.1377715	312.497
64750	64246.9	242.55	0.0928367	0.1333388	312.208
65000	64492.5	242.10	0.0896779	0.1290413	311.918
65250	64738.0	241.65	0.0866212	0.1248750	311.628
65500	64983.5	241.20	0.0836635	0.1208361	311.338
65750	65229.0	240.75	0.0808017	0.1169210	311.047
66000	65474.5	240.30	0.0780330	0.1131261	310.756
66250	65719.9	239.85	0.0753545	0.1094479	310.465
66500	65965.4	239.40	0.0727633	0.1058830	310.174
66750	66210.8	238.95	0.0702567	0.1024281	309.882
67000	66456.2	238.50	0.0678323	0.0990800	309.590
67250	66701.6	238.05	0.0654873	0.0958356	309.298
67500	66946.9	237.60	0.0632193	0.0926911	309.006
67750	67192.3	237.15	0.0610260	0.0896456	308.713
68000	67437.6	236.70	0.0589050	0.0866946	308.420
68250	67682.9	236.25	0.0568540	0.0838354	308.126
68500	67928.2	235.80	0.0548709	0.0810656	307.833
68750	68173.4	235.35	0.0529536	0.0783825	307.539
69000	68418.7	234.90	0.0510998	0.0757835	307.245
69250	68663.9	234.45	0.0493078	0.0732681	306.950
69500	68909.1	234.00	0.0475754	0.0708280	306.656
69750	69154.3	233.55	0.0459009	0.0684667	306.361
70000	69399.5	233.10	0.0442824	0.0661800	306.065
70250	69644.6	232.65	0.0427181	0.0639650	305.771
70500	69889.8	232.43	0.0412071	0.0617602	305.628
70750	70134.9	232.22	0.0397483	0.0596290	305.485
71000	70380.0	232.00	0.0383400	0.0575707	305.342
71250	70625.1	231.78	0.0369804	0.0555813	305.199
71500	70870.1	231.56	0.0356679	0.0536590	305.056
71750	71115.1	231.35	0.0344009	0.0518016	304.913
72000	71360.2	231.13	0.0331779	0.0500070	304.769
72250	71605.2	230.91	0.0319973	0.0482730	304.626
72500	71850.1	230.69	0.0308579	0.0465978	304.482
72750	72095.1	230.48	0.0297580	0.0449794	304.339
73000	72340.1	230.26	0.0286965	0.0434158	304.195
73250	72585.0	230.04	0.0276719	0.0419053	304.051
73500	72829.9	229.82	0.0266831	0.0404461	303.908
73750	73074.8	229.61	0.0257288	0.0390366	303.764
74000	73319.6	229.39	0.0248079	0.0376750	303.620
74250	73564.5	229.17	0.0239191	0.0363597	303.476
74500	73809.3	228.96	0.0230615	0.0350893	303.332
74750	74054.1	228.74	0.0222339	0.0338623	303.188
75000	74298.9	228.52	0.0214353	0.0326771	303.044
75250	74543.7	228.30	0.0206647	0.0315324	302.899
75500	74788.4	228.09	0.0199212	0.0304269	302.755
75750	75033.2	227.87	0.0192039	0.0293592	302.611
76000	75277.9	227.65	0.0185117	0.0283281	302.466
76250	75522.6	227.43	0.0178440	0.0273324	302.322
76500	75767.3	227.22	0.0171998	0.0263708	302.177
76750	76011.9	227.00	0.0165783	0.0254423	302.032
77000	76256.5	226.78	0.0159787	0.0245457	301.888
77250	76501.2	226.56	0.0154003	0.0236799	301.743
77500	76745.8	226.35	0.0148424	0.0228439	301.598
77750	76990.3	226.13	0.0143042	0.0220368	301.453
78000	77234.9	225.91	0.0137851	0.0212575	301.308
78250	77479.5	225.69	0.0132844	0.0205051	301.163
78500	77724.0	225.47	0.0128014	0.0197787	301.018
78750	77968.5	225.26	0.0123356	0.0190774	300.873
79000	78213.0	225.04	0.0118864	0.0184005	300.727
79250	78457.4	224.82	0.0114531	0.0177469	300.582
79500	78701.9	224.60	0.0110353	0.0171160	300.437
79750	78946.3	224.39	0.0106324	0.0165071	300.291
80000	79190.7	224.15	0.0102438	0.0159206	300.132

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
80250	79435.1	224.15	0.0096692	0.0153385	300.132
80500	79679.5	224.15	0.0095084	0.0147777	300.132
80750	79923.9	224.15	0.0091608	0.0142375	300.132
81000	80168.2	224.15	0.0088259	0.0137170	300.132
81250	80412.5	224.15	0.0085031	0.0132157	300.132
81500	80656.8	224.15	0.0081925	0.0127326	300.132
81750	80901.1	224.15	0.0078931	0.0122673	300.132
82000	81145.3	224.15	0.0076047	0.0118190	300.132
82250	81389.6	224.15	0.0073268	0.0113871	300.132
82500	81633.8	224.15	0.0070591	0.0109711	300.132
82750	81878.0	224.15	0.0068012	0.0105702	300.132
83000	82122.2	224.15	0.0065527	0.0101841	300.132
83250	82366.4	224.15	0.0063134	0.0098121	300.132
83500	82610.5	224.15	0.0060828	0.0094537	300.132
83750	82854.6	224.15	0.0058606	0.0091084	300.132
84000	83098.7	224.15	0.0056465	0.0087757	300.132
84250	83342.8	224.15	0.0054403	0.0084552	300.132
84500	83586.9	224.15	0.0052417	0.0081465	300.132
84750	83830.9	224.15	0.0050503	0.0078490	300.132
85000	84075.0	224.15	0.0048659	0.0075625	300.132
85250	84319.0	224.15	0.0046883	0.0072864	300.132
85500	84563.0	224.15	0.0045171	0.0070204	300.132
85750	84807.0	224.15	0.0043522	0.0067641	300.132
86000	85050.9	224.15	0.0041934	0.0065172	300.132
86250	85294.9	224.15	0.0040403	0.0062794	300.132
86500	85538.8	224.15	0.0038929	0.0060502	300.132
86750	85782.7	224.15	0.0037508	0.0058294	300.132
87000	86026.6	224.15	0.0036140	0.0056167	300.132
87250	86270.4	224.15	0.0034821	0.0054118	300.132
87500	86514.3	224.15	0.0033551	0.0052144	300.132
87750	86758.1	224.15	0.0032327	0.0050242	300.132
88000	87001.9	224.15	0.0031148	0.0048409	300.132
88250	87245.7	224.15	0.0030012	0.0046643	300.132
88500	87489.5	224.15	0.0028917	0.0044942	300.132
88750	87733.2	224.15	0.0027862	0.0043303	300.132
89000	87976.9	224.15	0.0026846	0.0041724	300.132
89250	88220.6	224.15	0.0025868	0.0040203	300.132
89500	88464.3	224.15	0.0024924	0.0038737	300.132
89750	88708.0	224.15	0.0024016	0.0037325	300.132
90000	88951.7	224.15	0.0023140	0.0035964	300.132

IRIG-RANGE REFERENCE ATMOSPHERE, MARCH

TABLE I. 3

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY gm^{-3}	SPEED OF SOUND $m\ sec^{-1}$
25000	24959.9	223.85	24.6084000	38.2969662	299.931
25250	25208.6	223.90	23.6922904	36.8626196	299.966
25500	25457.1	223.96	22.8105557	35.4824170	300.001
25750	25705.7	224.01	21.9618981	34.1342983	300.037
26000	25954.3	224.06	21.1450612	32.8762829	300.072
26250	26202.8	224.11	20.3586481	31.6464658	300.107
26500	26451.3	224.17	19.6021000	30.4530152	300.142
26750	26699.8	224.22	18.8737038	29.3241695	300.177
27000	26948.3	224.27	18.1725890	28.2282343	300.212
27250	27196.8	224.32	17.4977250	27.1735003	300.248
27500	27445.2	224.38	16.8481236	26.1586403	300.283
27750	27693.6	224.43	16.2228293	25.1819073	300.318
28000	27942.0	224.48	15.6209263	24.2419317	300.353
28250	28190.4	224.53	15.0415327	23.3373196	300.388
28500	28438.8	224.59	14.4838000	22.4667301	300.423
28750	28687.1	224.64	13.9469122	21.6288736	300.458
29000	28935.4	224.69	13.4300839	20.8225096	300.493
29250	29183.7	224.74	12.9325599	20.0464458	300.528
29500	29432.0	224.80	12.4536135	19.2995342	300.564
29750	29680.3	224.85	11.9925454	18.5806714	300.599
30000	29928.5	224.90	11.5486832	17.8887957	300.634
30250	30176.8	224.95	11.1213796	17.2228862	300.669
30500	30425.0	225.01	10.7100121	16.5819608	300.704
30750	30673.1	225.06	10.3139816	15.9650748	300.739
31000	30921.3	225.11	9.9327120	15.3713194	300.774
31250	31169.5	225.16	9.5656488	14.7998207	300.809
31500	31417.6	225.22	9.2122580	14.2497376	300.844
31750	31665.7	225.27	8.8720269	13.7202620	300.879
32000	31913.8	225.32	8.5444614	13.2106152	300.914
32250	32161.9	225.38	8.2291766	12.7127710	301.037
32500	32409.9	225.42	7.9259446	12.2217799	301.315
32750	32657.9	226.34	7.6344363	11.7506376	301.592
33000	32906.0	226.75	7.3541767	11.2965061	301.869
33250	33153.9	227.17	7.0847117	10.8645044	302.146
33500	33401.9	227.58	6.8256062	10.4401065	302.422
33750	33649.9	228.00	6.5764433	10.0483402	302.699
34000	33897.8	228.42	6.3368239	9.6645850	302.975
34250	34145.7	228.83	6.1063653	9.2961713	303.250
34500	34393.6	229.25	5.8847010	8.9424586	303.526
34750	34641.5	229.66	5.6714797	8.6028342	303.801
35000	34889.4	230.08	5.4663649	8.2767120	304.076
35250	35137.2	230.50	5.2690340	7.9635315	304.351
35500	35385.0	230.91	5.0791779	7.6627563	304.626
35750	35632.8	231.33	4.8965001	7.3738731	304.900
36000	35880.6	231.74	4.7207167	7.0963910	305.174
36250	36128.4	232.16	4.5515553	6.8298399	305.449
36500	36376.1	232.58	4.3887547	6.5737700	305.721
36750	36623.8	232.99	4.2320647	6.3277511	305.994
37000	36871.5	233.41	4.0812452	6.0913709	306.267
37250	37119.2	233.82	3.9360659	5.8642351	306.540
37500	37366.9	234.24	3.7963061	5.6459660	306.813
37750	37614.5	234.66	3.6617541	5.4362022	307.085
38000	37862.1	235.15	3.5322277	5.2328924	307.408
38250	38109.7	235.62	3.4075966	5.0336586	307.848
38500	38357.3	236.59	3.2877084	4.8429437	308.286
38750	38604.9	237.17	3.1723697	4.6597939	308.724
39000	38852.4	237.84	3.0613953	4.4840723	309.162
39250	39100.0	238.51	2.9546081	4.3154575	309.598
39500	39347.5	239.18	2.8518389	4.1536420	310.034
39750	39595.0	239.88	2.7529255	3.9983356	310.470
40000	39842.4	240.53	2.6577127	3.8492567	310.905
40250	40089.9	241.20	2.5660522	3.7061396	311.339
40500	40337.3	241.88	2.4778017	3.5687296	311.773
40750	40584.7	242.55	2.3928254	3.4367645	312.206
41000	40832.1	243.22	2.3109929	3.3100716	312.639
41250	41079.5	243.89	2.2321794	3.1883703	313.071
41500	41326.9	244.56	2.1562657	3.0714654	313.502
41750	41574.2	245.24	2.0831372	2.9591643	313.933
42000	41821.5	245.91	2.0126843	2.8512649	314.363
42250	42068.8	246.58	1.9446022	2.7475859	314.792
42500	42316.1	247.26	1.8793901	2.6479510	315.221
42750	42563.4	247.93	1.8163516	2.5521921	315.650
43000	42810.6	248.60	1.7555947	2.4601480	316.078

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, MARCH** TABLE I. 3

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
43250	43305.8	249.27	1.6970305	2.3716651	316.505
43500	43305.0	249.94	1.6405742	2.2865964	316.931
43750	43552.2	250.62	1.5861444	2.2040011	317.357
44000	43799.4	251.29	1.5336631	2.1201446	317.783
44250	44046.5	251.96	1.4830555	2.0304991	318.208
44500	44293.6	252.64	1.4342499	1.9777409	318.632
44750	44540.7	253.31	1.3871774	1.9077525	319.056
45000	44787.8	253.98	1.3417720	1.8404215	319.479
45250	45034.9	254.65	1.2979704	1.7756401	319.902
45500	45281.9	255.34	1.2557119	1.7133053	320.324
45750	45529.0	256.00	1.2149381	1.6533185	320.746
46000	45776.0	256.67	1.1755931	1.5955852	321.167
46250	46023.0	257.34	1.1376231	1.5400151	321.587
46500	46269.9	258.01	1.1009766	1.4865217	322.007
46750	46516.9	258.69	1.0656042	1.4350221	322.427
47000	46763.8	259.36	1.0314583	1.3854370	322.845
47250	47010.7	260.03	0.9984933	1.3376904	323.264
47500	47257.6	260.71	0.9666654	1.2917096	323.681
47750	47504.5	261.38	0.9359325	1.2474249	324.099
48000	47751.3	262.05	0.9062541	1.2047694	324.515
48250	47998.2	262.73	0.8775931	1.1635605	324.948
48500	48245.0	263.09	0.8498943	1.1253979	325.156
48750	48491.8	263.42	0.8231055	1.0885360	325.363
49000	48738.6	263.76	0.7971956	1.0529288	325.570
49250	48985.3	264.09	0.7721347	1.0185320	325.778
49500	49232.1	264.43	0.7478937	0.9853028	325.985
49750	49478.8	264.76	0.7244450	0.9532002	326.192
50000	49725.5	265.10	0.7017614	0.9221846	326.398
50250	49972.2	265.44	0.6798172	0.8922177	326.605
50500	50218.8	265.77	0.6585873	0.8632626	326.811
50750	50465.5	266.11	0.6380475	0.8352644	327.018
51000	50712.1	266.44	0.6181745	0.8082484	327.224
51250	50958.7	266.78	0.5989458	0.7821218	327.430
51500	51205.3	267.11	0.5803397	0.7568729	327.636
51750	51451.9	267.45	0.5623353	0.7324710	327.842
52000	51698.4	267.55	0.5449048	0.7095022	327.903
52250	51944.9	267.55	0.5280169	0.6875157	327.903
52500	52191.4	267.55	0.5116576	0.6662122	327.903
52750	52437.9	267.55	0.4958045	0.6455704	327.903
53000	52684.4	267.55	0.4804437	0.6255696	327.903
53250	52930.8	267.55	0.4655600	0.6061900	327.903
53500	53177.3	267.55	0.4511385	0.5874122	327.903
53750	53423.7	267.55	0.4371647	0.5692175	327.903
54000	53670.1	267.55	0.4236249	0.5515877	327.903
54250	53916.5	267.55	0.4105054	0.5345052	327.903
54500	54162.8	267.55	0.3977931	0.5179531	327.903
54750	54409.2	267.55	0.3854755	0.5019147	327.903
55000	54655.5	267.55	0.3735402	0.4863742	327.903
55250	54901.8	267.55	0.3619754	0.4713160	327.903
55500	55148.0	267.55	0.3507694	0.4567251	327.903
55750	55394.3	267.55	0.3399112	0.4425870	327.903
56000	55640.5	267.55	0.3293899	0.4288876	327.903
56250	55886.8	267.55	0.3191951	0.4156132	327.903
56500	56133.0	267.55	0.3093165	0.4027507	327.903
56750	56379.2	267.55	0.2997445	0.3902872	327.903
57000	56625.3	267.55	0.2904693	0.3782103	327.903
57250	56871.5	267.55	0.2814816	0.3665081	327.903
57500	57117.6	267.55	0.2727731	0.3551687	327.903
57750	57363.7	267.55	0.2643345	0.3441811	327.903
58000	57609.8	267.55	0.2561576	0.3335342	327.903
58250	57855.8	267.55	0.2482342	0.3232174	327.903
58500	58101.9	267.55	0.2405565	0.3132205	327.903
58750	58347.9	267.70	0.2331189	0.3033633	327.997
59000	58593.9	266.29	0.2258950	0.2955221	327.130
59250	58839.9	264.88	0.2188590	0.2878441	326.261
59500	59085.9	263.47	0.2120067	0.2803269	325.390
59750	59331.8	262.05	0.2053343	0.2729678	324.517
60000	59577.8	260.64	0.1988381	0.2657643	323.641
60250	59823.7	259.23	0.1925143	0.2587140	322.763
60500	60069.6	257.82	0.1863591	0.2518144	321.882
60750	60315.5	256.40	0.1803690	0.2450630	320.999
61000	60561.3	254.99	0.1745404	0.2384574	320.114
61250	60807.2	253.58	0.1688697	0.2319953	319.226
61500	61053.0	252.17	0.1633538	0.2256742	318.336

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, MARCH** **TABLE I. 3**

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m-3	SPEED OF SOUND m sec-1
61750	61296.8	250.75	0.1579886	0.2199919	317.443
62000	61544.6	249.34	0.1527713	0.2134460	316.548
62250	61790.3	247.93	0.1476986	0.2075342	315.650
62500	62036.1	246.52	0.1427671	0.2017543	314.749
62750	62281.8	245.10	0.1379737	0.1961041	313.846
63000	62527.5	243.69	0.1333153	0.1905814	312.941
63250	62773.2	242.28	0.1287888	0.1851839	312.032
63500	63018.9	240.87	0.1243912	0.1799095	311.121
63750	63264.5	239.45	0.1201196	0.1747562	310.208
64000	63510.1	238.04	0.1159709	0.1697217	309.292
64250	63755.7	236.63	0.1119425	0.1648040	308.373
64500	64001.3	235.22	0.1080314	0.1600011	307.451
64750	64246.9	233.80	0.1042349	0.1553110	306.526
65000	64492.5	232.39	0.1005503	0.1507315	305.599
65250	64738.0	230.98	0.0969750	0.1462609	304.669
65500	64983.5	229.57	0.0935063	0.1418970	303.736
65750	65229.0	228.15	0.0901416	0.1376394	302.798
66000	65474.5	227.94	0.0868869	0.1327920	302.659
66250	65719.9	227.73	0.0837471	0.1281114	302.519
66500	65965.4	227.52	0.0807183	0.1235920	302.380
66750	66210.8	227.31	0.0777960	0.1192285	302.240
67000	66456.2	227.10	0.0749793	0.1150155	302.101
67250	66701.6	226.89	0.0722598	0.1109480	301.961
67500	66946.9	226.68	0.0696377	0.1070211	301.821
67750	67192.3	226.47	0.0671087	0.1032301	301.681
68000	67437.6	226.26	0.0646695	0.0995702	301.541
68250	67682.9	226.05	0.0623169	0.0960372	301.401
68500	67928.2	225.84	0.0600481	0.0926268	301.261
68750	68173.4	225.63	0.0578600	0.0893346	301.121
69000	68418.7	225.42	0.0557499	0.0861569	300.981
69250	68663.9	225.21	0.0537151	0.0830896	300.841
69500	68909.1	225.00	0.0517526	0.0801290	300.701
69750	69154.3	224.79	0.0498607	0.0772715	300.560
70000	69399.5	224.58	0.0480362	0.0745130	300.420
70250	69644.6	224.37	0.0462770	0.0718519	300.279
70500	69889.8	224.16	0.0445808	0.0692831	300.139
70750	70134.9	223.95	0.0429454	0.0668041	299.998
71000	70380.0	223.74	0.0413686	0.0644116	299.857
71250	70625.1	223.53	0.0398485	0.0621032	299.717
71500	70870.1	223.32	0.0383829	0.0598754	299.576
71750	71115.1	223.11	0.0369701	0.0577255	299.435
72000	71360.2	222.90	0.0356081	0.0556515	299.294
72250	71605.2	222.69	0.0342952	0.0536502	299.153
72500	71850.1	222.48	0.0330296	0.0517191	299.012
72750	72095.1	222.27	0.0318097	0.0498560	298.871
73000	72340.1	222.06	0.0306339	0.0480584	298.730
73250	72585.0	221.85	0.0295005	0.0463242	298.588
73500	72829.9	221.64	0.0284082	0.0446512	298.447
73750	73074.8	221.43	0.0273554	0.0430372	298.306
74000	73319.6	221.22	0.0263407	0.0414802	298.164
74250	73564.5	221.01	0.0253629	0.0399783	298.022
74500	73809.3	220.80	0.0244205	0.0385295	297.881
74750	74054.1	220.59	0.0235124	0.0371320	297.739
75000	74298.9	220.38	0.0226373	0.0357841	297.597
75250	74543.7	220.17	0.0217940	0.0344839	297.456
75500	74788.4	219.96	0.0209815	0.0332300	297.314
75750	75033.2	219.75	0.0201985	0.0320206	297.172
76000	75277.9	219.54	0.0194442	0.0308542	297.030
76250	75522.6	219.33	0.0187174	0.0297293	296.888
76500	75767.3	219.12	0.0180171	0.0286445	296.745
76750	76011.9	218.91	0.0173425	0.0275984	296.603
77000	76256.5	218.70	0.0166925	0.0265896	296.461
77250	76501.2	218.49	0.0160664	0.0256168	296.319
77500	76745.8	218.28	0.0154633	0.0246789	296.176
77750	76990.3	218.07	0.0148822	0.0237745	296.034
78000	77234.9	217.86	0.0143226	0.0229024	295.891
78250	77479.5	217.65	0.0137835	0.0220617	295.748
78500	77724.0	217.44	0.0132642	0.0212511	295.606
78750	77968.5	217.23	0.0127641	0.0204696	295.463
79000	78213.0	217.02	0.0122824	0.0197161	295.320
79250	78457.4	216.81	0.0118185	0.0189896	295.177
79500	78701.9	216.60	0.0113717	0.0182896	295.034
79750	78946.3	216.39	0.0109414	0.0176147	294.891
80000	79190.7	216.15	0.0105271	0.0169664	294.728

(CONTINUED) IRIG-RANGE REFERENCE ATMOSPHERE, MARCH TABLE I. 3

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
80750	79935.1	210.15	0.0101282	0.0163235	294.728
80900	79974.5	210.15	0.0097444	0.0157051	294.728
80750	79923.9	210.15	0.0093753	0.0151101	294.728
81000	80166.2	210.15	0.0090201	0.0145377	294.728
81250	80412.5	210.15	0.0086785	0.0139870	294.728
81500	80656.8	210.15	0.0083497	0.0134572	294.728
81750	80901.1	210.15	0.0080335	0.0129476	294.728
82000	81145.3	210.15	0.0077293	0.0124572	294.728
82250	81389.6	210.15	0.0074366	0.0119855	294.728
82500	81633.8	210.15	0.0071550	0.0115317	294.728
82750	81878.0	210.15	0.0068841	0.0110951	294.728
83000	82122.2	210.15	0.0066235	0.0106750	294.728
83250	82366.4	210.15	0.0063727	0.0102709	294.728
83500	82610.5	210.15	0.0061315	0.0098821	294.728
83750	82854.6	210.15	0.0058994	0.0095081	294.728
84000	83098.7	210.15	0.0056762	0.0091482	294.728
84250	83342.8	210.15	0.0054614	0.0088020	294.728
84500	83586.9	210.15	0.0052547	0.0084690	294.728
84750	83830.9	210.15	0.0050559	0.0081485	294.728
85000	84075.0	210.15	0.0048646	0.0078402	294.728
85250	84319.0	210.15	0.0046805	0.0075436	294.728
85500	84563.0	210.15	0.0045035	0.0072582	294.728
85750	84807.0	210.15	0.0043331	0.0069836	294.728
86000	85050.9	210.15	0.0041692	0.0067195	294.728
86250	85294.9	210.15	0.0040115	0.0064654	294.728
86500	85538.8	210.15	0.0038598	0.0062208	294.728
86750	85782.7	210.15	0.0037139	0.0059856	294.728
87000	86026.6	210.15	0.0035734	0.0057593	294.728
87250	86270.4	210.15	0.0034383	0.0055415	294.728
87500	86514.3	210.15	0.0033083	0.0053320	294.728
87750	86758.1	210.15	0.0031832	0.0051304	294.728
88000	87001.9	210.15	0.0030629	0.0049365	294.728
88250	87245.7	210.15	0.0029471	0.0047499	294.728
88500	87489.5	210.15	0.0028358	0.0045704	294.728
88750	87733.2	210.15	0.0027286	0.0043975	294.728
89000	87976.9	210.15	0.0026255	0.0042315	294.728
89250	88220.5	210.15	0.0025263	0.0040716	294.728
89500	88464.3	210.15	0.0024308	0.0039177	294.728
89750	88708.0	210.15	0.0023390	0.0037697	294.728
90000	88951.7	210.15	0.0022506	0.0036273	294.728

IRIG-RANGE REFERENCE ATMOSPHERE, APRIL

TABLE I. 4

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	gm^{-3}	$m\ sec^{-1}$
25000	24959.9	222.85	25.1269000	39.2793547	299.260
25250	25208.6	222.96	24.1874841	37.7925941	299.333
25500	25457.1	223.06	23.2836869	36.3628916	299.405
25750	25705.7	223.17	22.4141393	34.9880293	299.477
26000	25954.3	223.28	21.5775253	33.6658748	299.549
26250	26202.8	223.39	20.7725802	32.3943798	299.621
26500	26451.3	223.50	19.9980886	31.1715767	299.693
26750	26699.8	223.60	19.2528823	29.9955752	299.765
27000	26948.3	223.71	18.5358387	28.8645597	299.837
27250	27196.8	223.82	17.8458785	27.7767855	299.909
27500	27445.2	223.93	17.1819646	26.7305769	299.981
27750	27693.6	224.03	16.5431061	25.7243237	300.053
28000	27942.0	224.14	15.9283267	24.7564792	300.125
28250	28190.4	224.25	15.3367233	23.8255572	300.197
28500	28438.8	224.35	14.7674046	22.9301298	300.269
28750	28687.1	224.46	14.2195193	22.0688251	300.341
29000	28935.4	224.57	13.6922494	21.2403249	300.413
29250	29183.7	224.68	13.1848084	20.4433527	300.485
29500	29432.0	224.79	12.6964402	19.6767214	300.557
29750	29680.3	224.89	12.2264179	18.9392317	300.629
30000	29928.5	225.00	11.7740428	18.2297698	300.701
30250	30176.8	225.25	11.3387783	17.5363642	300.868
30500	30425.0	225.74	10.9203117	16.8525105	301.195
30750	30673.1	226.23	10.5181773	16.1967689	301.521
31000	30921.3	226.72	10.1317034	15.5679249	301.848
31250	31169.5	227.21	9.7602472	14.9648189	302.174
31500	31417.6	227.70	9.4031935	14.3863438	302.499
31750	31665.7	228.19	9.0599538	13.8314423	302.825
32000	31913.8	228.68	8.7299648	13.2991047	303.150
32250	32161.9	229.17	8.4126874	12.7883666	303.474
32500	32409.9	229.66	8.1076053	12.2983071	303.799
32750	32657.9	230.15	7.8142246	11.8280460	304.122
33000	32906.0	230.64	7.5320721	11.3767426	304.446
33250	33153.9	231.13	7.2606949	10.9435938	304.769
33500	33401.9	231.62	6.9996593	10.5278318	305.092
33750	33649.9	232.11	6.7485498	10.1287231	305.415
34000	33897.8	232.60	6.5069685	9.7455665	305.737
34250	34145.7	233.09	6.2745344	9.3776919	306.059
34500	34393.6	233.58	6.0508824	9.0244585	306.380
34750	34641.5	234.07	5.8356626	8.6852538	306.702
35000	34889.4	234.56	5.6285400	8.3594922	307.022
35250	35137.2	235.05	5.4291934	8.0466137	307.343
35500	35385.0	235.54	5.2373151	7.7460826	307.663
35750	35632.8	236.03	5.0526101	7.4573868	307.983
36000	35880.6	236.52	4.8747957	7.1800363	308.302
36250	36128.4	237.01	4.7026009	6.9135624	308.622
36500	36376.1	237.50	4.5387659	6.6575167	308.941
36750	36623.8	237.99	4.3800417	6.4114702	309.259
37000	36871.5	238.48	4.2271893	6.1750123	309.577
37250	37119.2	238.85	4.0799428	5.9507467	309.816
37500	37366.9	239.89	3.9382459	5.7192336	310.488
37750	37614.5	240.92	3.8020606	5.4976840	311.159
38000	37862.1	241.96	3.6711498	5.2856284	311.828
38250	38109.7	243.00	3.5452876	5.0826213	312.496
38500	38357.3	244.04	3.4242586	4.8882401	313.162
38750	38604.9	245.07	3.3078576	4.7020833	313.827
39000	38852.4	246.11	3.1958889	4.5237699	314.491
39250	39100.0	247.15	3.0881659	4.3529381	315.153
39500	39347.5	248.19	2.9845105	4.1892441	315.814
39750	39595.0	249.22	2.8847527	4.0323613	316.473
40000	39842.4	250.26	2.7887306	3.8819794	317.131
40250	40089.9	251.30	2.6962894	3.7378032	317.788
40500	40337.3	252.34	2.6072914	3.5995524	318.443
40750	40584.7	253.37	2.5215656	3.4669602	319.097
41000	40832.1	254.41	2.4390070	3.3397731	319.750
41250	41079.5	255.45	2.3594773	3.2177495	320.401
41500	41326.9	256.49	2.2828534	3.1006600	321.051
41750	41573.2	257.52	2.2090180	2.9882861	321.700
42000	41821.5	258.56	2.1378587	2.8804196	322.347
42250	42068.8	259.60	2.0692682	2.7768625	322.993
42500	42316.1	260.64	2.0031440	2.6774264	323.638
42750	42563.4	261.67	1.9393879	2.5819314	324.281
43000	42810.6	262.71	1.8779061	2.4902065	324.924

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, APRIL** TABLE I. 4

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m-3	SPEED OF SOUND m sec-1
43250	43057.8	263.75	1.8186088	2.4020887	325.565
43500	43305.0	264.79	1.7613102	2.3174225	326.204
43750	43552.2	265.82	1.7062280	2.2360598	326.843
44000	43799.4	267.95	1.6530906	2.1492206	328.148
44250	44046.5	268.22	1.6018386	2.0804905	328.313
44500	44293.6	268.49	1.5522287	2.0140288	328.479
44750	44540.7	268.76	1.5042064	1.9497586	328.644
45000	44787.8	269.03	1.4577194	1.8876058	328.809
45250	45034.9	269.30	1.4127169	1.8274979	328.974
45500	45281.9	269.57	1.3691502	1.7693658	329.139
45750	45529.0	269.84	1.3269719	1.7131424	329.303
46000	45776.0	270.11	1.2861362	1.6587633	329.468
46250	46023.0	270.38	1.2465993	1.6061659	329.633
46500	46269.9	270.65	1.2083183	1.5552901	329.797
46750	46516.9	270.92	1.1712521	1.5060778	329.962
47000	46763.8	271.19	1.1353609	1.4584729	330.126
47250	47010.7	271.46	1.1006064	1.4124213	330.290
47500	47257.6	271.73	1.0669512	1.3678707	330.455
47750	47504.5	272.00	1.0343596	1.3247708	330.619
48000	47751.3	272.27	1.0027968	1.2830727	330.783
48250	47998.2	272.54	0.9722294	1.2427294	330.947
48500	48245.0	272.81	0.9426249	1.2036957	331.111
48750	48491.8	273.08	0.9139520	1.1659276	331.274
49000	48738.6	273.35	0.8861804	1.1293828	331.438
49250	48985.3	273.50	0.8592751	1.0945030	331.528
49500	49232.1	273.63	0.8332015	1.0607972	331.605
49750	49478.8	273.75	0.8079326	1.0281468	331.682
50000	49725.5	273.86	0.7834432	0.9965183	331.759
50250	49972.2	274.01	0.7597088	0.9658792	331.837
50500	50218.8	274.14	0.7367057	0.9361979	331.914
50750	50465.5	274.26	0.7144111	0.9074440	331.991
51000	50712.1	274.39	0.6928027	0.8795882	332.068
51250	50958.7	274.52	0.6718591	0.8526018	332.145
51500	51205.3	274.64	0.6515594	0.8264573	332.222
51750	51451.9	274.77	0.6318836	0.8011280	332.299
52000	51698.4	274.90	0.6128122	0.7765881	332.377
52250	51944.9	275.03	0.5943262	0.7528125	332.454
52500	52191.4	275.16	0.5764074	0.7297771	332.531
52750	52437.9	275.28	0.5590381	0.7074584	332.608
53000	52684.4	275.50	0.5422039	0.6856132	332.739
53250	52930.8	275.50	0.5258843	0.6649771	332.739
53500	53177.3	275.50	0.5100570	0.6449036	332.739
53750	53423.7	275.50	0.4947073	0.6255540	332.739
54000	53670.1	275.50	0.4798206	0.6067239	332.739
54250	53916.5	275.50	0.4653831	0.5884737	332.739
54500	54162.8	275.50	0.4513810	0.5707682	332.739
54750	54409.2	275.50	0.4378012	0.5535966	332.739
55000	54655.5	275.50	0.4246310	0.5369439	332.739
55250	54901.8	275.50	0.4118580	0.5207916	332.739
55500	55148.0	275.50	0.3994701	0.5051272	332.739
55750	55394.3	275.50	0.3874558	0.4899352	332.739
56000	55640.5	275.50	0.3758036	0.4752011	332.739
56250	55886.8	275.00	0.3644927	0.4617365	332.437
56500	56133.0	274.00	0.3534935	0.4494372	331.832
56750	56379.2	273.00	0.3427887	0.4374233	331.226
57000	56625.3	272.00	0.3323713	0.4256893	330.619
57250	56871.5	271.00	0.3222347	0.4142295	330.010
57500	57117.6	270.00	0.3123722	0.4030386	329.401
57750	57363.7	269.00	0.3027773	0.3921111	328.790
58000	57609.8	268.00	0.2934438	0.3814418	328.179
58250	57855.8	267.00	0.2843654	0.3710254	327.566
58500	58101.9	266.00	0.2755361	0.3608568	326.952
58750	58347.9	265.00	0.2669498	0.3509311	326.337
59000	58593.9	264.00	0.2586008	0.3412432	325.720
59250	58839.9	263.00	0.2504833	0.3317884	325.103
59500	59085.9	262.00	0.2425918	0.3225618	324.484
59750	59331.8	261.00	0.2349207	0.3135587	323.864
60000	59577.8	260.00	0.2274647	0.3047746	323.243
60250	59823.7	259.00	0.2202185	0.2962049	322.621
60500	60069.6	258.00	0.2131770	0.2878451	321.998
60750	60315.5	257.00	0.2063352	0.2796900	321.373
61000	60561.3	256.00	0.1996880	0.2717378	320.747
61250	60807.2	255.00	0.1932307	0.2639815	320.120
61500	61053.0	254.00	0.1869585	0.2564187	319.492

(CONTINUED) IRIG-RANGE REFERENCE ATMOSPHERE, APRIL TABLE I.4

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	332	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
61750	61298.8	253.00	0.1808669	0.2490443	318.892
62000	61544.6	252.00	0.1740512	0.2418547	318.232
62250	61790.3	251.00	0.1692071	0.2348459	317.600
62500	62036.1	250.00	0.1636302	0.2280140	316.966
62750	62281.8	249.00	0.1582163	0.2213553	316.332
63000	62527.5	248.00	0.1529611	0.2148659	315.696
63250	62773.2	247.00	0.1478605	0.2085423	315.059
63500	63018.9	246.00	0.1429112	0.2023805	314.420
63750	63264.5	245.00	0.1381085	0.1963776	313.791
64000	63510.1	244.00	0.1334489	0.1905300	313.140
64250	63755.7	243.00	0.1289287	0.1848335	312.497
64500	64001.3	242.00	0.1245443	0.1792860	311.854
64750	64246.9	241.00	0.1202920	0.1738932	311.208
65000	64492.5	240.00	0.1161684	0.1686223	310.562
65250	64738.0	239.00	0.1121702	0.1635000	309.915
65500	64983.5	238.00	0.1082940	0.1585132	309.2[illegible]
65750	65229.0	237.00	0.1045365	0.1538589	308.615
66000	65474.5	236.00	0.1008946	0.1489341	307.983
66250	65719.9	235.00	0.0973652	0.1443359	307.310
66500	65965.4	234.00	0.0939453	0.1398612	306.656
66750	66210.8	233.00	0.0906318	0.1355073	306.000
67000	66456.2	232.00	0.0874220	0.1312716	305.342
67250	66701.6	231.00	0.0843129	0.1271511	304.684
67500	66946.9	230.00	0.0813019	0.1231433	304.023
67750	67192.3	229.20	0.0783874	0.1191447	303.493
68000	67437.6	228.46	0.0755688	0.1152306	303.004
68250	67682.9	227.72	0.0728423	0.1114335	302.514
68500	67928.2	226.98	0.0702063	0.1077500	302.024
68750	68173.4	226.25	0.0676579	0.1041772	301.533
69000	68418.7	225.51	0.0651943	0.1007121	301.041
69250	68663.9	224.77	0.0628123	0.0973517	300.549
69500	68909.1	224.04	0.0605113	0.0940933	300.055
69750	69154.3	223.30	0.0582870	0.0909339	299.561
70000	69399.5	222.56	0.0561377	0.0878710	299.065
70250	69644.6	221.82	0.0540610	0.0849018	298.570
70500	69889.8	221.09	0.0520548	0.0820238	298.073
70750	70134.9	220.35	0.0501169	0.0792344	297.575
71000	70380.0	219.61	0.0482451	0.0765313	297.077
71250	70625.1	218.87	0.0464374	0.0739120	296.578
71500	70870.1	218.14	0.0446918	0.0713741	296.078
71750	71115.1	217.40	0.0430064	0.0689155	295.577
72000	71360.2	216.66	0.0413793	0.0665339	295.075
72250	71605.2	215.92	0.0398086	0.0642269	294.572
72500	71850.1	215.18	0.0382925	0.0619927	294.068
72750	72095.1	214.45	0.0368294	0.0598291	293.565
73000	72339.1	213.71	0.0354176	0.0577341	293.059
73250	72585.0	212.97	0.0340554	0.0557058	292.553
73500	72829.9	212.23	0.0327412	0.0537423	292.046
73750	73074.8	211.50	0.0314735	0.0518416	291.539
74000	73319.6	210.76	0.0302509	0.0500020	291.030
74250	73564.5	210.02	0.0290717	0.0482216	290.520
74500	73809.3	209.29	0.0279348	0.0464991	290.009
74750	74054.1	208.55	0.0268385	0.0448324	289.498
75000	74298.9	207.81	0.0257818	0.0432200	288.985
75250	74543.7	207.07	0.0247631	0.0416602	288.472
75500	74788.4	206.34	0.0237814	0.0401510	287.958
75750	75033.2	205.60	0.0228354	0.0386927	287.443
76000	75277.9	204.86	0.0219238	0.0372919	286.927
76250	75522.6	204.12	0.0210457	0.0359178	286.410
76500	75767.3	203.39	0.0201998	0.0345991	285.892
76750	76011.9	202.65	0.0193850	0.0333264	285.374
77000	76256.5	201.91	0.0186004	0.0320924	284.854
77250	76501.2	201.17	0.0178449	0.0309018	284.333
77500	76745.8	200.43	0.0171175	0.0297513	283.811
77750	76990.3	199.70	0.0164173	0.0286397	283.289
78000	77234.9	198.96	0.0157434	0.0275659	282.765
78250	77479.5	198.22	0.0150948	0.0265285	282.241
78500	77724.0	197.48	0.0144705	0.0255268	281.715
78750	77968.5	196.75	0.0138704	0.0245594	281.189
79000	78213.0	196.01	0.0132928	0.0236252	280.661
79250	78457.4	195.27	0.0127373	0.0227234	280.133
79500	78701.9	194.54	0.0122030	0.0218529	279.603
79750	78946.3	193.80	0.0116894	0.0210128	279.073
80000	79190.7	193.15	0.0111956	0.0201925	278.606

(CONTINUED) IRIG-RANGE REFERENCE ATMOSPHERE, APRIL TABLE I.4

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63° 59' N	145° 43' W	UNITS. SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m^{-3}	SPEED OF SOUND m sec^{-1}
80250	79435.1	193.15	0.0107220	0.0193383	278.606
80500	79679.5	193.15	0.0102684	0.0185202	278.606
80750	79923.9	193.15	0.0098341	0.0177368	278.606
81000	80166.2	193.15	0.0094181	0.0169866	278.606
81250	80412.5	193.15	0.0090198	0.0162682	278.606
81500	80656.8	193.15	0.0086383	0.0155802	278.606
81750	80901.1	193.15	0.0082731	0.0149214	278.606
82000	81145.3	193.15	0.0079233	0.0142905	278.606
82250	81389.6	193.15	0.0075883	0.0136863	278.606
82500	81633.8	193.15	0.0072674	0.0131077	278.606
82750	81878.0	193.15	0.0069602	0.0125536	278.606
83000	82122.2	193.15	0.0066660	0.0120229	278.606
83250	82366.4	193.15	0.0063843	0.0115147	278.606
83500	82610.5	193.15	0.0061144	0.0110281	278.606
83750	82854.6	193.15	0.0058560	0.0105620	278.606
84000	83098.7	193.15	0.0056086	0.0101157	278.606
84250	83342.8	193.15	0.0053716	0.0096883	278.606
84500	83586.9	193.15	0.0051446	0.0092789	278.606
84750	83830.9	193.15	0.0049273	0.0088869	278.606
85000	84075.0	193.15	0.0047191	0.0085115	278.606
85250	84319.0	193.15	0.0045198	0.0081519	278.606
85500	84563.0	193.15	0.0043289	0.0078076	278.606
85750	84807.0	193.15	0.0041460	0.0074779	278.606
86000	85050.9	193.15	0.0039710	0.0071621	278.606
86250	85294.9	193.15	0.0038033	0.0068596	278.606
86500	85538.8	193.15	0.0036427	0.0065700	278.606
86750	85782.7	193.15	0.0034889	0.0062926	278.606
87000	86026.6	193.15	0.0033416	0.0060269	278.606
87250	86270.4	193.15	0.0032005	0.0057725	278.606
87500	86514.3	193.15	0.0030654	0.0055288	278.606
87750	86758.1	193.15	0.0029360	0.0052954	278.606
88000	87001.9	193.15	0.0028121	0.0050719	278.606
88250	87245.7	193.15	0.0026934	0.0048579	278.606
88500	87489.5	193.15	0.0025798	0.0046529	278.606
88750	87733.2	193.15	0.0024709	0.0044565	278.606
89000	87976.9	193.15	0.0023666	0.0042685	278.606
89250	88220.6	193.15	0.0022668	0.0040884	278.606
89500	88464.3	193.15	0.0021712	0.0039159	278.606
89750	88708.0	193.15	0.0020796	0.0037507	278.606
90000	88951.7	193.15	0.0019919	0.0035925	278.606

IRIG-RANGE REFERENCE ATMOSPHERE, MAY

TABLE I.5

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	gm^{-3}	$m\ sec^{-1}$
25000	24959.9	226.25	26.2256000	40.3808018	301.535
25250	25208.6	226.51	25.2596879	38.8487759	301.710
25500	25457.1	226.76	24.3308650	37.3766580	301.884
25750	25705.7	227.04	23.4370948	35.9620382	302.059
26000	25954.3	227.30	22.5771987	34.6025985	302.234
26250	26202.9	227.56	21.7498536	33.2961282	302.408
26500	26451.3	227.83	20.9537897	32.0405007	302.582
26750	26699.8	228.09	20.1877879	30.8336786	302.757
27000	26948.3	228.35	19.4506784	29.6737087	302.931
27250	27196.8	228.61	18.7413379	28.5587183	303.105
27500	27445.2	228.88	18.0586885	27.4869113	303.279
27750	27693.6	229.14	17.4016949	26.4565659	303.453
28000	27942.0	229.40	16.7693634	25.4660305	303.627
28250	28190.4	229.66	16.1607399	24.5137215	303.800
28500	28438.8	229.93	15.5749084	23.5981197	303.974
28750	28687.1	230.19	15.0109891	22.7177663	304.147
29000	28935.4	230.45	14.4681373	21.8712700	304.321
29250	29183.7	230.71	13.9455416	21.0572843	304.494
29500	29432.0	230.97	13.4424237	20.2745254	304.667
29750	29680.3	231.24	12.9580347	19.5217598	304.840
30000	29928.5	231.50	12.4916562	18.7978041	305.013
30250	30176.8	231.76	12.0425330	18.1008999	305.142
30500	30425.0	232.00	11.6104714	17.3996179	305.645
30750	30673.1	232.22	11.1952862	16.7223841	306.147
31000	30921.3	232.99	10.7962659	16.0736448	306.649
31250	31169.5	234.70	10.4127302	15.4521123	307.150
31500	31417.6	235.52	10.0440297	14.8565609	307.650
31750	31665.7	236.29	9.6895443	14.2858239	308.149
32000	31913.8	237.05	9.3486817	13.7387907	308.648
32250	32161.9	237.82	9.0208700	13.2144035	309.145
32500	32409.9	238.58	8.7055868	12.7116553	309.642
32750	32657.9	239.35	8.4022974	12.2295867	310.138
33000	32906.0	240.11	8.1105142	11.7672840	310.633
33250	33153.9	240.88	7.8297654	11.3238763	311.128
33500	33401.9	241.64	7.5596001	10.8985341	311.622
33750	33649.9	242.41	7.2995868	10.4904664	312.114
34000	33897.8	243.17	7.0493133	10.0989195	312.607
34250	34145.7	243.94	6.8083852	9.7231748	313.098
34500	34393.6	244.70	6.5764253	9.3625470	313.588
34750	34641.5	245.47	6.3530726	9.0163827	314.078
35000	34889.4	246.23	6.1379821	8.6840585	314.567
35250	35137.2	247.00	5.9308231	8.3649800	315.056
35500	35385.0	247.76	5.7312797	8.0585797	315.543
35750	35632.8	248.53	5.5390490	7.7643163	316.030
36000	35880.6	249.29	5.3538415	7.4816734	316.516
36250	36128.4	250.06	5.1753796	7.2101577	317.001
36500	36376.1	250.82	5.0033978	6.9492984	317.486
36750	36623.8	251.59	4.8376416	6.6986462	317.969
37000	36871.5	252.35	4.6778675	6.4577719	318.453
37250	37119.2	253.12	4.5238419	6.2262655	318.935
37500	37366.9	253.88	4.3753413	6.0037354	319.416
37750	37614.5	254.65	4.2321514	5.7898077	319.897
38000	37862.1	255.41	4.0940660	5.5841249	320.377
38250	38109.7	256.18	3.9608908	5.3863456	320.857
38500	38357.3	256.94	3.8324345	5.1961432	321.336
38750	38604.9	257.71	3.7085172	5.0132060	321.814
39000	38852.4	258.47	3.5889655	4.8372355	322.291
39250	39100.0	259.24	3.4736129	4.6679466	322.768
39500	39347.5	260.00	3.3622998	4.5050922	323.243
39750	39595.0	260.87	3.2548997	4.3462148	323.799
40000	39842.4	261.74	3.1512887	4.1934670	324.354
40250	40089.9	262.69	3.0513208	4.0455922	324.909
40500	40337.3	263.56	2.9548558	3.9053454	325.462
40750	40584.7	264.40	2.8617594	3.7694926	326.015
41000	40832.1	265.37	2.7719031	3.6388102	326.566
41250	41079.5	266.27	2.6851635	3.5130848	327.117
41500	41326.9	267.13	2.6014224	3.3921122	327.667
41750	41574.2	268.06	2.5205663	3.2756976	328.216
42000	41821.5	268.98	2.4424867	3.1636546	328.764
42250	42068.8	269.85	2.3670791	3.0558050	329.311
42500	42316.1	270.75	2.2942437	2.9519784	329.857
42750	42563.4	271.61	2.2238794	2.8524075	330.379
43000	42810.6	271.98	2.1558308	2.7613140	330.607

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, MAY** TABLE I.5

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m^{-3}	SPEED OF SOUND m sec^{-1}
43250	43057.0	272.30	2.0899588	2.6732555	330.834
43500	43305.0	272.73	2.0261911	2.5981270	331.062
43750	43552.2	273.11	1.9644573	2.5058267	331.290
44000	43799.4	273.40	1.9046899	2.4262570	331.517
44250	44046.5	273.80	1.8468235	2.3493235	331.744
44500	44293.6	274.23	1.7907951	2.2749352	331.971
44750	44540.7	274.61	1.7365437	2.2030044	332.198
45000	44787.8	274.90	1.6840106	2.1334467	332.425
45250	45034.9	275.30	1.6331389	2.0661805	332.652
45500	45281.9	275.73	1.5838739	2.0011271	332.878
45750	45529.0	276.11	1.5361626	1.9382108	333.104
46000	45776.0	276.40	1.4899540	1.8773586	333.330
46250	46023.0	276.80	1.4451986	1.8184997	333.556
46500	46269.9	277.23	1.4018487	1.7615664	333.782
46750	46516.9	277.61	1.3598584	1.7064929	334.008
47000	46763.8	277.98	1.3191831	1.6532161	334.233
47250	47010.7	278.30	1.2797799	1.6016748	334.459
47500	47257.6	278.73	1.2416086	1.5517005	334.696
47750	47504.5	278.73	1.2046044	1.5054547	334.696
48000	47751.3	278.73	1.1687059	1.4605905	334.696
48250	47998.2	278.73	1.1338799	1.4170667	334.696
48500	48245.0	278.73	1.1000943	1.3748430	334.696
48750	48491.8	278.73	1.0673178	1.3338807	334.696
49000	48738.6	278.73	1.0355204	1.2941418	334.696
49250	48985.3	278.73	1.0046726	1.2555898	334.696
49500	49232.1	278.73	0.9747460	1.2181891	334.696
49750	49478.8	278.73	0.9457132	1.1819052	334.696
50000	49725.5	278.73	0.9175472	1.1467046	334.696
50250	49972.2	278.73	0.8902222	1.1125553	334.696
50500	50218.8	278.73	0.8637129	1.0794254	334.696
50750	50465.5	278.73	0.8379951	1.0472845	334.696
51000	50712.1	278.73	0.8130449	1.0161030	334.696
51250	50958.7	278.73	0.7888394	0.9858523	334.696
51500	51205.3	278.73	0.7653564	0.9565043	334.696
51750	51451.9	278.73	0.7425742	0.9280323	334.696
52000	51698.4	278.73	0.7204718	0.9004098	334.696
52250	51944.9	278.73	0.6990290	0.8736116	334.696
52500	52191.4	278.73	0.6782259	0.8476130	334.696
52750	52437.9	278.73	0.6580435	0.8223900	334.696
53000	52684.4	278.73	0.6384632	0.7979195	334.696
53250	52930.8	278.73	0.6194669	0.7741789	334.696
53500	53177.3	278.73	0.6010372	0.7511464	334.696
53750	53423.7	278.73	0.5831573	0.7288009	334.696
54000	53670.1	278.73	0.5658105	0.7071218	334.696
54250	53916.5	278.73	0.5489810	0.6860892	334.696
54500	54162.8	278.73	0.5326534	0.6656837	334.696
54750	54409.2	278.73	0.5168126	0.6458867	334.696
55000	54655.5	278.73	0.5014441	0.6266798	334.696
55250	54901.8	278.73	0.4865337	0.6080456	334.696
55500	55148.0	278.73	0.4720678	0.5899668	334.696
55750	55394.3	278.73	0.4580331	0.5724269	334.696
56000	55640.5	278.73	0.4444166	0.5554098	334.696
56250	55886.8	278.80	0.4312026	0.5391761	334.609
56500	56133.0	277.30	0.4183509	0.5254544	333.860
56750	56379.2	276.11	0.4058280	0.5120237	333.110
57000	56625.3	274.67	0.3936268	0.4988792	332.358
57250	56871.5	273.02	0.3817404	0.4860159	331.605
57500	57117.6	272.30	0.3701621	0.4734289	330.850
57750	57363.7	271.13	0.3588852	0.4611137	330.093
58000	57609.8	269.89	0.3479031	0.4490654	329.334
58250	57855.8	268.64	0.3372094	0.4372794	328.573
58500	58101.9	267.40	0.3267979	0.4257512	327.811
58750	58347.9	266.15	0.3166622	0.4144763	327.047
59000	58593.9	264.91	0.3067963	0.4034501	326.281
59250	58839.9	263.66	0.2971942	0.3926684	325.514
59500	59085.9	262.42	0.2878500	0.3821268	324.744
59750	59331.8	261.17	0.2787580	0.3718209	323.973
60000	59577.8	259.93	0.2699124	0.3617467	323.200
60250	59823.7	258.68	0.2613076	0.3518999	322.425
60500	60069.6	257.44	0.2529385	0.3422764	321.648
60750	60315.5	256.19	0.2447993	0.3328722	320.869
61000	60561.3	254.95	0.2368848	0.3236833	320.089
61250	60807.2	253.70	0.2291899	0.3147057	319.306
61500	61053.0	252.46	0.2217096	0.3059355	318.522

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, MAY** TABLE I.5

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m^{-3}	m sec^{-1}
61750	61498.6	251.21	0.2144367	0.2973690	317.736
62000	61744.6	249.97	0.2073725	0.2890024	316.947
62250	61990.3	248.72	0.2005061	0.2808318	316.157
62500	62236.1	247.48	0.1938348	0.2728537	315.365
62750	62481.8	246.23	0.1873541	0.2650644	314.570
63000	62727.5	244.99	0.1810592	0.2574604	313.774
63250	62973.2	243.74	0.1749459	0.2500380	312.976
63500	63218.9	242.50	0.1690097	0.2427940	312.176
63750	63464.5	241.25	0.1632463	0.2357248	311.373
64000	63710.1	240.01	0.1576516	0.2288270	310.569
64250	63755.7	238.76	0.1522215	0.2220974	309.762
64500	64001.3	237.52	0.1469519	0.2155326	308.954
64750	64246.9	236.27	0.1418388	0.2091295	308.143
65000	64492.5	235.03	0.1368784	0.2028848	307.330
65250	64738.0	233.78	0.1320668	0.1967955	306.515
65500	64983.5	232.54	0.1274004	0.1908584	305.697
65750	65229.0	231.29	0.1228755	0.1850705	304.878
66000	65474.5	230.05	0.1184885	0.1794288	304.056
66250	65719.9	228.80	0.1142360	0.1739304	303.233
66500	65965.4	227.56	0.1101144	0.1685723	302.406
66750	66210.8	226.31	0.1061204	0.1633517	301.578
67000	66456.2	225.07	0.1022507	0.1582657	300.747
67250	66701.6	223.82	0.0985022	0.1533117	299.914
67500	66946.9	222.58	0.0948715	0.1484868	299.079
67750	67192.3	221.33	0.0913557	0.1437884	298.242
68000	67437.6	220.09	0.0879518	0.1392138	297.402
68250	67682.9	218.84	0.0846566	0.1347605	296.559
68500	67928.2	217.60	0.0814675	0.1304258	295.714
68750	68173.4	216.35	0.0783814	0.1262072	294.867
69000	68418.7	215.11	0.0753956	0.1221022	294.018
69250	68663.9	213.86	0.0725075	0.1181085	293.166
69500	68909.1	212.62	0.0697143	0.1142236	292.311
69750	69154.3	211.37	0.0670134	0.1104451	291.454
70000	69399.5	210.13	0.0644024	0.1067707	290.594
70250	69644.6	208.90	0.0618787	0.1031906	289.743
70500	69889.8	208.17	0.0594430	0.0994765	289.236
70750	70134.9	207.44	0.0570953	0.0958839	288.728
71000	70380.0	206.71	0.0548326	0.0924093	288.220
71250	70625.1	205.98	0.0526523	0.0890493	28 .710
71500	70870.1	205.25	0.0505515	0.0858004	287.200
71750	71115.1	204.52	0.0485277	0.0826594	285.689
72000	71360.2	203.79	0.0465782	0.0796230	286.177
72250	71605.2	203.06	0.0447007	0.0766880	285.664
72500	71850.1	202.33	0.0428925	0.0738515	285.150
72750	72095.1	201.60	0.0411516	0.0711105	284.635
73000	72340.1	200.87	0.0394754	0.0684620	284.119
73250	72585.0	200.14	0.0378620	0.0659033	283.602
73500	72829.9	199.41	0.0363090	0.0634316	283.085
73750	73074.8	198.68	0.0348145	0.0610442	282.566
74000	73319.6	197.95	0.0333765	0.0587386	282.047
74250	73564.5	197.22	0.0319930	0.0565122	281.526
74500	73809.3	196.49	0.0306621	0.0543626	281.004
74750	74054.1	195.76	0.0293821	0.0522874	280.482
75000	74298.9	195.03	0.0281511	0.0502842	279.959
75250	74543.7	194.30	0.0269674	0.0483509	279.434
75500	74788.4	193.57	0.0258294	0.0464852	278.909
75750	75033.2	192.84	0.0247355	0.0446850	278.382
76000	75277.9	192.11	0.0236841	0.0429482	277.855
76250	75522.6	191.38	0.0226737	0.0412726	277.326
76500	75767.3	190.65	0.0217029	0.0396569	276.797
76750	76011.9	189.92	0.0207702	0.0380985	276.267
77000	76256.5	189.19	0.0198743	0.0365959	275.735
77250	76501.2	188.46	0.0190139	0.0351472	275.203
77500	76745.8	187.73	0.0181877	0.0337506	274.669
77750	76990.3	187.00	0.0173944	0.0324046	274.135
78000	77234.9	186.27	0.0166329	0.0311074	273.599
78250	77479.5	185.54	0.0159020	0.0298574	273.062
78500	77724.0	184.81	0.0152005	0.0286531	272.525
78750	77968.5	184.08	0.0145275	0.0274930	271.986
79000	78213.0	183.35	0.0138818	0.0263756	271.446
79250	78457.4	182.62	0.0132624	0.0252996	270.905
79500	78701.9	181.89	0.0126685	0.0242635	270.363
79750	78946.3	181.16	0.0120989	0.0232660	269.820
80000	79190.7	180.65	0.0115531	0.0222792	269.440

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, MAY** TABLE I.5

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
80250	79435.1	180.65	0.0110313	0.0212730	269.440
80500	79679.5	180.65	0.0105331	0.0203122	269.440
80750	79923.9	180.65	0.0100575	0.0193949	269.440
81000	80168.2	180.65	0.0096033	0.0185192	269.440
81250	80412.5	180.65	0.0091697	0.0176830	269.440
81500	80656.8	180.65	0.0087557	0.0168846	269.440
81750	80901.1	180.65	0.0083604	0.0161223	269.440
82000	81145.3	180.65	0.0079830	0.0153945	269.440
82250	81389.6	180.65	0.0076227	0.0146997	269.440
82500	81633.8	180.65	0.0072786	0.0140362	269.440
82750	81878.0	180.65	0.0069501	0.0134027	269.440
83000	82122.2	180.65	0.0066365	0.0127979	269.440
83250	82366.4	180.65	0.0063370	0.0122204	269.440
83500	82610.5	180.65	0.0060511	0.0116690	269.440
83750	82854.6	180.65	0.0057781	0.0111425	269.440
84000	83098.7	180.65	0.0055174	0.0106398	269.440
84250	83342.8	180.65	0.0052685	0.0101598	269.440
84500	83586.9	180.65	0.0050308	0.0097015	269.440
84750	83830.9	180.65	0.0048039	0.0092640	269.440
85000	84075.0	180.65	0.0045873	0.0088461	269.440
85250	84319.0	180.65	0.0043804	0.0084472	269.440
85500	84563.0	180.65	0.0041829	0.0080663	269.440
85750	84807.0	180.65	0.0039943	0.0077026	269.440
86000	85050.9	180.65	0.0038142	0.0073553	269.440
86250	85294.9	180.65	0.0036422	0.0070237	269.440
86500	85538.8	180.65	0.0034780	0.0067070	269.440
86750	85782.7	180.65	0.0033212	0.0064047	269.440
87000	86026.6	180.65	0.0031715	0.0061160	269.440
87250	86270.4	180.65	0.0030286	0.0058404	269.440
87500	86514.3	180.65	0.0028921	0.0055772	269.440
87750	86758.1	180.65	0.0027618	0.0053258	269.440
88000	87001.9	180.65	0.0026373	0.0050859	269.440
88250	87245.7	180.65	0.0025185	0.0048567	269.440
88500	87489.5	180.65	0.0024050	0.0046379	269.440
88750	87733.2	180.65	0.0022967	0.0044290	269.440
89000	87976.9	180.65	0.0021932	0.0042295	269.440
89250	88220.6	180.65	0.0020944	0.0040389	269.440
89500	88464.3	180.65	0.0020001	0.0038570	269.440
89750	88708.0	180.65	0.0019100	0.0036833	269.440
90000	88951.7	180.65	0.0018240	0.0035175	269.440

IRIG-RANGE REFERENCE ATMOSPHERE, JUNE

TABLE I. 6

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	gm^{-3}	$m\ sec^{-1}$
25000	24959.9	230.15	27.4552000	41.5577212	304.122
25250	25208.0	230.50	26.4611929	39.9931860	304.350
25500	25457.1	230.84	25.5046536	38.4898712	304.578
25750	25705.7	231.19	24.5841148	37.0452909	304.806
26000	25954.3	231.53	23.6981672	35.6570641	305.033
26250	26202.8	231.88	22.8454612	34.3229096	305.260
26500	26451.3	232.22	22.0247001	33.0406419	305.487
26750	26699.8	232.57	21.2346402	31.8081671	305.714
27000	26948.3	232.91	20.4740880	30.6234788	305.941
27250	27196.8	233.26	19.7418982	29.4846542	306.167
27500	27445.2	233.60	19.0369715	28.3898510	306.393
27750	27693.6	233.95	18.3582528	27.3373034	306.620
28000	27942.0	234.29	17.7047296	26.3253186	306.846
28250	28190.4	234.64	17.0754297	25.3522752	307.071
28500	28438.8	234.98	16.4694201	24.4166175	307.297
28750	28687.1	235.33	15.8858047	23.5168552	307.523
29000	28935.4	235.67	15.3238162	22.6441054	307.800
29250	29183.7	236.41	14.7829703	21.7841142	308.229
29500	29432.0	237.06	14.2626771	20.9590995	308.657
29750	29680.3	237.72	13.7621004	20.1675425	309.085
30000	29928.5	238.38	13.2804403	19.4079986	309.512
30250	30176.8	239.04	12.8169315	18.6790879	309.939
30500	30425.0	239.70	12.3708418	17.9794940	310.365
30750	30673.1	240.35	11.9414702	17.3079604	310.791
31000	30921.3	241.01	11.5281460	16.6632878	311.216
31250	31169.5	241.67	11.1302270	16.0443312	311.640
31500	31417.6	242.33	10.7470984	15.4499974	312.064
31750	31665.7	242.98	10.3781718	14.8792826	312.487
32000	31913.8	243.64	10.0226833	14.3310698	312.910
32250	32161.9	244.30	9.6806932	13.8045269	313.332
32500	32409.9	244.96	9.3510844	13.2987044	313.753
32750	32657.9	245.62	9.0335617	12.8127331	314.174
33000	32906.0	246.27	8.7276504	12.3457829	314.595
33250	33153.9	246.93	8.4326960	11.8970603	315.015
33500	33401.9	247.59	8.1488626	11.4658068	315.434
50	33649.9	248.25	7.8751328	11.0512978	315.853
34000	33897.8	248.90	7.6113062	10.6528402	316.271
34250	34145.7	249.56	7.3569993	10.2697716	316.688
34500	34393.6	250.22	7.1118441	9.9014584	317.105
34750	34641.5	250.88	6.8754880	9.5472949	317.522
35000	34889.4	251.54	6.6475927	9.2067017	317.938
35250	35137.2	252.19	6.4278339	8.8791245	318.353
35500	35385.0	252.85	6.2159006	8.5640331	318.768
35750	35632.8	253.51	6.0114942	8.2609202	319.183
36000	35880.6	254.17	5.8143285	7.9693005	319.596
36250	36128.4	254.82	5.6241288	7.6887094	320.010
36500	36376.1	255.48	5.4406314	7.4187023	320.422
36750	36623.8	256.14	5.2635835	7.1588536	320.835
37000	36871.5	256.80	5.0927423	6.9087559	321.246
37250	37119.2	257.45	4.9278747	6.6680191	321.657
37500	37366.9	258.11	4.7687569	6.4362698	322.068
37750	37614.5	258.77	4.6151743	6.2131502	322.478
38000	37862.1	259.43	4.4669205	5.9983178	322.888
38250	38109.7	260.09	4.3237975	5.7914443	323.297
38500	38357.3	260.74	4.1856152	5.5922155	323.705
38750	38604.9	261.40	4.0521906	5.4003303	324.113
39000	38852.4	262.06	3.9233488	5.2154999	324.521
39250	39100.0	262.72	3.7989208	5.0374479	324.928
39500	39347.5	263.37	3.6787445	4.8659092	325.334
39750	39595.0	264.03	3.5626646	4.7006298	325.740
40000	39842.4	264.69	3.4505313	4.5413663	326.146
40250	40089.9	265.35	3.3422009	4.3878850	326.551
40500	40337.3	266.01	3.2375353	4.2399623	326.955
40750	40584.7	266.66	3.1364017	4.0973838	327.359
41000	40832.1	267.32	3.0386723	3.9599425	327.763
41250	41079.5	267.98	2.9442244	3.8274472	328.166
41500	41326.9	268.64	2.8529400	3.6996932	328.568
41750	41574.2	269.29	2.7647055	3.5765137	328.970
42000	41821.5	269.95	2.6794118	3.4577294	329.372
42250	42068.8	270.61	2.5969538	3.3431732	329.773
42500	42316.1	271.27	2.5172306	3.2326646	330.173
42750	42563.4	271.93	2.4401450	3.1261095	330.573
43000	42810.6	272.58	2.3656034	3.0233001	330.973

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, JUNE** TABLE I. 6

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	$g\ m^{-3}$	$m\ sec^{-1}$
43250	43057.8	273.24	2.2935160	2.9241146	331.372
43500	43305.0	273.90	2.2237961	2.8284167	331.771
43750	43552.2	274.50	2.1563604	2.7360757	332.169
44000	43799.4	275.21	2.0911288	2.6469659	332.566
44250	44046.5	275.87	2.0280240	2.5609668	332.964
44500	44293.6	276.53	1.9669718	2.4779626	333.360
44750	44540.7	277.19	1.9079005	2.3978421	333.756
45000	44787.8	277.85	1.8507415	2.3204983	334.152
45250	45034.9	278.51	1.7954287	2.2457911	334.550
45500	45281.9	278.80	1.7418032	2.1765425	334.723
45750	45529.0	279.00	1.6899526	2.1095023	334.896
46000	45776.0	279.37	1.6396439	2.0445977	335.068
46250	46023.0	279.66	1.5908861	1.9817584	335.240
46500	46269.9	279.94	1.5436296	1.9209165	335.413
46750	46516.9	280.23	1.4978268	1.8620065	335.585
47000	46763.8	280.52	1.4534314	1.8049651	335.757
47250	47010.7	280.81	1.4103986	1.7497309	335.929
47500	47257.6	281.00	1.3686783	1.6968097	336.044
47750	47504.5	281.00	1.3282088	1.6466380	336.044
48000	47751.3	281.00	1.2889389	1.5979534	336.044
48250	47998.2	281.00	1.2508331	1.5507119	336.044
48500	48245.0	281.00	1.2138566	1.5048706	336.044
48750	48491.8	281.00	1.1779760	1.4603876	336.044
49000	48738.6	281.00	1.1431586	1.4172232	336.044
49250	48985.3	281.00	1.1093729	1.3753376	336.044
49500	49232.1	281.00	1.0765983	1.3346931	336.044
49750	49478.8	281.00	1.0447749	1.2952527	336.044
50000	49725.5	281.00	1.0139041	1.2569800	336.044
50250	49972.2	281.00	0.9839477	1.2198425	336.044
50500	50218.8	281.00	0.9546786	1.1838043	336.044
50750	50465.5	281.00	0.9266704	1.1488335	336.044
51000	50712.1	281.00	0.8992977	1.1146983	336.044
51250	50958.7	281.00	0.8727355	1.0819680	336.044
51500	51205.3	281.00	0.8469599	1.0500129	336.044
51750	51451.9	281.00	0.8219475	1.0190039	336.044
52000	51698.4	281.00	0.7976756	0.9889130	336.044
52250	51944.9	281.00	0.7741222	0.9597129	336.044
52500	52191.4	281.00	0.7512561	0.9313771	336.044
52750	52437.9	281.00	0.7290865	0.9038801	336.044
53000	52684.4	281.00	0.7075634	0.8771970	336.044
53250	52930.8	281.00	0.6866772	0.8513035	336.044
53500	53177.3	281.00	0.6664092	0.8261763	336.044
53750	53423.7	280.20	0.6467131	0.8040545	335.564
54000	53670.1	279.17	0.6275391	0.7830872	334.948
54250	53916.5	278.14	0.6088674	0.7625941	334.331
54500	54162.8	277.12	0.5906866	0.7425462	333.713
54750	54409.2	276.09	0.5729855	0.7229945	333.094
55000	54655.5	275.06	0.5557532	0.7038702	332.473
55250	54901.8	274.03	0.5389787	0.6851847	331.852
55500	55148.0	273.01	0.5226517	0.6669294	331.229
55750	55394.3	271.98	0.5067617	0.6490959	330.605
56000	55640.5	270.95	0.4912985	0.6316760	329.980
56250	55886.8	269.92	0.4762523	0.6146616	329.354
56500	56133.0	268.90	0.4616132	0.5980446	328.726
56750	56379.2	267.87	0.4473717	0.5818173	328.098
57000	56625.3	266.84	0.4335185	0.5659717	327.468
57250	56871.5	265.81	0.4200442	0.5505005	326.837
57500	57117.6	264.79	0.4069400	0.5353960	326.204
57750	57363.7	263.76	0.3941970	0.5206509	325.571
58000	57609.8	262.73	0.3818066	0.5062579	324.936
58250	57855.8	261.70	0.3697603	0.4922100	324.300
58500	58101.9	260.68	0.3580497	0.4785002	323.663
58750	58347.9	259.65	0.3466669	0.4651214	323.024
59000	58593.9	258.62	0.3356038	0.4520671	322.384
59250	58839.9	257.59	0.3248526	0.4393304	321.743
59500	59085.9	256.57	0.3144058	0.4269049	321.101
59750	59331.8	255.54	0.3042557	0.4147842	320.457
60000	59577.8	254.51	0.2943952	0.4029616	319.813
60250	59823.7	253.48	0.2848170	0.3914317	319.166
60500	60069.6	252.46	0.2755141	0.3801876	318.519
60750	60315.5	251.43	0.2664796	0.3692235	317.870
61000	60561.3	250.40	0.2577069	0.3585336	317.220
61250	60807.2	249.37	0.2491894	0.3481121	316.568
61500	61053.0	248.35	0.2409206	0.3379532	315.915

(CONTINUED) IRIG-RANGE REFERENCE ATMOSPHERE, JUNE TABLE I. 6

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m^{-3}	SPEED OF SOUND m sec^{-1}
61750	61296.6	247.32	0.2326941	0.3280513	315.261
62000	61544.6	246.29	0.2251040	0.3164010	314.606
62250	61790.3	245.20	0.2175440	0.3089969	313.949
62500	62036.1	244.24	0.2102084	0.2998335	313.290
62750	62281.8	243.21	0.2030912	0.2909057	312.631
63000	62527.5	242.18	0.1961870	0.2822085	311.970
63250	62773.2	241.15	0.1894901	0.2737366	311.307
63500	63018.9	240.13	0.1829952	0.2654852	310.643
63750	63264.5	239.10	0.1766969	0.2574495	309.978
64000	63510.1	238.07	0.1705902	0.2496246	309.311
64250	63755.7	237.04	0.1646699	0.2420059	308.643
64500	64001.3	236.02	0.1589311	0.2345888	307.973
64750	64246.9	234.99	0.1533690	0.2273688	307.302
65000	64492.5	233.96	0.1479789	0.2203414	306.629
65250	64738.0	232.93	0.1427561	0.2135023	305.955
65500	64983.5	231.91	0.1376961	0.2068472	305.280
65750	65229.0	230.88	0.1327946	0.2003720	304.603
66000	65474.5	229.85	0.1280473	0.1940725	303.924
66250	65719.9	228.82	0.1234496	0.1879446	303.244
66500	65965.4	227.80	0.1189982	0.1819845	302.563
66750	66210.8	226.77	0.1146884	0.1761882	301.879
67000	66456.2	225.74	0.1105165	0.1705520	301.195
67250	66701.6	224.71	0.1064787	0.1650720	300.508
67500	66946.9	223.69	0.1025712	0.1597447	299.821
67750	67192.3	222.66	0.0987903	0.1545664	299.131
68000	67437.6	221.63	0.0951326	0.1495336	298.440
68250	67682.9	220.60	0.0915945	0.1446429	297.748
68500	67928.2	219.58	0.0881727	0.1398908	297.053
68750	68173.4	218.55	0.0848638	0.1352741	296.358
69000	68418.7	217.52	0.0816646	0.1307894	295.660
69250	68663.9	216.49	0.0785719	0.1264336	294.961
69500	68909.1	215.47	0.0755827	0.1222035	294.260
69750	69154.3	214.44	0.0726939	0.1180961	293.558
70000	69399.5	213.41	0.0699027	0.1141083	292.854
70250	69644.6	212.38	0.0672062	0.1102373	292.148
70500	69889.8	211.36	0.0646016	0.1064801	291.440
70750	70134.9	210.33	0.0620861	0.1028339	290.731
71000	70380.0	209.30	0.0596572	0.0992959	290.020
71250	70625.1	208.27	0.0573122	0.0958634	289.307
71500	70870.1	207.25	0.0550486	0.0925338	288.593
71750	71115.1	206.22	0.0528640	0.0893044	287.876
72000	71360.2	205.19	0.0507560	0.0861727	287.158
72250	71605.2	204.16	0.0487223	0.0831361	286.438
72500	71850.1	203.14	0.0467605	0.0801923	285.717
72750	72095.1	202.11	0.0448686	0.0773389	284.993
73000	72340.1	201.08	0.0430442	0.0745735	284.268
73250	72585.0	200.05	0.0412854	0.0718937	283.540
73500	72829.9	199.03	0.0395901	0.0692974	282.811
73750	73074.8	198.00	0.0379563	0.0667824	282.080
74000	73319.6	196.97	0.0363820	0.0643465	281.348
74250	73564.5	195.94	0.0348655	0.0619876	280.613
74500	73809.3	194.92	0.0334047	0.0597037	279.876
74750	74054.1	193.89	0.0319981	0.0574927	279.137
75000	74298.9	192.86	0.0306438	0.0553526	278.397
75250	74543.7	191.83	0.0293401	0.0532816	277.654
75500	74788.4	190.81	0.0280854	0.0512777	276.910
75750	75033.2	189.78	0.0268781	0.0493392	276.163
76000	75277.9	188.75	0.0257167	0.0474642	275.414
76250	75522.6	187.72	0.0245996	0.0456509	274.664
76500	75767.3	186.70	0.0235254	0.0438977	273.911
76750	76011.9	185.67	0.0224926	0.0422029	273.156
77000	76256.5	184.64	0.0214999	0.0405647	272.399
77250	76501.2	183.61	0.0205459	0.0389817	271.640
77500	76745.8	182.59	0.0196294	0.0374522	270.879
77750	76990.3	181.56	0.0187488	0.0359747	270.116
78000	77234.8	180.53	0.0179032	0.0345477	269.350
78250	77479.5	179.50	0.0170913	0.0331698	268.583
78500	77724.0	178.48	0.0163120	0.0318395	267.813
78750	77968.5	177.45	0.0155640	0.0305555	267.041
79000	78212.9	176.42	0.0148464	0.0293164	266.267
79250	78457.4	175.39	0.0141579	0.0281208	265.490
79500	78701.9	174.37	0.0134977	0.0269674	264.711
79750	78946.3	173.34	0.0128647	0.0258551	263.930
80000	79190.7	172.65	0.0122585	0.0247349	263.406

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, JUNE** TABLE I. 6

STATION	ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES
		LATITUDE	LONGITUDE		
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
80250	79435.1	172.05	0.0116798	0.0235672	263.406
80500	79679.5	172.05	0.0111289	0.0224547	263.406
80750	79923.9	172.05	0.0106032	0.0213948	263.406
81000	80168.2	172.05	0.0101027	0.0203850	263.406
81250	80412.5	172.05	0.0096260	0.0194230	263.406
81500	80656.8	172.05	0.0091717	0.0185064	263.406
81750	80901.1	172.05	0.0087389	0.0176331	263.406
82000	81145.3	172.05	0.0083260	0.0168011	263.406
82250	81389.6	172.05	0.0079337	0.0160084	263.406
82500	81633.8	172.05	0.0075594	0.0152532	263.406
82750	81878.0	172.05	0.0072028	0.0145337	263.406
83000	82122.2	172.05	0.0068631	0.0138481	263.406
83250	82366.4	172.05	0.0065394	0.0131950	263.406
83500	82610.5	172.05	0.0062310	0.0125727	263.406
83750	82854.6	172.05	0.0059371	0.0119798	263.406
84000	83098.7	172.05	0.0056572	0.0114149	263.406
84250	83342.8	172.05	0.0053904	0.0108766	263.406
84500	83586.9	172.05	0.0051363	0.0103638	263.406
84750	83830.9	172.05	0.0048941	0.0098752	263.406
85000	84075.0	172.05	0.0046634	0.0094097	263.406
85250	84319.0	172.05	0.0044436	0.0089662	263.406
85500	84563.0	172.05	0.0042342	0.0085435	263.406
85750	84807.0	172.05	0.0040346	0.0081409	263.406
86000	85050.9	172.05	0.0038445	0.0077572	263.406
86250	85294.9	172.05	0.0036633	0.0073917	263.406
86500	85538.8	172.05	0.0034907	0.0070434	263.406
86750	85782.7	172.05	0.0033262	0.0067115	263.406
87000	86026.6	172.05	0.0031695	0.0063953	263.406
87250	86270.4	172.05	0.0030202	0.0060941	263.406
87500	86514.3	172.05	0.0028779	0.0058070	263.406
87750	86758.1	172.05	0.0027424	0.0055335	263.406
88000	87001.9	172.05	0.0026132	0.0052729	263.406
88250	87245.7	172.05	0.0024902	0.0050246	263.406
88500	87489.5	172.05	0.0023729	0.0047879	263.406
88750	87733.2	172.05	0.0022612	0.0045625	263.406
89000	87976.9	172.05	0.0021547	0.0043477	263.406
89250	88220.6	172.05	0.0020532	0.0041430	263.406
89500	88464.3	172.05	0.0019566	0.0039479	263.406
89750	88708.0	172.05	0.0018645	0.0037621	263.406
90000	88951.7	172.05	0.0017767	0.0035850	263.406

IRIG-RANGE REFERENCE ATMOSPHERE, JULY

TABLE I. 7

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY gm-3	SPEED OF SOUND m sec-1
25000	24959.9	230.00	28.0381000	42.4677095	304.023
25250	25200.6	230.40	27.0226321	40.6443976	304.340
25500	25457.1	230.96	26.0360157	39.2864350	304.657
25750	25705.7	231.44	25.1088850	37.7910585	304.974
26000	25954.3	231.92	24.2031429	35.3556263	305.290
26250	26202.8	232.40	23.3339518	34.9776206	305.605
26500	26451.3	232.88	22.4977372	33.6546235	305.921
26750	26699.8	233.36	21.6931817	32.3643310	306.236
27000	26948.3	233.84	20.9190230	31.1045377	306.551
27250	27196.8	234.32	20.1740520	29.9931356	306.865
27500	27445.2	234.80	19.4571098	28.8601086	307.179
27750	27693.6	235.28	18.7670859	27.7875286	307.493
28000	27942.0	235.76	18.1029160	26.7495516	307.807
28250	28190.4	236.24	17.4635800	25.7524135	308.120
28500	28438.8	236.72	16.8481000	24.7944268	308.433
28750	28687.1	237.20	16.2555367	23.8739772	308.745
29000	28935.4	237.68	15.6849973	22.9895199	309.058
29250	29183.7	238.16	15.1356140	22.1395769	309.369
29500	29432.0	238.64	14.6065626	21.3227335	309.681
29750	29680.3	239.12	14.0970506	20.5376359	309.992
30000	29928.5	239.60	13.6063160	19.7829885	310.303
30250	30176.8	240.08	13.1336359	19.0575507	310.614
30500	30425.0	240.56	12.6783050	18.3601351	310.924
30750	30673.1	241.04	12.2396544	17.6896046	311.234
31000	30921.3	241.52	11.8170407	17.0448712	311.544
31250	31169.5	242.00	11.4098463	16.4248920	311.854
31500	31417.6	242.48	11.0174780	15.8286688	312.163
31750	31665.7	242.96	10.6393695	15.2552456	312.472
32000	31913.8	243.44	10.2749725	14.7037065	312.780
32250	32161.9	243.92	9.9237645	14.1731743	313.088
32500	32409.9	244.40	9.5852423	13.6628086	313.396
32750	32657.9	244.88	9.2589234	13.1718082	313.704
33000	32906.0	245.36	8.9443444	12.6993696	314.011
33250	33153.9	245.84	8.6410606	12.2440254	314.318
33500	33401.9	246.32	8.3486446	11.8074031	314.625
33750	33649.9	246.80	8.0666863	11.3864436	314.931
34000	33897.8	247.28	7.7947916	10.9812966	315.237
34250	34145.7	247.80	7.5326055	10.5894996	315.571
34500	34393.6	248.52	7.2798784	10.2048175	316.025
34750	34641.5	249.24	7.0363380	9.8351795	316.479
35000	34889.4	249.95	6.8016248	9.4799557	316.931
35250	35137.2	250.66	6.5753944	9.1385445	317.384
35500	35385.0	251.37	6.3573169	8.8103708	317.835
35750	35632.6	252.09	6.1470760	8.4948853	318.286
36000	35880.6	252.80	5.9443687	8.1915628	318.736
36250	36128.4	253.51	5.7489045	7.8999013	319.185
36500	36376.1	254.23	5.5604046	7.6194208	319.635
36750	36623.8	254.94	5.3786021	7.3496626	320.083
37000	36871.5	255.66	5.2032408	7.0901876	320.531
37250	37119.2	256.37	5.0340751	6.8405764	320.978
37500	37366.9	257.08	4.8708693	6.6004273	321.425
37750	37614.5	257.80	4.7133974	6.3693565	321.871
38000	37862.1	258.51	4.5614426	6.1469964	322.316
38250	38109.7	259.22	4.4147966	5.9329956	322.761
38500	38357.3	259.94	4.2732603	5.7270174	323.205
38750	38604.9	260.65	4.1366415	5.5287400	323.648
39000	38852.4	261.37	4.0047564	5.3378549	324.091
39250	39100.0	262.08	3.8774285	5.1540672	324.533
39500	39347.5	262.79	3.7544882	4.9770943	324.975
39750	39595.0	263.51	3.6357728	4.8066655	325.416
40000	39842.4	264.22	3.5211259	4.6425219	325.856
40250	40089.9	264.93	3.4103974	4.4844150	326.295
40500	40337.3	265.65	3.3034432	4.3321073	326.735
40750	40584.7	266.36	3.2001246	4.1853710	327.174
41000	40832.1	267.08	3.1003090	4.0439870	327.612
41250	41079.5	267.79	3.0038680	3.9077485	328.049
41500	41326.9	268.50	2.9106790	3.7764528	328.486
41750	41574.2	269.22	2.8206238	3.6499086	328.923
42000	41821.5	269.93	2.7335891	3.5279317	329.358
42250	42068.8	270.64	2.6494657	3.4103456	329.793
42500	42316.1	271.40	2.5681487	3.2969809	330.228
42750	42563.4	272.07	2.4895374	3.1876755	330.662
43000	42810.6	272.79	2.4135349	3.0822736	331.096

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, JULY** TABLE I. 7

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m-3	SPEED OF SOUND m sec-1
43250	43057.6	273.50	2.3400676	2.9806259	331.528
43500	43335.0	274.10	2.2689721	2.8837541	331.893
43750	43552.2	274.45	2.2001783	2.7927543	332.104
44000	43799.4	274.80	2.1335590	2.7047431	332.316
44250	44046.5	275.15	2.0690429	2.6196186	332.528
44500	44293.6	275.50	2.0065607	2.5372824	332.739
44750	44540.7	275.85	1.9460459	2.4576395	332.950
45000	44787.8	276.20	1.8874330	2.3805985	333.162
45250	45034.9	276.55	1.8306624	2.3060710	333.373
45500	45281.9	276.90	1.7756713	2.2339719	333.583
45750	45529.0	277.25	1.7224026	2.1642190	333.794
46000	45776.0	277.60	1.6708000	2.0967326	334.005
46250	46023.0	277.95	1.6208094	2.0314370	334.215
46500	46269.9	278.30	1.5723783	1.9682576	334.426
46750	46516.9	278.65	1.5254562	1.9071234	334.636
47000	46763.8	279.00	1.4799940	1.8479625	334.846
4.250	47010.7	279.35	1.4359446	1.7907176	335.056
47500	47257.6	279.70	1.3932623	1.7353157	335.266
47750	47504.5	280.00	1.3518991	1.6819936	335.446
48000	47751.3	280.00	1.3117802	1.6320886	335.446
48250	47998.2	280.00	1.2728704	1.5836684	335.446
48500	48245.0	280.00	1.2351101	1.5366882	335.446
48750	48491.8	280.00	1.1984726	1.4911051	335.446
49000	48738.6	280.00	1.1629250	1.4468775	335.446
49250	48985.3	280.00	1.1284342	1.4039651	335.446
49500	49232.1	280.00	1.0949690	1.3623286	335.446
49750	49478.8	280.00	1.0624987	1.3219300	335.446
50000	49725.5	280.00	1.0309936	1.2827324	335.446
50250	49972.2	280.00	1.0004251	1.2446999	335.446
50500	50218.8	280.00	0.9707653	1.2077986	335.446
50750	50465.5	280.00	0.9419869	1.1719926	335.446
51000	50712.1	280.00	0.9140639	1.1372517	335.446
51250	50955.7	280.00	0.8869706	1.1035431	335.446
51500	51205.3	280.00	0.8606824	1.0708361	335.446
51750	51451.9	280.00	0.8351753	1.0391009	335.446
52000	51698.4	280.00	0.8104260	1.0083086	335.446
52250	51944.9	280.00	0.7864120	0.9784310	335.446
52500	52191.4	280.00	0.7631114	0.9494410	335.446
52750	52437.8	280.00	0.7405028	0.9213121	335.446
53000	52684.4	280.00	0.7185657	0.8940186	335.446
53250	52930.8	280.00	0.6972802	0.8675358	335.446
53500	53177.3	280.00	0.6766268	0.8418394	335.446
53750	53423.7	280.00	0.6565866	0.8169060	335.446
54000	53670.1	280.00	0.6371415	0.7927129	335.446
54250	53916.5	279.20	0.6182471	0.7714091	334.965
54500	54162.8	278.15	0.5998545	0.7512054	334.336
54750	54409.2	277.10	0.5819440	0.7316153	333.704
55000	54655.5	276.05	0.5645046	0.7123900	333.071
55250	54901.8	275.00	0.5475256	0.6936012	332.437
55500	55148.0	273.95	0.5309966	0.6752406	331.802
55750	55394.3	272.90	0.5149072	0.6572998	331.165
56000	55640.5	271.85	0.4992472	0.6397708	330.528
56250	55886.8	270.80	0.4840069	0.6226456	329.889
56500	56133.0	269.75	0.4691764	0.6059165	329.248
56750	56379.2	268.70	0.4547462	0.5895756	328.607
57000	56625.3	267.65	0.4407070	0.5736154	327.964
57250	56871.5	266.60	0.4270497	0.5580285	327.320
57500	57117.6	265.55	0.4137652	0.5428074	326.675
57750	57363.7	264.50	0.4008447	0.5279449	326.029
58000	57609.8	263.45	0.3882797	0.5134339	325.381
58250	57855.8	262.40	0.3760616	0.4992675	324.732
58500	58101.9	261.35	0.3641823	0.4854387	324.082
58750	58347.9	260.30	0.3526335	0.4719407	323.430
59000	58593.9	259.25	0.3414073	0.4587669	322.777
59250	58839.9	258.20	0.3304959	0.4459108	322.123
59500	59085.9	257.15	0.3198918	0.4333658	321.467
59750	59331.8	256.10	0.3095873	0.4211256	320.810
60000	59577.8	255.05	0.2995753	0.4091841	320.152
60250	59823.7	254.00	0.2898484	0.3975350	319.492
60500	60069.6	252.95	0.2803998	0.3861723	318.831
60750	60315.5	251.90	0.2712225	0.3750901	318.168
61000	60561.3	250.85	0.2623098	0.3642826	317.505
61250	60807.2	249.80	0.2536550	0.3537441	316.839
61500	61053.0	248.75	0.2452516	0.3434688	316.173

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, JULY** TABLE I. 7

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m-3	SPEED OF SOUND m sec-1
61750	61298.8	247.70	0.2370939	0.3334513	315.505
62000	61544.6	246.65	0.2291747	0.3236861	314.835
62250	61790.3	245.60	0.2214890	0.3141679	314.165
62500	62036.1	244.55	0.2140301	0.3048914	313.492
62750	62281.8	243.50	0.2067924	0.2958515	312.819
63000	62527.5	242.45	0.1997703	0.2870430	312.143
63250	62773.2	241.40	0.1929583	0.2784610	311.467
63500	63018.9	240.35	0.1863509	0.2701005	310.789
63750	63264.5	239.30	0.1799427	0.2619568	310.109
64000	63510.1	238.25	0.1737287	0.2540252	309.428
64250	63755.7	237.20	0.1677037	0.2463009	308.745
64500	64001.3	236.15	0.1618627	0.2387795	308.061
64750	64246.9	235.10	0.1562010	0.2314564	307.376
65000	64492.5	234.05	0.1507136	0.2243272	306.688
65250	64738.0	234.00	0.1453961	0.2173876	306.000
65500	64983.5	231.95	0.1402438	0.2106335	305.309
65750	65229.0	230.90	0.1352523	0.2040605	304.618
66000	65474.5	229.85	0.1304173	0.1976646	303.924
66250	65719.9	228.80	0.1257346	0.1914418	303.229
66500	65965.4	227.75	0.1211999	0.1853882	302.533
66750	66210.8	226.70	0.1168093	0.1794998	301.834
67000	66456.2	225.65	0.1125588	0.1737730	301.135
67250	66701.6	224.60	0.1084445	0.1682039	300.433
67500	66946.9	223.55	0.1044627	0.1627889	299.730
67750	67192.3	222.50	0.1006097	0.1575244	299.025
68000	67437.6	221.45	0.0968818	0.1524069	298.319
68250	67682.9	220.40	0.0932756	0.1474330	297.611
68500	67928.2	219.35	0.0897870	0.1425992	296.901
68750	68173.4	218.30	0.0864146	0.1379022	296.190
69000	68418.7	217.25	0.0831531	0.1333388	295.476
69250	68663.9	216.20	0.0800000	0.1289056	294.762
69500	68909.1	215.15	0.0769523	0.1246001	294.045
69750	69154.3	214.10	0.0740066	0.1204185	293.327
70000	69399.5	214.05	0.0711604	0.1163580	292.606
70250	69644.6	212.00	0.0684109	0.1124156	291.884
70500	69889.6	210.95	0.0657547	0.1085889	291.161
70750	70134.9	209.90	0.0631894	0.1048745	290.435
71000	70380.0	208.85	0.0607122	0.1012697	289.708
71250	70625.1	207.80	0.0583206	0.0977720	288.979
71500	70870.1	206.75	0.0560119	0.0943785	288.248
71750	71115.1	205.70	0.0537838	0.0910867	287.515
72000	71360.2	204.65	0.0516337	0.0878940	286.780
72250	71605.2	203.60	0.0495593	0.0847980	286.043
72500	71850.1	202.55	0.0475583	0.0817961	285.305
72750	72095.1	201.50	0.0456285	0.0788859	284.564
73000	72340.1	200.45	0.0437677	0.0760651	283.822
73250	72585.0	199.40	0.0419737	0.0733314	283.078
73500	72829.9	198.35	0.0402445	0.0706826	282.331
73750	73074.8	197.30	0.0385780	0.0681163	281.583
74000	73319.6	196.25	0.0369723	0.0656305	280.833
74250	73564.5	195.20	0.0354255	0.0632229	280.081
74500	73809.3	194.15	0.0339357	0.0608917	279.328
74750	74054.1	193.10	0.0325011	0.0586346	278.570
75000	74298.9	192.05	0.0311199	0.0564497	277.811
75250	74543.7	191.00	0.0297904	0.0543352	277.051
75500	74788.4	189.95	0.0285109	0.0522890	276.288
75750	75033.2	188.90	0.0272799	0.0503094	275.524
76000	75277.9	187.85	0.0260957	0.0483944	274.757
76250	75522.6	186.80	0.0249567	0.0465424	273.988
76500	75767.3	185.75	0.0238616	0.0447516	273.217
76750	76011.9	184.70	0.0228087	0.0430202	272.444
77000	76256.5	183.65	0.0217968	0.0413467	271.668
77250	76501.2	182.60	0.0208245	0.0397294	270.890
77500	76745.8	181.55	0.0198903	0.0381667	270.110
77750	76990.3	180.50	0.0189931	0.0366570	269.328
78000	77234.9	179.45	0.0181315	0.0351989	268.544
78250	77479.5	178.40	0.0173044	0.0337909	267.757
78500	77724.0	177.35	0.0165105	0.0324315	266.968
78750	77968.5	176.30	0.0157487	0.0311193	266.176
79000	78213.0	175.25	0.0150178	0.0298530	265.382
79250	78457.4	174.20	0.0143169	0.0286311	264.586
79500	78701.9	173.15	0.0136447	0.0274525	263.788
79750	78946.3	172.10	0.0130004	0.0263157	262.987
80000	79190.7	171.15	0.0123831	0.0252051	262.260

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, JULY** **TABLE I. 7**

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	$g\,m^{-3}$	$m\,sec^{-1}$
80250	79435.1	171.15	0.0117935	0.0240051	262.260
80500	79670.9	171.15	0.0112320	0.0228622	262.260
80750	79923.9	171.15	0.0106973	0.0217739	262.260
81000	80148.2	171.15	0.0101851	0.0207374	262.260
81250	80412.5	171.15	0.0097032	0.0197503	262.260
81500	80656.8	171.15	0.0092413	0.0188103	262.260
81750	80901.1	171.15	0.0088015	0.0179151	262.260
82000	81145.3	171.15	0.0083827	0.0170626	262.260
82250	81389.6	171.15	0.0079838	0.0162507	262.260
82500	81633.8	171.15	0.0076040	0.0154775	262.260
82750	81878.0	171.15	0.0072422	0.0147411	262.260
83000	82122.2	171.15	0.0068977	0.0140399	262.260
83250	82366.4	171.15	0.0065695	0.0133720	262.260
83500	82610.5	171.15	0.0062571	0.0127359	262.260
83750	82854.8	171.15	0.0059593	0.0121302	262.260
84000	83098.7	171.15	0.0056760	0.0115533	262.260
84250	83342.8	171.15	0.0054081	0.0110039	262.260
84500	83586.9	171.15	0.0051490	0.0104806	262.260
84750	83830.9	171.15	0.0049082	0.0099823	262.260
85000	84075.0	171.15	0.0046711	0.0095077	262.260
85250	84319.0	171.15	0.0044499	0.0090557	262.260
85500	84563.0	171.15	0.0042375	0.0086252	262.260
85750	84807.0	171.15	0.0040381	0.0082153	262.260
86000	85050.9	171.15	0.0038442	0.0078248	262.260
86250	85294.9	171.15	0.0036615	0.0074529	262.260
86500	85538.8	171.15	0.0034875	0.0070987	262.260
86750	85782.7	171.15	0.0033218	0.0067614	262.260
87000	86026.6	171.15	0.0031640	0.0064401	262.260
87250	86270.4	171.15	0.0030134	0.0061342	262.260
87500	86514.3	171.15	0.0028705	0.0058427	262.260
87750	86758.1	171.15	0.0027341	0.0055652	262.260
88000	87001.9	171.15	0.0026042	0.0053008	262.260
88250	87245.7	171.15	0.0024806	0.0050491	262.260
88500	87489.5	171.15	0.0023627	0.0048093	262.260
88750	87733.2	171.15	0.0022505	0.0045809	262.260
89000	87976.9	171.15	0.0021437	0.0043633	262.260
89250	88220.6	171.15	0.0020419	0.0041561	262.260
89500	88464.3	171.15	0.0019449	0.0039588	262.260
89750	88708.0	171.15	0.0018526	0.0037709	262.260
90000	88951.7	171.15	0.0017646	0.0035918	262.260

IRIG-RANGE REFERENCE ATMOSPHERE, AUGUST

TABLE I. 8

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	gm^{-3}	$m\ sec^{-1}$
25000	24959.9	227.59	27.4482000	42.0310812	302.367
25250	25208.6	227.74	26.8428559	40.8498256	302.523
25500	25457.1	227.97	25.4753865	38.9297137	302.679
25750	25705.7	228.21	24.5283322	37.4053146	302.835
26000	25953.3	228.44	23.6457785	36.0853506	302.991
26250	26202.6	228.65	22.7859749	34.7124375	303.146
26500	26451.3	228.91	21.9559229	33.4135029	303.302
26750	26699.8	229.15	21.1568751	32.1946767	303.458
27000	26948.3	229.38	20.3875339	30.9537556	303.613
27250	27196.8	229.62	19.6475495	29.7889175	303.769
27500	27445.2	229.85	18.9369121	28.6963497	303.924
27750	27693.6	230.07	18.2255691	27.6303041	304.080
28000	27942.0	230.32	17.5883941	26.6031234	304.235
28250	28190.4	230.55	16.9525094	25.6151977	304.390
28500	28438.8	230.79	16.3402743	24.6645419	304.545
28750	28687.1	231.03	15.7507847	23.7998617	304.700
29000	28935.4	231.28	15.1831721	22.8717865	304.855
29250	29183.7	231.54	14.6366022	22.0780565	305.010
29500	29432.0	231.73	14.1102732	21.2124707	305.165
29750	29680.3	231.97	13.6034147	20.4297744	305.3[illegible]
30000	29928.5	232.20	13.1152855	19.6707632	305.474
30250	30176.8	232.44	12.6451771	18.9522204	305.628
30500	30425.0	232.67	12.1924029	18.2552174	305.783
30750	30673.1	232.91	11.7563079	17.5945972	305.937
31000	30921.3	233.14	11.3362580	16.9391269	306.092
31250	31169.5	233.38	10.9319489	16.3280941	306.246
31500	31417.6	233.61	10.5418963	15.7203655	306.400
31750	31665.7	233.85	10.1656399	15.1453375	306.554
32000	31913.8	234.08	9.8027493	14.5918346	306.709
32250	32161.9	234.32	9.4526797	14.0591257	306.862
32500	32409.9	234.55	9.1205600	13.5454083	307.016
32750	32657.9	234.79	8.7971024	13.0329115	307.170
33000	32906.0	235.02	8.4854465	12.5778952	307.323
33250	33153.9	235.26	8.1851499	12.1236485	307.477
33500	33401.9	235.49	7.8957867	11.6904891	307.630
33750	33649.9	235.72	7.6169480	11.2567656	307.784
34000	33897.8	236.05	7.3482907	10.8547717	307.996
34250	34145.7	239.02	7.0895103	10.4178560	308.357
34500	34393.6	237.19	6.8405839	10.0471591	308.73
34750	34641.5	237.46	6.6010034	9.6719990	309.107
35000	34889.4	235.33	6.3703194	9.3117153	309.4[illegible]
35250	35137.2	235.87	6.1482350	8.9656908	309.746
35500	35385.0	237.40	5.9344100	8.6333252	310.214
35750	35632.8	240.03	5.7285163	8.3140496	310.582
36000	35880.6	242.90	5.5302473	8.0073170	311.951
36250	36128.4	241.17	5.3392973	7.7126808	311.313
36500	36376.1	241.74	5.1553813	7.4294192	311.684
36750	36623.8	242.31	4.9782241	7.1572780	312.051
37000	36871.5	242.89	4.8075519	6.8957255	312.417
37250	37119.2	243.44	4.6431417	6.6443331	312.782
37500	37366.9	244.01	4.4847210	6.4026748	313.148
37750	37614.5	244.58	4.3320673	6.1703547	313.512
38000	37862.1	245.15	4.1848577	5.9469908	313.877
38250	38109.7	245.73	4.0431870	5.7315913	314.241
38500	38357.3	246.30	3.9066124	5.5199279	314.772
38750	38604.9	247.33	3.7750814	5.3188266	315.282
39000	38852.4	248.15	3.6483820	5.1218318	315.791
39250	39100.0	249.93	3.5263511	4.9345957	316.300
39500	39347.5	249.72	3.4087930	4.7567956	316.809
39750	39595.0	250.30	3.2954925	4.5828533	317.315
40000	39842.4	251.33	3.1863083	4.4181824	317.821
40250	40089.9	252.15	3.0810880	4.2565709	318.326
40500	40337.3	252.93	2.9796588	4.1036000	318.831
40750	40584.7	253.73	2.8818989	3.9566965	319.335
41000	40832.1	254.55	2.7876375	3.8150590	319.838
41250	41079.5	255.35	2.6957471	3.6771673	320.340
41500	41326.9	256.13	2.6090976	3.5408122	320.841
41750	41574.2	255.93	2.5245535	3.4127548	321.342
42000	41821.5	257.73	2.4430240	3.2919254	321.842
42250	42068.8	259.55	2.3643659	3.1757247	322.341
42500	42316.1	259.35	2.2884770	3.0639[illegible]	322.839
42750	42563.4	259.13	2.2152520	2.9564526	323.337
43000	42810.6	289.93	2.1445398	2.8530240	323.833

(CONTINUED) IRIG-RANGE REFERENCE ATMOSPHERE, AUGUST TABLE I. 8

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	$g\ m^{-3}$	$m\ sec^{-1}$
43250	43057.8	261.75	2.0763925	2.7635086	324.325
43500	43305.0	262.35	2.0105673	2.6677473	324.825
43750	43552.2	263.35	1.9470246	2.5755869	325.319
44000	43799.4	264.15	1.8856785	2.4868817	325.813
44250	44046.5	264.66	1.8264149	2.4040591	326.129
44500	44293.6	265.18	1.7691276	2.3241526	326.444
44750	44540.7	265.69	1.7137468	2.2470547	326.760
45000	44787.8	266.20	1.6602056	2.1726607	327.075
45250	45034.9	266.71	1.6084392	2.1008710	327.389
45500	45281.9	267.22	1.5583856	2.0315894	327.704
45750	45529.0	267.74	1.5099848	1.9647235	328.018
46000	45776.0	268.25	1.4631790	1.9001848	328.332
46250	46023.0	268.76	1.4179129	1.8378877	328.645
46500	46269.9	269.28	1.3741327	1.7777502	328.958
46750	46516.9	269.79	1.3317870	1.7196935	329.271
47000	46763.8	270.30	1.2908261	1.6636416	329.584
47250	47010.7	270.81	1.2512020	1.6095217	329.896
47500	47257.6	271.33	1.2128667	1.5572634	330.208
47750	47504.5	271.84	1.1757817	1.5067994	330.520
48000	47751.3	272.35	1.1398982	1.4580647	330.831
48250	47998.2	272.86	1.1051769	1.4109968	331.143
48500	48245.0	273.38	1.0715779	1.3655357	331.453
48750	48491.8	273.89	1.0390630	1.3216236	331.764
49000	48738.6	274.40	1.0075952	1.2792047	332.074
49250	48985.3	274.91	0.9771387	1.2382257	332.384
49500	49232.1	275.43	0.9476593	1.1986350	332.694
49750	49478.8	275.94	0.9191238	1.1603830	333.003
50000	49725.5	276.45	0.8915002	1.1234220	333.312
50250	49972.2	277.00	0.8647595	1.0875611	333.644
50500	50218.8	277.00	0.8388483	1.0549740	333.644
50750	50465.5	277.00	0.8137154	1.0233657	333.644
51000	50712.1	277.00	0.7893374	0.9927068	333.644
51250	50958.7	277.00	0.7656915	0.9629687	333.644
51500	51205.3	277.00	0.7427557	0.9341236	333.644
51750	51451.9	277.00	0.7205087	0.9061447	333.644
52000	51698.4	277.00	0.6989297	0.8790054	333.644
52250	51944.9	277.00	0.6779985	0.8526820	333.644
52500	52191.4	277.00	0.6576958	0.8271483	333.644
52750	52437.9	277.00	0.6380025	0.8023811	333.644
53000	52684.4	277.00	0.6189004	0.7783574	333.644
53250	52930.8	277.00	0.6003718	0.7550548	333.644
53500	53177.3	277.00	0.5823989	0.7324515	333.644
53750	53423.7	277.00	0.5649856	0.7105285	333.644
54000	53670.1	277.00	0.5480554	0.6892595	333.644
54250	53916.5	277.00	0.5316526	0.6686306	333.644
54500	54162.8	277.00	0.5157420	0.6486207	333.644
54750	54409.2	277.00	0.5003087	0.6292111	333.644
55000	54655.5	277.00	0.4853383	0.6103837	333.644
55250	54901.8	277.00	0.4708171	0.5921211	333.644
55500	55148.0	277.00	0.4567314	0.5744062	333.644
55750	55394.3	277.00	0.4430681	0.5572227	333.644
56000	55640.5	277.00	0.4298145	0.5405545	333.644
56250	55886.8	277.00	0.4169585	0.5243861	333.644
56500	56133.0	275.60	0.4044569	0.5112474	332.799
56750	56379.2	274.70	0.3922810	0.4974813	332.256
57000	56625.3	273.80	0.3804345	0.4840436	331.711
57250	56871.5	272.90	0.3689093	0.4709277	331.165
57500	57117.6	272.00	0.3576978	0.4581266	330.619
57750	57363.7	271.10	0.3467924	0.4456339	330.071
58000	57609.8	270.20	0.3361857	0.4334430	329.523
58250	57855.8	269.30	0.3258704	0.4215476	328.974
58500	58101.9	268.40	0.3158394	0.4099415	328.424
58750	58347.9	267.50	0.3060858	0.3986186	327.872
59000	58593.9	266.60	0.2966028	0.3875727	327.320
59250	58839.9	265.70	0.2873857	0.3767901	326.767
59500	59085.9	264.80	0.2784220	0.3662888	326.214
59750	59331.8	263.90	0.2697113	0.3560393	325.659
60000	59577.8	263.00	0.2612455	0.3460433	325.103
60250	59823.7	262.10	0.2530183	0.3362970	324.546
60500	60069.6	261.20	0.2450239	0.3267934	323.989
60750	60315.5	260.30	0.2372563	0.3175278	323.430
61000	60561.3	259.80	0.2297100	0.3084949	322.870
61250	60807.2	258.80	0.2223792	0.2996896	322.310
61500	61053.0	257.60	0.2152586	0.2911071	321.748

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, AUGUST** TABLE I. 8

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m-3	SPEED OF SOUND m sec-1
61750	61298.8	256.70	0.2083428	0.2827422	321.188
62000	61544.6	255.80	0.2016265	0.2745903	320.622
62250	61790.5	254.90	0.1951040	0.2666487	320.057
62500	62036.1	254.00	0.1887725	0.2589066	319.492
62750	62281.8	253.10	0.1826248	0.2513655	318.925
63000	62527.5	252.20	0.1766570	0.2440191	318.358
63250	62773.2	251.30	0.1708643	0.2368628	317.789
63500	63018.9	250.40	0.1652422	0.2298925	317.220
63750	63264.5	249.50	0.1597863	0.2231056	316.649
64000	63510.1	248.60	0.1544922	0.2164928	316.078
64250	63755.7	247.70	0.1493556	0.2100553	315.505
64500	64001.3	246.80	0.1443726	0.2037873	314.931
64750	64246.9	245.90	0.1395385	0.1976850	314.356
65000	64492.5	245.00	0.1348501	0.1917446	313.781
65250	64738.0	244.10	0.1303031	0.1859623	313.204
65500	64983.5	243.01	0.1258921	0.1804730	312.504
65750	65229.0	241.92	0.1216119	0.1751227	311.802
66000	65474.5	240.83	0.1174592	0.1699083	311.099
66250	65719.9	239.74	0.1134306	0.1648271	310.394
66500	65965.4	238.65	0.1095234	0.1598761	309.688
66750	66210.8	237.56	0.1057339	0.1550526	308.980
67000	66456.2	236.47	0.1020593	0.1503538	308.270
67250	66701.6	235.38	0.0984965	0.1457771	307.559
67500	66946.9	234.29	0.0950427	0.1413199	306.846
67750	67192.3	233.20	0.0916951	0.1369795	306.131
68000	67437.6	232.11	0.0884507	0.1327533	305.415
68250	67682.9	231.02	0.0853069	0.1286389	304.697
68500	67928.2	229.93	0.0822609	0.1246339	303.977
68750	68173.4	228.84	0.0793103	0.1207357	303.256
69000	68418.7	227.75	0.0764524	0.1169420	302.533
69250	68663.9	226.66	0.0736847	0.1132506	301.808
69500	68909.1	225.57	0.0710047	0.1096590	301.081
69750	69154.3	224.48	0.0684102	0.1061650	300.353
70000	69399.5	223.39	0.0658987	0.1027665	299.623
70250	69644.6	222.30	0.0634680	0.0994612	298.891
70500	69889.8	221.21	0.0611159	0.0962470	298.157
70750	70134.9	220.12	0.0588401	0.0931219	297.422
71000	70380.0	219.04	0.0566385	0.0900837	296.684
71250	70625.1	217.94	0.0545091	0.0871305	295.945
71500	70870.1	216.85	0.0524499	0.0842603	295.204
71750	71115.1	215.76	0.0504588	0.0814712	294.461
72000	71360.2	214.67	0.0485339	0.0787611	293.717
72250	71605.2	213.58	0.0466734	0.0761284	292.970
72500	71850.1	212.49	0.0448753	0.0735710	292.222
72750	72095.1	211.40	0.0431379	0.0710873	291.471
73000	72340.1	210.31	0.0414595	0.0686755	290.719
73250	72585.0	209.22	0.0398382	0.0663336	289.964
73500	72829.9	208.14	0.0382725	0.0640605	289.208
73750	73074.8	207.04	0.0367607	0.0618540	288.450
74000	73319.6	205.95	0.0353013	0.0597127	287.689
74250	73564.5	204.86	0.0338926	0.0576349	286.927
74500	73809.3	203.77	0.0325331	0.0556190	286.163
74750	74054.1	202.68	0.0312214	0.0536636	285.396
75000	74298.9	201.59	0.0299561	0.0517671	284.628
75250	74543.7	200.50	0.0287356	0.0499280	283.857
75500	74788.4	199.41	0.0275588	0.0481450	283.085
75750	75033.2	198.32	0.0264241	0.0464165	282.310
76000	75277.9	197.23	0.0253304	0.0447412	281.533
76250	75522.6	196.14	0.0242764	0.0431177	280.754
76500	75767.3	195.05	0.0232608	0.0415448	279.973
76750	76011.9	194.01	0.0222825	0.0400119	279.222
77000	76256.5	193.23	0.0213387	0.0386710	277.942
77250	76501.2	190.45	0.0204268	0.0373634	276.655
77500	76745.8	188.68	0.0195459	0.0360885	275.363
77750	76990.3	186.91	0.0186953	0.0348457	274.065
78000	77234.9	185.13	0.0178742	0.0336347	272.760
78250	77479.5	183.35	0.0170818	0.0324548	271.450
78500	77724.0	181.58	0.0163174	0.0313055	270.133
78750	77968.5	179.81	0.0155802	0.0301863	268.809
79000	78213.0	178.03	0.0148696	0.0290967	267.479
79250	78457.4	176.26	0.0141848	0.0280363	266.142
79500	78701.9	174.48	0.0135251	0.0270044	264.798
79750	78946.3	172.70	0.0128899	0.0260006	263.448
80000	79190.7	171.15	0.0122789	0.0249931	262.260

(CONTINUED) IRIG-RANGE REFERENCE ATMOSPHERE, AUGUST | TABLE I. 8

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
80250	79435.1	171.15	0.0116942	0.0238031	262.260
80500	79679.5	171.15	0.0111375	0.0226699	262.260
80750	79923.9	171.15	0.0106073	0.0215907	262.260
81000	80168.2	171.15	0.0101024	0.0205629	262.260
81250	80412.5	171.15	0.0096215	0.0195842	262.260
81500	80656.6	171.15	0.0091636	0.0186521	262.260
81750	80901.1	171.15	0.0087275	0.0177644	262.260
82000	81145.4	171.15	0.0083122	0.0169190	262.260
82250	81389.6	171.15	0.0079167	0.0161140	262.260
82500	81633.8	171.15	0.0075400	0.0153473	262.260
82750	81878.0	171.15	0.0071813	0.0146171	262.260
83000	82122.2	171.15	0.0068396	0.0139217	262.260
83250	82366.4	171.15	0.0065143	0.0132595	262.260
83500	82610.5	171.15	0.0062044	0.0126288	262.260
83750	82854.6	171.15	0.0059093	0.0120281	262.260
84000	83098.7	171.15	0.0056283	0.0114561	262.260
84250	83342.8	171.15	0.0053606	0.0109113	262.260
84500	83586.9	171.15	0.0051057	0.0103925	262.260
84750	83830.9	171.15	0.0048630	0.0098983	262.260
85000	84075.0	171.15	0.0046318	0.0094277	262.260
85250	84319.0	171.15	0.0044116	0.0089795	262.260
85500	84563.0	171.15	0.0042018	0.0085527	262.260
85750	84807.0	171.15	0.0040021	0.0081461	262.260
86000	85050.9	171.15	0.0038119	0.0077590	262.260
86250	85294.9	171.15	0.0036307	0.0073902	262.260
86500	85538.8	171.15	0.0034582	0.0070390	262.260
86750	85782.7	171.15	0.0032939	0.0067045	262.260
87000	86026.6	171.15	0.0031374	0.0063859	262.260
87250	86270.4	171.15	0.0029883	0.0060825	262.260
87500	86514.3	171.15	0.0028463	0.0057936	262.260
87750	86758.1	171.15	0.0027111	0.0055184	262.260
88000	87001.9	171.15	0.0025823	0.0052562	262.260
88250	87245.7	171.15	0.0024597	0.0050066	262.260
88500	87489.5	171.15	0.0023429	0.0047688	262.260
88750	87733.2	171.15	0.0022316	0.0045423	262.260
89000	87976.9	171.15	0.0021256	0.0043266	262.260
89250	88220.6	171.15	0.0020247	0.0041212	262.260
89500	88464.3	171.15	0.0019286	0.0039255	262.260
89750	88708.0	171.15	0.0018370	0.0037391	262.260
90000	88951.7	171.15	0.0017498	0.0035616	262.260

IRIG-RANGE REFERENCE ATMOSPHERE, SEPTEMBER TABLE I. 9

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY gm-3	SPEED OF SOUND m sec-1
25000	24959.9	222.05	26.0049000	40.6883971	299.126
25250	25208.6	222.05	25.0320000	39.1310053	299.260
25500	25457.1	223.05	24.0963943	37.6346540	299.395
25750	25705.7	223.45	23.1980192	36.1908950	299.529
26000	25954.3	223.45	22.3312695	34.8153806	299.663
26250	26202.8	223.65	21.4989968	33.4878593	299.797
26500	26451.3	223.85	20.6985065	32.2121716	299.931
26750	26699.8	224.05	19.9285559	30.9862467	300.065
27000	26948.3	224.25	19.1879520	29.8080979	300.199
27250	27196.8	224.45	18.4755494	28.6758200	300.333
27500	27445.2	224.65	17.7902487	27.5875854	300.467
27750	27693.6	224.85	17.1309942	26.5416409	300.600
28000	27942.0	225.05	16.4967721	25.5363047	300.734
28250	28190.4	225.25	15.8866094	24.5699635	300.868
28500	28438.8	225.45	15.2995713	23.6410693	301.001
28750	28687.1	225.65	14.7347606	22.7481372	301.135
29000	28935.4	225.85	14.1913154	21.8897425	301.268
29250	29183.7	226.05	13.6684083	21.0645180	301.401
29500	29432.0	226.25	13.1652444	20.2711520	301.535
29750	29680.3	226.45	12.6810604	19.5083860	301.668
30000	29928.5	226.65	12.2151233	18.7750120	301.801
30250	30176.6	226.85	11.7667288	18.0698711	301.934
30500	30425.0	227.05	11.3352008	17.3918510	302.067
30750	30673.1	227.25	10.9196895	16.7398840	302.200
31000	30921.3	227.45	10.5201709	16.1129459	302.333
31250	31169.5	227.70	10.1354871	15.5067100	302.499
31500	31417.6	228.33	9.7656000	14.8995800	302.918
31750	31665.7	228.95	9.4102028	14.3178386	303.335
32000	31913.8	229.59	9.0686895	13.7603556	303.752
32250	32161.9	230.22	8.7404807	13.2260562	304.169
32500	32409.9	230.85	8.4250232	12.7139155	304.585
32750	32657.9	231.48	8.1[illegible]879	12.2229567	305.000
33000	32906.0	232.11	7.8[illegible]1	11.7522475	305.415
33250	33153.9	232.74	7.549[illegible]5	11.3009008	305.829
33500	33401.9	233.37	7.2804667	10.8680694	306.243
33750	33649.9	234.00	7.0212028	10.4529456	306.656
34000	33897.8	234.63	6.7720030	10.0547597	307.068
34250	34145.7	235.26	6.5322251	9.6727763	307.480
34500	34393.6	235.89	6.3015623	9.3062945	307.892
34750	34641.5	236.52	6.0796444	8.9546455	308.302
35000	34889.4	237.15	5.8661174	8.6171909	308.713
35250	35137.2	237.78	5.6606425	8.2933215	309.123
35500	35385.0	238.41	5.4628955	7.9824557	309.532
35750	35632.8	239.04	5.2725657	7.6840362	309.941
36000	35880.6	239.67	5.0893563	7.3975391	310.349
36250	36128.4	240.30	4.9129625	7.1224521	310.756
36500	36376.1	240.93	4.7431721	6.8582939	311.163
36750	36623.8	241.56	4.5796641	6.6046027	311.570
37000	36871.5	242.19	4.4222088	6.3609375	311.976
37250	37119.2	242.82	4.2705667	6.1268768	312.381
37500	37366.9	243.45	4.1245087	5.9020182	312.786
37750	37614.5	244.08	3.9838151	5.6859767	313.191
38000	37862.1	244.71	3.8482755	5.4783848	313.595
38250	38109.7	245.34	3.7176882	5.2788910	313.998
38500	38357.3	245.97	3.5918598	5.0871592	314.401
38750	38604.9	246.60	3.4706052	4.9028684	314.804
39000	38852.4	247.23	3.3537467	4.7257113	315.205
39250	39100.0	247.86	3.2411141	4.5553943	315.607
39500	39347.5	248.49	3.1325442	4.3916364	316.008
39750	39595.0	249.12	3.0278803	4.2341691	316.408
40000	39842.4	249.75	2.9269724	4.0827353	316.808
40250	40089.9	250.38	2.8296764	3.9370890	317.207
40500	40337.3	251.01	2.7358543	3.7969951	317.606
40750	40584.7	251.64	2.6453735	3.6622283	318.004
41000	40832.1	252.27	2.5581069	3.5325733	318.402
41250	41079.5	252.90	2.4739326	3.4078237	318.799
41500	41326.9	253.53	2.3927334	3.2877822	319.196
41750	41574.2	254.16	2.3143970	3.1722598	319.593
42000	41821.5	254.79	2.2388155	3.0610754	319.988
42250	42068.8	255.42	2.1658856	2.9540558	320.384
42500	42316.1	256.05	2.0955070	2.8510351	320.779
42750	42563.4	256.68	2.0275864	2.7518542	321.173
43000	42810.6	257.31	1.9620301	2.6563610	321.567

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m-3	SPEED OF SOUND m sec-1
43250	43057.8	257.94	1.8987509	2.5644095	321.960
43500	43305.0	258.57	1.8376642	2.4758601	322.353
43750	43552.2	259.20	1.7786888	2.3905786	322.746
44000	43799.4	259.83	1.7217460	2.3084373	323.138
44250	44046.5	260.46	1.6667633	2.2293126	323.529
44500	44293.6	261.09	1.6136662	2.1530869	323.920
44750	44540.7	261.72	1.5623865	2.0796471	324.311
45000	44787.8	262.35	1.5128576	2.0088849	324.701
45250	45034.9	262.98	1.4650156	1.9406965	325.091
45500	45281.9	263.61	1.4187994	1.8749823	325.480
45750	45529.0	264.24	1.3741494	1.8116466	325.868
46000	45776.0	264.87	1.3310094	1.7505981	326.257
46250	46023.0	265.50	1.2893246	1.6917486	326.644
46500	46269.9	266.13	1.2490426	1.6350141	327.032
46750	46516.9	266.76	1.2101128	1.5803135	327.419
47000	46763.8	267.39	1.1724869	1.5275694	327.805
47250	47010.7	268.02	1.1361182	1.4767072	328.191
47500	47257.6	268.65	1.1009617	1.4276556	328.576
47750	47504.5	269.28	1.0669742	1.3803456	328.962
48000	47751.3	269.91	1.0341142	1.3347122	329.346
48250	47996.2	270.54	1.0023416	1.2906915	329.730
48500	48245.0	271.17	0.9716145	1.2482231	330.114
48750	48491.8	271.80	0.9419072	1.2072487	330.497
49000	48738.6	272.50	0.9131759	1.1674170	330.922
49250	48985.3	272.50	0.8853584	1.1318547	330.922
49500	49232.1	272.50	0.8583903	1.0973784	330.922
49750	49478.8	272.50	0.8322457	1.0639547	330.922
50000	49725.5	272.50	0.8068994	1.0315516	330.922
50250	49972.2	272.50	0.7823266	1.0001377	330.922
50500	50218.8	272.50	0.7585044	0.9696828	330.922
50750	50465.5	272.50	0.7354092	0.9401576	330.922
51000	50712.1	272.50	0.7130189	0.9115335	330.922
51250	50958.7	272.50	0.6913120	0.8837831	330.922
51500	51205.3	272.50	0.6702675	0.8568795	330.922
51750	51451.9	272.50	0.6498652	0.8307969	330.922
52000	51698.4	272.50	0.6300855	0.8055102	330.922
52250	51944.9	272.50	0.6109092	0.7809950	330.922
52500	52191.4	272.50	0.5923180	0.7572278	330.922
52750	52437.9	272.50	0.5742939	0.7341855	330.922
53000	52684.4	272.50	0.5568197	0.7118462	330.922
53250	52930.8	272.50	0.5398784	0.6901883	330.922
53500	53177.3	272.50	0.5234539	0.6691909	330.922
53750	53423.7	272.50	0.5075302	0.6488330	330.922
54000	53670.1	272.50	0.4920921	0.6290976	330.922
54250	53916.5	272.50	0.4771248	0.6099831	330.922
54500	54162.8	272.50	0.4626138	0.5914121	330.922
54750	54409.2	272.50	0.4485453	0.5734266	330.922
55000	54655.5	272.50	0.4349056	0.5559895	330.922
55250	54901.8	272.50	0.4216817	0.5390838	330.922
55500	55148.0	272.50	0.4088608	0.5226935	330.922
55750	55394.3	272.50	0.3964308	0.5068027	330.922
56000	55640.5	272.50	0.3843795	0.4913962	330.922
56250	55886.8	272.00	0.3726849	0.4773259	330.617
56500	56133.0	271.67	0.3613298	0.4633489	330.415
56750	56379.2	271.33	0.3503082	0.4497680	330.213
57000	56625.3	271.00	0.3396108	0.4365664	330.010
57250	56871.5	270.67	0.3292283	0.4237398	329.808
57500	57117.6	270.34	0.3191517	0.4112757	329.605
57750	57363.7	270.00	0.3093725	0.3991646	329.403
58000	57609.8	269.67	0.2998822	0.3873969	329.200
58250	57855.8	269.34	0.2906725	0.3759632	328.997
58500	58101.9	269.01	0.2817355	0.3648542	328.793
58750	58347.9	268.67	0.2730634	0.3540613	328.590
59000	58593.9	268.34	0.2646487	0.3435757	328.387
59250	58839.9	268.01	0.2564839	0.3333890	328.183
59500	59085.9	267.68	0.2485619	0.3234930	327.980
59750	59331.8	267.34	0.2408758	0.3138798	327.776
60000	59577.8	267.01	0.2334189	0.3045415	327.572
60250	59823.7	266.68	0.2261845	0.2954707	327.369
60500	60069.6	266.35	0.2191662	0.2866600	327.164
60750	60315.5	266.01	0.2123570	0.2781022	326.960
61000	60561.3	265.68	0.2057534	0.2697902	326.755
61250	60807.2	265.35	0.1993460	0.2617174	326.551
61500	61053.0	265.01	0.1931328	0.2538771	326.346

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
61750	61298.6	264.70	0.1871055	0.2462469	326.152
62000	61544.6	263.61	0.1812516	0.2395289	325.480
62250	61790.3	262.54	0.1755560	0.2329681	324.806
62500	62036.1	261.43	0.1700212	0.2265613	324.131
62750	62281.6	260.34	0.1646374	0.2203057	323.455
63000	62527.5	259.25	0.1594029	0.2141981	322.777
63250	62773.2	258.16	0.1543143	0.2082357	322.098
63500	63018.9	257.07	0.1493679	0.2024156	321.417
63750	63264.5	255.98	0.1445605	0.1967350	320.735
64000	63510.1	254.89	0.1398886	0.1911911	320.051
64250	63755.7	253.80	0.1353490	0.1857811	319.366
64500	64001.3	252.71	0.1309384	0.1805023	318.680
64750	64246.9	251.62	0.1266538	0.1753522	317.992
65000	64492.5	250.53	0.1224920	0.1703280	317.302
65250	64738.0	249.44	0.1184500	0.1654272	316.611
65500	64983.5	248.35	0.1145248	0.1606474	315.919
65750	65229.0	247.26	0.1107136	0.1559859	315.225
66000	65474.5	246.17	0.1070135	0.1514404	314.529
66250	65719.9	245.08	0.1034218	0.1470084	313.832
66500	65965.4	243.99	0.0999356	0.1426877	313.133
66750	66210.8	242.90	0.0965524	0.1384750	312.433
67000	66456.2	241.81	0.0932696	0.1343705	311.731
67250	66701.6	240.72	0.0900845	0.1303695	311.028
67500	66946.9	239.63	0.0869947	0.1264706	310.323
67750	67192.3	238.54	0.0839977	0.1226717	309.616
68000	67437.6	237.45	0.0810912	0.1189706	308.908
68250	67682.9	236.36	0.0782728	0.1153652	308.198
68500	67928.2	235.27	0.0755402	0.1118535	307.487
68750	68173.4	234.18	0.0728912	0.1084334	306.774
69000	68418.7	233.09	0.0703235	0.1051030	306.059
69250	68663.9	232.00	0.0678351	0.1018602	305.342
69500	68909.1	230.91	0.0654238	0.0987032	304.624
69750	69154.3	229.82	0.0630876	0.0956301	303.904
70000	69399.5	228.73	0.0608245	0.0926390	303.183
70250	69644.6	227.64	0.0586325	0.0897280	302.460
70500	69889.6	226.55	0.0565097	0.0868955	301.735
70750	70134.9	225.46	0.0544543	0.0841396	301.008
71000	70380.0	224.37	0.0524643	0.0814586	300.279
71250	70625.1	223.28	0.0505380	0.0788509	299.549
71500	70870.1	222.19	0.0486737	0.0763147	298.817
71750	71115.1	221.10	0.0468696	0.0738484	298.083
72000	71360.2	220.01	0.0451242	0.0714504	297.347
72250	71605.2	218.90	0.0434355	0.0691254	296.596
72500	71850.1	217.66	0.0418017	0.0668981	295.769
72750	72095.1	216.40	0.0402206	0.0647306	294.939
73000	72340.1	215.24	0.0386914	0.0624223	294.106
73250	72585.0	214.02	0.0372120	0.0605713	293.272
73500	72829.9	212.80	0.0357813	0.0585765	292.435
73750	73074.8	211.58	0.0343980	0.0566366	291.595
74000	73319.6	210.36	0.0330608	0.0547505	290.753
74250	73564.5	209.14	0.0317683	0.0529169	289.909
74500	73809.3	207.92	0.0305192	0.0511347	289.062
74750	74054.1	206.70	0.0293125	0.0494027	288.213
75000	74298.9	205.48	0.0281469	0.0477198	287.361
75250	74543.7	204.26	0.0270211	0.0460849	286.507
75500	74788.4	203.04	0.0259342	0.0444968	285.650
75750	75033.2	201.82	0.0248848	0.0429545	284.790
76000	75277.9	200.60	0.0238721	0.0414569	283.928
76250	75522.6	199.38	0.0228948	0.0400030	283.063
76500	75767.3	198.16	0.0219519	0.0385918	282.196
76750	76011.9	196.94	0.0210425	0.0372222	281.326
77000	76256.5	195.72	0.0201656	0.0358933	280.453
77250	76501.2	194.50	0.0193201	0.0346040	279.578
77500	76745.8	193.28	0.0185051	0.0333536	278.700
77750	76990.3	192.06	0.0177197	0.0321409	277.819
78000	77234.9	190.84	0.0169630	0.0309651	276.935
78250	77479.5	189.62	0.0162342	0.0298253	276.048
78500	77724.0	188.40	0.0155323	0.0287206	275.159
78750	77968.5	187.18	0.0148565	0.0276501	274.266
79000	78213.0	185.96	0.0142061	0.0266130	273.371
79250	78457.4	184.74	0.0135802	0.0256084	272.473
79500	78701.9	183.52	0.0129780	0.0246356	271.572
79750	78946.3	182.30	0.0123989	0.0236937	270.668
80000	79190.7	181.15	0.0118420	0.0227733	269.813

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

STATION	ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES
		LATITUDE	LONGITUDE		
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	$g\ m^{-3}$	$m\ sec^{-1}$
80250	79435.1	181.15	0.0113086	0.0217475	269.813
80500	79679.5	181.15	0.0107993	0.0207680	269.813
80750	79923.9	181.15	0.0103129	0.0198327	269.813
81000	80168.2	181.15	0.0098485	0.0189395	269.813
81250	80412.5	181.15	0.0094050	0.0180867	269.813
81500	80656.8	181.15	0.0089815	0.0172723	269.813
81750	80901.1	181.15	0.0085771	0.0164946	269.813
82000	81145.3	181.15	0.0081910	0.0157520	269.813
82250	81389.6	181.15	0.0078223	0.0150429	269.813
82500	81633.8	181.15	0.0074702	0.0143656	269.813
82750	81878.0	181.15	0.0071339	0.0137192	269.813
83000	82122.2	181.15	0.0068128	0.0131017	269.813
83250	82366.4	181.15	0.0065062	0.0125121	269.813
83500	82610.5	181.15	0.0062135	0.0119491	269.813
83750	82854.6	181.15	0.0059339	0.0114114	269.813
84000	83098.7	181.15	0.0056669	0.0108980	269.813
84250	83342.6	181.15	0.0054120	0.0104077	269.813
84500	83586.9	181.15	0.0051685	0.0099395	269.813
84750	83830.9	181.15	0.0049360	0.0094924	269.813
85000	84075.0	181.15	0.0047140	0.0090654	269.813
85250	84319.0	181.15	0.0045020	0.0086577	269.813
85500	84563.0	181.15	0.0042995	0.0082683	269.813
85750	84807.0	181.15	0.0041062	0.0078965	269.813
86000	85050.9	181.15	0.0039215	0.0075414	269.813
86250	85294.9	181.15	0.0037452	0.0072024	269.813
86500	85538.8	181.15	0.0035768	0.0068785	269.813
86750	85782.7	181.15	0.0034160	0.0065693	269.813
87000	86026.6	181.15	0.0032625	0.0062740	269.813
87250	86270.4	181.15	0.0031158	0.0059920	269.813
87500	86514.3	181.15	0.0029758	0.0057227	269.813
87750	86758.1	181.15	0.0028420	0.0054655	269.813
88000	87001.9	181.15	0.0027143	0.0052199	269.813
88250	87245.7	181.15	0.0025924	0.0049853	269.813
88500	87489.5	181.15	0.0024759	0.0047613	269.813
88750	87733.2	181.15	0.0023646	0.0045474	269.813
89000	87976.9	181.15	0.0022584	0.0043431	269.813
89250	88220.6	181.15	0.0021570	0.0041480	269.813
89500	88464.3	181.15	0.0020601	0.0039617	269.813
89750	88708.0	181.15	0.0019675	0.0037838	269.813
90000	88951.7	181.15	0.0018792	0.0036138	269.813

IRIG-RANGE REFERENCE ATMOSPHERE, OCTOBER

TABLE I. 10

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	gm^{-3}	$m\ sec^{-1}$
25000	24959.9	219.50	24.6842000	39.1762286	297.003
25250	25208.6	219.59	23.7474931	37.6737075	297.065
25500	25457.1	219.69	22.8467734	36.2295186	297.128
25750	25705.7	219.78	21.9808413	34.8413700	297.190
26000	25954.3	219.87	21.1477525	33.5070609	297.253
26250	26202.5	219.96	20.3468154	32.2244780	297.315
26500	26451.3	220.06	19.5765893	30.9915918	297.378
26750	26699.8	220.15	18.8358824	29.8068535	297.440
27000	26948.3	220.24	18.1235493	28.6671916	297.503
27250	27196.8	220.33	17.4384900	27.5720088	297.565
27500	27445.2	220.43	16.7796474	26.5191790	297.628
27750	27693.6	220.52	16.1460060	25.5070447	297.690
28000	27942.0	220.61	15.5365900	24.5340137	297.753
28250	28190.4	220.70	14.9504619	23.5985572	297.815
28500	28438.8	220.80	14.3867209	22.6992066	297.877
28750	28687.1	220.89	13.8445015	21.8345515	297.940
29000	28935.4	220.98	13.3229720	21.0032372	298.002
29250	29183.7	221.10	12.8213503	20.2019461	298.080
29500	29432.0	221.42	12.3391383	19.4136000	298.299
29750	29680.3	221.75	11.8757582	18.6571628	298.518
30000	29928.5	222.07	11.4304546	17.9312969	298.736
30250	30176.8	222.40	11.0024962	17.2347227	298.955
30500	30425.0	222.72	10.5911823	16.5662160	299.173
30750	30673.1	223.05	10.1958416	15.9246055	299.391
31000	30921.3	223.37	9.8158308	15.3087705	299.609
31250	31169.5	223.70	9.4505332	14.7176385	299.827
31500	31417.6	224.02	9.0993582	14.1501832	300.045
31750	31665.7	224.35	8.7617395	13.6054225	300.263
32000	31913.8	224.67	8.4371343	13.0824164	300.480
32250	32161.9	225.00	8.1250223	12.5802650	300.697
32500	32409.9	225.32	7.8249049	12.0981070	300.914
32750	32657.9	225.65	7.5363041	11.6351180	301.131
33000	32906.0	225.97	7.2587613	11.1905086	301.348
33250	33153.9	226.30	6.9918373	10.7635232	301.565
33500	33401.9	226.72	6.7351662	10.3489569	301.848
33750	33649.9	227.14	6.4883909	9.9511190	302.131
34000	33897.8	227.57	6.2511117	9.5693039	302.413
34250	34145.7	227.99	6.0229460	9.2028372	302.695
34500	34393.6	228.42	5.8035269	8.8510740	302.977
34750	34641.5	228.85	5.5925034	8.5133977	303.259
35000	34889.4	229.27	5.3895389	8.1892187	303.541
35250	35137.2	229.69	5.1943110	7.8779732	303.822
35500	35385.0	230.12	5.0065107	7.5791216	304.103
35750	35632.8	230.55	4.8258421	7.2921484	304.383
36000	35880.6	230.97	4.6520215	7.0165596	304.664
36250	36128.4	231.40	4.4847787	6.7517407	304.947
36500	36376.1	231.99	4.3238921	6.4943739	305.303
36750	36623.8	232.40	4.1691431	6.2473996	305.658
37000	36871.5	233.02	4.0202839	6.0103757	306.013
37250	37119.2	233.56	3.8770769	5.7828782	306.367
37500	37366.9	234.10	3.7392949	5.5645032	306.721
37750	37614.5	234.64	3.6067202	5.3548646	307.075
38000	37862.1	235.18	3.4791443	5.1535933	307.428
38250	38109.7	235.72	3.3563675	4.9603369	307.781
38500	38357.3	236.26	3.2381988	4.7747584	308.133
38750	38604.9	236.80	3.1244548	4.5965356	308.485
39000	38852.4	237.34	3.0149601	4.4253612	308.836
39250	39100.0	237.88	2.9095466	4.2609406	309.188
39500	39347.5	238.44	2.8080530	4.1029924	309.538
39750	39595.0	238.96	2.7103250	3.9512477	309.889
40000	39842.4	239.50	2.6162146	3.8054494	310.239
40250	40089.9	240.04	2.5255800	3.6653513	310.588
40500	40337.3	240.58	2.4382851	3.5307182	310.937
40750	40584.7	241.12	2.3541996	3.4013251	311.286
41000	40832.1	241.66	2.2731985	3.2769566	311.634
41250	41079.5	242.20	2.1951619	3.1574067	311.982
41500	41326.9	242.74	2.1199750	3.0424782	312.330
41750	41574.2	243.28	2.0475274	2.9319827	312.677
42000	41821.5	243.82	1.9777134	2.8257395	313.024
42250	42068.8	244.36	1.9104316	2.7235758	313.370
42500	42316.1	244.90	1.8455847	2.6253263	313.717
42750	42563.4	245.44	1.7830794	2.5308327	314.062
43000	42810.6	245.98	1.7228260	2.4399432	314.408

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, OCTOBER** TABLE I. 10

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m-3	SPEED OF SOUND m sec-1
43250	43057.8	246.52	1.6647386	2.3525128	314.752
43500	43305.0	247.00	1.6087348	2.2884025	315.097
43750	43552.2	247.00	1.5547353	2.1074790	315.441
44000	43799.4	248.14	1.5026641	2.1096150	315.785
44250	44046.5	248.60	1.4524482	2.0346883	316.128
44500	44293.6	249.22	1.4040177	1.9525819	316.471
44750	44540.7	249.70	1.3573053	1.8931837	316.814
45000	44787.8	250.30	1.3122464	1.8263862	317.156
45250	45034.9	250.84	1.2687789	1.7620866	317.498
45500	45281.9	251.38	1.2268434	1.7001862	317.840
45750	45529.0	251.92	1.1863826	1.6405905	318.181
46000	45776.0	252.46	1.1473415	1.5832089	318.522
46250	46023.0	253.00	1.1096674	1.5279544	318.862
46500	46269.9	253.54	1.0733096	1.4747439	319.203
46750	46516.9	254.08	1.0382192	1.4234974	319.542
47000	46763.8	254.62	1.0043496	1.3741335	319.882
47250	47010.7	255.16	0.9716557	1.3265936	320.221
47500	47257.6	255.70	0.9400942	1.2807924	320.559
47750	47504.5	256.24	0.9096236	1.2366674	320.898
48000	47751.3	256.78	0.8802040	1.1941537	321.236
48250	47998.2	257.32	0.8517966	1.1531892	321.573
48500	48245.0	257.86	0.8243653	1.1137143	321.910
48750	48491.6	258.40	0.7978738	1.0756718	322.247
49000	48738.6	258.94	0.7722883	1.0390068	322.584
49250	48985.3	259.48	0.7475759	1.0036666	322.920
49500	49232.1	260.02	0.7237050	0.9696006	323.256
49750	49478.8	260.56	0.7006452	0.9367604	323.591
50000	49725.5	261.10	0.6783674	0.9050993	323.927
50250	49972.2	261.64	0.6568435	0.8745726	324.261
50500	50218.6	262.18	0.6360463	0.8451373	324.596
50750	50465.3	262.72	0.6159500	0.8167524	324.930
51000	50712.1	263.26	0.5965294	0.7893781	325.264
51250	50958.7	263.80	0.5777606	0.7629766	325.597
51500	51205.3	264.34	0.5596202	0.7375111	325.930
51750	51451.9	264.88	0.5420860	0.7129468	326.263
52000	51698.4	265.50	0.5251391	0.6890455	326.644
52250	51944.9	265.50	0.5087421	0.6675307	326.644
52500	52191.4	265.50	0.4928583	0.6466892	326.644
52750	52437.9	265.50	0.4774716	0.6265000	326.644
53000	52684.4	265.50	0.4625664	0.6069425	326.644
53250	52930.8	265.50	0.4481276	0.5879972	326.644
53500	53177.3	265.50	0.4341405	0.5596445	326.644
53750	53423.7	265.50	0.4205911	0.5518880	326.644
54000	53670.1	265.50	0.4074656	0.5346437	326.644
54250	53916.5	265.50	0.3947508	0.5179802	326.644
54500	54162.8	265.50	0.3824334	0.5017985	326.644
54750	54409.2	265.50	0.3705014	0.4861423	326.644
55000	54655.5	265.50	0.3589425	0.4709757	326.644
55250	54901.8	265.50	0.3477452	0.4562834	326.644
55500	55148.0	265.50	0.3368979	0.4420505	326.644
55750	55394.3	265.50	0.3263899	0.4282627	326.644
56000	55640.5	265.50	0.3162103	0.4149059	326.644
56250	55886.8	265.50	0.3063490	0.4019687	326.644
56500	56133.0	265.50	0.2967960	0.3896320	326.644
56750	56379.2	265.50	0.2875416	0.3772091	326.644
57000	56625.3	265.50	0.2785764	0.3655257	326.644
57250	56871.5	265.00	0.2698834	0.3547875	326.337
57500	57117.6	264.44	0.2614456	0.3444232	325.992
57750	57363.7	263.88	0.2532553	0.3343414	325.646
58000	57609.8	263.32	0.2453055	0.3245351	325.301
58250	57855.8	262.76	0.2375898	0.3149972	324.955
58500	58101.9	262.20	0.2301016	0.3057209	324.608
58750	58347.9	261.64	0.2228340	0.2968993	324.261
59000	58593.9	261.08	0.2157831	0.2879267	323.914
59250	58839.9	260.52	0.2089407	0.2793959	323.567
59500	59085.9	259.96	0.2023017	0.2711010	323.219
59750	59331.8	259.40	0.1958603	0.2630359	322.870
60000	59577.8	258.84	0.1896116	0.2551947	322.522
60250	59823.7	258.28	0.1835497	0.2475717	322.172
60500	60069.6	257.72	0.1776695	0.2401612	321.823
60750	60315.5	257.16	0.1719659	0.2329577	321.473
61000	60561.3	256.60	0.1664341	0.2259559	321.123
61250	60807.2	256.04	0.1610690	0.2191504	320.772
61500	61053.0	255.48	0.1558661	0.2125362	320.421

(CONTINUED) **IRIG – RANGE REFERENCE ATMOSPHERE, OCTOBER** TABLE I. 10

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 – DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	33°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
61750	61294.8	254.92	0.1508200	0.2001083	320.070
62000	61544.6	254.36	0.1459287	0.1998619	319.718
62250	61790.3	253.80	0.1411853	0.1937921	319.366
62500	62036.1	253.24	0.1365865	0.1878943	319.014
62750	62281.8	252.68	0.1321201	0.1821640	318.661
63000	62527.5	252.12	0.1278062	0.1765968	318.307
63250	62773.2	251.56	0.1236188	0.1711883	317.954
63500	63018.9	251.00	0.1195562	0.1659345	317.600
63750	63264.6	250.40	0.1156203	0.1608379	317.218
64000	63510.4	249.72	0.1118047	0.1559714	316.789
64250	63755.7	249.04	0.1081055	0.1512211	316.359
64500	64001.3	248.36	0.1045193	0.1466035	315.928
64750	64246.9	247.68	0.1010433	0.1421152	315.497
65000	64492.5	247.01	0.0976737	0.1377530	315.065
65250	64738.0	246.33	0.0944081	0.1335136	314.633
65500	64983.5	245.65	0.0912433	0.1293938	314.200
65750	65228.0	244.98	0.0881764	0.1253907	313.766
66000	65474.5	244.30	0.0852051	0.1215011	313.332
66250	65719.9	243.62	0.0823262	0.1177223	312.897
66500	65965.4	242.94	0.0795371	0.1140512	312.462
66750	66210.8	242.27	0.0768353	0.1104851	312.026
67000	66456.2	241.59	0.0742183	0.1070213	311.589
67250	66701.6	240.91	0.0716837	0.1036571	311.152
67500	66946.9	240.23	0.0692290	0.1003879	310.714
67750	67192.3	239.56	0.0668520	0.0972171	310.276
68000	67437.6	238.88	0.06455	0.0941363	309.837
68250	67682.9	238.20	0.0623220	0.0911450	309.397
68500	67928.2	237.52	0.0601647	0.0882410	308.957
68750	68173.4	236.85	0.0580763	0.0854218	308.516
69000	68418.7	236.17	0.0560550	0.0826851	308.074
69250	68663.9	235.49	0.0540986	0.0800289	307.632
69500	68909.1	234.81	0.0522053	0.0774510	307.189
69750	69154.3	234.14	0.0503732	0.0749492	306.746
70000	69399.5	233.46	0.0486006	0.0725215	306.302
70250	69644.6	232.78	0.0468855	0.0701660	305.857
70500	69889.8	232.10	0.0452264	0.0678806	305.411
70750	70134.9	231.43	0.0436215	0.0656635	304.965
71000	70380.0	230.75	0.0420692	0.0635127	304.519
71250	70625.1	230.07	0.0405680	0.0614266	304.071
71500	70870.1	229.39	0.0391162	0.0594033	303.623
71750	71115.1	228.72	0.0377124	0.0574412	303.175
72000	71360.2	228.04	0.0363552	0.0555385	302.725
72250	71605.2	227.36	0.0350431	0.0536935	302.275
72500	71850.1	226.68	0.0337748	0.0519048	301.824
72750	72095.1	226.01	0.0325488	0.0501707	301.373
73000	72340.1	225.33	0.0313640	0.0484896	300.921
73250	72585.0	224.65	0.0302190	0.0468605	300.468
73500	72829.9	223.97	0.0291126	0.0452814	300.015
73750	73074.8	223.30	0.0280436	0.0437511	299.561
74000	73319.6	222.62	0.0270109	0.0422682	299.106
74250	73564.5	221.94	0.0260134	0.0408314	298.651
74500	73809.3	221.26	0.0250496	0.0394394	298.194
74750	74054.1	220.59	0.0241192	0.0380909	297.737
75000	74298.9	219.91	0.0232206	0.0367846	297.280
75250	74543.7	219.23	0.0223529	0.0355195	296.822
75500	74788.4	218.56	0.0215151	0.0342943	296.363
75750	75033.2	217.88	0.0207064	0.0331078	295.903
76000	75277.9	217.20	0.0199257	0.0319589	295.442
76250	75522.6	216.52	0.0191722	0.0308466	294.981
76500	75767.3	215.85	0.0184451	0.0297698	294.519
76750	76011.9	215.17	0.0177434	0.0287275	294.057
77000	76256.5	214.49	0.0170664	0.0277186	293.594
77250	76501.2	213.81	0.0164132	0.0267422	293.130
77500	76745.8	213.14	0.0157831	0.0257974	292.665
77750	76990.3	212.46	0.0151754	0.0248832	292.199
78000	77234.9	211.78	0.0145893	0.0239986	291.733
78250	77479.5	211.10	0.0140241	0.0231429	291.266
78500	77724.0	210.43	0.0134791	0.0223152	290.798
78750	77968.5	209.75	0.0129537	0.0215146	290.330
79000	78213.0	209.07	0.0124472	0.0207404	289.860
79250	78457.4	208.39	0.0119589	0.0199917	289.390
79500	78701.9	207.72	0.0114884	0.0192677	288.920
79750	78946.3	207.04	0.0110350	0.0185679	288.448
80000	79190.7	206.15	0.0105979	0.0179091	287.829

(CONTINUED) IRIG-RANGE REFERENCE ATMOSPHERE, OCTOBER TABLE I. 10

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC, meters	HEIGHT GEOPOTENTIAL meters	TEMPERATURE degrees K	PRESSURE mb	DENSITY g m-3	SPEED OF SOUND m sec-1
80250	79435.1	206.15	0.0101773	0.0171983	287.829
80500	79679.5	206.15	0.0097733	0.0165157	287.829
80750	79923.9	206.15	0.0093855	0.0158603	287.829
81000	80168.2	206.15	0.0090130	0.0152309	287.829
81250	80412.5	206.15	0.0086554	0.0146266	287.829
81500	80656.8	206.15	0.0083120	0.0140462	287.829
81750	80901.1	206.15	0.0079822	0.0134890	287.829
82000	81145.3	206.15	0.0076654	0.0129538	287.829
82250	81389.6	206.15	0.0073615	0.0124400	287.829
82500	81633.8	206.15	0.0070695	0.0119466	287.829
82750	81878.0	206.15	0.0067891	0.0114728	287.829
83000	82122.2	206.15	0.0065199	0.0110178	287.829
83250	82366.4	206.15	0.0062613	0.0105809	287.829
83500	82610.5	206.15	0.0060130	0.0101613	287.829
83750	82854.6	206.15	0.0057746	0.0097584	287.829
84000	83098.7	206.15	0.0055457	0.0093715	287.829
84250	83342.8	206.15	0.0053258	0.0090000	287.829
84500	83586.9	206.15	0.0051147	0.0086432	287.829
84750	83830.9	206.15	0.0049120	0.0083006	287.829
85000	84075.0	206.15	0.0047173	0.0079717	287.829
85250	84319.0	206.15	0.0045304	0.0076557	287.829
85500	84563.0	206.15	0.0043509	0.0073523	287.829
85750	84807.0	206.15	0.0041784	0.0070610	287.829
86000	85050.9	206.15	0.0040129	0.0067812	287.829
86250	85294.9	206.15	0.0038539	0.0065127	287.829
86500	85538.8	206.15	0.0037012	0.0062546	287.829
86750	85782.7	206.15	0.0035546	0.0060068	287.829
87000	86026.5	206.15	0.0034138	0.0057689	287.829
87250	86270.4	206.15	0.0032786	0.0055404	287.829
87500	86514.3	206.15	0.0031487	0.0053210	287.829
87750	86758.1	206.15	0.0030240	0.0051102	287.829
88000	87[illegible].9	206.15	0.0029043	0.0049079	287.829
88250	87[illegible]	206.15	0.0027893	0.0047136	287.829
88500	87439.5	206.15	0.0026789	0.0045269	287.829
88750	87683.2	206.15	0.0025728	0.0043477	287.829
89000	87926.9	206.15	0.0024710	0.0041756	287.829
89250	88170.6	206.15	0.0023731	0.0040103	287.829
89500	88414.3	206.15	0.0022792	0.0038516	287.829
89750	88658.0	206.15	0.0021890	0.0036992	287.829
90000	88901.7	206.15	0.0021024	0.0035526	287.829

IRIG-RANGE REFERENCE ATMOSPHERE, NOVEMBER TABLE I.11

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	gm^{-3}	$m\ sec^{-1}$
25000	24959.9	220.30	24.3155000	38.4509256	297.543
25250	25208.6	220.45	23.3961778	36.9728350	297.641
25500	25457.1	220.59	22.5122516	35.5525869	297.739
25750	25705.7	220.73	21.6623343	34.1878761	297.837
26000	25954.3	220.88	20.8450939	32.8764983	297.935
26250	26202.8	221.02	20.0592514	31.6163270	298.033
26500	26451.3	221.17	19.3035789	30.4053292	298.130
26750	26699.8	221.31	18.5768974	29.2419574	298.228
27000	26948.3	221.46	17.8780746	28.1231228	298.326
27250	27196.8	221.60	17.2060234	27.0482423	298.423
27500	27445.2	221.75	16.5596997	26.0151852	298.521
27750	27693.6	221.89	15.9381009	25.0222956	298.619
28000	27942.0	222.04	15.3402642	24.0679840	298.716
28250	28190.4	222.18	14.7652649	23.1507293	298.814
28500	28438.8	222.33	14.2122150	22.2690553	298.911
28750	28687.1	222.47	13.6802614	21.4213688	299.009
29000	28935.4	222.62	13.1685850	20.6069172	299.106
29250	29183.7	222.76	12.6763990	19.8238058	299.203
29500	29432.0	222.91	12.2029475	19.0709920	299.301
29750	29680.3	223.06	11.7475047	18.3472829	299.398
30000	29928.5	223.20	11.3093732	17.6515335	299.495
30250	30176.8	223.35	10.8878833	16.9826443	299.593
30500	30425.0	223.49	10.4823913	16.3395603	299.690
30750	30673.1	223.64	10.0922792	15.7212682	299.787
31000	30921.3	223.78	9.7169531	15.1267953	299.884
31250	31169.5	223.93	9.3558425	14.5552079	299.981
31500	31417.6	224.07	9.0083994	14.0056094	300.079
31750	31665.7	224.22	8.6740970	13.4771389	300.176
32000	31913.8	224.36	8.3524294	12.9689697	300.273
32250	32161.9	224.51	8.0429106	12.4803084	300.370
32500	32409.9	224.65	7.7450733	12.0103926	300.467
32750	32657.9	224.80	7.4584689	11.5584907	300.564
33000	32906.0	224.94	7.1826659	11.1238996	300.661
33250	33153.9	225.09	6.9172500	10.7059491	300.757
33500	33401.9	225.23	6.6618229	10.3039785	300.854
33750	33649.9	225.38	6.4160020	9.9173775	300.951
34000	33897.6	225.52	6.1794194	9.5455444	301.048
34250	34145.7	225.67	5.9517217	9.1879051	301.145
34500	34393.6	225.81	5.7325691	8.8439081	301.241
34750	34641.5	225.96	5.5218353	8.5130239	301.338
35000	34889.4	226.10	5.3186064	8.1947436	301.435
35250	35137.2	226.25	5.1231806	7.8885741	301.531
35500	35385.0	226.39	4.9350686	7.5940605	301.628
35750	35632.8	226.54	4.7539913	7.3107371	301.725
36000	35880.6	226.68	4.5796810	7.0381758	301.821
36250	36128.4	226.83	4.4118801	6.7759817	301.918
36500	36376.1	226.97	4.2503413	6.5236919	302.014
36750	36623.8	227.12	4.0948267	6.2809056	302.111
37000	36871.5	227.26	3.9451074	6.0474726	302.207
37250	37119.2	227.41	3.8009637	5.8227991	302.304
37500	37366.9	227.55	3.6621841	5.6066239	302.400
37750	37614.5	227.70	3.5285654	5.3986202	302.496
38000	37862.1	227.84	3.3995123	5.1984735	302.592
38250	38109.7	227.98	3.2760368	5.0058816	302.689
38500	38357.3	228.13	3.1567583	4.8205548	302.785
38750	38604.9	228.27	3.0419032	4.6422137	302.881
39000	38852.4	228.42	2.9313044	4.4705908	302.977
39250	39100.0	228.50	2.8247853	4.3067220	303.027
39500	39347.5	228.97	2.7222660	4.1418090	303.342
39750	39595.0	229.45	2.6236759	3.9835446	303.656
40000	39842.4	229.92	2.5288565	3.8318474	303.970
40250	40089.9	230.39	2.4376561	3.6858465	304.284
40500	40337.3	230.87	2.3499292	3.5458909	304.598
40750	40584.7	231.35	2.2655365	3.4115288	304.911
41000	40832.1	231.82	2.1843447	3.2825275	305.224
41250	41079.5	232.30	2.1062260	3.1586623	305.536
41500	41326.9	232.77	2.0310578	3.0397106	305.849
41750	41574.2	233.25	1.9587230	2.9254910	306.161
42000	41821.5	233.72	1.8891090	2.8157833	306.472
42250	42068.8	234.20	1.8221081	2.7104076	306.783
42500	42316.1	234.67	1.7576170	2.6091844	307.094
42750	42563.4	235.14	1.6955369	2.5119418	307.405
43000	42810.6	235.62	1.6357727	2.4185156	307.715

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	$g\ m^{-3}$	$m\ sec^{-1}$
43250	43097.8	238.10	1.5782335	2.3287484	308.025
43500	43395.0	238.57	1.5228327	2.2424897	308.335
43750	43592.2	237.05	1.4694850	2.1595957	308.644
44000	43799.4	237.52	1.4181110	2.0799264	308.954
44250	44006.5	238.00	1.3686357	2.0033560	309.262
44500	44293.6	238.47	1.3209830	1.9297523	309.571
44750	44580.7	238.95	1.2750828	1.8589964	309.879
45000	44787.8	239.42	1.2308674	1.7909776	310.187
45250	45034.9	239.89	1.1882716	1.7255701	310.494
45500	45281.9	240.37	1.1472329	1.6626829	310.802
45750	45589.0	240.85	1.1076915	1.6022094	311.108
46000	45776.0	241.32	1.0695897	1.5440572	311.415
46250	46083.0	241.80	1.0328724	1.4881163	311.721
46500	46289.9	242.27	0.9974867	1.4343164	312.027
46750	46516.9	242.75	0.9633817	1.3825670	312.333
47000	46703.8	243.22	0.9305005	1.3327872	312.639
47250	47010.7	243.70	0.8988204	1.2848654	312.944
47500	47257.6	244.17	0.8682723	1.2388016	313.249
47750	47584.5	244.64	0.8388211	1.1944586	313.553
48000	47791.3	245.12	0.8104253	1.1517874	313.857
48250	47998.2	245.60	0.7830450	1.1107218	314.161
48500	48205.0	246.07	0.7566420	1.0711903	314.465
48750	48491.8	246.55	0.7311796	1.0331562	314.768
49000	48798.6	247.02	0.7066225	0.9965371	315.071
49250	48905.3	247.50	0.6829368	0.9612851	315.374
49500	49292.1	247.97	0.6600600	0.9273466	315.677
49750	49478.8	248.45	0.6380506	0.8946702	315.979
50000	49725.5	248.92	0.6167888	0.8632067	316.281
50250	49972.2	249.39	0.5962756	0.8329087	316.583
50500	50218.8	249.77	0.5764793	0.8040472	316.820
50750	50465.5	250.14	0.5573700	0.7762290	317.058
51000	50712.1	250.52	0.5389227	0.7494146	317.296
51250	50958.7	250.89	0.5211136	0.7235665	317.533
51500	51205.3	251.27	0.5039196	0.6986494	317.770
51750	51451.9	251.64	0.4873185	0.6746255	318.007
52000	51698.4	252.02	0.4712891	0.6514641	318.244
52250	51944.9	252.39	0.4558108	0.6291323	318.481
52500	52191.4	252.77	0.4408639	0.6075541	318.717
52750	52437.9	253.14	0.4264293	0.5868327	318.954
53000	52684.4	253.52	0.4124887	0.5668105	319.190
53250	52930.8	253.89	0.3990244	0.5474951	319.426
53500	53177.3	254.27	0.3860196	0.5288741	319.662
53750	53423.7	254.64	0.3734578	0.5109100	319.897
54000	53670.1	255.02	0.3613233	0.4935825	320.133
54250	53916.5	255.39	0.3496009	0.4788881	320.368
54500	54162.8	255.77	0.3382761	0.4607441	320.603
54750	54409.2	256.14	0.3273340	0.4451089	320.838
55000	54655.5	256.52	0.3167634	0.4301816	321.073
55250	54981.8	256.89	0.3065489	0.4157020	321.308
55500	55148.0	257.27	0.2966787	0.4017309	321.542
55750	55394.3	257.64	0.2871407	0.3882497	321.776
56000	55640.5	258.02	0.2779233	0.3752405	322.010
56250	55886.8	258.39	0.2690152	0.3626880	322.244
56500	56133.0	258.77	0.2604056	0.3505698	322.478
56750	56379.2	259.14	0.2520840	0.3388758	322.712
57000	56625.3	259.52	0.2440405	0.3275888	322.945
57250	56871.5	259.89	0.2362652	0.3166941	323.178
57500	57117.6	260.27	0.2287489	0.3061774	323.411
57750	57363.7	260.64	0.2214826	0.2960250	323.644
58000	57609.8	261.00	0.2144574	0.2862455	323.864
58250	57855.8	261.00	0.2078601	0.2771178	323.864
58500	58101.9	261.00	0.2010767	0.2683883	323.864
58750	58347.9	261.00	0.1947084	0.2598829	323.864
59000	58593.9	261.00	0.1885364	0.2516477	323.864
59250	58839.9	261.00	0.1825625	0.2436740	323.864
59500	59085.9	261.00	0.1767783	0.2359536	323.864
59750	59331.8	261.00	0.1711770	0.2284783	323.864
60000	59577.8	261.00	0.1657551	0.2212405	323.864
60250	59823.7	260.70	0.1605017	0.2144730	323.880
60500	60069.6	260.36	0.1554090	0.2079449	323.464
60750	60315.5	260.01	0.1504717	0.2016077	323.248
61000	60561.3	259.66	0.1456854	0.1954561	323.032
61250	60807.2	259.31	0.1410436	0.1894847	322.816
61500	61053.0	258.97	0.1365480	0.1836888	322.599

(CONTINUED) IRIG-RANGE REFERENCE ATMOSPHERE, NOVEMBER TABLE I.11

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	$g\ m^{-3}$	$m\ sec^{-1}$
61750	61298.8	256.82	0.1321863	0.1780829	322.383
62000	61544.6	259.27	0.1279627	0.1726026	322.103
62250	61790.3	257.92	0.1238859	0.1673032	321.949
62500	62036.1	257.58	0.1198574	0.1621601	321.732
62750	62281.8	257.23	0.1160502	0.1571889	321.5[illegible]
63000	62527.5	256.88	0.1123218	0.1523252	321.258
63250	62773.2	256.53	0.1087089	0.1476249	321.081
63500	63018.9	256.19	0.1052073	0.1430840	320.863
63750	63264.5	255.84	0.1018145	0.1386384	320.645
64000	63510.1	255.49	0.0985270	0.1343443	320.428
64250	63755.7	255.14	0.0953416	0.1301780	320.210
64500	64001.3	254.80	0.0922553	0.1261358	319.992
64750	64246.9	254.45	0.0892651	0.1222142	319.773
65000	64492.5	254.10	0.0863682	0.1184097	319.555
65250	64738.0	253.75	0.0835617	0.1147189	319.336
65500	64983.5	253.41	0.0808430	0.1111387	319.118
65750	65229.0	253.06	0.0782093	0.1076657	318.899
66000	65474.5	252.71	0.0756583	0.1042971	318.680
66250	65719.9	252.39	0.0731872	0.1010296	318.460
66500	65965.4	252.02	0.0707939	0.0978605	318.241
66750	66210.8	251.67	0.0684758	0.0947889	318.022
67000	66456.2	251.32	0.0662308	0.0918060	317.802
67250	66701.6	250.97	0.0640539	0.0889151	317.582
67500	66946.9	250.63	0.0619510	0.0861117	317.362
67750	67192.3	250.28	0.0599120	0.0833932	317.142
68000	67437.6	249.93	0.0579376	0.0807571	316.922
68250	67682.9	249.58	0.0560258	0.0782010	316.701
68500	67928.2	249.24	0.0541747	0.0757227	316.481
68750	68173.4	248.89	0.0523825	0.0733198	316.260
69000	68418.7	248.54	0.0506473	0.0709901	316.039
69250	68663.9	248.19	0.0489673	0.0687315	315.818
69500	68909.1	247.85	0.0473410	0.0665420	315.597
69750	69154.3	247.50	0.0457667	0.0644194	315.376
70000	69399.5	247.15	0.0442427	0.0623619	315.154
70250	69644.6	246.80	0.0427676	0.0603675	314.933
70500	69889.8	246.46	0.0413397	0.0584343	314.711
70750	70134.9	246.11	0.0399577	0.0565606	314.489
71000	70380.0	245.76	0.0386202	0.0547446	314.267
71250	70625.1	245.41	0.0373258	0.0529846	314.045
71500	70870.1	245.07	0.0360730	0.0512790	313.822
71750	71115.1	244.72	0.0348591	0.0497615	313.165
72000	71360.2	244.37	0.0336813	0.0482839	312.504
72250	71605.2	244.02	0.0325386	0.0468443	311.841
72500	71850.1	243.67	0.0314301	0.0454419	311.176
72750	72095.1	243.32	0.0303549	0.0440759	310.510
73000	72340.1	242.97	0.0293123	0.0427454	309.843
73250	72585.0	242.62	0.0283012	0.0414497	309.175
73500	72829.9	242.27	0.0273209	0.0401880	308.504
73750	73074.8	241.92	0.0263706	0.0389595	307.833
74000	73319.6	241.57	0.0254495	0.0377637	307.160
74250	73564.5	241.22	0.0245568	0.0365996	306.485
74500	73809.3	240.87	0.0236917	0.0354668	305.809
74750	74054.1	240.52	0.0228535	0.0343639	305.132
75000	74298.9	240.17	0.0220415	0.0332910	304.453
75250	74543.7	239.82	0.0212550	0.0322470	303.772
75500	74788.4	239.47	0.0204933	0.0312314	303.090
75750	75033.2	239.12	0.0197556	0.0302435	302.406
76000	75277.9	238.77	0.0190414	0.0292827	301.721
76250	75522.6	238.42	0.0183500	0.0283483	301.035
76500	75767.3	238.07	0.0176807	0.0274397	300.348
76750	76011.9	237.72	0.0170330	0.0265564	299.656
77000	76256.3	237.41	0.0164063	0.0256977	299.965
77250	76501.2	237.38	0.0157999	0.0248630	298.272
77500	76745.8	237.35	0.0152133	0.0240518	297.577
77750	76990.3	237.32	0.0146459	0.0232635	296.881
78000	77234.9	237.29	0.0140972	0.0224978	296.183
78250	77479.5	237.26	0.0135666	0.0217535	295.483
78500	77724.0	237.23	0.0130537	0.0210307	294.782
78750	77968.5	237.20	0.0125578	0.0203288	294.079
79000	78213.0	237.17	0.0120787	0.0196471	293.374
79250	78457.4	237.14	0.0116156	0.0189852	292.668
79500	78701.9	237.11	0.0111682	0.0183426	291.960
79750	78946.3	237.08	0.0107361	0.0177189	291.250
80000	79190.7	237.05	0.0103183	0.0171135	290.538

(CONTINUED) **IRIG-RANGE REFERENCE ATMOSPHERE, NOVEMBER** TABLE I.11

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
80250	79495.1	209.65	0.0099154	0.0164761	290.262
80500	79679.3	209.65	0.0095203	0.0158327	290.262
80750	79863.9	209.65	0.0091564	0.0152148	290.262
81000	80048.2	209.65	0.0087990	0.0146210	290.262
81250	80412.5	209.65	0.0084556	0.0140503	290.262
81500	80656.8	209.65	0.0081256	0.0135020	290.262
81750	80901.1	209.65	0.0078085	0.0129751	290.262
82000	81195.3	209.65	0.0075038	0.0124688	290.262
82250	81389.6	209.65	0.0072110	0.0119822	290.262
82500	81683.8	209.65	0.0069297	0.0115148	290.262
82750	81878.0	209.65	0.0066593	0.0110655	290.262
83000	82182.2	209.65	0.0063995	0.0106339	290.262
83250	82366.4	209.65	0.0061499	0.0102191	290.262
83500	82610.5	209.65	0.0059100	0.0098205	290.262
83750	82854.6	209.65	0.0056795	0.0094375	290.262
84000	83098.7	209.65	0.0054581	0.0090695	290.262
84250	83302.8	209.65	0.0052452	0.0087158	290.262
84500	83546.9	209.65	0.0050407	0.0083760	290.262
84750	83830.9	209.65	0.0048442	0.0080494	290.262
85000	84075.0	209.65	0.0046553	0.0077356	290.262
85250	84319.0	209.65	0.0044738	0.0074340	290.262
85500	84583.0	209.65	0.0042995	0.0071442	290.262
85750	84887.0	209.65	0.0041319	0.0068658	290.262
86000	85090.9	209.65	0.0039708	0.0065982	290.262
86250	85294.9	209.65	0.0038161	0.0063411	290.262
86500	85538.8	209.65	0.0036674	0.0060940	290.262
86750	85782.7	209.65	0.0035245	0.0058565	290.262
87000	86046.6	209.65	0.0033872	0.0056283	290.262
87250	86270.4	209.65	0.0032552	0.0054091	290.262
87500	86514.3	209.65	0.0031284	0.0051983	290.262
87750	86758.1	209.65	0.0030065	0.0049959	290.262
88000	87001.9	209.65	0.0028894	0.0048013	290.262
88250	87285.7	209.65	0.0027769	0.0046143	290.262
88500	87489.5	209.65	0.0026688	0.0044346	290.262
88750	87733.2	209.65	0.0025648	0.0042619	290.262
89000	87976.9	209.65	0.0024650	0.0040959	290.262
89250	88280.6	209.65	0.0023690	0.0039365	290.262
89500	88464.3	209.65	0.0022768	0.0037832	290.262
89750	88708.0	209.65	0.0021881	0.0036359	290.262
90000	88951.7	209.65	0.0021029	0.0034944	290.262

IRIG-RANGE REFERENCE ATMOSPHERE, DECEMBER TABLE I.12

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	gm-3	m sec-1
25000	24959.9	220.40	24.2566000	38.3403815	297.611
25250	25208.6	220.25	23.3393107	36.9156230	297.510
25500	25457.1	220.10	22.4561877	35.5429999	297.408
25750	25705.7	219.95	21.6059777	34.2206339	297.307
26000	25954.3	219.80	20.7874727	32.9467133	297.206
26250	26202.8	219.65	19.9995085	31.7194910	297.104
26500	26451.3	219.50	19.2409629	30.5372815	297.003
26750	26699.8	219.40	18.5108400	29.3915607	296.937
27000	26948.3	219.17	17.8079580	28.3055181	296.779
27250	27196.8	218.94	17.1311134	27.2585989	296.622
27500	27445.2	218.71	16.4793658	26.2494299	296.464
27750	27693.6	218.47	15.8519078	25.2766848	296.307
28000	27942.0	218.24	15.2475661	24.3390828	296.149
28250	28190.4	218.01	14.6657902	23.4353868	295.991
28500	28438.8	217.78	14.1056713	22.5644021	295.833
28750	28687.1	217.54	13.5664216	21.7249752	295.675
29000	28935.4	217.31	13.0472830	20.9159919	295.517
29250	29183.7	217.08	12.5475242	20.1363766	295.359
29500	29432.0	216.85	12.0664398	19.3850905	295.201
29750	29680.3	216.61	11.6033495	18.6611306	295.043
30000	29928.5	216.38	11.1575971	17.9635286	294.884
30250	30176.8	216.15	10.7285496	17.2913495	294.726
30500	30425.0	215.92	10.3155968	16.6336907	294.567
30750	30673.1	215.68	9.9181499	16.0196806	294.409
31000	30921.3	215.45	9.5356414	15.4184780	294.250
31250	31169.5	215.22	9.1675238	14.8392706	294.091
31500	31417.6	214.99	8.8132892	14.2812766	293.932
31750	31665.7	214.75	8.4723686	13.7437330	293.773
32000	31913.8	214.52	8.1443313	13.2259154	293.614
32250	32161.9	214.30	7.8286913	12.7265345	293.462
32500	32409.9	214.23	7.5251026	12.2371524	293.412
32750	32657.9	214.15	7.2332123	11.7664691	293.363
33000	32906.0	214.08	6.9525725	11.3137746	293.313
33250	33153.9	214.01	6.6827522	10.8783858	293.263
33500	33401.9	213.94	6.4233474	10.4596454	293.214
33750	33649.9	213.86	6.1739282	10.0569207	293.164
34000	33897.8	213.79	5.9341422	9.6696033	293.114
34250	34145.7	213.72	5.7036102	9.2971073	293.064
34500	34393.6	213.65	5.4819772	8.9388693	293.015
34750	34641.5	213.57	5.2689030	8.5943470	292.965
35000	34889.4	213.50	5.0640562	8.2630185	292.915
35250	35137.2	213.80	4.8672933	7.9307239	293.123
35500	35385.0	214.22	4.6784998	7.6084262	293.405
35750	35632.8	214.63	4.4973854	7.2998314	293.688
36000	35880.6	215.04	4.3236233	7.0043315	293.970
36250	36128.4	215.45	4.1569014	6.7213464	294.252
36500	36376.1	215.87	3.9969213	6.4503279	294.533
36750	36623.8	216.28	3.8433978	6.1907331	294.814
37000	36871.5	216.69	3.6960582	5.9420736	295.095
37250	37119.2	217.10	3.5546422	5.7038639	295.376
37500	37366.9	217.51	3.4189004	5.4756456	295.657
37750	37614.5	217.93	3.2885948	5.2569812	295.937
38000	37862.1	218.34	3.1634976	5.0474532	296.217
38250	38109.7	218.75	3.0433911	4.8466631	296.496
38500	38357.3	219.17	2.9280668	4.6542304	296.776
38750	38604.9	219.58	2.8173257	4.4697921	297.055
39000	38852.4	219.99	2.7109772	4.2930014	297.334
39250	39100.0	220.40	2.6088390	4.1235272	297.613
39500	39347.5	220.81	2.5107368	3.9610535	297.891
39750	39595.0	221.23	2.4165036	3.8052733	298.169
40000	39842.4	221.64	2.3259799	3.6559134	298.447
40250	40089.9	222.05	2.2390128	3.5126833	298.725
40500	40337.3	222.47	2.1554562	3.3753251	299.002
40750	40584.7	222.88	2.0751702	3.2435873	299.279
41000	40832.1	223.29	1.9980208	3.1172298	299.556
41250	41079.5	223.70	1.9238798	2.9960233	299.832
41500	41326.9	224.11	1.8526245	2.8797485	300.109
41750	41574.2	224.53	1.7841373	2.7681259	300.385
42000	41821.5	224.94	1.7183058	2.6611653	300.661
42250	42068.8	225.30	1.6550146	2.5590781	300.899
42500	42316.1	226.88	1.5943153	2.4480803	301.951
42750	42563.4	228.45	1.5362443	2.3426228	302.999
43000	42810.6	230.03	1.4806708	2.2423931	304.043

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	$g\ m^{-3}$	$m\ sec^{-1}$
43250	43057.8	231.61	1.4274711	2.1471027	305.084
43500	43305.0	233.19	1.3765286	2.0564717	306.121
43750	43552.2	234.76	1.3277332	1.9702447	307.155
44000	43799.4	236.34	1.2809806	1.8881800	308.185
44250	44046.5	237.92	1.2361724	1.8100507	309.212
44500	44293.6	239.50	1.1932152	1.7356437	310.235
44750	44540.7	241.10	1.1520244	1.6645891	311.272
45000	44787.8	242.29	1.1124840	1.5995447	312.040
45250	45034.9	243.48	1.0744880	1.5373470	312.807
45500	45281.9	244.68	1.0379686	1.4778581	313.572
45750	45529.0	245.87	1.0028618	1.4209475	314.336
46000	45776.0	247.06	0.9691062	1.3664919	315.097
46250	46023.0	248.25	0.9366438	1.3143739	315.857
46500	46269.9	249.45	0.9054190	1.2644826	316.614
46750	46516.9	250.64	0.8753789	1.2167129	317.370
47000	46763.8	251.83	0.8464733	1.1709649	318.124
47250	47010.7	253.02	0.8186541	1.1271440	318.877
47500	47257.6	254.22	0.7918757	1.0851604	319.627
47750	47504.5	255.41	0.7660944	1.0449289	320.376
48000	47751.3	256.60	0.7412687	1.0063686	321.123
48250	47998.2	257.79	0.7173588	0.9694028	321.868
48500	48245.0	258.99	0.6943270	0.9339584	322.612
48750	48491.8	260.20	0.6721381	0.8998898	323.368
49000	48738.6	260.65	0.6507274	0.8697201	323.647
49250	48985.3	261.10	0.6300356	0.8406134	323.927
49500	49232.1	261.55	0.6100372	0.8125305	324.206
49750	49478.8	262.00	0.5907078	0.7854337	324.484
50000	49725.5	262.45	0.5720239	0.7592865	324.763
50250	49972.2	262.90	0.5539629	0.7340543	325.041
50500	50218.8	263.35	0.5365029	0.7097033	325.319
50750	50465.5	263.80	0.5196229	0.6862014	325.597
51000	50712.1	264.25	0.5033027	0.6635174	325.875
51250	50958.7	264.70	0.4875227	0.6416216	326.152
51500	51205.3	265.15	0.4722642	0.6204853	326.429
51750	51451.9	265.60	0.4575091	0.6000808	326.706
52000	51698.4	266.05	0.4432399	0.5803816	326.983
52250	51944.9	266.50	0.4294397	0.5613621	327.259
52500	52191.4	266.95	0.4160925	0.5429978	327.535
52750	52437.9	267.40	0.4031825	0.5252649	327.811
53000	52684.4	267.85	0.3906948	0.5081408	328.087
53250	52930.8	268.30	0.3786147	0.4916035	328.362
53500	53177.3	268.75	0.3669284	0.4756319	328.638
53750	53423.7	269.20	0.3556223	0.4602057	328.913
54000	53670.1	269.65	0.3446834	0.4453055	329.187
54250	53916.5	270.10	0.3340992	0.4309124	329.462
54500	54162.8	270.55	0.3238577	0.4170083	329.736
54750	54409.2	271.00	0.3139470	0.4035759	330.010
55000	54655.5	271.50	0.3043570	0.3905274	330.315
55250	54901.8	271.50	0.2950690	0.3786098	330.315
55500	55148.0	271.50	0.2860652	0.3670568	330.315
55750	55394.3	271.50	0.2773368	0.3558572	330.315
56000	55640.5	271.50	0.2688754	0.3450001	330.315
56250	55886.8	271.50	0.2606727	0.3344751	330.315
56500	56133.0	271.50	0.2527209	0.3242719	330.315
56750	56379.2	271.50	0.2450122	0.3143808	330.315
57000	56625.3	271.50	0.2375393	0.3047921	330.315
57250	56871.5	271.50	0.2302948	0.2954966	330.315
57500	57117.6	271.50	0.2232718	0.2864852	330.315
57750	57363.7	271.50	0.2164635	0.2777493	330.315
58000	57609.8	271.50	0.2098634	0.2692805	330.315
58250	57855.8	270.51	0.2034534	0.2620159	329.709
58500	58101.9	269.91	0.1972216	0.2545503	329.346
58750	58347.9	269.32	0.1911681	0.2472822	328.983
59000	58593.9	268.72	0.1852880	0.2402069	328.619
59250	58839.9	268.13	0.1795768	0.2333195	328.255
59500	59085.9	267.53	0.1740300	0.2266156	327.891
59750	59331.8	266.94	0.1686432	0.2200905	327.526
60000	59577.6	266.34	0.1634120	0.2137399	327.161
60250	59823.7	265.75	0.1583323	0.2075594	326.795
60500	60069.6	265.15	0.1534000	0.2015449	326.429
60750	60315.5	264.56	0.1486112	0.1956922	326.063
61000	60561.3	263.96	0.1439619	0.1899974	325.696
61250	60807.2	263.37	0.1394485	0.1844564	325.328
61500	61053.0	262.77	0.1350671	0.1790655	324.961

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

STATION	ELEVATION (MSL) meters	LOCATION		PERIOD OF DATA	THERMODYNAMIC QUANTITIES
		LATITUDE	LONGITUDE		
FAIRBANKS, ALASKA	134	64° 49' N	147° 52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63° 59' N	145° 43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	$g\ m^{-3}$	$m\ sec^{-1}$
61750	61298.8	262.18	0.1308143	0.1738209	324.593
62000	61544.6	261.58	0.1266865	0.1687189	324.224
62250	61790.3	260.99	0.1226803	0.1637560	323.855
62500	62036.1	260.39	0.1187923	0.1589287	323.486
62750	62281.8	259.80	0.1150194	0.1542334	323.116
63000	62527.5	259.20	0.1113584	0.1496670	322.746
63250	62773.2	258.61	0.1078061	0.1452261	322.375
63500	63018.9	258.01	0.1043596	0.1409075	322.004
63750	63264.5	257.42	0.1010160	0.1367082	321.633
64000	63510.1	256.82	0.0977724	0.1326251	321.261
64250	63755.7	256.23	0.0946261	0.1286552	320.888
64500	64001.3	255.63	0.0915742	0.1247956	320.515
64750	64246.9	255.04	0.0886142	0.1210436	320.142
65000	64492.5	254.44	0.0857436	0.1173963	319.769
65250	64738.0	253.85	0.0829597	0.1138510	319.394
65500	64983.5	253.25	0.0802602	0.1104051	319.020
65750	65229.0	252.66	0.0776428	0.1070561	318.645
66000	65474.5	252.06	0.0751050	0.1038013	318.269
66250	65719.9	251.47	0.0726446	0.1006385	317.894
66500	65965.4	250.87	0.0702595	0.0975651	317.517
66750	66210.8	250.28	0.0679475	0.0945788	317.141
67000	66456.2	249.68	0.0657065	0.0916774	316.763
67250	66701.6	249.09	0.0635345	0.0888587	316.386
67500	66946.9	248.49	0.0614295	0.0861204	316.008
67750	67192.3	247.90	0.0593896	0.0834604	315.629
68000	67437.6	247.30	0.0574129	0.0808767	315.250
68250	67682.9	246.71	0.0554977	0.0783673	314.871
68500	67928.2	246.11	0.0536421	0.0759302	314.491
68750	68173.4	245.52	0.0518444	0.0735634	314.110
69000	68418.7	244.92	0.0501029	0.0712651	313.729
69250	68663.9	244.33	0.0484160	0.0690334	313.348
69500	68909.1	243.73	0.0467822	0.0668667	312.966
69750	69154.3	243.14	0.0451998	0.0647630	312.584
70000	69399.5	242.54	0.0436674	0.0627208	312.201
70250	69644.6	241.90	0.0421833	0.0607495	311.789
70500	69889.8	241.40	0.0407465	0.0588018	311.467
70750	70134.9	240.90	0.0393558	0.0569129	311.144
71000	70380.0	240.40	0.0380100	0.0550810	310.821
71250	70625.1	239.90	0.0367077	0.0533046	310.498
71500	70870.1	239.40	0.0354475	0.0515821	310.174
71750	71115.1	238.90	0.0342281	0.0499120	309.850
72000	71360.2	238.40	0.0330484	0.0482929	309.525
72250	71605.2	237.90	0.0319071	0.0467230	309.201
72500	71850.1	237.40	0.0308029	0.0452012	308.875
72750	72095.1	236.90	0.0297349	0.0437260	308.550
73000	72340.1	236.40	0.0287018	0.0422961	308.224
73250	72585.0	235.90	0.0277027	0.0409102	307.898
73500	72829.9	235.40	0.0267363	0.0395671	307.572
73750	73074.8	234.90	0.0258019	0.0382654	307.245
74000	73319.6	234.40	0.0248982	0.0370040	306.918
74250	73564.5	233.90	0.0240244	0.0357817	306.590
74500	73809.3	233.40	0.0231796	0.0345974	306.262
74750	74054.1	232.90	0.0223629	0.0334500	305.934
75000	74298.9	232.40	0.0215733	0.0323384	305.605
75250	74543.7	231.90	0.0208100	0.0312615	305.277
75500	74788.4	231.40	0.0200723	0.0302184	304.947
75750	75033.2	230.90	0.0193592	0.0292080	304.618
76000	75277.9	230.40	0.0186701	0.0282294	304.288
76250	75522.6	229.90	0.0180041	0.0272817	303.957
76500	75767.3	229.40	0.0173606	0.0263639	303.627
76750	76011.9	228.90	0.0167388	0.0254751	303.295
77000	76256.5	228.40	0.0161380	0.0246145	302.964
77250	76501.2	227.90	0.0155575	0.0237812	302.632
77500	76745.8	227.40	0.0149968	0.0229745	302.300
77750	76990.3	226.90	0.0144552	0.0221936	301.968
78000	77234.9	226.40	0.0139320	0.0214376	301.635
78250	77479.5	225.90	0.0134267	0.0207058	301.301
78500	77724.0	225.40	0.0129388	0.0199976	300.968
78750	77968.5	224.90	0.0124675	0.0193121	300.634
79000	78213.0	224.40	0.0120125	0.0186487	300.299
79250	78845.[illegible]	223.90	0.0115731	0.0180068	299.965
79500	78701.9	223.40	0.0111490	0.0173856	299.630
79750	78946.3	222.90	0.0107395	0.0167846	299.294
80000	79190.7	222.65	0.0103444	0.0161853	299.126

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
80250	79435.1	222.65	0.0099637	0.0155896	299.126
80500	79679.5	222.65	0.0095970	0.0150159	299.126
80750	79923.9	222.65	0.0092438	0.0144633	299.126
81000	80168.2	222.65	0.0089037	0.0139311	299.126
81250	80412.5	222.65	0.0085761	0.0134185	299.126
81500	80656.8	222.65	0.0082606	0.0129248	299.126
81750	80901.1	222.65	0.0079567	0.0124494	299.126
82000	81145.3	222.65	0.0076640	0.0119914	299.126
82250	81389.6	222.65	0.0073821	0.0115503	299.126
82500	81633.8	222.65	0.0071106	0.0111255	299.126
82750	81878.0	222.65	0.0068491	0.0107163	299.126
83000	82122.2	222.65	0.0065972	0.0103223	299.126
83250	82366.4	222.65	0.0063546	0.0099427	299.126
83500	82610.5	222.65	0.0061210	0.0095771	299.126
83750	82854.6	222.65	0.0058959	0.0092250	299.126
84000	83098.7	222.65	0.0056792	0.0088859	299.126
84250	83342.8	222.65	0.0054704	0.0085592	299.126
84500	83586.9	222.65	0.0052693	0.0082446	299.126
84750	83830.9	222.65	0.0050756	0.0079416	299.126
85000	84075.0	222.65	0.0048891	0.0076497	299.126
85250	84319.0	222.65	0.0047094	0.0073686	299.126
85500	84563.0	222.65	0.0045364	0.0070978	299.126
85750	84807.0	222.65	0.0043697	0.0068370	299.126
86000	85050.9	222.65	0.0042092	0.0065858	299.126
86250	85294.9	222.65	0.0040545	0.0063439	299.126
86500	85538.8	222.65	0.0039056	0.0061108	299.126
86750	85782.7	222.65	0.0037621	0.0058864	299.126
87000	86026.6	222.65	0.0036239	0.0056702	299.126
87250	86270.4	222.65	0.0034908	0.0054619	299.126
87500	86514.3	222.65	0.0033626	0.0052613	299.126
87750	86758.1	222.65	0.0032392	0.0050681	299.126
88000	87001.9	222.65	0.0031202	0.0048820	299.126
88250	87245.7	222.65	0.0030057	0.0047028	299.126
88500	87489.5	222.65	0.0028953	0.0045301	299.126
88750	87733.2	222.65	0.0027890	0.0043638	299.126
89000	87976.9	222.65	0.0026867	0.0042037	299.126
89250	88220.6	222.65	0.0025880	0.0040494	299.126
89500	88464.3	222.65	0.0024931	0.0039008	299.126
89750	88708.0	222.65	0.0024016	0.0037576	299.126
90000	88951.7	222.65	0.0023134	0.0036197	299.126

IRIG-RANGE REFERENCE ATMOSPHERE, ANNUAL TABLE I. 13

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	gm^{-3}	$m\ sec^{-1}$
25000	24959.9	225.45	25.5867000	39.5368560	301.001
25250	25208.6	225.58	24.6408269	38.0564865	301.076
25500	25457.1	225.68	23.7306283	36.6322740	301.151
25750	25705.7	225.79	22.8544545	35.2.21718	301.226
26000	25954.3	225.90	22.0111076	33.9440578	301.301
26250	26202.8	226.01	21.1993389	32.6759312	301.376
26500	26451.3	226.13	20.4179520	31.4558693	301.451
26750	26699.8	226.28	19.6657903	30.2820243	301.526
27000	26948.3	226.35	18.9417459	29.1526206	301.601
27250	27196.8	226.46	18.2447526	28.0458517	301.676
27500	27445.2	226.58	17.5737849	27.0203775	301.751
27750	27693.6	226.69	16.9278571	26.0143216	301.826
28000	27942.0	226.80	16.3060212	25.0462693	301.901
28250	28190.4	226.91	15.7073655	24.1176844	301.976
28500	28438.8	227.03	1[illegible].1310135	23.2184074	302.051
28750	28687.1	227.14	14.5741271	22.3558532	302.126
29000	28935.4	227.25	14.0418807	21.5258089	302.200
29250	29183.7	227.36	13.5275097	20.7270316	302.275
29500	29432.0	227.48	13.0322592	19.9583260	302.350
29750	29680.3	227.60	12.5554212	19.2175102	302.433
30000	29928.5	227.90	12.0964860	18.4906849	302.632
30250	30176.8	228.20	11.6548310	17.7823028	302.831
30500	30425.0	228.50	11.2300752	17.1212139	303.030
30750	30673.1	228.80	10.8212652	16.4743160	303.229
31000	30921.3	229.10	10.4278739	15.8565527	303.428
31250	31169.5	229.40	10.0492998	15.2409118	303.627
31500	31417.6	229.70	9.6849655	14.6884232	303.825
31750	31665.7	230.00	9.3343168	14.1381568	304.023
32000	31913.8	230.30	8.9968218	13.6092212	304.222
32250	32161.9	230.60	8.6719700	13.1007621	304.420
32500	32409.9	230.90	8.3592715	12.6119602	304.618
32750	32657.9	231.20	8.0582557	12.1420301	304.815
33000	32906.0	231.50	7.7684711	11.6902191	305.013
33250	33153.9	231.80	7.4891826	11.2558242	305.208
33500	33401.9	232.26	7.2209436	10.8309906	305.510
33750	33649.8	232.71	6.9625919	10.4228180	305.811
34000	33897.8	233.17	6.7139644	10.0310052	306.111
34250	34145.7	233.63	6.4746950	9.6545814	306.411
34500	34393.6	234.09	6.2444135	9.2930048	306.711
34750	34641.5	234.54	6.0227451	8.9456617	307.011
35000	34889.4	235.00	5.8094098	8.6119647	307.310
35250	35137.2	235.46	5.6040213	8.2913518	307.609
35500	35385.0	235.92	5.4062871	7.9832852	307.908
35750	35632.8	236.37	5.2159078	7.6872503	308.206
36000	35880.6	236.83	5.0325948	7.4027544	308.504
36250	36128.4	237.29	4.8560735	7.1293261	308.802
36500	36376.1	237.75	4.6860790	6.8665140	309.100
36750	36623.8	238.20	4.5223579	6.6138860	309.397
37000	36871.5	238.66	4.3646667	6.3710284	309.694
37250	37119.2	239.12	4.2127720	6.1375450	309.991
37500	37366.9	239.58	4.0664500	5.9130566	310.287
37750	37614.5	240.03	3.9254857	5.6971998	310.583
38000	37862.1	240.49	3.7896730	5.4896268	310.879
38250	38109.7	250.00	3.6611883	5.1017184	314.948
38500	38357.3	250.35	3.5398728	4.9253574	317.185
38750	38604.9	250.69	3.4219709	4.7553817	317.402
39000	38852.4	251.03	3.3085311	4.5914270	317.619
39250	39100.0	251.37	3.1990072	4.4333860	317.835
39300	39347.5	251.72	3.0932588	4.2810003	318.052
39750	39595.0	252.06	2.9911507	4.1380599	318.268
40000	39842.4	252.40	2.8925526	3.9923628	318.484
40250	40089.9	252.74	2.7973390	3.8557149	318.700
40500	40337.3	253.09	2.7053892	3.7239294	318.916
40750	40584.7	253.43	2.6165870	3.5965268	319.132
41000	40832.1	253.77	2.5308202	3.4742343	319.347
41250	41079.5	254.11	2.4479811	3.3559859	319.563
41500	41326.9	254.46	2.3679658	3.2419818	319.779
41750	41574.2	254.80	2.2906742	3.1318883	319.993
42000	41821.5	255.14	2.2160100	3.0257376	320.208
42250	42068.8	255.48	2.1438803	2.9233274	320.423
42500	42316.1	255.83	2.0741956	2.8245211	320.638
42750	42563.4	256.17	2.0066698	2.7291849	320.852
43000	42810.6	256.51	1.9410200	2.6371982	321.067

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
43250	43057.8	256.85	1.8789661	2.5488331	321.281
43500	43305.0	257.19	1.8182310	2.4627745	321.495
43750	43552.2	257.54	1.7595606	2.3801094	321.709
44000	43799.4	257.88	1.7028233	2.3003293	321.923
44250	44046.5	258.22	1.6480100	2.2233296	322.137
44500	44293.6	258.56	1.5950344	2.1490099	322.350
44750	44540.7	258.91	1.5438326	2.0772732	322.564
45000	44787.8	259.25	1.4943423	2.0080284	322.777
45250	45034.9	259.59	1.4465045	1.9411798	322.990
45500	45281.9	259.93	1.4002618	1.8766470	323.203
45750	45529.0	260.30	1.3555608	1.8161906	323.430
46000	45776.0	260.73	1.3123550	1.7534703	323.697
46250	46023.0	261.16	1.2705973	1.6948816	323.964
46500	46269.9	261.59	1.2302368	1.6383462	324.230
46750	46516.9	262.02	1.1912246	1.5837889	324.497
47000	46763.8	262.45	1.1535133	1.5311373	324.763
47250	47010.7	262.88	1.1170575	1.4803216	325.029
47500	47257.6	263.31	1.0811133	1.4312749	325.294
47750	47504.5	263.74	1.0477335	1.3839328	325.560
48000	47751.3	264.17	1.0147925	1.3382333	325.825
48250	47998.2	264.60	0.9829359	1.2941167	326.090
48500	48245.0	265.03	0.9521311	1.2515258	326.355
48750	48491.8	265.46	0.9223815	1.2104052	326.620
49000	48738.6	265.89	0.8935322	1.1707019	326.884
49250	48985.3	266.32	0.8656693	1.1323647	327.149
49500	49232.1	266.75	0.8387201	1.0953445	327.413
49750	49478.8	267.18	0.8126333	1.0595939	327.676
50000	49725.5	267.61	0.7874386	1.0250074	327.940
50250	49972.2	268.04	0.7630466	0.9917211	328.203
50500	50218.8	268.47	0.7394494	0.9595128	328.466
50750	50465.5	268.80	0.7166155	0.9287418	328.668
51000	50712.1	269.05	0.6945119	0.8992589	328.821
51250	50958.7	269.30	0.6731112	0.8707402	328.974
51500	51205.3	269.55	0.6523906	0.8431531	329.128
51750	51451.9	269.80	0.6323277	0.8164864	329.279
52000	51698.4	270.00	0.6128992	0.7907940	329.401
52250	51944.9	270.00	0.5940759	0.7665073	329.401
52500	52191.4	270.00	0.5758322	0.7429663	329.401
52750	52437.9	270.00	0.5581501	0.7201539	329.401
53000	52684.4	270.00	0.5410122	0.6980418	329.401
53250	52930.8	270.00	0.5244019	0.6766102	329.401
53500	53177.3	270.00	0.5083027	0.6558383	329.401
53750	53423.7	270.00	0.4926990	0.6357056	329.401
54000	53670.1	270.00	0.4775755	0.6161924	329.401
54250	53916.5	270.00	0.4629172	0.5972796	329.401
54500	54162.8	270.00	0.4487100	0.5789887	329.401
54750	54409.2	270.00	0.4349399	0.5611818	329.401
55000	54655.5	270.00	0.4215938	0.5439614	329.401
55250	54901.8	269.50	0.4086656	0.5282337	329.096
55500	55148.0	268.50	0.3960820	0.5138743	328.885
55750	55394.3	267.50	0.3838220	0.4998551	327.872
56000	55640.5	266.50	0.3718178	0.4861682	327.258
56250	55886.8	265.50	0.3603403	0.4728097	326.644
56500	56133.0	264.50	0.3490828	0.4597702	326.029
56750	56379.2	263.50	0.3381371	0.4470443	325.412
57000	56625.3	262.50	0.3274958	0.4346249	324.794
57250	56871.5	261.50	0.3171515	0.4225063	324.175
57500	57117.6	260.50	0.3070968	0.4106831	323.553
57750	57363.7	259.50	0.2973250	0.3991463	322.932
58000	57609.8	258.50	0.2878238	0.3878925	322.310
58250	57855.8	257.50	0.2786015	0.3769158	321.686
58500	58101.9	256.50	0.2696366	0.3662095	321.060
58750	58347.9	255.50	0.2609275	0.3557681	320.434
59000	58593.9	254.50	0.2524678	0.3455861	319.806
59250	58839.9	253.50	0.2442513	0.3356580	319.177
59500	59085.8	252.50	0.2362719	0.3258784	318.547
59750	59331.8	251.80	0.2285282	0.3161711	318.105
60000	59577.8	251.05	0.2210177	0.3066837	317.631
60250	59823.7	250.30	0.2137331	0.2974740	317.156
60500	60068.6	249.55	0.2066684	0.2885039	316.681
60750	60315.5	248.80	0.1998175	0.2797830	316.205
61000	60561.3	248.05	0.1931744	0.2712983	315.728
61250	60807.2	247.30	0.1867339	0.2630493	315.250
61500	61053.0	246.55	0.1804898	0.2550268	314.772

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	$g\,m^{-3}$	$m\,sec^{-1}$
61750	61298.8	245.80	0.1744369	0.2472263	314.292
62000	61548.6	245.05	0.1685699	0.2396822	313.813
62250	61790.3	244.30	0.1628835	0.2322693	313.332
62500	62036.1	243.55	0.1573728	0.2251032	312.851
62750	62281.8	242.80	0.1520328	0.2181357	312.369
63000	62527.5	242.05	0.1468587	0.2113668	311.886
63250	62773.2	241.30	0.1418458	0.2047846	311.402
63500	63018.9	240.55	0.1369896	0.1983903	310.918
63750	63264.5	239.80	0.1322857	0.1921771	310.433
64000	63510.1	239.05	0.1277298	0.1861405	309.947
64250	63755.7	238.30	0.1233172	0.1802758	309.460
64500	64001.3	237.55	0.1190443	0.1745789	308.973
64750	64246.9	236.80	0.1149070	0.1690452	308.485
65000	64492.5	236.05	0.1108013	0.1636707	307.996
65250	64738.0	235.30	0.1070235	0.1584512	307.506
65500	64983.5	234.55	0.1032699	0.1533827	307.016
65750	65229.0	233.80	0.0996368	0.1484613	306.525
66000	65474.5	233.05	0.0961207	0.1436831	306.033
66250	65719.9	232.30	0.0927182	0.1390445	305.540
66500	65965.4	231.55	0.0894250	0.1345417	305.046
66750	66210.8	230.80	0.0862407	0.1301711	304.552
67000	66456.2	230.05	0.0831598	0.1259298	304.056
67250	66701.6	229.30	0.0801789	0.1218131	303.560
67500	66946.9	228.55	0.0772961	0.1178188	303.064
67750	67192.3	227.80	0.0745083	0.1139443	302.566
68000	67437.6	227.05	0.0718125	0.1101835	302.067
68250	67682.9	226.30	0.0692060	0.1065362	301.568
68500	67928.2	225.55	0.0666861	0.1029985	301.068
68750	68173.4	224.80	0.0642502	0.0995673	300.567
69000	68418.7	224.05	0.0618958	0.0962397	300.065
69250	68663.9	223.30	0.0596204	0.0930131	299.562
69500	68909.1	222.55	0.0574215	0.0898846	299.059
69750	69154.3	221.80	0.0552969	0.0868515	298.555
70000	69399.5	221.05	0.0532443	0.0839113	298.049
70250	69644.6	220.30	0.0512616	0.0810614	297.543
70500	69889.8	219.55	0.0493461	0.0782992	297.036
70750	70134.9	218.80	0.0474963	0.0756225	296.529
71000	70380.0	218.05	0.0457100	0.0730287	296.020
71250	70625.1	217.30	0.0439852	0.0705156	295.510
71500	70870.1	216.55	0.0423200	0.0680810	295.000
71750	71115.1	215.80	0.0407125	0.0657226	294.489
72000	71360.2	215.05	0.0391609	0.0634383	293.977
72250	71605.2	214.49	0.0376641	0.0611729	293.598
72500	71850.1	213.97	0.0362211	0.0589721	293.237
72750	72095.1	213.45	0.0348301	0.0568456	292.88[illegible]
73000	72340.1	212.93	0.0334894	0.0547910	292.524
73250	72585.0	212.41	0.0321978	0.0528061	292.147
73500	72829.9	211.89	0.0309523	0.0508887	291.809
73750	73074.8	211.37	0.0297526	0.0490365	291.450
74000	73319.6	210.85	0.0285967	0.0472476	291.092
74250	73564.5	210.33	0.0274831	0.0455200	290.733
74500	73809.3	209.81	0.0264103	0.0438514	290.373
74750	74054.1	209.29	0.0253770	0.0422405	290.013
75000	74298.9	208.77	0.0243817	0.0406850	289.652
75250	74543.7	208.25	0.0234233	0.0391833	289.291
75500	74788.4	207.73	0.0225003	0.0377335	288.930
75750	75033.2	207.21	0.0216116	0.0363341	288.568
76000	75277.9	206.69	0.0207559	0.0349833	288.206
76250	75522.6	206.17	0.0199322	0.0336797	287.843
76500	75767.3	205.65	0.0191392	0.0324216	287.480
76750	76011.9	205.13	0.0183760	0.0312076	287.116
77000	76256.5	204.61	0.0176414	0.0300362	286.752
77250	76501.2	204.09	0.0169345	0.0289061	286.387
77500	76745.8	203.57	0.0162543	0.0278159	286.022
77750	76990.3	203.05	0.0155998	0.0267643	285.657
78000	77234.9	202.53	0.0149702	0.0257499	285.291
78250	77479.5	202.01	0.0143645	0.0247716	284.924
78500	77724.0	201.49	0.0137818	0.0238282	284.557
78750	77968.5	200.97	0.0132214	0.0229185	284.190
79000	78213.0	200.45	0.0126825	0.0220413	283.822
79250	78457.4	199.93	0.0121643	0.0211957	283.454
79500	78701.9	199.41	0.0116660	0.0203805	283.085
79750	78946.3	198.89	0.0111870	0.0195947	282.715
80000	79190.7	198.50	0.0107266	0.0188252	282.430

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

STATION	ELEVATION (MSL) meters	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	THERMODYNAMIC QUANTITIES
FAIRBANKS, ALASKA	134	64°49' N	147°52' W	JAN 1961 - DEC 1966	FORT GREELY MISSILE RANGE LAUNCH SITE
LAUNCH SITE-FT GREELY	392	63°59' N	145°43' W	UNITS: SEE COLUMN HEADINGS	

ALT GEOMETRIC	HEIGHT GEOPOTENTIAL	TEMPERATURE	PRESSURE	DENSITY	SPEED OF SOUND
meters	meters	degrees K	mb	g m-3	m sec-1
80250	79835.1	198.50	0.0102848	0.0180498	282.438
80500	79679.5	198.50	0.0098612	0.0173064	282.438
80750	79523.9	198.50	0.0094551	0.0165937	282.438
81000	80168.2	198.50	0.0090657	0.0159106	282.438
81250	80412.5	198.50	0.0086924	0.0152552	282.438
81500	80656.8	198.50	0.0083345	0.0146271	282.438
81750	80901.1	198.50	0.0079914	0.0140249	282.438
82000	81145.3	198.50	0.0076624	0.0134475	282.438
82250	81389.6	198.50	0.0073470	0.0128940	282.438
82500	81633.8	198.50	0.0070446	0.0123632	282.438
82750	81878.0	198.50	0.0067546	0.0118546	282.438
83000	82122.2	198.50	0.0064766	0.0113665	282.438
83250	82366.4	198.50	0.0062101	0.0108988	282.438
83500	82610.5	198.50	0.0059546	0.0104503	282.438
83750	82854.6	198.50	0.0057096	0.0100203	282.438
84000	83098.7	198.50	0.0054747	0.0096081	282.438
84250	83342.8	198.50	0.0052494	0.0092128	282.438
84500	83586.9	198.50	0.0050335	0.0088338	282.438
84750	83830.9	198.50	0.0048265	0.0084705	282.438
85000	84075.0	198.50	0.0046280	0.0081221	282.438
85250	84319.0	198.50	0.0044376	0.0077880	282.438
85500	84563.0	198.50	0.0042551	0.0074678	282.438
85750	84807.0	198.50	0.0040802	0.0071607	282.438
86000	85050.9	198.50	0.0039128	0.0068662	282.438
86250	85294.9	198.50	0.0037515	0.0065839	282.438
86500	85538.8	198.50	0.0035973	0.0063133	282.438
86750	85782.7	198.50	0.0034494	0.0060537	282.438
87000	86026.6	198.50	0.0033076	0.0058049	282.438
87250	86270.4	198.50	0.0031717	0.0055663	282.438
87500	86514.3	198.50	0.0030413	0.0053375	282.438
87750	86758.1	198.50	0.0029163	0.0051182	282.438
88000	87001.9	198.50	0.0027965	0.0049079	282.438
88250	87245.7	198.50	0.0026816	0.0047062	282.438
88500	87489.5	198.50	0.0025714	0.0045129	282.438
88750	87733.2	198.50	0.0024658	0.0043275	282.438
89000	87976.9	198.50	0.0023645	0.0041497	282.438
89250	88220.6	198.50	0.0022674	0.0039792	282.438
89500	88464.3	198.50	0.0021742	0.0038158	282.438
89750	88708.0	198.50	0.0020849	0.0036591	282.438
90000	88951.7	198.50	0.0019993	0.0035088	282.438

IRIG RANGE REFERENCE ATMOSPHERE, JANUARY

TABLE II.1.1

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49'N	147° 52'W	1960 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59'N	145° 43'W	UNITS: WIND SPEED-m/sec	

ALT (km) MSL	NO. OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	46	8.4	314		9.0	11.3	20.6	27.3	32.0	44.5	52.2	67.4	68.0	68.3	68.6	285
26.0	46	10.7	313		11.0	15.3	21.6	26.0	35.0	45.5	53.7	69.7	71.0	73.7	74.5	289
27.0	46	13.1	314		13.1	17.2	23.3	29.5	37.0	44.8	54.7	70.7	74.0	75.4	75.8	289
28.0	47	16.9	320		18.1	21.2	23.7	32.8	39.8	45.6	58.3	75.3	76.0	76.4	76.8	287
29.0	44	19.9	320		20.1	23.4	25.8	38.0	39.8	50.0	59.2	75.6	78.4	78.7	78.9	288
30.0	48	19.7	60		22.0	22.7	26.4	37.0	43.3	58.5	64.2	73.6	77.9	82.6	83.1	294
31.0	47	17.0	82		22.1	24.4	27.7	37.4	45.3	58.1	65.3	77.9	81.9	88.4	88.7	296
32.0	48	16.2	68		22.1	24.5	28.8	38.5	46.0	62.0	71.2	77.6	88.0	96.6	97.2	297
33.0	48	17.9	70		22.1	24.4	30.8	40.4	48.3	64.0	71.2	80.6	93.9	104.6	105.1	298
34.0	49	9.4	79		22.4	23.4	33.9	41.0	49.7	64.3	73.2	82.6	99.9	105.6	106.8	300
35.0	44	.6	79		22.0	22.7	31.8	40.0	49.5	67.5	75.6	84.6	105.9	106.6	107.8	302
36.0	49	.5	81			21.5	29.0	40.3	48.8	65.9	79.1	87.6	106.9	107.6	108.2	306
37.0	48	20.5	290		20.5	21.4	29.8	40.0	51.0	67.0	78.2	88.6	109.0	111.3	111.4	310
38.0	48	21.5	303		21.5	26.4	30.9	41.0	49.5	67.5	79.2	96.3	97.0	110.5	111.0	310
39.0	49	10.3	277		21.1	26.5	29.5	39.1	48.5	66.8	81.1	93.6	105.9	109.3	109.5	311
40.0	49	8.5	222		19.1	21.5	26.9	37.1	44.8	70.8	83.1	98.6	106.9	114.3	114.6	2
41.0	48	10.8	223			21.4	30.3	38.0	52.0	71.0	84.2	104.3	105.0	121.5	121.9	3
42.0	48	7.3	312		10.1	20.4	27.8	39.0	53.0	74.0	88.5	109.3	110.0	126.6	127.1	3
43.0	48	8.7	307			20.4	26.8	41.5	51.5	74.5	96.2	108.6	113.0	131.8	132.4	2
44.0	48	9.8	345		13.1	16.4	21.8	34.3	52.0	73.0	92.2	103.8	117.9	137.7	138.3	3
45.0	46	14.8	308				17.6	30.5	50.0	72.8	94.4	99.7	119.0	143.6	144.2	3
46.0	46	11.1	307		12.0	16.3	17.8	28.5	45.0	72.5	92.4	97.7	115.0	149.6	150.1	4
47.0	46	14.7	240			16.3	20.8	29.3	44.0	70.5	94.4	100.0	111.0	140.6	141.1	3
48.0	46	16.1	278		16.2	16.7	17.8	26.5	43.0	71.5	102.4	103.0	108.0	131.4	131.7	1
49.0	44	4.1	220		13.0	15.1	16.2	24.0	42.0	68.0	97.6	105.4	106.0	122.5	122.9	350
50.0	44	7.4	40		10.0	16.1	17.4	22.0	34.0	64.0	93.5	104.3	108.0	116.6	117.1	356
51.0	41	8.6	355			10.1	15.1	23.3	38.8	58.8	83.0	107.0	115.1	115.6	115.9	350
52.0	39	3.9	239			7.0	11.0	20.8	42.3	67.3	79.5	105.1	118.1	118.7	119.2	352
53.0	34	1.3	317			5.7	11.4	26.5	43.5	69.8	82.6	104.3	112.2	112.4	112.9	352
54.0	32	7.9	311			10.3	13.1	18.5	37.0	61.0	80.9	98.0	105.2	105.6	105.9	347
55.0	28	12.1	253			12.2	12.9	17.0	28.0	61.5	81.2	107.6	108.2	108.5	108.6	354
56.0	19	10.1	234					15.4	25.5	50.3	66.1	110.0	110.4	110.5	110.6	358
57.0	13	11.1	214				11.3	18.1	19.5	50.8	61.7	102.9	102.4	102.5	102.6	359
58.0	11	9.1	244				12.1	12.9	21.5	53.3	56.9	86.0	86.7	86.9	87.0	357
59.0	9	15.8	314					16.3	30.5	58.8	71.1	71.3	71.4	71.5	71.5	354
60.0	6	18.4	53					19.5	22.0	55.5	67.2	67.6	67.8	67.6	67.6	0
61.0	4	27.8	290					28.0	30.0	36.0	78.5	78.7	78.8	78.8	78.9	2
62.0	2	38.1	275						38.0	40.4	40.7	40.8	40.9	40.9	40.9	257

IRIG RANGE REFERENCE ATMOSPHERE, FEBRUARY TABLE II. I. 2

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49'N	147° 52' W	1962 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED-m/sec	

ALT. (km) MSL	NO. OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	68	1.4	104		1.5	2.5	3.6	8.0	18.8	27.5	34.4	41.6	43.5	44.3	45.0	315
26.0	69	1.3	328		1.6	2.5	4.0	9.8	19.5	28.7	37.8	44.6	46.[illegible]	48.4	49.2	286
27.0	70	0.3	27		1.8	1.8	4.7	10.5	21.3	30.3	41.0	47.3	52.4	54.2	54.8	290
28.0	70	1.8	34			3.5	5.0	10.9	22.3	31.3	44.0	46.5	52.4	54.4	55.5	293
29.0	72	1.8	275			4.3	6.6	11.4	24.0	34.0	47.4	50.9	53.4	56.2	56.6	287
30.0	72	2.4	32		2.6	4.6	7.7	13.5	24.0	37.0	48.8	51.6	55.4	57.3	58.2	292
31.0	73	0.6	245		3.7	4.8	8.4	13.8	26.5	37.4	48.7	53.4	57.3	61.2	61.6	297
32.0	75	2.1	254		4.7	5.0	9.8	14.6	29.3	37.6	48.5	56.3	60.3	62.3	63.4	300
33.0	75	4.6	340			7.8	9.8	14.0	30.1	39.6	51.5	55.3	63.2	63.4	64.3	316
34.0	75	3.8	51		4.7	6.8	11.2	15.9	30.2	41.1	50.2	59.3	63.3	65.3	66.3	319
35.0	75	3.3	116			9.4	10.9	14.8	29.8	48.3	52.3	59.1	60.3	64.2	64.9	322
36.0	75	2.2	2		4.4	6.4	10.5	18.8	30.3	46.1	55.3	60.1	60.8	65.2	66.0	327
37.0	74	3.9	265			4.3	10.4	18.8	31.2	44.5	60.6	62.3	69.3	70.3	71.0	328
38.0	73	4.5	154		4.6	6.7	8.5	20.0	31.3	48.8	61.9	65.7	71.3	81.4	82.3	360
39.0	72	1.5	179		5.6	6.0	9.6	19.7	29.5	47.6	60.8	68.0	71.4	93.2	93.8	349
40.0	72	2.3	74		2.6	6.3	10.1	19.0	28.5	47.5	59.0	73.0	76.4	101.4	102.3	360
41.0	71	3.6	1			4.8	10.8	18.4	33.5	51.1	58.0	78.9	83.4	109.9	109.8	2
42.0	71	1.9	333		2.6	6.8	13.5	19.3	33.6	47.6	61.9	83.8	88.4	115.3	116.1	4
43.0	70	4.1	262		5.3	8.3	13.0	16.8	34.5	48.3	68.0	88.8	93.4	128.3	120.9	6
44.0	68	4.7	43		5.8	10.4	12.5	16.0	36.4	49.3	68.2	79.6	97.5	125.3	126.0	8
45.0	68	2.5	336		3.5	10.1	11.3	18.0	35.0	47.0	70.1	77.4	98.7	132.5	133.4	8
46.0	68	4.2	12		5.3	7.4	10.8	17.0	34.0	50.0	69.1	76.4	102.5	141.2	141.9	5
47.0	68	4.5	6		4.2	6.8	9.0	18.0	34.5	47.0	68.1	78.4	106.5	145.4	146.4	8
48.0	65	4.9	2		6.8	8.9	11.5	18.6	33.5	49.3	61.5	81.8	112.5	142.5	143.4	9
49.0	64	5.8	340			8.2	12.8	20.0	35.0	51.0	64.4	88.8	118.5	133.4	134.1	9
50.0	63	7.2	360			9.2	13.3	21.9	34.2	51.3	67.7	85.0	109.6	116.3	116.9	8
51.0	61	7.5	351			9.5	12.1	20.1	35.5	49.8	68.9	92.0	98.4	103.5	104.2	8
52.0	60	1.6	315		4.4	7.0	10.8	19.5	32.0	54.0	71.0	85.0	97.4	101.5	102.4	9
53.0	59	8.2	304		8.3	11.0	13.5	21.8	32.8	52.3	73.1	94.1	98.7	100.2	100.6	11
54.0	54	7.2	300		9.2	10.7	12.7	19.5	32.0	54.5	68.6	86.3	90.8	103.3	103.7	17
55.0	48	6.4	313		8.0	7.2	10.7	18.0	36.0	51.0	63.6	70.8	88.0	107.6	108.0	19
56.0	34	2.5	354			5.4	8.4	15.5	28.0	46.5	63.6	65.7	103.2	103.6	104.0	19
57.0	26	5.3	338			5.3	8.5	20.5	31.5	45.5	67.4	73.7	96.5	96.9	97.2	21
58.0	20	5.9	295				8.0	16.5	31.0	38.5	46.0	55.0	88.3	88.4	88.5	25
59.0	18	6.6	351				8.8	15.5	23.0	32.8	40.2	88.1	86.9	87.2	87.5	30
60.0	12	6.8	60				7.2	10.0	16.0	30.0	32.9	87.4	87.7	87.9	88.0	35
61.0	11	8.6	45						30.5	37.3	31.0	74.5	74.0	75.1	75.2	41
62.0	9	1.7	45					8.6	21.5	27.8	52.1	52.4	52.6	52.7	52.7	51
63.0	6	18.0	51					19.0	26.0	39.0	39.4	39.8	39.6	39.4	39.7	43
64.0	3	18.4	41						30.5	42.3	42.9	43.1	43.2	43.2	43.3	46
65.0	1	44.0	87												46.4	47
66.0	1	50.4	89												50.4	89
67.0	1	54.0	90												54.0	90

IRIG RANGE REFERENCE ATMOSPHERE, MARCH

TABLE II.1.3

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49'N	147° 52'W	1962 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59'N	145° 43'W	UNITS: WIND SPEED-m/sec	

ALT (km) MSL	NO OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	82	1.5	28		1.4	1.4	2.7	4.0	10.0	24.8	37.8	52.0	55.6	57.2	58.3	287
26.0	82	0.0	0		0.0	1.4	2.4	4.8	10.7	25.3	38.0	48.0	55.1	55.8	56.4	280
27.0	82	0.0	0		0.0	2.0	3.1	4.5	13.0	26.8	39.8	48.0	54.1	56.2	57.1	290
28.0	83	1.4	340		1.4	2.4	3.4	6.0	12.0	28.1	43.7	49.0	55.1	56.1	56.7	282
29.0	84	1.3	140		1.4	1.8	3.1	7.3	14.0	29.0	46.3	50.8	55.1	57.1	57.9	285
30.0	84	1.0	0			3.0	3.4	8.0	14.0	31.0	45.4	52.8	56.5	55.9	57.2	357
31.0	84	2.0	291			3.1	4.2	7.3	13.8	32.0	43.8	51.8	59.1	54.1	64.6	359
32.0	85	1.3	130		1.8	2.4	3.4	7.7	14.8	32.8	45.2	48.8	62.0	62.7	63.9	5
33.0	84	1.2	86		2.0	3.1	4.8	7.8	14.0	33.3	45.7	50.4	62.0	59.1	69.7	9
34.0	85	0.8	180		1.0	3.1	4.8	8.1	14.8	32.4	44.5	51.8	63.1	65.2	66.1	4
35.0	84	2.8	80			3.8	5.3	9.5	17.1	31.4	44.3	52.8	63.0	63.8	64.3	6
36.0	84	0.8	284		1.0	3.1	4.5	9.4	19.2	32.8	45.5	49.8	60.1	62.2	63.5	9
37.0	85	0.3	174		0.0	2.8	5.3	9.8	18.2	33.3	40.5	49.8	57.1	58.2	59.1	10
38.0	84	1.0	147		1.0	3.4	5.5	11.3	19.0	31.0	43.8	44.8	55.1	57.1	57.8	20
39.0	83	2.4	101		2.0	4.5	5.5	11.0	20.4	32.4	43.7	49.0	57.1	60.2	61.1	9
40.0	82	4.3	360		4.4	4.8	5.6	10.8	20.5	30.3	41.0	43.5	55.1	56.1	56.8	22
41.0	82	3.8	42		4.4	5.4	7.2	9.0	21.7	30.0	37.0	45.0	49.1	54.2	55.3	23
42.0	82	4.0	342			5.4	7.1	11.3	23.2	33.1	40.4	44.0	51.1	53.1	53.5	22
43.0	82	2.7	352		4.0	6.2	7.1	11.5	22.0	32.2	44.8	49.0	53.1	58.2	59.1	78
44.0	81	2.0	54		3.8	5.5	8.0	11.1	20.0	31.0	46.5	52.5	59.2	60.1	60.5	245
45.0	79	2.9	92			4.0	6.6	12.0	23.3	32.6	46.5	53.5	63.2	67.2	68.1	120
46.0	74	0.1	90		2.3	3.0	6.0	13.0	23.3	33.4	50.1	55.1	63.2	73.1	73.7	119
47.0	74	1.9	90			3.0	9.2	14.5	22.8	35.3	51.4	55.4	63.2	66.2	67.1	118
48.0	77	3.1	334		3.4	4.4	9.4	14.8	21.0	35.0	54.2	57.6	60.6	62.3	63.4	245
49.0	76	2.6	284		3.7	4.0	8.5	14.0	21.0	35.5	49.4	57.4	60.3	63.4	64.5	259
50.0	73	3.8	294			4.7	9.2	14.5	22.8	34.4	52.4	59.4	64.3	67.2	67.7	253
51.0	69	4.5	333		5.3	6.2	10.4	16.0	23.0	38.5	50.1	57.6	68.5	70.3	71.0	257
52.0	67	4.7	133			6.7	10.0	15.4	23.8	39.4	50.7	56.7	70.5	71.5	72.5	259
53.0	62	3.2	137		4.4	6.1	7.4	13.5	24.0	37.5	55.8	63.0	71.6	72.6	73.5	260
54.0	53	4.3	133		4.8	5.7	7.3	11.1	21.3	32.8	46.7	59.4	66.8	74.2	74.5	242
55.0	46	1.9	270		5.0	7.1	7.8	9.0	19.2	38.4	53.5	59.4	66.0	67.5	67.9	35
56.0	36	6.2	352			8.8	9.5	13.3	21.0	40.0	56.4	60.2	62.2	62.4	62.9	265
57.0	30	4.0	360			7.4	10.0	12.3	20.0	37.5	47.0	65.8	67.5	68.0	69.4	273
58.0	24	5.1	360			5.2	6.2	9.5	18.0	29.0	53.4	61.8	62.4	63.1	63.4	279
59.0	14	3.9	284				5.9	7.9	19.5	35.3	55.1	59.0	59.4	59.5	59.6	291
60.0	12	4.6	104				6.2	8.0	14.0	20.0	45.8	47.8	47.8	48.0	48.2	355
61.0	4	9.0	324					9.0	13.0	14.5	25.1	25.3	25.5	25.5	25.6	12
62.0	4	14.9	80						15.0	18.0	20.0	21.0	21.2	21.2	21.3	99
63.0	2	14.5	82						14.0	14.7	17.0	17.2	17.2	17.3	17.3	110
64.0	1	22.9	324												22.9	129

IRIG RANGE REFERENCE ATMOSPHERE, APRIL

TABLE II. I. 4

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49'N	147° 52'W	1961 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59'N	145° 43'W	UNITS: WIND SPEED-m/sec	

ALT. (km) MSL	NO. OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	70	0.0	0		0.4	1.9	2.0	3.9	9.2	9.4	18.0	24.8	25.7	28.2	29.7	301
26.0	70	0.0	0		1.1	1.4	2.8	5.8	7.0	11.9	20.0	24.8	25.7	29.2	29.7	299
27.0	70	0.7	90			1.9	2.4	4.9	4.9	12.8	21.0	25.8	27.9	28.0	28.5	302
28.0	69	1.4	212		1.8	1.4	3.0	4.4	9.8	12.7	21.1	22.0	27.7	30.4	31.4	287
29.0	69	0.5	90		1.1	1.8	2.8	4.8	9.4	18.0	20.4	26.4	28.0	33.2	33.7	305
30.0	69	0.3	90		0.4	1.7	3.0	4.8	10.8	16.6	22.0	28.4	31.4	32.9	32.9	93
31.0	64	0.9	90		1.6	2.8	3.8	4.0	11.8	16.0	25.1	28.0	33.7	34.2	34.5	90
32.0	69	0.0	0		1.6	3.2	3.7	6.9	12.4	17.4	22.1	30.9	36.4	37.9	38.9	311
33.0	69	0.0	0		1.1	3.1	3.7	6.7	12.8	17.4	22.5	27.6	36.4	37.9	37.9	312
34.0	69	0.3	0		0.9	3.2	4.2	6.8	12.8	18.2	21.7	25.0	34.7	35.2	35.6	95
35.0	68	0.9	244		1.4	2.9	3.0	6.9	13.9	18.5	22.4	27.6	33.2	33.6	34.0	96
36.0	67	0.0	0		1.9	2.1	2.7	5.0	12.9	18.1	23.9	27.7	31.4	32.2	32.7	99
37.0	67	0.0	0		0.8	1.7	3.3	6.2	12.3	18.1	22.4	24.7	30.6	33.4	34.1	99
38.0	66	0.9	153		1.8	2.9	3.0	7.5	13.0	17.0	23.9	26.7	33.4	37.4	38.3	12
39.0	66	0.9	4		1.9	2.3	3.0	7.4	12.8	17.8	23.4	29.7	31.7	54.5	55.4	10
40.0	66	2.6	219			3.4	4.8	7.1	12.2	17.0	21.3	25.7	33.8	54.3	56.8	14
41.0	66	0.4	346		1.9	3.1	3.0	6.8	11.7	17.3	22.7	29.1	36.4	49.4	50.3	26
42.0	64	2.2	72		2.2	2.4	3.4	7.0	11.3	15.0	22.2	28.4	33.8	44.2	48.4	40
43.0	63	0.0	0		2.1	2.4	3.3	6.3	10.3	16.1	20.0	24.0	27.4	38.3	38.4	41
44.0	63	0.0	0			2.4	3.7	6.0	11.0	14.1	19.7	24.4	25.4	31.4	32.3	72
45.0	61	3.0	90			2.3	3.0	5.7	10.8	15.0	19.0	23.3	23.0	24.8	25.4	287
46.0	61	2.0	90		2.1	2.4	3.4	6.4	10.8	15.4	19.4	21.0	24.4	25.3	25.8	289
47.0	61	2.0	90				2.5	6.8	10.0	14.7	20.3	21.0	25.4	25.5	27.2	100
48.0	60	1.8	108			2.3	4.3	6.0	10.0	14.3	21.0	24.8	26.4	29.3	29.4	102
49.0	59	0.2	315		0.3	3.0	4.4	6.0	10.7	18.1	20.8	27.1	30.2	30.5	30.7	71
50.0	59	1.4	113		1.4	2.0	3.8	5.0	11.2	17.8	23.1	28.3	31.7	35.4	37.4	90
51.0	57	0.0	0		1.1	1.9	3.8	6.6	11.3	17.0	24.2	28.2	32.7	35.4	35.9	96
52.0	57	0.0	0		1.3	2.4	4.3	7.1	12.8	17.0	24.3	27.0	32.7	33.8	34.1	123
53.0	56	0.0	0		2.3	3.8	6.8	8.1	11.5	18.0	24.4	27.4	30.7	34.3	34.7	139
54.0	54	0.0				0.7	5.4	9.3	14.0	18.4	22.0	28.7	31.5	31.9	32.2	144
55.0	51	0.0				1.3	4.1	8.2	13.9	18.6	24.0	28.7	29.8	34.7	35.4	132
56.0	42	0.0	0			4.1	5.4	9.5	14.3	20.5	25.0	28.4	30.1	30.7	31.3	270
57.0	36	3.8	111			6.4	7.4	10.5	14.3	20.5	27.7	28.4	34.2	34.7	35.1	90
58.0	26	6.9	118			7.2	7.8	9.4	14.0	20.5	29.4	32.7	33.8	33.9	34.2	144
59.0	20	9.6	100				6.0	9.0	16.4	20.0	26.0	30.0	39.3	39.5	39.6	140
60.0	14	6.8	145				8.4	10.0	15.0	22.4	28.4	29.3	29.0	30.3	30.5	113
61.0	14	9.7	177				6.5	9.8	16.4	22.3	32.3	32.8	33.0	33.1	33.2	116
62.0	11	4.5	117				8.1	11.4	14.9	19.3	24.0	31.8	31.8	32.0	32.1	110
63.0	8	9.4	94					10.0	18.0	16.0	40.2	40.4	40.8	40.9	41.0	105
64.0	8	7.1	90					10.4	14.0	15.0	49.0	49.7	49.0	49.0	50.0	104
65.0	3	11.6	204						14.4	19.3	19.8	20.0	20.1	20.1	20.2	122
66.0	3	12.0	169						19.3	30.2	30.7	30.0	30.0	30.0	31.0	112
67.0	2	18.6	111												18.8	139
68.0	1	23.4	126												23.4	126
69.0	1	30.6	119												30.6	119
70.0	1	31.5	117												31.5	117

IRIG RANGE REFERENCE ATMOSPHERE, MAY

TABLE II. 1. 5

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49'N	147° 52'W	1961 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59'N	145° 43'W	UNITS: WIND SPEED-m/sec	

ALT (km) MSL	NO OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	60	0.4	140		0.8	0.7	1.9	3.4	8.4	4.0	8.7	9.8	10.4	13.3	13.7	09
26.0	63	0.1	00		0.8	1.2	1.7	3.5	8.5	7.3	8.8	11.9	11.2	14.3	14.8	102
27.0	66	0.0	0			1.3	2.0	4.2	6.1	8.4	10.4	12.0	12.8	13.2	13.7	103
28.0	66	0.8	153		1.3	2.1	2.7	5.2	7.8	9.8	11.7	12.0	12.0	13.4	14.2	101
29.0	62	1.0	270			1.1	2.7	4.8	8.8	11.3	13.1	14.9	15.3	16.0	16.4	95
30.0	67	0.8	190			1.2	2.3	4.7	9.4	12.2	14.8	15.7	16.5	17.4	18.4	09
31.0	66	0.0	0			0.2	1.4	4.8	9.8	12.6	13.2	15.0	18.8	19.2	19.7	101
32.0	66	0.0	0		0.8	1.4	3.3	6.4	9.4	12.0	13.4	15.0	16.7	22.3	22.4	100
33.0	67	0.9	104			1.1	2.7	5.0	9.1	12.1	15.0	16.8	20.8	21.2	21.7	105
34.0	67	0.0	0		0.3	1.4	2.5	4.8	9.3	12.1	15.3	17.4	18.5	21.9	22.5	96
35.0	66	0.0	0		0.3	1.1	2.4	7.8	10.2	12.6	16.7	17.0	20.3	20.8	21.2	99
36.0	66	1.7	40			2.5	3.0	7.8	10.7	13.3	16.1	16.0	19.7	23.3	24.1	95
37.0	66	2.3	40		2.8	2.8	4.6	8.0	11.0	13.0	15.8	17.8	19.3	19.0	20.4	101
38.0	64	1.0	00		2.1	2.6	4.8	7.7	10.7	13.3	17.3	18.4	21.8	23.2	23.7	106
39.0	64	1.6	340			2.4	4.3	7.	11.2	13.8	16.8	19.8	20.8	23.3	24.1	95
40.0	67	1.5	03			2.4	4.6	6.6	11.1	13.0	17.4	18.2	19.8	23.2	23.5	02
41.0	67	1.0	280		2.1	2.4	3.8	6.6	10.8	14.1	16.8	19.8	21.4	22.3	23.0	90
42.0	67	1.8	195			2.7	4.2	7.8	11.3	14.1	17.2	20.7	23.2	23.5	23.8	90
43.0	-	2.7	110			3.1	4.2	7.7	10.6	14.1	18.8	21.4	24.3	26.0	27.4	09
44.0	[illegible]	3.0	270		3.8	4.3	4.0	9.4	1[illegible]	17.1	19.7	21.0	23.4	27.4	28.1	96
45.0	64	2.5	294		2.6	4.3	4.0	8.0	13.3	16.0	20.2	22.4	23.8	25.2	25.7	117
46.0	64	1.3	181		2.3	3.3	7.3	9.0	13.6	16.8	21.8	24.7	28.8	29.3	29.8	82
47.0	64	0.6	190		3.2	4.1	6.4	9.8	14.8	18.4	21.0	22.0	27.4	28.4	29.3	81
48.0	64	2.8	180		3.2	4.2	6.8	10.8	15.8	18.3	22.2	23.0	25.8	27.2	27.7	84
49.0	64	3.3	182		3.4	4.1	5.4	11.3	16.8	20.8	24.4	26.8	28.3	28.8	29.1	93
50.0	64	1.6	171			3.3	4.2	12.0	17.7	22.0	25.0	26.0	28.8	30.2	30.4	101
51.0	63	1.3	350		1.4	3.4	4.7	11.4	16.8	22.8	27.2	28.7	31.4	33.8	34.2	107
52.0	63	3.2	134			3.4	4.7	13.2	18.1	24.1	27.4	29.0	35.2	35.4	35.4	106
53.0	61	4.8	84			5.3	9.3	14.1	21.3	25.3	29.8	32.8	36.4	39.8	40.3	120
54.0	60	4.8	120			6.0	8.4	17.0	22.7	27.0	33.0	34.8	35.4	37.3	37.9	93
55.0	57	6.4	193		6.8	6.0	9.6	16.3	20.0	27.9	34.3	36.0	38.7	40.2	40.5	81
56.0	53	6.4	94		4.1	4.4	8.3	16.1	23.8	27.4	31.4	34.4	38.8	40.8	41.0	103
57.0	51	2.4	114		3.1	5.8	10.6	17.3	23.1	24.3	29.0	31.8	39.8	40.3	40.7	107
58.0	44	4.0	00		6.0	7.3	14.4	18.2	24.7	28.4	31.4	32.0	38.0	41.4	42.8	110
59.0	37	4.0	00			8.0	15.4	18.4	23.3	33.2	35.3	36.4	47.2	47.7	48.1	94
60.0	30	9.6	114			10.8	16.0	19.8	28.0	34.5	39.8	40.8	52.3	52.4	52.9	109
61.0	22	12.2	94			12.2	19.2	21.3	23.8	34.5	39.0	47.0	65.4	65.5	65.7	110
62.0	18	15.4	80				14.8	19.4	24.3	34.4	48.2	78.1	78.3	78.4	78.5	110
63.0	4	16.3	141					22.3	28.8	30.8	35.1	36.8	37.1	37.3	37.4	97
64.0	4	22.4	150					24.5	31.0	34.5	37.0	38.0	38.3	38.4	38.5	100
65.0	3	28.8	194						39.4	39.2	39.8	39.4	39.4	39.8	39.7	103
66.0	1	35.3	111												35.3	110
67.0	1	38.0	104												38.0	108
68.0	1	43.3	106												43.3	106
69.0	1	47.7	105												47.7	105
70.0	1	52.2	103												52.2	103

IRIG RANGE REFERENCE ATMOSPHERE, JUNE

TABLE II. I. 6

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1964 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED—m/sec	

ALT. (km) MSL	NO. OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	44	4.4	106		5.0	5.3	5.9	6.7	7.9	9.1	9.8	10.3	10.7	10.9	11.1	89
26.0	44	6.2	82		6.2	6.5	7.1	7.9	8.9	10.5	11.5	11.9	12.0	12.7	13.2	90
27.0	44	6.1	91		6.1	6.4	7.1	8.0	9.6	11.2	11.9	12.0	13.5	13.8	14.1	101
28.0	48	6.7	113			7.1	7.4	8.8	9.8	11.5	12.5	12.0	13.5	13.8	14.0	93
29.0	52	7.6	95				8.7	9.4	10.2	12.3	13.0	14.2	14.9	15.4	15.9	91
30.0	53	7.3	97		7.5	8.2	9.0	9.8	11.2	12.0	13.9	14.6	14.9	15.5	16.1	85
31.0	54	7.5	97		7.5	7.9	8.8	10.1	11.8	12.9	14.3	15.8	15.9	19.3	19.5	93
32.0	54	7.5	113		7.5	7.6	8.3	10.2	11.9	13.8	15.2	16.1	16.6	16.8	17.0	110
33.0	54	8.2	88			8.4	8.9	10.4	12.4	14.2	15.0	16.2	16.9	17.6	18.2	75
34.0	55	8.2	103		8.3	9.1	9.6	11.3	12.7	14.2	15.8	15.7	16.0	17.5	18.0	101
35.0	57	7.5	76		9.1	9.6	10.2	11.5	13.7	15.2	16.8	17.[illegible]	19.5	19.9	20.3	96
36.0	59	9.7	102				10.7	12.2	13.9	15.8	17.4	18.0	18.8	20.5	21.2	90
37.0	62	8.8	98			9.6	11.0	12.5	15.2	16.6	19.2	19.0	20.3	20.8	21.2	99
38.0	63	8.2	108		9.1	9.7	11.7	13.2	15.4	16.9	18.3	19.0	20.5	21.2	21.6	93
39.0	63	8.3	108		9.1	9.5	11.1	12.8	16.0	17.9	19.5	20.0	20.8	21.2	21.6	100
40.0	63	10.2	101			11.0	11.6	13.1	16.1	18.2	19.5	20.0	24.4	2[illegible].9	25.3	108
41.0	63	8.5	91		10.2	11.0	11.5	13.3	16.1	18.4	20.2	21.0	24.5	25.3	25.9	108
42.0	63	10.2	90		10.2	11.1	12.4	14.4	17.2	19.9	21.2	22.0	22.8	27.5	28.4	99
43.0	63	8.0	81		8.4	12.4	14.1	16.1	18.4	20.0	21.9	25.0	26.8	32.2	32.5	100
44.0	63	10.2	81		13.2	14.1	15.4	17.4	19.2	20.9	22.5	24.5	29.5	30.5	31.3	104
45.0	63	13.7	94		14.1	14.7	16.3	18.3	20.3	22.1	23.8	25.0	29.4	29.9	30.4	108
46.0	63	12.8	101		15.4	16.2	16.9	19.1	21.3	24.4	25.3	27.5	30.5	32.2	32.5	85
47.0	63	16.8	102		17.4	18.2	18.7	19.8	22.1	24.4	28.3	29.0	30.7	31.0	31.3	91
48.0	63	15.3	113		16.8	19.0	19.7	21.2	23.8	26.2	28.7	31.3	31.9	36.5	37.4	95
49.0	63	16.9	101		17.2	18.2	19.8	22.0	25.8	28.1	30.2	32.3	32.9	34.4	35.2	96
50.0	62	15.6	96		19.1	19.4	20.2	24.3	27.5	29.6	31.5	34.0	37.5	40.5	41.5	79
51.0	62	14.5	83		18.4	19.5	21.2	25.5	29.0	32.1	36.4	37.5	37.9	41.5	42.0	112
52.0	62	19.2	76		19.4	20.1	23.2	27.1	30.6	3[illegible].0	37.4	38.5	40.4	41.0	41.5	94
53.0	62	18.4	100		22.1	22.7	24.6	27.7	30.5	33.9	38.9	40.5	41.5	42.5	43.4	101
54.0	62	21.2	93		23.4	25.0	25.8	28.5	31.8	38.1	40.0	42.0	44.4	44.9	45.4	114
55.0	60	22.8	111		23.2	24.0	24.0	31.0	34.8	39.0	41.0	43.5	45.5	48.5	49.3	93
56.0	59	22.1	1.2			23.0	28.4	31.7	35.6	39.4	41.4	44.1	45.7	48.5	49.3	97
57.0	57	22.6	1.2		25.1	25.9	29.4	32.3	36.8	40.9	43.3	47.2	50.7	54.5	55.2	104
58.0	50	24.2	114		25.1	26.5	30.3	32.7	38.0	42.4	46.5	49.5	5[illegible].9	56.3	56.6	98
59.0	47	24.5	107			27.4	28.9	33.6	37.9	43.3	51.4	52.7	53.9	55.3	55.5	99
60.0	38	20.9	145			26.9	30.8	35.8	39.7	45.5	51.2	56.[illegible]	66.2	66.9	67.5	104
61.0	31	22.6	135			27.3	29.1	35.8	40.3	48.1	51.0	56.5	80.2	80.5	80.7	105
62.0	21	21.9	137			28.1	30.1	36.3	40.5	41.9	46.0	47.0	55.7	56.1	56.4	99
63.0	16	12.8	141				30.6	38.0	41.0	45.0	50.4	60.2	60.8	61.0	61.2	101
64.0	11	32.0	110				35.1	43.4	44.5	52.3	53.5	53.8	54.0	54.1	54.1	93
65.0	11	31.8	80				43.1	47.4	51.5	56.3	57.9	58.6	59.7	58.8	58.9	101
66.0	8	43.1	115					51.0	54.0	60.0	64.3	64.8	65.1	65.2	65.3	60
67.0	6	41.0	113					64.5	59.0	68.5	76.5	77.0	77.3	77.4	77.5	54
68.0	3	39.0	112						57.5	63.4	64.0	64.7	64.8	64.8	64.5	84
69.0	1	36.9	110												36.9	110
70.0	1	34.9	109												34.9	109

IRIG RANGE REFERENCE ATMOSPHERE, JULY

TABLE II. I. 7

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1960 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED–m/sec	

ALT. (km) MSL	NO. OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	44	1.9	153			2.1	2.8	4.5	6.4	7.0	8.8	9.8	12.0	13.7	14.2	98
26.0	48	2.7	138				3.4	5.5	6.9	8.7	9.9	11.3	12.0	15.3	15.5	92
27.0	49	3.0	135		3.1	3.7	5.1	6.0	7.3	9.0	10.0	10.0	11.0	12.6	13.1	105
28.0	54	4.3	80		4.5	5.1	5.7	7.2	8.5	9.7	11.6	13.2	13.0	14.5	15.1	105
29.0	55	5.2	90				5.5	7.3	8.8	10.2	12.2	13.4	13.0	15.5	17.0	102
30.0	59	5.6	91			6.2	6.7	8.3	9.4	10.5	11.8	12.5	13.7	15.2	15.5	99
31.0	63	5.8	84			7.0	7.4	8.5	9.6	10.7	12.0	13.0	14.5	14.3	15.8	94
32.0	65	6.1	112			6.6	7.4	8.7	10.2	11.5	12.8	14.3	14.8	16.5	17.4	95
33.0	66	5.0	140		5.5	6.7	7.9	9.2	10.5	12.3	14.1	14.7	15.5	16.3	16.8	81
34.0	66	6.6	115			7.3	7.9	9.2	10.8	13.3	14.9	15.6	16.5	18.5	19.4	89
35.0	68	8.3	108		6.5	7.7	9.2	9.9	11.4	15.0	16.4	16.0	18.5	20.2	20.5	104
36.0	69	7.4	104		8.1	8.6	9.4	10.8	12.8	15.7	17.5	18.0	18.9	19.2	19.3	103
37.0	69	8.0	91		8.1	8.5	9.3	10.8	13.5	16.3	17.6	18.3	19.3	19.9	20.4	109
38.0	70	7.4	99		7.5	8.8	9.4	11.2	13.6	16.4	18.5	19.1	19.5	19.8	20.0	105
39.0	70	6.7	93			8.3	9.4	10.9	14.0	16.5	18.5	19.0	20.5	20.9	21.2	111
40.0	71	7.3	121		8.2	8.9	9.5	11.4	15.2	17.4	19.2	19.9	20.5	21.0	21.3	104
41.0	71	8.2	85		8.6	9.8	10.6	12.9	15.5	18.6	19.9	20.5	21.4	23.3	23.9	90
42.0	71	9.7	90			11.1	11.7	14.3	16.9	19.4	20.7	21.7	22.7	23.1	23.4	104
43.0	71	8.2	91			10.2	11.6	14.2	18.1	20.4	21.7	22.5	23.2	23.7	24.1	101
44.0	69	8.4	102		10.6	11.5	13.0	15.9	18.6	20.5	23.0	24.2	24.8	26.2	26.7	98
45.0	69	11.6	98		12.3	13.5	14.6	16.7	19.4	22.5	24.0	26.8	28.5	28.8	29.1	92
46.0	69	10.1	91		13.2	13.8	14.6	17.7	20.7	23.5	26.4	27.5	29.2	29.7	30.1	94
47.0	67	11.1	113		12.6	17.2	17.5	19.1	21.9	25.2	27.5	29.8	29.9	30.4	31.2	103
48.0	67	13.0	102		14.5	17.2	18.3	20.3	23.5	26.6	29.7	30.8	33.5	34.2	34.7	110
49.0	67	12.6	108		15.5	17.1	19.1	21.1	24.2	27.3	30.5	31.8	33.7	37.2	37.6	98
50.0	67	15.9	129			16.2	19.3	21.5	25.0	28.3	31.3	33.7	36.5	39.5	40.4	104
51.0	67	13.8	136		15.5	17.2	19.2	22.9	27.0	30.3	33.5	36.7	38.6	39.0	39.3	91
52.0	64	13.3	108		15.5	16.7	20.8	24.5	29.5	32.5	36.2	38.4	39.2	39.6	39.9	100
53.0	65	12.8	100		18.2	19.3	22.5	26.6	30.5	34.3	36.8	39.2	39.8	40.1	40.3	109
54.0	64	16.2	94		17.5	21.2	23.6	27.5	31.8	35.9	38.9	40.5	40.9	43.4	44.0	92
55.0	64	19.3	96		21.5	23.5	24.6	28.0	33.2	38.0	40.9	43.0	47.4	47.9	48.4	95
56.0	62	22.4	98		22.7	26.1	28.2	29.5	36.1	39.3	43.4	45.0	46.5	47.3	47.7	107
57.0	60	23.4	98		24.4	26.0	28.3	33.0	39.0	40.9	45.3	47.0	49.4	50.0	50.4	115
58.0	56	18.9	122		20.3	28.8	30.2	33.7	39.4	43.3	46.5	49.2	50.7	52.3	52.8	93
59.0	51	20.0	88		28.2	31.2	32.1	35.7	39.9	44.5	47.6	50.5	53.8	59.5	60.0	117
60.0	43	20.1	84			27.2	32.2	36.9	41.2	45.5	48.4	49.0	69.0	69.7	70.2	106
61.0	32	26.1	116			28.5	31.1	35.0	40.8	45.3	49.4	50.3	50.8	51.1	51.3	111
62.0	22	30.7	121			31.1	34.2	37.5	40.7	45.8	48.9	50.0	53.5	53.8	54.0	91
63.0	11	31.6	120				35.1	39.4	45.5	50.3	51.4	57.4	57.7	57.8	57.9	93
64.0	5	45.1	101					47.5	51.0	55.5	61.3	61.6	61.7	61.8	61.9	95
65.0	2	50.0	99						50.0	65.4	65.7	65.8	65.8	65.9	65.9	97

IRIG RANGE REFERENCE ATMOSPHERE, AUGUST

TABLE II. I. 8

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1960 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED-m/sec	

ALT. (km) MSL	NO OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	45	0.0				0.1	1.1	2.1	3.8	4.8	6.4	6.8	7.0	8.3	8.5	168
26.0	45	0.0				0.2	1.2	2.2	3.8	5.3	7.5	8.8	12.0	13.8	14.4	108
27.0	47	0.6	180				1.3	2.5	4.2	5.[illegible]	8.7	9.8	12.9	19.5	19.9	127
28.0	48	0.1	297			0.4	1.5	3.0	4.1	6.2	8.6	9.6	10.0	10.3	10.4	107
29.0	49	0.4	114		0.4	0.7	1.3	2.5	4.4	6.8	8.0	9.3	9.9	10.3	10.6	95
30.0	49	0.2	180			0.4	1.0	2.6	4.4	6.3	8.0	8.6	9.0	9.5	10.1	98
31.0	49	0.7	270				1.3	2.5	5.1	7.0	8.4	9.3	9.9	13.5	13.9	91
32.0	49	0.2	324		0.2	0.7	2.0	3.2	5.9	7.5	9.0	9.9	10.9	11.5	12.0	69
33.0	49	1.6	360				2.2	2.8	5.6	7.7	8.9	9.5	10.0	11.8	12.5	90
34.0	49	0.9	108		1.0	1.5	2.2	3.7	5.5	8.3	9.5	10.6	13.9	22.6	23.2	90
35.0	49	0.8	360		1.0	1.5	2.2	3.5	5.2	8.4	9.8	11.3	11.9	13.8	14.5	105
36.0	49	0.5	324		1.0	1.4	2.0	3.4	5.5	8.2	10.4	11.6	12.9	17.6	18.2	106
37.0	49	0.0	0		0.1	1.2	2.3	3.8	5.8	8.8	10.6	11.9	12.3	12.5	12.7	93
38.0	49	0.7	180				2.5	5.0	6.8	8.5	10.4	11.3	11.9	12.2	12.5	108
39.0	49	0.1	27		1.1	2.2	3.2	5.1	7.7	9.3	11.1	12.5	13.0	14.4	14.7	118
40.0	49	0.9	326		1.0	1.4	2.0	5.2	8.3	10.3	11.7	12.0	14.5	14.8	15.0	89
41.0	49	1.2	120		1.2	1.5	2.2	3.8	7.1	9.8	13.9	14.0	15.0	17.3	17.7	77
42.0	49	0.6	297			1.2	2.0	4.3	5.[illegible]	9.7	18.1	16.6	19.9	28.5	29.3	109
43.0	49	1.8	270				3.2	5.1	8.[illegible]	10.9	13.1	15.6	20.9	55.5	56.1	111
44.0	48	1.3	249		2.1	4.1	4.6	6.0	9.3	11.5	15.5	18.6	19.9	20.3	20.5	114
45.0	48	3.6	124			4.1	4.9	[illegible]	10.3	13.0	15.5	17.6	20.9	21.5	21.9	113
46.0	48	4.1	129		5.0	5.7	6.6	9.5	11.5	13.7	15.4	15.0	18.9	21.6	22.2	111
47.0	48	4.5	170		4.5	4.7	5.6	8.7	12.0	15.2	16.7	19.[illegible]	20.6	21.0	21.4	107
48.0	48	3.6	237				4.5	8.3	12.3	16.0	19.5	20.6	23.3	23.5	23.7	122
49.0	48	0.0	0		2.0	2.5	5.3	8.2	12.2	16.0	20.7	23.6	24.0	25.5	26.0	121
50.0	48	0.0	0		3.1	4.2	5.8	8.5	13.2	17.0	21.4	23.6	27.6	28.0	28.3	119
51.0	47	0.0	0		3.1	4.4	6.4	8.9	14.2	19.3	23.3	24.8	28.9	30.8	31.5	103
52.0	47	1.1	173		1.2	3.4	5.9	9.5	13.8	20.7	24.7	28.7	29.9	33.5	34.0	107
53.0	47	1.5	90		3.1	5.4	6.9	10.4	15.8	21.5	28.3	31.3	32.0	36.3	36.6	111
54.0	47	3.1	244		3.2	7.4	9.7	12.4	17.3	25.1	30.3	32.8	33.9	38.7	39.4	114
55.0	46	2.9	250		5.0	9.3	11.2	12.8	19.0	25.5	31.4	34.7	39.0	40.3	40.5	113
56.0	45	7.5	317		8.0	8.6	10.3	13.5	19.5	25.9	32.9	36.0	42.0	42.8	43.4	110
57.0	41	8.6	12			9.1	11.1	17.1	21.8	28.4	32.5	37.0	42.1	42.6	43.0	112
58.0	39	9.6	105				11.0	17.0	23.8	29.6	36.1	42.0	42.8	43.2	43.5	113
59.0	37	10.4	140			11.9	13.2	17.6	22.6	30.9	39.3	44.2	47.1	47.6	47.9	95
60.0	31	9.8	144			13.6	14.6	18.4	23.8	32.6	39.9	43.5	44.4	45.0	45.4	92
61.0	21	10.0	60			14.0	14.6	17.8	26.3	34.8	40.0	43.0	44.4	44.6	44.8	94
62.0	15	16.4	113				17.3	21.8	29.5	35.5	46.5	49.3	49.7	49.9	50.1	111
63.0	10	19.4	117				19.0	21.5	36.0	43.5	46.0	50.3	50.5	50.5	50.6	108
64.0	6	27.9	86					30.5	43.0	48.8	48.5	48.8	49.0	49.1	49.2	101
65.0	4	32.0	88					32.0	41.0	43.0	47.7	47.0	48.0	48.1	48.1	85
66.0	3	37.0	94						42.5	47.3	47.7	47.0	47.9	48.0	48.0	91
67.0	3	36.9	95						46.5	47.3	47.9	48.1	48.2	48.3	48.3	97
68.0	3	32.6	94						42.5	48.3	48.7	48.0	49.0	49.0	49.0	102
69.0	4	28.4	114					28.0	35.0	42.0	49.7	49.0	50.0	50.1	50.1	107
70.0	3	35.3	90						30.5	42.4	43.0	43.2	43.3	43.4	43.4	93

IRIG RANGE REFERENCE ATMOSPHERE, SEPTEMBER TABLE II.1.9

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1961 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED—m/sec	

ALT. (km) MSL	NO. OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	53	1.7	306		3.2	4.2	4.8	5.8	8.2	10.5	12.9	17.6	18.8	19.5	20.2	248
26.0	53	1.7	282		2.2	3.2	3.8	6.2	8.7	11.0	14.4	16.7	19.9	20.6	21.2	255
27.0	53	1.4	225		2.1	2.8	3.5	6.0	8.7	11.7	14.7	18.8	20.9	21.3	21.6	282
28.0	53	1.9	234				3.2	6.1	9.1	13.3	15.7	20.0	21.5	22.0	22.3	283
29.0	53	1.1	209		2.2	3.2	4.1	6.6	9.3	12.6	15.9	20.0	21.8	22.5	23.1	250
30.0	53	0.3	281		0.4	2.7	4.3	6.1	9.1	13.9	17.7	20.2	20.9	21.5	22.1	264
31.0	53	1.4	224		2.2	3.7	4.8	6.7	9.1	13.9	18.7	19.7	20.1	20.2	20.4	281
32.0	53	1.5	263			3.3	4.7	6.9	10.5	14.8	19.5	19.0	20.9	22.4	22.8	255
33.0	52	0.3	304		2.1	2.8	4.1	7.3	11.7	16.7	20.0	22.4	23.8	26.3	26.6	284
34.0	53	2.4	93		2	3.7	5.3	7.8	12.8	16.9	20.9	22.2	22.9	24.4	24.9	262
35.0	52	1.2	45		1.4	2.3	5.1	8.5	12.3	18.0	21.9	23.7	24.8	27.4	27.8	262
36.0	52	2.5	225			3.3	5.2	8.7	11.8	18.0	21.9	26.4	28.8	29.4	29.9	268
37.0	52	2.0	11		2.2	3.3	6.2	10.3	13.8	19.3	21.4	28.0	30.8	31.5	32.0	274
38.0	50	4.5	298			5.2	6.0	11.5	16.3	19.8	28.0	30.3	30.9	31.5	32.1	265
39.0	50	5.2	280		5.2	5.5	6.5	10.8	17.0	20.9	25.0	26.5	27.0	29.5	30.2	260
40.0	50	2.2	207		3.1	4.5	7.5	11.5	18.0	24.2	28.0	28.8	29.0	30.3	30.5	264
41.0	49	4.7	224			5.5	8.0	12.3	19.5	23.0	29.1	31.6	32.0	33.3	33.7	256
42.0	44	5.0	217		6.0	6.7	8.8	12.0	20.0	23.7	30.6	31.8	35.0	36.4	36.8	269
43.0	48	4.9	360		5.0	5.7	8.4	12.0	19.3	26.0	30.3	30.0	31.0	34.8	35.5	247
44.0	48	2.1	339		4.1	6.4	7.9	12.0	19.0	25.7	29.6	31.6	37.0	41.7	42.4	249
45.0	46	2.7	315		4.0	7.3	10.2	12.0	19.0	24.8	29.7	32.7	42.0	42.8	43.5	252
46.0	44	4.0	316		5.0	6.2	9.2	14.3	20.0	26.0	30.6	37.0	39.0	42.7	43.3	260
47.0	44	2.7	326		5.0	6.2	10.4	16.0	20.0	27.0	33.2	33.0	40.0	44.8	45.4	261
48.0	44	4.9	230		6.0	6.6	11.4	18.2	20.8	28.7	32.4	33.0	41.0	47.7	48.3	262
49.0	44	5.5	176		8.0	9.2	13.2	17.5	21.5	30.0	35.3	36.4	37.0	43.7	44.2	264
50.0	44	7.8	154		8.0	9.2	11.2	16.5	22.8	29.0	35.8	39.0	40.5	40.8	41.0	271
51.0	43	5.5	39			9.2	13.1	16.0	22.0	28.1	36.7	37.0	40.0	40.7	41.3	256
52.0	43	7.2	52			9.2	11.3	16.8	21.8	30.4	38.5	39.0	44.0	44.5	45.0	203
53.0	42	6.3	185			8.1	10.1	15.8	22.0	30.5	38.3	39.0	53.0	53.6	54.0	209
54.0	39	5.9	213			7.0	8.3	13.5	21.3	30.5	38.1	42.1	54.1	54.4	54.6	230
55.0	37	6.9	324			7.9	9.7	13.6	19.8	30.6	34.3	41.2	45.2	45.8	46.2	247
56.0	30	2.7	270			7.3	8.0	15.5	21.7	27.8	31.0	43.5	49.5	50.0	50.4	249
57.0	30	7.1	181			8.5	11.5	18.8	22.0	29.5	37.0	47.5	50.3	50.6	50.9	246
58.0	28	4.6	248			6.0	8.8	16.3	23.0	31.0	39.6	43.6	56.4	56.7	57.0	255
59.0	19	10.6	275					13.8	20.5	29.3	35.1	39.1	39.8	40.1	40.3	260
60.0	16	11.4	271				15.6	17.0	21.7	25.5	28.4	37.2	37.5	37.7	37.8	255
61.0	12	9.3	277				14.2	16.0	21.0	25.0	32.8	34.6	35.0	35.2	35.4	248
62.0	6	7.6	248						20.0	25.5	29.4	29.7	29.9	30.0	30.0	225
63.0	1	0.3	248												0.3	248
64.0	1	12.5	47												12.5	47
65.0	1	25.6	47												25.6	47
66.0	1	38.7	47												38.7	47
67.0	1	51.7	47												51.7	47
68.0	1	64.8	47												64.8	47

IRIG RANGE REFERENCE ATMOSPHERE, OCTOBER

TABLE II. I. 10

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49'N	147° 52'W	1961 – 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59'N	145° 43'W	UNITS: WIND SPEED–m/sec	

ALT. (km) MSL	NO OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	78	2.2	63		2.8	4.0	4.5	8.5	15.8	22.1	25.4	31.1	32.2	32.8	33.4	257
26.0	78	1.1	181			2.5	5.2	7.0	15.5	23.2	28.2	31.1	34.2	35.3	36.3	257
27.0	78	0.0	0		1.2	1.6	4.8	9.8	16.3	28.8	30.1	38.1	36.1	36.7	37.1	282
28.0	77	0.0				2.8	5.7	10.7	16.8	25.9	30.8	36.3	37.5	38.2	38.9	282
29.0	77	0.6	63		2.8	4.2	5.7	12.3	18.9	28.9	33.2	35.2	38.2	39.3	40.2	283
30.0	77	3.5	81		3.6	4.0	5.7	13.8	19.8	30.8	38.8	38.2	41.1	41.7	42.1	255
31.0	77	2.8	266			5.3	6.9	12.6	21.8	31.2	36.1	37.2	43.2	46.2	46.7	261
32.0	77	2.3	254		2.8	3.6	6.6	14.1	23.8	32.8	38.1	40.2	43.2	44.2	45.0	285
33.0	77	0.0	0		2.8	4.8	8.6	15.3	23.1	32.9	39.1	41.1	43.2	49.2	50.0	270
34.0	77	0.0	0		4.8	7.9	12.2	15.5	24.1	33.9	40.1	42.2	44.6	49.2	50.1	273
35.0	77	0.4	153		3.8	10.9	12.8	17.1	24.8	36.9	40.5	43.2	45.2	49.3	49.1	277
36.0	77	1.8	153		5.8	9.9	12.4	18.1	25.5	35.8	42.8	44.6	46.1	45.6	47.0	276
37.0	76	2.0	79		3.7	8.8	12.8	19.0	28.0	38.3	44.8	47.8	48.3	49.2	49.8	275
38.0	75	3.6	34			7.0	14.5	18.9	28.5	36.8	44.5	47.3	49.3	59.3	60.3	283
39.0	75	1.9	45		3.7	8.8	14.8	20.7	30.3	38.1	45.2	50.3	51.6	56.3	57.4	280
40.0	75	0.2	144		5.7	9.8	16.5	21.8	31.8	39.1	45.8	51.1	52.3	53.2	53.6	273
41.0	72	3.7	164		8.6	13.6	18.1	24.0	30.0	39.0	45.0	50.8	53.4	58.2	58.9	284
42.0	71	7.1	164		11.3	13.6	15.8	22.8	32.8	41.1	45.5	50.6	52.4	69.3	69.9	282
43.0	68	5.0	218		5.5	9.4	15.8	23.0	33.3	39.5	46.6	50.6	53.5	58.4	55.3	257
44.0	67	8.4	266		8.5	9.7	14.7	24.9	32.9	42.1	49.9	52.7	55.5	58.4	59.3	287
45.0	66	5.2	240		7.5	11.3	15.6	22.9	32.0	39.8	48.7	52.0	55.2	55.5	55.8	268
46.0	64	6.1	223		6.5	12.2	16.4	23.8	32.0	42.5	52.8	58.8	55.5	55.7	55.9	288
47.0	61	6.6	121		7.8	12.1	15.1	22.4	31.6	45.9	53.0	55.0	59.5	60.6	61.4	264
48.0	60	7.2	97		8.4	11.0	15.0	24.0	32.0	43.0	53.0	56.0	58.5	66.5	67.5	269
49.0	60	4.6	153		5.8	13.5	16.0	24.5	33.3	41.7	51.7	55.0	58.8	69.3	69.7	274
50.0	58	0.2	153		5.3	12.5	17.4	23.6	33.0	44.3	51.2	58.1	64.7	69.5	70.1	282
51.0	56	5.7	136		9.3	10.4	15.8	25.0	35.0	55.0	56.4	60.2	65.7	69.2	69.6	286
52.0	55	6.0	147		8.3	9.8	17.3	24.4	35.3	45.1	54.5	57.6	65.7	84.4	84.8	285
53.0	51	6.8	135		9.2	12.6	18.1	24.9	31.3	42.3	51.5	60.5	62.8	86.4	86.8	240
54.0	50	7.9	127		11.1	13.5	16.0	22.8	31.7	43.5	49.0	62.5	63.9	84.4	84.9	234
55.0	47	3.1	348		4.1	8.4	12.7	21.8	31.5	43.1	52.3	59.7	63.9	83.3	83.6	228
56.0	41	4.0	248			10.0	12.1	19.8	30.5	43.3	48.5	50.0	60.1	60.5	60.9	10
57.0	31	9.1	228			9.6	14.1	19.8	31.8	38.8	46.9	56.5	61.4	61.9	62.3	15
58.0	29	8.1	350			8.2	9.0	16.4	28.5	38.8	50.1	57.6	62.3	62.5	62.9	17
59.0	20	9.0	297			9.0	11.0	15.0	21.0	36.0	39.7	40.0	42.5	42.8	43.0	218
60.0	12	7.0	308				9.2	15.0	23.0	32.0	38.5	39.0	39.2	39.3	39.4	354
61.0	7	12.7	298					14.8	17.5	25.3	27.3	28.7	28.9	29.0	29.1	16
62.0	5	10.7	304					14.4	15.5	28.8	39.3	39.5	39.6	39.7	39.7	78
63.0	1	9.2	320												9.2	320
64.0	1	8.5	339												8.5	339

IRIG RANGE REFERENCE ATMOSPHERE, NOVEMBER

TABLE II. I. II

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49'N	147° 52'W	1960 – 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59'N	145° 43'W	UNITS: WIND SPEED–m/sec	

ALT (km) MSL	NO OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	63	1.3	344		2.2	3.1	[illegible]	8.0	15.7	21.8	32.7	39.0	49.8	50.5	51.5	328
26.0	65	1.1	225		2.2	3.1	4.8	9.4	16.8	25.8	34.8	47.6	48.4	48.0	49.4	241
27.0	69	1.9	185			2.2	5.0	10.4	18.2	29.8	42.0	48.6	52.3	52.0	53.4	315
28.0	69	0.0	180		1.6	2.7	5.0	11.1	19.8	31.8	42.1	47.6	51.4	55.2	55.6	313
29.0	70	2.6	270			4.5	7.0	12.1	21.3	33.8	44.0	48.8	51.4	53.3	54.1	312
30.0	72	3.1	104			5.6	8.4	13.5	25.0	37.0	48.8	53.6	56.4	66.4	67.3	305
31.0	71	3.7	18			5.3	9.1	14.3	25.5	40.1	46.0	52.5	59.4	60.2	60.5	320
32.0	72	3.8	31		4.3	5.3	8.6	16.0	27.0	41.7	51.3	56.6	61.4	63.4	64.5	323
33.0	72	4.7	290			7.5	11.1	16.0	27.8	45.0	53.8	57.0	64.8	67.2	67.5	308
34.0	72	4.3	135		6.6	7.5	10.2	17.5	30.0	45.0	53.8	58.4	63.8	69.8	70.4	305
35.0	72	0.0	0		3.6	5.8	11.3	18.0	31.3	46.5	58.4	62.6	64.8	65.4	66.3	336
36.0	71	0.0	0		0.6	6.5	9.5	14.0	31.8	45.5	52.0	63.2	68.8	76.2	76.5	214
37.0	71	1.4	270		3.6	7.5	13.0	18.2	33.5	45.3	54.5	65.5	74.4	75.3	79.2	217
38.0	71	2.3	294		4.6	5.8	13.1	21.3	33.8	46.8	54.0	68.5	72.8	77.8	78.2	228
39.0	71	5.8	257		6.2	6.0	12.1	22.4	33.8	46.3	54.7	66.5	70.8	80.3	81.2	235
40.0	69	5.6	10			8.7	13.3	21.1	35.7	48.4	59.5	66.6	71.3	73.2	73.5	229
41.0	69	5.9	267		8.3	9.2	12.0	21.3	36.5	49.0	57.6	65.2	65.8	74.3	74.9	337
42.0	66	6.0	249		6.5	8.3	10.8	21.3	38.0	51.5	59.1	59.0	63.7	72.4	73.1	338
43.0	66	3.8	7		6.3	7.3	10.6	21.3	38.0	51.2	61.4	64.7	68.7	71.2	71.7	300
44.0	65	0.2	342		3.5	6.3	10.5	19.8	37.8	50.0	62.3	68.0	71.5	80.2	80.5	291
45.0	64	5.1	191		5.5	7.6	10.5	21.0	38.2	54.0	65.3	68.0	87.5	90.2	90.4	293
46.0	63	5.4	336		6.4	10.2	11.6	19.8	38.3	54.1	66.7	72.0	84.6	91.2	91.5	296
47.0	61	4.1	73		7.4	10.0	12.1	23.6	40.5	50.0	65.3	78.0	79.6	86.5	87.2	301
48.0	60	3.8	117		7.8	8.5	10.0	22.3	38.5	52.5	65.0	77.0	82.6	93.4	93.9	303
49.0	58	4.5	151		7.2	8.0	12.8	21.7	38.0	51.8	65.2	72.1	73.7	100.5	101.3	302
50.0	56	3.8	204		4.3	6.8	9.8	20.8	38.2	53.6	60.5	76.2	99.7	123.6	124.3	309
51.0	52	1.3	7		5.1	5.8	7.2	20.0	38.0	51.0	61.4	69.0	79.8	89.6	90.2	303
52.0	51	3.6	186			5.3	14.1	24.8	37.8	51.3	64.0	74.5	78.8	94.3	94.7	302
53.0	49	4.7	306		6.1	7.5	10.5	23.3	37.8	48.8	64.6	71.6	79.0	94.5	95.0	307
54.0	45	5.8	263		6.0	8.3	13.5	22.1	37.5	50.4	64.3	71.0	77.0	79.6	80.0	271
55.0	40	2.6	331			7.0	15.0	22.0	34.0	51.0	64.0	75.0	77.1	77.6	78.0	297
56.0	38	6.4	194			9.0	10.9	23.3	36.0	53.5	67.2	72.1	73.1	73.6	74.0	295
57.0	32	0.8	270			4.6	18.1	21.7	35.0	51.0	62.8	70.4	75.3	75.0	76.3	251
58.0	26	5.3	270			15.2	15.8	18.8	36.5	49.5	65.7	67.7	73.5	73.8	74.1	320
59.0	17	7.0	248				10.7	17.3	34.5	40.8	69.3	74.1	74.5	74.7	74.8	3
60.0	11	9.5	197				12.1	15.4	19.5	37.3	46.0	72.5	72.0	73.0	73.2	324
61.0	4	5.3	198					18.3	19.5	29.8	74.3	74.0	74.5	74.5	74.5	325
62.0	4	2.6	341					3.0	22.0	31.0	78.5	75.7	75.8	75.8	75.9	325
63.0	3	10.0	360						19.5	25.2	26.4	26.5	26.6	26.6	26.6	13
64.0	2	13.5	30						13.0	17.5	18.0	18.1	18.2	18.2	18.2	305
65.0	2	16.6	312						17.0	18.4	18.7	18.8	18.0	18.0	18.9	45
66.0	2	15.3	321						15.0	24.5	24.0	25.0	25.0	25.0	25.1	53
67.0	1	31.5	58												31.5	58
68.0	1	38.2	61												38.2	61

IRIG RANGE REFERENCE ATMOSPHERE, DECEMBER

TABLE II. I. 12

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1962 – 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED – m/sec	

ALT. (km) MSL	NO OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	44	2.2	27	--	5.0	6.2	7.7	14.0	28.0	33.0	45.6	51.0	54.0	54.8	55.4	302
26.0	46	3.7	353		4.0	5.3	7.6	13.8	29.0	38.5	50.4	52.7	58.0	59.7	60.4	303
27.0	51	5.4	331			6.6	8.7	15.8	33.5	42.3	53.0	60.2	60.0	63.3	63.6	303
28.0	53	3.2	34		4.2	5.7	9.7	20.3	36.3	44.8	57.7	62.4	65.5	65.6	65.9	295
29.0	53	3.5	352		5.2	6.7	11.1	22.1	38.5	47.8	59.7	67.5	68.0	68.2	69.4	315
30.0	54	4.3	144		5.2	7.7	13.4	23.8	38.5	50.5	61.8	72.3	75.8	89.6	90.4	291
31.0	54	2.4	354	--	4.2	7.4	10.7	27.2	40.0	53.3	63.6	77.3	78.8	91.4	91.8	291
32.0	53	4.7	357		5.2	6.7	14.3	27.3	39.5	55.3	70.7	83.0	84.8	94.6	95.3	291
33.0	52	5.9	198		6.2	7.6	17.2	27.5	39.0	55.0	73.4	88.0	91.8	99.7	100.4	290
34.0	52	4.5	185		4.6	9.6	17.2	27.0	40.0	54.0	76.9	97.0	98.8	99.5	100.0	290
35.0	53	0.9	63		6.2	9.3	17.3	29.3	41.5	57.8	74.7	95.0	101.8	103.5	104.1	350
36.0	54	2.2	243		9.2	10.7	17.4	29.8	42.0	60.5	82.5	105.3	108.8	120.5	121.0	347
37.0	54	4.7	335		10.2	11.7	18.4	28.8	42.5	63.5	88.5	110.3	111.8	121.4	121.8	351
38.0	54	7.7	346		11.2	13.7	18.4	27.5	42.7	59.5	97.8	110.7	117.8	120.7	121.4	352
39.0	53	6.1	347		12.2	16.7	17.6	28.3	44.5	57.8	35.7	109.0	120.8	123.4	123.8	334
40.0	53	5.6	334		11.2	13.7	17.3	25.3	44.5	63.8	89.0	107.0	109.8	123.5	124.0	335
41.0	52	7.4	101		7.5	11.6	15.1	25.0	44.0	65.0	88.0	102.0	110.8	120.7	121.4	335
42.0	53	5.0	90		11.1	11.8	14.3	28.1	43.8	62.8	83.7	110.0	116.8	125.6	126.4	332
43.0	53	3.0	67		6.2	9.3	12.3	30.3	44.5	64.8	81.7	108.0	109.8	116.5	117.0	331
44.0	51	2.5	3		3.2	8.6	10.1	28.8	47.8	66.1	73.0	100.5	107.8	110.7	111.4	329
45.0	49	5.8	321		7.1	8.5	12.0	29.3	44.2	61.0	72.4	79.6	101.0	107.3	107.5	327
46.0	48	8.9	345			9.2	14.8	30.0	45.5	60.5	74.1	81.6	94.0	110.5	119.0	328
47.0	48	10.3	116		10.4	11.4	14.8	32.0	44.7	58.0	74.2	83.6	86.0	125.3	125.6	327
48.0	47	8.8	328		12.1	14.4	18.6	31.4	40.4	57.3	71.3	77.7	78.0	119.7	120.4	317
49.0	46	12.7	321	--	13.0	17.3	20.6	28.3	43.0	55.5	75.4	82.0	83.0	114.8	115.4	313
50.0	45	14.6	24			19.1	24.5	28.3	37.8	54.9	80.5	87.0	93.0	107.4	107.8	315
51.0	44	23.1	13			24.1	24.8	29.0	32.0	54.0	79.5	88.8	94.0	100.3	100.5	317
52.0	43	16.2	281			21.4	25.2	30.0	43.8	55.8	75.7	91.0	96.0	96.7	97.2	291
53.0	42	10.2	308			17.1	22.2	31.3	46.0	58.3	78.0	88.0	110.0	110.4	110.6	293
54.0	38	15.1	262			16.9	19.8	30.2	44.0	62.5	82.2	107.1	114.1	114.7	115.1	297
55.0	30	14.9	71			17.2	17.7	24.5	35.0	60.3	79.0	98.5	106.4	106.8	107.2	275
56.0	23	11.0	269			12.1	12.7	20.0	35.8	76.3	83.7	99.0	102.4	102.6	102.8	274
57.0	19	5.2	229				12.9	22.4	36.5	65.3	100.1	102.0	102.3	102.5	102.6	275
58.0	16	7.4	155				12.6	18.0	31.0	48.0	99.4	102.3	102.0	103.1	103.3	273
59.0	13	13.2	283				13.3	21.8	38.3	62.8	92.7	94.4	94.8	95.0	95.1	280
60.0	11	11.6	278				15.1	18.5	39.5	74.3	83.0	86.0	86.5	86.8	86.9	285
61.0	6	10.2	271					22.3	53.5	69.8	86.7	87.1	87.3	87.4	87.4	85
62.0	2	24.2	42						28.0	76.4	76.7	76.3	76.8	76.8	76.8	111
63.0	1	99.9	113												99.9	113

IRIG RANGE REFERENCE ATMOSPHERE, ANNUAL

TABLE II. I. 13

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	SCALAR WINDS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1960 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED-m/sec	

ALT. (km) MSL	NO OBS.	MIN. SPEED	DIR. (deg)	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX SPEED	DIR. (deg)
25.0	697	0.0		0.3	1.1	1.8	3.0	5.2	9.1	20.1	31.5	39.8	50.1	54.5	68.6	285
26.0	709	0.0		0.3	1.2	1.9	3.1	5.7	9.8	21.4	34.3	43.6	50.6	55.5	74.3	289
27.0	726	0.0		0.3	1.2	2.1	3.4	6.3	10.5	23.4	36.9	45.6	52.0	57.7	75.8	289
28.0	737	0.0		0.3	1.4	2.4	3.7	7.1	11.3	25.0	39.4	47.1	55.3	59.9	76.9	287
29.0	750	0.4	113	0.7	1.3	2.3	4.1	7.5	12.1	27.1	40.8	49.8	56.3	60.8	79.9	288
30.0	757	0.2	180	0.4	1.3	2.6	4.0	8.2	12.8	28.0	42.6	52.8	57.0	66.7	90.4	291
31.0	760	0.0	0	0.6	1.5	2.8	4.5	8.4	13.2	29.4	44.1	53.6	60.7	70.4	91.8	291
32.0	764	0.0		1.1	1.0	3.3	5.1	8.5	14.0	30.7	45.3	55.0	63.5	75.3	97.2	297
33.0	767	0.0		1.1	2.1	3.2	5.2	9.1	14.5	30.8	46.0	56.8	66.5	79.3	105.1	299
34.0	768	0.0		0.8	2.2	3.6	5.9	9.4	15.1	31.0	47.0	58.6	67.5	81.3	106.2	300
35.0	772	0.0		0.6	1.0	3.2	5.8	10.2	15.8	32.0	49.4	59.6	70.1	83.6	107.2	302
36.0	774	0.0		1.2	2.0	3.3	5.9	10.5	16.5	32.0	48.5	60.1	73.5	87.3	121.0	347
37.0	774	0.0		1.1	2.3	3.6	6.0	11.0	17.0	32.7	50.1	61.6	74.8	88.5	121.8	351
38.0	771	0.7	181	1.4	2.7	4.4	6.7	11.2	17.8	33.4	49.4	62.2	76.2	89.3	121.4	352
39.0	769	0.1	27	1.6	3.2	4.8	6.7	11.5	18.1	33.4	51.0	63.6	78.8	93.2	123.8	354
40.0	766	0.2	164	1.6	3.0	4.8	6.6	11.5	18.5	34.9	50.7	64.7	79.6	98.3	124.0	355
41.0	759	0.4	386	1.0	3.0	4.3	6.9	11.7	18.7	34.5	52.0	65.3	80.7	99.4	121.9	3
42.0	753	0.6	297	1.8	2.0	4.4	7.0	12.3	19.4	34.5	52.4	63.8	82.0	101.5	127.1	3
43.0	748	0.0	0	2.3	3.2	5.0	6.9	12.6	19.8	34.8	52.5	64.7	84.0	98.5	132.4	2
44.0	737	0.0	0	2.1	3.8	5.1	7.7	13.1	19.9	34.0	53.6	68.0	79.6	100.6	134.3	3
45.0	728	2.0	90	2.8	3.2	5.3	8.2	13.7	20.6	34.0	53.6	65.7	79.3	98.4	144.2	3
46.0	719	0.1	90	2.5	3.6	6.0	9.0	14.1	21.3	35.0	53.6	67.6	82.6	95.8	150.1	4
47.0	711	0.6	180	2.0	3.4	6.1	9.1	15.1	21.0	34.9	53.7	66.1	81.8	100.3	146.4	8
48.0	701	1.8	108	3.1	4.1	5.6	9.0	15.7	22.8	35.2	54.2	64.5	79.5	103.0	143.4	9
49.0	693	0.0	0	2.7	4.1	6.0	9.0	16.4	23.8	34.7	52.9	64.2	79.1	104.1	134.1	9
50.0	682	0.0	0	2.0	3.7	6.0	8.9	16.6	25.1	34.0	53.4	63.0	83.5	104.2	124.3	309
51.0	661	0.0		1.9	4.2	6.1	9.4	16.8	25.7	36.4	52.6	62.5	80.0	94.4	115.8	350
52.0	653	0.0	0	2.4	3.8	6.4	9.9	16.9	26.8	37.5	51.9	65.7	79.6	96.5	119.2	352
53.0	630	0.0	0	3.7	5.5	7.3	9.7	17.8	27.2	37.0	54.5	65.8	82.7	94.6	112.9	352
54.0	594	0.0		3.3	6.1	7.9	10.5	17.5	27.5	37.4	52.4	64.0	80.2	90.0	115.1	297
55.0	549	0.0		2.2	4.8	7.5	10.6	17.6	27.8	37.4	50.2	61.8	75.5	94.5	108.6	354
56.0	482	0.0	0	2.8	5.1	8.2	10.6	18.2	28.2	37.9	47.7	60.6	71.0	83.2	110.6	355
57.0	426	0.8	270	4.1	5.6	9.1	11.5	18.9	28.2	38.3	46.9	56.7	67.4	77.7	102.6	276
58.0	371	4.0	90	4.9	6.2	8.2	11.7	18.5	29.6	39.0	46.5	56.2	65.3	86.3	103.3	279
59.0	307	3.9	266	5.8	6.7	9.1	12.2	18.8	31.8	39.3	47.4	55.7	69.0	74.9	95.1	280
60.0	238	4.6	105	6.1	7.2	9.4	13.3	18.9	30.8	40.2	47.0	54.1	69.6	83.6	89.0	95
61.0	173	5.3	194	5.7	7.0	8.9	12.4	19.6	29.4	40.5	48.9	53.7	74.5	80.3	87.4	85
62.0	119	1.7	55	2.2	3.7	8.3	12.9	19.8	30.0	40.7	46.7	52.1	75.3	76.8	78.5	110
63.0	66	0.3	248		8.3	9.2	12.8	19.8	35.8	43.5	50.1	51.7	60.5	90.3	99.9	113
64.0	43	7.1	89			10.2	12.7	21.8	37.5	47.3	53.2	58.0	61.0	61.5	61.9	95
65.0	27	11.5	205			14.4	16.7	28.8	43.5	51.3	57.3	58.7	65.3	65.6	65.9	97
66.0	19	12.0	165				14.9	30.8	42.8	55.3	63.1	64.1	64.8	65.1	65.3	60
67.0	15	16.6	111					36.8	47.5	58.3	68.5	76.0	77.0	77.3	77.5	54
68.0	12	23.4	126				32.2	36.0	42.0	49.0	63.9	64.3	64.6	64.7	64.8	47
69.0	10	28.4	114				28.0	33.5	37.0	48.5	50.0	50.6	50.9	51.1	51.2	102
70.0	10	31.5	117				32.0	34.8	43.0	46.5	51.5	51.0	52.0	52.1	52.2	103

IRIG RANGE REFERENCE ATMOSPHERE, JANUARY

TABLE II. 2. I

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1963 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX
25.0	46	-15.9	5.0	6.3	10.6	22.5	29.0	40.3	47.0	62.7	64.0	65.8	66.4	
26.0	46	-19.6	0.0	7.3	11.6	24.5	31.0	40.5	50.7	64.7	68.0	69.7	70.3	
27.0	46	-20.4	7.0	7.7	10.6	24.5	33.0	40.8	52.2	66.7	68.0	71.3	71.6	
28.0	47	-22.1	7.1	10.1	10.9	25.8	38.2	43.3	54.7	66.7	72.6	72.9	73.2	
29.0	44	-17.9	9.0	9.7	12.9	25.0	38.0	45.0	52.5	69.6	70.0	73.5	74.0	
30.0	48	-17.0	1.1	10.4	12.6	27.5	38.0	46.0	56.2	59.6	70.0	75.5	76.0	
31.0	47	-16.9	-1.0	8.8	13.7	27.4	39.3	47.1	59.7	60.0	72.0	79.5	80.0	
32.0	48	-15.0	4.1	9.4	13.8	27.0	39.0	46.0	59.6	64.6	76.0	85.7	86.4	
33.0	48	-14.9	6.1	9.8	12.8	23.0	39.5	46.8	60.2	69.6	77.0	92.5	93.0	
34.0	48	-21.9	0.1	10.4	13.8	22.0	40.0	49.0	64.2	67.6	80.0	91.7	92.3	
35.0	48	-21.3	-2.0	9.4	17.8	25.0	40.0	47.0	62.5	69.6	84.0	89.8	90.4	
36.0	49	-20.3	0.1	7.5	11.9	25.1	37.5	45.8	62.1	69.6	83.0	87.5	88.0	
37.0	49	-21.1	3.1	5.4	11.8	24.0	39.5	46.0	63.2	69.6	84.0	85.4	85.7	
38.0	48	-27.5	4.1	7.4	9.8	22.0	35.0	45.0	65.2	69.6	75.0	84.5	85.1	
39.0	49	-31.9		4.5	8.0	17.5	32.5	43.4	65.1	69.6	71.0	82.4	82.7	
40.0	49	-46.7	-35.0	-4.5	6.5	18.3	30.5	43.0	60.1	68.3	68.0	77.7	79.4	
41.0	48	-50.0	-7.0	2.4	5.8	20.0	31.0	46.0	61.2	64.6	70.0	72.6	73.2	
42.0	48	-43.3	-6.0	-0.5	6.8	19.0	31.0	45.0	59.2	66.3	67.0	68.7	69.4	
43.0	48	-35.8	-5.0	-1.6	9.8	18.0	33.0	44.0	56.2	65.3	66.0	68.6	69.2	
44.0	44	-29.2	-7.0	2.4	3.9	20.5	31.5	43.0	56.2	62.6	63.0	67.4	67.7	
45.0	46	-30.4	-9.0	0.3	11.3	18.5	28.0	39.8	49.3	58.0	62.0	66.5	67.0	
46.0	44	-27.1	-11.0	3.3	7.6	17.5	25.0	36.8	45.7	55.7	64.0	65.7	66.2	
47.0	46	-20.0	-10.0	-6.7	4.6	14.5	24.5	35.5	47.2	54.7	64.0	65.5	65.9	
48.0	46	-15.6	-8.0	-2.7	-0.4	11.3	23.3	33.8	43.4	56.7	60.0	67.6	68.0	
49.0	44	-11.2	-7.0	-2.8	2.2	10.5	22.0	35.5	40.5	56.6	57.0	69.7	70.2	
50.0	44	-12.7	-12.7	-5.8	1.4	10.5	20.5	34.0	40.5	58.8	58.0	71.8	72.5	
51.0	41	-16.0		-5.0	0.0	8.3	15.5	31.8	39.0	58.0	75.1	75.6	76.0	
52.0	39	-14.4		-12.1	0.0	6.4	15.5	32.6	48.1	67.1	79.1	79.3	79.5	
53.0	34	-17.8		-6.6	-5.8	0.5	15.0	31.8	57.6	73.3	82.2	82.7	83.0	
54.0	32	-17.5		-15.7	-9.8	-0.5	14.0	23.5	56.8	74.0	79.3	79.7	80.0	
55.0	28	-14.0		-12.6	-8.2	3.0	13.0	22.0	44.2	61.0	61.8	62.0	62.2	
56.0	19	-24.1			-18.1	0.8	7.5	27.3	35.1	49.0	49.3	49.4	49.5	
57.0	13	-28.0			-18.7	-1.7	6.5	17.8	45.7	50.2	50.5	50.6	50.7	
58.0	11	-28.0			-11.9	-11.1	7.5	18.3	49.0	53.3	53.5	53.6	53.7	
59.0	9	-30.0				1.3	10.5	17.8	56.1	56.0	56.5	56.6	56.7	
60.0	6	-32.7				-15.5	0.0	15.5	17.5	17.0	18.1	18.2	18.3	
61.0	4	-35.4				-35.0	-3.0	28.0	28.5	28.0	28.0	29.0	29.0	
62.0	2	37.9					38.0	39.4	39.5	39.7	39.7	39.8	39.8	

IRIG RANGE REFERENCE ATMOSPHERE, FEBRUARY

TABLE II. 2. 2

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1962 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX
25.0	68	-14.4			-11.8	-9.2	3.0	13.0	22.0	32.2	34.6	39.8	41.4	42.3
26.0	69	-16.9		-15.4	-13.8	-10.1	1.3	14.3	24.0	34.1	37.8	44.4	46.4	47.3
27.0	70	-19.7		-16.8	-16.2	-9.4	0.3	14.0	27.3	37.0	40.6	48.4	53.3	54.0
28.0	70	-19.1			-15.3	-11.3	-0.2	13.3	26.8	39.0	43.8	49.4	53.3	54.0
29.0	72	-18.6			-16.7	-11.8	-0.5	12.0	28.7	40.8	46.4	49.4	53.3	54.0
30.0	72	-20.3			-19.5	-11.8	-0.7	13.0	26.0	38.0	40.1	49.8	53.3	54.2
31.0	73	-21.6		-21.8	-21.1	-13.8	-3.4	11.5	24.4	39.7	47.2	48.3	54.2	54.9
32.0	75	-27.4		-26.3	-21.2	-15.7	-3.4	12.3	1.5	41.5	48.2	49.6	54.2	55.0
33.0	74	-30.0		-29.3	-23.2	-18.8	-4.3	12.8	24.3	41.5	51.1	52.3	53.3	54.1
34.0	75	-30.0			-25.6	-18.5	-7.2	10.5	23.3	39.5	48.6	49.6	55.1	55.6
35.0	75	-30.5			-26.2	-18.7	-5.3	10.8	23.4	40.3	46.2	49.3	50.2	50.6
36.0	75	-33.7		-32.3	-24.2	-22.2	-3.6	12.2	23.1	38.8	46.3	50.2	50.8	51.3
37.0	74	-34.7		-28.3	-23.3	-19.2	-1.8	12.0	26.3	38.3	48.3	50.3	55.3	56.1
38.0	73	-34.3		-30.3	-21.3	-16.2	-2.6	11.5	25.8	39.2	48.6	50.7	57.2	57.8
39.0	72	-31.1		-30.4	-21.7	-15.0	-1.0	10.5	22.8	39.8	46.6	51.4	55.2	55.7
40.0	72	-29.5		-29.4	-24.4	-18.8	-2.7	9.7	25.0	40.4	46.6	49.0	54.3	55.1
41.0	71	-29.4		-27.8	-27.1	-24.4	-4.2	9.8	27.4	43.0	48.8	50.7	57.2	57.7
42.0	71	-34.5		-30.0	-29.2	-21.0	-7.1	9.8	27.1	42.0	52.2	55.4	58.3	59.1
43.0	70	-44.7		-33.4	-31.2	-25.0	-8.2	11.0	27.8	45.0	57.8	59.4	61.2	61.7
44.0	68	-52.6		-32.7	-30.8	-25.1	-4.0	11.3	26.0	46.1	49.8	53.5	69.4	70.4
45.0	68	-58.1		-32.7	-30.6	-21.2	-8.0	10.0	27.0	42.2	46.8	54.5	70.3	71.1
46.0	68	-63.5		-34.5	-33.3	-19.6	-5.0	9.0	26.5	41.6	51.4	53.5	65.3	66.0
47.0	68	-68.7		-40.8	-32.6	-18.2	-5.5	12.0	27.0	45.1	50.4	54.5	58.3	59.0
48.0	65	-72.8		-45.5	-31.7	-21.2	-8.7	11.3	27.4	47.5	52.8	55.5	57.4	58.2
49.0	64	-76.8		-52.5	-30.9	-20.3	-6.0	10.0	30.0	47.5	51.0	60.5	63.4	64.2
50.0	63	-79.8		-51.6	-32.8	-18.7	-5.7	13.5	29.1	47.7	55.4	63.4	71.4	72.1
51.0	61	-79.0		-45.6	-38.9	-18.9	-8.4	8.5	28.8	49.9	55.0	66.4	73.4	74.0
52.0	60	-78.2		-46.6	-42.0	-27.0	-12.0	7.7	27.0	52.0	59.0	70.4	73.4	74.8
53.0	59	-78.3		-52.7	-42.1	-28.1	-12.2	12.3	26.1	57.5	65.1	71.7	73.3	73.9
54.0	54	-78.6		-54.8	-41.3	-31.6	-10.5	10.0	22.5	58.5	64.3	67.8	69.8	69.9
55.0	44	-78.9		-57.0	-38.8	-36.3	-12.0	9.5	29.0	54.6	62.8	65.0	69.4	69.5
56.0	34	-36.6			-35.3	-28.6	-7.5	4.0	27.8	57.5	63.2	63.7	64.0	64.2
57.0	26	-37.8			-35.7	-31.4	-6.5	17.0	26.5	52.4	55.7	64.3	64.5	64.7
58.0	20	-39.0			-39.0	-38.0	-19.0	5.0	25.5	32.0	33.0	33.8	34.1	34.4
59.0	18	-44.2				-34.2	-12.5	3.0	19.5	32.2	39.1	39.4	39.8	40.0
60.0	12	-51.0				-31.8	-45.0	-6.0	1.0	10.8	32.8	33.0	33.2	33.3
61.0	11	-49.4				-29.9	-28.2	-9.5	-5.3	16.9	26.3	26.5	26.6	26.7
62.0	9	-41.2					-24.7	-17.8	-1.2	19.1	19.8	19.8	19.9	20.0
63.0	4	-39.4					-39.0	-26.0	-25.0	-15.1	-14.8	-14.7	-14.6	-14.6
64.0	3	-43.2						-29.8	-12.8	-12.4	-12.3	-12.2	-12.1	-12.1
65.0	1	-46.8												-46.8
66.0	1	-50.4												-50.4
67.0	1	-54.0												-54.0

IRIG RANGE REFERENCE ATMOSPHERE, MARCH

TABLE II.2.3

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1962 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX
25.0	82	-10.8		-9.1	-6.6	-5.7	-1.1	4.3	15.9	27.4	48.0	54.1	55.1	55.9
26.0	82	-15.3		-11.6	-8.0	-7.4	-1.8	4.0	11.8	28.4	43.0	53.1	55.5	55.9
27.0	82	-15.0		-14.6	-10.0	-8.6	-1.8	4.5	19.9	28.8	39.0	53.1	55.6	56.0
28.0	83	-18.7		-16.1	-11.8	-8.0	-1.7	3.7	13.3	29.7	42.0	53.1	56.2	55.4
29.0	84	-20.0		-19.1	-14.8	-9.3	-3.0	4.0	14.0	31.4	44.8	51.1	55.2	56.0
30.0	84	-20.0		-18.5	-16.8	-9.8	-4.2	3.5	13.0	31.8	43.0	54.1	56.1	56.5
31.0	84	-23.0		-22.1	-20.8	-11.8	-4.7	4.8	14.0	31.6	42.8	50.1	59.1	59.6
32.0	84	-27.7		-24.1	-20.7	-11.7	-4.2	3.5	14.8	32.3	38.8	47.1	58.1	58.7
33.0	86	-28.4		-25.0	-21.7	-13.1	-5.5	3.0	14.3	29.7	42.7	44.5	48.1	48.5
34.0	85	-28.2			-20.7	-14.5	-7.3	2.7	13.4	30.5	34.8	45.1	53.1	53.7
35.0	85	-29.8		-27.1	-20.0	-16.5	-7.2	3.7	16.4	31.3	34.0	46.1	51.1	51.9
36.0	85	-29.0			-23.7	-16.5	-7.4	2.8	16.4	32.5	39.8	46.0	46.8	47.4
37.0	85	-29.8		-27.1	-25.4	-19.2	-8.2	2.3	15.7	29.8	33.8	43.1	44.2	49.0
38.0	84	-30.0		-29.1	-26.0	-20.4	-8.5	4.0	18.0	29.5	34.8	45.1	47.1	47.8
39.0	83	-32.6			-28.8	-20.3	-8.4	4.7	21.1	30.4	36.0	42.1	50.2	51.4
40.0	82	-37.3		-30.1	-27.0	-18.0	-7.5	5.0	20.5	28.0	37.0	38.7	43.2	44.1
41.0	82	-42.7		-27.1	-24.9	-20.8	-7.7	7.5	21.4	32.8	35.0	44.1	46.1	46.7
42.0	82	-50.3		-27.1	-23.0	-20.4	-5.5	8.0	23.1	30.0	33.0	45.1	49.1	49.4
43.0	82	-57.8		-32.1	-26.4	-18.8	-6.5	8.5	24.3	30.0	35.0	47.1	53.1	53.8
44.0	81	-59.1		-45.2	-22.0	-17.0	-6.7	9.2	25.4	35.0	41.0	50.2	59.3	60.4
45.0	79	-60.3		-59.2	-24.1	-18.6	-6.2	10.8	26.4	35.1	44.8	53.2	63.2	64.0
46.0	79	-64.6		-59.2	-29.1	-20.1	-6.2	11.5	27.1	37.1	49.1	55.2	65.2	64.0
47.0	78	-59.1		-53.2	-31.1	-20.1	-6.2	12.0	25.5	40.2	53.1	57.2	63.1	63.6
48.0	77	-55.5		-48.2	-30.1	-19.3	-5.0	12.8	28.0	42.3	56.2	59.2	62.3	63.2
49.0	76	-49.4		-43.3	-29.2	-20.4	-8.5	12.0	28.0	44.4	56.6	60.3	62.3	63.3
50.0	73	-47.6		-41.3	-31.2	-21.7	-7.0	12.3	26.0	46.7	56.7	63.3	65.4	66.3
51.0	68	-45.9		-39.8	-31.6	-23.2	-8.0	13.5	26.5	46.2	57.3	67.5	68.4	69.3
52.0	67	-44.2		-37.7	-30.4	-24.3	-9.0	12.3	30.1	43.3	56.7	69.5	70.3	71.0
53.0	62	-43.1		-42.6	-35.0	-27.8	-10.2	8.5	26.5	51.8	58.0	63.6	71.5	72.4
54.0	53	-45.1		-43.8	-38.3	-28.8	-10.7	2.5	19.8	44.7	57.6	58.8	73.4	73.8
55.0	44	-43.5		-43.0	-39.7	-34.5	-12.7	3.3	18.8	44.5	51.0	60.0	65.5	65.9
56.0	36	-48.0			-44.2	-36.4	-20.0	2.0	17.0	46.4	57.2	62.1	62.4	62.5
57.0	30	-52.0			-40.5	-37.0	-20.2	0.0	10.5	29.0	65.8	67.4	68.0	68.4
58.0	24	-52.0			-38.8	-34.6	-19.0	-0.5	5.5	19.5	61.0	62.3	62.5	62.6
59.0	18	-48.1				-28.1	-19.2	-8.2	11.1	53.1	58.0	58.3	58.5	59.4
60.0	12	-44.0				-21.8	-16.0	-9.0	-4.0	3.8	11.4	11.7	11.9	12.0
61.0	8	-19.4					-15.0	-13.0	-4.0	4.3	4.8	5.1	5.2	5.3
62.0	4	-21.0					-21.0	-18.0	-14.3	-15.0	-14.8	-14.8	-14.7	-14.7
63.0	2	-14.3						-14.0	-14.7	-14.5	-14.5	-14.4	-14.4	-14.4
64.0	1	-17.9												-17.9

IRIG RANGE REFERENCE ATMOSPHERE, APRIL

TABLE II. 2.4

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1961 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	70	-14.2		-14.4	-13.5	-9.0	-4.9	-2.0	3.2	15.5	20.4	24.7	25.3	26.0
26.0	70	-19.3		-17.4	-14.2	-11.0	-6.7	-3.2	2.4	15.0	23.5	25.2	25.6	26.0
27.0	70	-20.0			-16.5	-11.0	-8.1	-4.0	-0.1	16.0	21.8	25.4	26.3	27.0
28.0	69	-23.0		-22.4	-17.4	-12.6	-10.4	-4.4	-0.2	18.4	20.4	27.4	29.3	29.9
29.0	69	-28.0		-22.4	-17.3	-15.5	-11.0	-4.0	-1.0	14.0	22.4	27.4	28.4	29.2
30.0	69	-32.9		-23.4	-19.3	-18.3	-12.0	-5.3	-0.1	14.1	23.3	25.4	28.5	29.5
31.0	69	-34.5		-29.4	-20.8	-19.1	-12.7	-5.5	-1.1	14.1	22.4	25.7	33.2	33.8
32.0	69	-31.2			-22.3	-19.1	-14.2	-7.4	-0.4	15.1	19.8	28.4	36.2	36.6
33.0	69	-37.0		-31.4	-22.4	-19.6	-13.7	-8.1	-1.4	13.1	16.8	27.3	27.8	28.3
34.0	69	-35.5			-21.6	-19.4	-14.8	-7.2	-1.3	12.1	21.4	24.0	25.3	25.9
35.0	68	-33.8			-20.4	-19.2	-16.5	-4.8	-1.0	10.2	17.0	22.5	27.3	28.0
36.0	67	-32.3			-21.3	-19.6	-16.3	-4.0	-1.4	7.7	16.7	19.7	27.5	28.4
37.0	67	-34.1		-31.8	-21.8	-19.6	-15.7	-4.0	-0.4	9.3	13.8	15.5	26.2	26.5
38.0	66	-34.0		-31.8	-23.3	-19.4	-16.2	-8.0	0.5	8.4	15.4	22.5	24.4	27.1
39.0	66	-31.9			-22.6	-20.4	-18.2	-8.0	-1.1	10.2	18.7	20.5	20.3	24.8
40.0	66	-33.9		-31.8	-20.7	-18.7	-14.8	-7.8	0.5	11.4	15.0	18.7	20.5	21.5
41.0	66	-34.5		-30.7	-26.7	-20.4	-13.5	-7.7	-0.5	10.7	15.7	19.5	22.3	22.8
42.0	64	-34.0		-31.8	-29.8	-21.5	-14.0	-7.5	2.5	7.8	15.4	17.5	20.2	20.6
43.0	63	-33.7		-28.6	-24.8	-20.3	-13.2	-5.7	3.8	9.6	12.0	18.6	20.3	20.8
44.0	63	-30.7		-26.6	-24.4	-17.3	-13.4	-3.7	5.1	9.7	12.0	18.6	23.2	23.6
45.0	61	-23.5			-22.0	-16.0	-13.7	-5.5	2.7	9.0	13.0	15.6	23.8	24.8
46.0	61	-24.8		-22.6	-19.0	-15.0	-12.7	-4.5	3.8	9.0	13.0	20.6	24.2	24.5
47.0	60	-26.8		-23.6	-17.7	-16.0	-12.0	-4.0	5.0	9.5	11.0	17.6	24.3	24.8
48.0	60	-28.8		-24.6	-22.0	-17.5	-12.0	-4.5	4.0	9.3	11.0	18.6	24.8	25.1
49.0	59	-29.3			-22.1	-19.1	-11.7	-4.8	6.3	9.8	11.8	18.7	24.6	25.3
50.0	59	-34.5		-30.7	-20.8	-20.0	-11.2	-3.5	5.3	11.5	14.8	19.7	25.3	25.6
51.0	57	-35.7		-30.7	-22.6	-20.3	-10.4	-3.3	4.4	13.3	16.4	19.7	25.4	25.9
52.0	57	-29.6		-28.4	-24.1	-21.3	-9.7	-3.7	3.0	12.7	16.2	20.7	23.6	24.4
53.0	56	-24.9		-24.7	-23.6	-19.7	-12.8	-3.7	6.3	11.4	20.0	21.7	22.4	23.0
54.0	54	-24.9		-23.0	-23.1	-20.3	-12.4	-5.0	0.2	11.0	15.3	19.8	19.9	20.2
55.0	51	-26.5		-26.4	-22.4	-19.9	-13.5	-4.5	7.1	11.8	13.7	17.8	23.8	24.0
56.0	42	-26.1			-22.0	-19.9	-14.2	-7.0	3.3	12.8	14.0	30.1	30.7	31.3
57.0	36	-35.1			-27.2	-22.4	-14.0	-7.0	1.0	9.4	13.2	20.1	20.4	20.7
58.0	26	-30.9			-28.7	-24.4	-16.2	-9.0	-2.5	7.4	7.7	7.0	7.0	8.0
59.0	20	-28.0			-28.0	-21.0	-15.0	-8.0	1.0	8.0	9.0	15.5	15.7	15.9
60.0	16	-28.0				-25.4	-19.0	-4.5	3.0	7.4	17.3	17.8	19.1	18.3
61.0	14	-29.9				-28.5	-21.2	-3.4	1.3	7.8	14.2	14.6	14.7	14.9
62.0	11	-30.2				-17.0	-13.2	-4.5	5.1	6.0	6.3	6.6	6.6	6.7
63.0	8	-39.4					-12.0	-9.0	0.0	11.1	11.3	11.5	11.5	11.6
64.0	6	-48.6					-12.4	-7.0	-4.5	12.3	12.3	12.4	12.5	12.5
65.0	5	-17.2						-13.5	4.2	4.5	4.3	4.7	4.8	4.8
66.0	5	-29.6						-14.5	-3.8	-3.4	-3.2	-3.2	-3.1	-3.1
67.0	2	-18.5						-15.0	-11.5	-11.2	-11.1	-11.0	-11.0	-11.0
68.0	1	-18.5												-18.8
69.0	1	-26.7												-26.7
70.0	1	-28.2												-28.2

IRIG RANGE REFERENCE ATMOSPHERE, MAY

TABLE II. 2. 5

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1961 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 50' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	60	-13.5		-10.4	-10.3	-8.5	-7.0	-5.6	-2.0	0.0	2.0	3.6	4.4	5.0
26.0	63	-14.5		-12.0	-12.3	-9.5	-7.7	-5.0	-3.3	-0.3	1.8	2.6	7.3	7.7
27.0	66	-13.4			-12.7	-11.1	-9.1	-4.5	-4.1	-1.2	-0.3	3.5	4.3	7.0
28.0	66	-14.0		-13.7	-12.0	-12.3	-10.4	-5.2	-4.4	-1.0	-0.1	6.5	7.5	8.5
29.0	67	-14.4		-15.8	-14.7	-13.8	-11.2	-5.5	-5.2	-1.2	0.2	2.5	15.4	16.1
30.0	67	-14.1		-14.8	-16.2	-15.3	-12.2	-10.0	-4.0	-1.2	0.0	2.3	2.7	3.1
31.0	66	-19.3			-14.8	-14.0	-12.7	-10.2	-4.8	-1.5	-0.4	0.5	1.3	2.0
32.0	66	-22.5		-17.5	-16.4	-14.8	-12.8	-9.7	-4.7	-2.4	-0.1	3.5	4.3	5.0
33.0	67	-21.0			-17.4	-15.3	-12.8	-9.8	-5.0	-1.5	-0.3	2.5	3.3	3.9
34.0	67	-22.4		-18.7	-17.0	-16.3	-12.8	-9.0	-4.4	-0.0	0.7	3.5	4.2	6.3
35.0	64	-20.9		-20.5	-18.5	-17.1	-13.0	-10.5	-7.5	-0.0	1.0	5.5	6.2	6.6
36.0	64	-24.0		-20.7	-17.9	-16.1	-13.0	-11.2	-4.2	0.1	3.9	4.5	5.2	5.5
37.0	68	-20.0			-18.4	-16.4	-13.4	-11.0	-7.7	-3.4	2.4	5.5	6.2	6.4
38.0	68	-22.7		-22.5	-18.8	-17.5	-13.7	-11.0	-4.4	-2.4	-0.4	3.5	4.3	4.9
39.0	68	-24.0		-20.5	-19.3	-17.1	-13.0	-10.8	-6.7	-0.4	2.4	5.7	9.2	9.6
40.0	67	-23.5		-19.7	-18.0	-15.1	-14.7	-10.8	-6.2	-0.4	4.7	8.5	9.2	9.7
41.0	67	-23.0		-22.5	-20.3	-17.8	-14.2	-10.8	-5.7	1.1	5.2	5.8	6.2	6.7
42.0	67	-25.8		-25.5	-20.8	-17.0	-15.3	-11.4	-7.2	1.3	2.0	5.5	6.4	7.1
43.0	67	-27.0			-22.3	-19.3	-17.1	-13.1	-6.6	-0.7	2.8	4.7	9.2	9.7
44.0	64	-24.0		-22.4	-20.0	-20.3	-17.1	-13.3	-8.2	-4.4	-3.1	4.5	6.2	6.7
45.0	66	-23.4		-23.8	-23.2	-19.6	-16.7	-13.0	-9.5	-5.7	0.2	2.5	3.2	3.6
46.0	66	-20.4			-23.7	-22.1	-18.0	-14.0	-10.1	-5.3	-0.6	0.5	1.3	1.8
47.0	66	-25.0		-27.5	-23.0	-22.6	-19.0	-14.0	-10.1	-5.5	-3.1	-0.2	1.3	1.7
48.0	66	-27.5		-25.8	-22.0	-21.0	-20.0	-14.2	-10.7	-4.4	-1.1	-0.2	2.2	2.5
49.0	66	-22.1		-27.8	-25.8	-24.4	-20.5	-14.3	-12.0	-3.8	-2.2	-0.5	0.5	1.3
50.0	66	-30.0		-29.8	-27.8	-24.2	-21.3	-14.7	-12.0	-1.4	0.0	1.3	2.4	3.0
51.0	63	-32.7		-30.6	-28.0	-27.0	-23.3	-14.0	-11.0	-4.1	-0.1	1.8	2.3	2.0
52.0	63	-34.2		-31.8	-30.0	-28.6	-22.7	-10.4	-11.0	-3.6	-1.1	2.4	2.0	3.3
53.0	61	-35.6		-35.6	-33.5	-29.0	-24.0	-20.6	-13.4	-7.1	-4.2	-4.1	3.2	3.6
54.0	60	-37.3		-35.6	-34.5	-31.0	-24.0	-21.5	-14.0	-7.5	-5.0	-1.4	3.4	3.0
55.0	57	-40.0		-30.7	-37.1	-31.6	-27.0	-20.8	-15.1	-7.0	1.2	2.7	6.3	6.6
56.0	55	-40.0		-38.8	-32.3	-29.0	-24.0	-21.0	-14.8	-5.3	-0.6	1.8	2.3	2.6
57.0	51	-34.0		-38.8	-31.0	-28.0	-23.1	-21.1	-14.6	-9.5	-4.8	-2.2	-0.5	0.1
58.0	44	-32.6		-30.0	-31.0	-31.3	-27.7	-23.5	-14.2	-11.3	-6.1	-4.0	-0.5	0.0
59.0	37	-48.0			-38.1	-35.3	-32.4	-27.5	-17.6	-10.7	-4.0	-0.9	-0.4	0.0
60.0	30	-49.9			-43.7	-40.0	-32.8	-25.0	-20.1	-15.0	-8.5	-0.7	-0.3	0.0
61.0	22	-51.9			-44.0	-40.0	-32.9	-23.3	-19.5	-16.2	-12.1	-4.5	-4.4	-4.3
62.0	14	-73.9				-48.2	-34.5	-24.3	-20.5	-11.0	-10.0	-10.5	-10.3	-10.2
63.0	9	-37.1					-29.7	-24.5	-21.2	-10.3	-10.7	-10.5	-10.4	-10.0
64.0	6	-37.9					-31.7	-31.0	-22.5	-17.7	-17.3	-17.3	-17.2	-17.2
65.0	5	-38.6						-31.5	-24.7	-24.3	-24.1	-24.1	-24.0	-24.0
66.0	1	-33.2												-33.2
67.0	1	-37.0												-37.0
68.0	1	-41.6												-41.6
69.0	1	-46.2												-46.2
70.0	1	-50.8												-50.8

IRIG RANGE REFERENCE ATMOSPHERE, JUNE

TABLE II.2.6

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1964 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT (km) MSL	NO. OBS	MAX	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX
25.0	46	-13.1				-10.8	-10.0	-8.6	-7.5	-6.9	-6.5	-6.0	-5.6	-5.5
26.0	54	-13.2		-13.0	-12.6	-12.6	-11.5	-9.7	-8.7	-7.5	-6.7	-6.5	-6.1	-6.0
27.0	54	-14.0			-13.7	-13.6	-12.1	-10.5	-8.6	-7.7	-6.7	-6.5	-6.1	-6.0
28.0	54	-14.9		-14.0	-13.7	-13.2	-12.2	-10.9	-9.6	-7.7	-7.1	-6.6	-6.6	-6.2
29.0	59	-15.6		-14.7	-14.2	-14.0	-13.2	-11.1	-10.1	-9.2	-8.6	-8.1	-6.6	-6.5
30.0	55	-16.0		-15.0	-15.6	-14.8	-13.8	-11.0	-10.7	-9.6	-9.1	-7.6	-7.2	-6.9
31.0	56	-16.6		-16.0	-16.1	-14.0	-13.7	-12.6	-10.6	-9.2	-8.6	-8.1	-7.7	-7.6
32.0	56	-16.7		-16.7	-16.6	-15.0	-14.6	-12.7	-10.0	-9.0	-8.5	-8.0	-7.5	-6.9
33.0	56	-17.6		-17.0	-16.6	-15.8	-14.0	-13.0	-11.2	-9.5	-8.0	-8.5	-8.5	-8.2
34.0	58	-17.7		-17.0	-16.7	-16.4	-14.5	-13.1	-12.1	-10.4	-9.7	-8.6	-8.2	-8.0
35.0	57	-20.2			-18.7	-17.6	-15.7	-14.6	-12.0	-11.1	-10.8	-10.1	-7.7	-7.2
36.0	59	-21.2		-19.0	-18.6	-18.0	-16.7	-14.6	-12.6	-11.5	-10.6	-10.1	-9.8	-9.5
37.0	62	-20.2		-20.6	-19.0	-18.5	-17.5	-15.5	-12.6	-11.2	-10.0	-9.5	-9.1	-8.7
38.0	65	-21.6		-20.8	-19.8	-19.5	-17.8	-15.8	-13.8	-11.6	-10.1	-9.2	-8.5	-7.8
39.0	65	-21.3			-21.0	-20.3	-18.6	-16.5	-13.5	-11.5	-10.5	-8.7	-8.5	-7.9
40.0	65	-24.1			-20.0	-19.0	-18.8	-16.6	-13.6	-10.5	-11.1	-10.2	-9.7	-9.5
41.0	65	-24.6		-23.8	-22.8	-20.0	-18.0	-16.8	-14.2	-12.5	-11.5	-11.1	-9.7	-8.5
42.0	65	-28.1		-23.6	-22.6	-21.6	-19.1	-18.1	-15.2	-13.6	-12.1	-11.2	-10.7	-10.2
43.0	65	-29.0		-27.6	-25.6	-22.0	-20.7	-19.1	-17.1	-14.6	-13.1	-9.6	-8.6	-7.0
44.0	63	-30.3			-24.6	-23.0	-21.7	-19.7	-18.2	-15.8	-14.6	-13.6	-10.7	-10.1
45.0	65	-28.0			-26.8	-24.7	-22.0	-20.6	-18.7	-16.5	-15.0	-14.6	-14.1	-13.7
46.0	65	-32.4		-31.6	-27.6	-26.7	-24.8	-21.5	-19.6	-17.5	-17.0	-15.6	-15.5	-12.6
47.0	65	-31.3			-29.6	-28.5	-25.6	-22.8	-20.5	-18.7	-18.0	-16.5	-15.0	-15.6
48.0	65	-37.3		-32.0	-32.5	-28.2	-26.7	-24.5	-21.6	-20.2	-19.1	-17.6	-16.7	-16.1
49.0	65	-34.0		-32.6	-31.6	-30.2	-28.7	-25.0	-23.1	-19.5	-18.6	-17.6	-16.7	-16.1
50.0	69	-[illegible]		-36.6	-34.0	-32.6	-29.0	-27.7	-23.0	-21.1	-19.1	-17.6	-16.0	-15.5
51.0	69	-38.0		-38.0	-38.5	-37.5	-32.6	-28.0	-25.2	-21.6	-20.0	-18.6	-16.6	-16.6
52.0	69	-41.4		-40.6	-39.6	-36.0	-33.7	-30.0	-25.0	-23.1	-21.1	-19.6	-19.0	-18.6
53.0	69	-42.6		-41.6	-40.6	-39.6	-34.5	-30.5	-27.9	-24.1	-21.6	-18.7	-18.5	-18.0
54.0	63	-44.2		-43.6	-41.5	-40.5	-37.7	-32.0	-29.5	-25.5	-23.8	-21.6	-20.7	-20.2
55.0	69	-46.2		-46.6	-44.0	-40.7	-39.0	-35.0	-31.0	-26.5	-26.0	-20.6	-18.7	-18.3
56.0	59	-49.9		-48.7	-45.1	-41.1	-39.1	-35.6	-32.5	-25.6	-21.0	-20.5	-16.7	-16.2
57.0	57	-53.5		-51.7	-49.1	-45.5	-40.6	-36.6	-32.1	-27.7	-25.8	-22.5	-21.5	-20.9
58.0	50	-54.0		-55.0	-48.5	-46.0	-41.5	-37.7	-33.1	-28.0	-25.8	-24.1	-22.6	-22.1
59.0	47	-54.9		-51.0	-52.5	-48.5	-43.2	-38.2	-33.0	-28.5	-24.7	-24.0	-20.6	-20.5
60.0	38	-65.4			-55.1	-49.2	-44.8	-39.4	-34.2	-29.0	-20.0	-12.8	-12.5	-11.0
61.0	31	-77.9			-55.4	-51.0	-48.1	-40.3	-36.7	-28.6	-20.8	-16.7	-16.5	-16.0
62.0	21	-55.6			-47.0	-46.0	-42.4	-40.4	-36.6	-29.1	-27.1	-15.5	-15.5	-15.1
63.0	36	-60.0				-51.4	-48.5	-40.5	-38.5	-30.5	-8.0	-8.4	-8.2	-8.0
64.0	11	-64.0				-53.0	-50.2	-44.7	-40.7	-36.7	-30.8	-30.5	-30.1	-30.0
65.0	11	-67.8				-57.8	-54.2	-51.8	-47.4	-40.1	-39.8	-39.1	-39.0	-31.8
66.0	8	-62.5					-59.0	-56.8	-53.0	-39.8	-39.8	-39.5	-39.2	-39.2
67.0	6	-62.2					-63.8	-60.0	-53.8	-38.1	-37.8	-37.5	-37.2	-37.0
68.0	3	-64.2						-57.8	-34.8	-34.4	-34.3	-34.2	-34.1	-34.1
69.0	1	-34.4												-34.4
70.0	1	-33.1												-33.1

IRIG RANGE REFERENCE ATMOSPHERE, JULY

TABLE II. 2.7

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1960 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	84	-14.1		-12.0	-10.8	-9.6	-8.5	-6.7	-5.3	-3.7	-2.6	-2.0	-1.8	-0.9
26.0	48	-15.5		-12.0	-10.9	-10.4	-9.2	-7.7	-6.3	-4.3	-3.5	-3.0	-2.4	-1.8
27.0	49	-12.7		-12.0	-11.5	-10.9	-10.0	-8.1	-6.8	-5.0	-4.2	-3.1	-2.6	-2.2
28.0	54	-14.6		-14.5	-14.1	-11.9	-10.6	-9.3	-7.0	-6.5	-5.0	-5.1	-4.7	-4.2
29.0	56	-16.6		-14.7	-13.8	-13.1	-10.9	-9.6	-8.0	-6.1	-5.4	-5.1	-4.6	-4.2
30.0	59	-15.4		-13.7	-12.0	-12.4	-11.0	-10.1	-8.8	-7.2	-6.8	-6.0	-5.8	-5.5
31.0	63	-15.0		-14.0	-14.3	-12.0	-11.5	-10.5	-9.4	-8.3	-7.7	-7.2	-7.0	-6.8
32.0	65	-17.3		-15.8	-14.7	-13.6	-12.3	-10.7	-9.4	-8.2	-7.4	-6.6	-6.1	-5.5
33.0	66	-16.6		-16.5	-15.7	-15.1	-12.0	-11.1	-10.0	-8.5	-7.3	-6.3	-3.7	-3.2
34.0	66	-19.4		-17.5	-16.0	-15.6	-13.6	-11.5	-9.8	-8.6	-8.2	-7.5	-6.7	-6.0
35.0	68	-20.0		-19.5	-17.0	-17.1	-15.5	-12.1	-10.5	-9.5	-8.2	-6.5	-0.8	-0.3
36.0	69	-19.0				-18.0	-16.4	-13.5	-11.2	-10.0	-9.3	-8.6	-7.7	-7.2
37.0	69	-19.7		-19.5	-19.2	-18.3	-17.0	-13.4	-11.0	-9.8	-9.2	-8.7	-8.2	-7.7
38.0	70	-19.6		-19.5	-19.5	-18.8	-16.0	-13.9	-11.2	-10.1	-8.8	-8.2	-7.8	-7.3
39.0	70	-20.4				-19.2	-16.7	-14.5	-11.9	-10.0	-8.5	-7.6	-6.6	-5.7
40.0	71	-20.7			-20.5	-19.6	-18.0	-15.8	-12.3	-10.2	-9.4	-7.6	-6.8	-6.3
41.0	71	-23.9		-22.4	-20.9	-20.4	-19.0	-16.2	-13.5	-11.2	-9.8	-9.2	-8.8	-8.2
42.0	71	-22.7			-22.5	-21.5	-20.0	-17.5	-14.4	-12.2	-11.4	-10.8	-10.2	-9.7
43.0	71	-23.6		-23.5	-23.1	-22.2	-20.7	-18.7	-15.1	-12.3	-10.5	-8.7	-8.1	-7.6
44.0	69	-26.4		-25.7	-24.0	-24.0	-21.2	-19.2	-16.3	-13.4	-11.7	-10.4	-8.8	-8.2
45.0	69	-29.0			-27.3	-24.8	-22.0	-20.1	-17.2	-15.2	-13.2	-12.3	-11.0	-11.5
46.0	69	-30.0		-29.4	-28.5	-27.4	-24.1	-20.9	-18.1	-15.4	-14.2	-12.6	-10.7	-10.1
47.0	69	-30.4				-28.1	-25.4	-22.3	-19.7	-18.0	-17.1	-13.6	-10.7	-10.2
48.0	67	-33.4			-30.0	-30.4	-26.6	-23.8	-20.6	-18.3	-16.3	-13.7	-13.1	-12.7
49.0	67	-37.2		-32.5	-31.6	-30.7	-27.6	-24.4	-21.0	-18.3	-16.3	-13.5	-12.7	-12.0
50.0	67	-39.1		-36.5	-32.0	-31.8	-28.1	-26.1	-20.0	-18.7	-16.7	-14.5	-12.3	-12.4
51.0	67	-39.3			-37.3	-33.6	-30.5	-27.7	-23.2	-19.8	-16.2	-15.3	-10.5	-9.5
52.0	66	-39.8		-39.7	-38.8	-36.4	-32.6	-30.0	-24.5	-20.2	-15.3	-14.3	-12.6	-11.7
53.0	65	-39.4				-37.2	-34.5	-30.5	-26.1	-21.5	-19.2	-18.2	-13.5	-12.6
54.0	64	-44.0		-41.8	-40.0	-38.9	-36.2	-31.6	-28.2	-23.7	-21.1	-18.5	-16.7	-16.1
55.0	64	-48.2			-44.8	-41.8	-37.7	-33.0	-28.0	-24.4	-22.6	-20.5	-19.7	-19.2
56.0	62	-46.3			-44.0	-43.6	-39.0	-35.8	-30.1	-27.3	-23.5	-22.4	-21.5	-20.7
57.0	60	-48.0		-47.6	-46.5	-45.0	-41.8	-37.0	-32.7	-28.3	-26.5	-23.4	-20.7	-20.3
58.0	56	-52.7		-50.7	-49.2	-46.2	-42.8	-40.0	-33.0	-29.5	-28.0	-21.3	-16.6	-16.0
59.0	51	-57.5		-53.8	-50.4	-48.4	-44.1	-39.7	-34.4	-31.3	-28.5	-24.2	-20.5	-20.0
60.0	43	-67.5			-50.8	-48.8	-45.2	-40.6	-35.7	-28.3	-24.1	-21.0	-20.4	-20.0
61.0	32	-50.2				-48.8	-45.0	-40.6	-33.0	-30.2	-26.6	-24.4	-24.0	-23.5
62.0	22	-54.0			-51.9	-49.8	-43.8	-40.5	-38.2	-30.5	-30.1	-26.5	-26.3	-26.2
63.0	11	-57.8				-51.9	-47.2	-44.2	-39.4	-36.1	-27.7	-27.4	-27.3	-27.2
64.0	6	-61.6					-55.8	-54.0	-48.5	-44.7	-44.5	-44.4	-44.3	-44.3
65.0	2	-65.4						-65.0	-49.7	-49.5	-49.4	-49.4	-49.4	-49.3

IRIG RANGE REFERENCE ATMOSPHERE, AUGUST

TABLE II.2.8

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49'N	147° 52'W	1960 – 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59'N	145° 43'W	UNITS: WIND SPEED – m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	45	-7.0				-6.9	-4.0	-3.3	-0.7	2.3	3.8	4.7	5.1	5.4
26.0	45	-13.7		-10.0	-8.0	-7.8	-5.4	-4.1	-1.4	1.8	2.0	4.0	4.7	5.2
27.0	47	-15.6		-10.0	-9.5	-8.6	-6.0	-4.4	-1.3	1.7	2.8	5.0	11.6	12.1
28.0	48	-10.0			-9.5	-8.1	-6.2	-4.0	-1.3	0.5	4.6	5.0	8.5	9.0
29.0	49	-10.5		-10.5	-10.3	-8.4	-6.7	-4.4	-1.7	1.5	4.6	7.0	8.3	8.6
30.0	49	-10.0		-9.0	-8.0	-8.4	-6.6	-4.6	-1.4	1.4	3.6	4.0	6.3	6.6
31.0	49	-13.9		-10.0	-10.3	-9.1	-7.5	-5.5	-2.1	0.8	1.8	2.0	7.8	7.8
32.0	49	-11.2			-10.8	-9.6	-8.2	-5.5	-2.8	1.5	2.6	3.0	8.5	9.0
33.0	49	-12.5		-10.0	-9.0	-9.4	-8.2	-5.2	-2.0	1.3	1.0	4.0	5.5	6.0
34.0	49	-22.8		-11.0	-10.5	-8.8	-8.1	-5.8	-2.1	1.6	4.6	6.0	8.5	8.9
35.0	49	-14.0		-12.0	-10.8	-9.8	-8.3	-5.6	-1.6	1.5	5.6	6.7	7.1	7.5
36.0	49	-17.6		-12.0	-12.3	-10.6	-7.7	-4.8	-1.1	1.8	2.6	3.0	5.5	5.9
37.0	49	-12.7		-12.0	-11.6	-11.0	-7.7	-4.0	-0.0	2.1	3.8	6.0	8.4	8.9
38.0	49	-11.9				-10.6	-8.0	-6.1	-2.4	4.4	5.6	6.0	7.5	8.0
39.0	49	-13.3				-11.1	-9.3	-7.1	-3.1	3.0	4.6	7.0	8.6	9.2
40.0	49	-15.0		-13.0	-13.3	-11.9	-10.5	-6.8	-0.2	4.0	5.6	7.0	10.5	10.9
41.0	49	-17.2		-16.0	-15.6	-13.6	-10.8	-5.6	-0.1	3.6	7.6	8.5	9.1	9.8
42.0	49	-27.6		-19.0	-17.6	-15.1	-10.2	-7.2	-2.2	0.7	2.8	5.0	6.4	6.7
43.0	49	-52.4		-20.0	-17.6	-14.1	-11.2	-6.6	-3.1	1.0	3.6	7.5	7.0	8.2
44.0	44	-19.7		-14.6	-17.8	-16.2	-11.7	-9.0	-4.5	0.5	4.6	7.0	14.3	14.7
45.0	48	-20.1			-18.6	-14.8	-13.0	-8.3	-6.0	-2.4	2.4	5.0	7.5	8.0
46.0	48	-27.8		-19.0	-16.0	-16.3	-13.2	-11.1	-7.3	-1.8	5.6	6.0	7.5	7.9
47.0	48	-20.4			-18.8	-17.2	-14.8	-11.0	-7.0	1.2	5.6	6.0	8.5	8.9
48.0	48	-23.6		-21.0	-20.7	-20.2	-15.7	-10.7	-5.5	0.2	2.8	5.0	8.4	8.7
49.0	48	-23.7		-22.0	-21.0	-21.3	-14.5	-10.5	-6.0	0.2	2.3	3.0	5.7	6.3
50.0	48	-27.5		-25.0	-23.6	-21.1	-17.0	-11.5	-6.0	-0.8	3.3	4.0	6.7	7.4
51.0	47	-30.6		-25.0	-24.8	-24.1	-18.7	-13.2	-6.0	-0.7	0.8	1.0	8.3	8.6
52.0	47	-32.4		-29.0	-26.6	-23.3	-18.6	-12.0	-7.4	-1.7	0.7	3.0	5.6	6.0
53.0	47	-34.2		-32.0	-27.6	-23.6	-20.6	-14.5	-8.4	-2.7	3.3	4.0	6.3	6.6
54.0	47	-36.0		-33.0	-29.8	-26.6	-22.2	-14.5	-9.0	-0.7	2.3	3.0	7.6	8.1
55.0	46	-37.3		-35.0	-32.7	-30.7	-21.9	-16.5	-10.8	-1.8	2.7	7.0	7.8	8.5
56.0	45	-40.7		-40.0	-36.7	-31.5	-24.9	-17.7	-11.4	-2.5	2.8	4.7	5.1	5.5
57.0	41	-39.9			-37.9	-31.9	-25.7	-19.6	-12.7	-4.1	-1.5	1.1	1.8	2.4
58.0	39	-42.8			-40.1	-36.4	-27.1	-20.9	-13.7	-9.9	-5.0	-2.9	-2.1	-1.6
59.0	37	-47.8			-45.1	-39.3	-30.7	-22.5	-18.2	-10.7	-7.8	-6.8	-6.4	-6.8
60.0	31	-45.4			-40.7	-39.0	-31.1	-24.2	-14.4	-12.6	-10.5	-6.6	-6.1	-5.7
61.0	21	-44.7			-41.9	-40.9	-32.4	-25.5	-18.2	-15.1	-13.1	-10.5	-10.2	-10.0
62.0	15	-46.9				-46.0	-36.2	-29.5	-18.9	-15.5	-8.7	-8.3	-8.1	-8.0
63.0	10	-48.0				-48.0	-39.5	-36.5	-21.5	-19.0	-17.7	-17.5	-17.8	-17.3
64.0	6	-48.3					-45.5	-42.0	-29.5	-28.5	-28.2	-28.0	-27.9	-27.8
65.0	4	-48.0					-48.0	-43.0	-41.0	-32.4	-32.2	-32.1	-32.0	-32.0
66.0	3	-49.0						-43.5	-37.7	-37.3	-37.1	-37.0	-37.0	-36.9
67.0	3	-48.0						-44.5	-37.7	-37.1	-35.0	-36.8	-36.8	-36.7
68.0	3	-49.0						-42.5	-33.6	-33.0	-32.7	-32.6	-32.6	-32.5
69.0	4	-48.0					-48.0	-42.0	-35.0	-26.4	-26.1	-26.0	-26.0	-25.9
70.0	3	-43.1						-40.5	-35.4	-35.5	-35.0	-35.4	-35.4	-35.3

IRIG RANGE REFERENCE ATMOSPHERE, SEPTEMBER

TABLE II.2.9

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49'N	147° 52'W	1961 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59'N	145° 43'W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	55	-2.6		-2.5	-1.4	0.6	4.1	7.2	9.5	11.0	16.7	18.5	18.5	18.7
26.0	55	-1.9		-1.8	-0.7	1.1	3.8	7.7	10.0	13.7	16.7	19.8	20.3	20.6
27.0	55	-1.5		-1.4	-0.3	1.1	3.6	7.5	10.9	13.7	17.7	20.5	20.9	21.2
28.0	55	-3.3		-1.8	-0.7	1.1	3.8	8.4	11.0	15.4	19.2	19.9	21.4	21.5
29.0	55	-4.4		-2.8	-1.4	0.5	4.6	9.9	11.5	16.9	19.8	20.8	21.3	21.7
30.0	53	-2.3		-0.0	-0.6	0.1	4.8	9.5	13.3	16.2	20.2	20.9	21.5	22.0
31.0	53	-4.6		-4.5	0.7	1.4	6.2	8.8	12.8	17.7	19.1	19.6	19.8	20.0
32.0	53	-5.0		-0.0	-0.2	1.3	6.1	9.9	13.7	19.1	19.7	20.0	21.5	22.2
33.0	52	-0.6		-0.5	-0.2	1.7	6.7	11.7	16.0	19.9	22.8	23.8	25.4	25.8
34.0	53	-2.4		-0.8	0.7	2.7	6.7	11.5	14.4	20.4	21.7	22.8	24.3	24.7
35.0	52	-1.2				3.2	7.5	13.8	18.0	21.4	29.7	23.8	27.3	27.6
36.0	52	-3.2			-0.4	4.4	7.7	10.9	16.7	21.8	28.0	28.8	29.4	29.9
37.0	52	-0.4		2.1	2.5	6.1	9.0	13.3	18.3	20.9	28.6	30.9	31.4	31.9
38.0	50	4.0			4.3	6.0	11.2	15.8	19.3	23.5	30.3	30.9	31.5	32.0
39.0	50	3.8			4.3	6.5	10.8	16.7	20.9	28.0	25.0	26.0	29.4	29.7
40.0	50	-4.1		0.1	2.5	5.5	11.2	17.3	23.3	27.5	28.5	29.5	30.0	30.3
41.0	49	3.0			3.2	7.3	11.1	18.5	23.8	29.1	30.8	32.5	32.8	33.1
42.0	48	1.4		2.1	3.4	5.4	10.3	19.0	23.5	30.1	30.0	33.0	36.4	36.9
43.0	48	0.0		3.1	3.4	6.8	10.0	18.8	25.0	30.1	30.7	31.0	32.3	32.6
44.0	48	0.8		4.0	4.7	7.4	11.0	19.0	25.0	28.2	31.6	36.9	38.3	39.5
45.0	46	1.9		3.0	5.2	7.3	11.5	18.5	24.5	29.8	32.7	40.7	41.1	41.4
46.0	44	2.7		3.0	5.2	7.8	13.0	19.0	25.0	30.6	37.8	38.0	42.3	42.6
47.0	44	1.5		4.0	5.1	6.2	12.5	19.0	26.5	32.3	33.8	38.0	44.5	44.9
48.0	44	3.7			5.2	8.4	14.0	19.8	27.3	31.6	33.0	37.0	47.4	47.7
49.0	44	-0.4		5.0	5.2	11.3	14.8	19.3	29.0	32.6	33.0	37.0	43.6	44.0
50.0	44	-3.4		2.0	4.2	9.7	15.0	20.5	28.0	33.6	39.8	40.0	40.6	41.0
51.0	43	-4.5			5.2	9.7	15.6	21.3	26.3	34.7	36.0	39.0	39.6	40.0
52.0	43	-5.7			4.2	10.2	16.4	20.5	27.3	31.7	37.0	39.0	39.5	40.0
53.0	42	-9.5			0.1	8.1	18.2	21.5	26.3	32.8	38.5	39.0	39.3	39.5
54.0	39	1.8				2.9	12.4	19.8	28.1	33.6	38.1	41.1	41.6	41.9
55.0	37	-7.5			0.8	5.4	10.6	19.3	26.9	31.7	36.2	42.1	42.4	42.6
56.0	30	-10.2			-1.5	1.0	12.2	19.7	24.5	30.0	40.8	46.3	46.8	47.1
57.0	30	-11.5			-1.5	-0.5	12.5	20.0	27.5	38.5	45.8	45.9	46.2	46.4
58.0	28	-9.2			0.4	2.8	9.0	21.0	27.5	38.2	41.6	54.4	54.7	55.0
59.0	19	-8.4				7.9	10.6	19.3	26.3	35.1	39.0	39.4	39.6	39.9
60.0	16	-15.2				3.6	11.0	18.0	20.5	27.4	36.1	36.4	36.5	36.6
61.0	12	-20.8				2.2	6.0	14.0	19.0	27.8	32.0	32.7	32.8	32.9
62.0	6	8.3					6.5	8.0	21.4	22.0	22.2	22.3	22.4	22.4
63.0	1	0.3												0.3
64.0	1	-9.2												-9.2
65.0	1	-18.8												-18.8
66.0	1	-28.5												-28.5
67.0	1	-38.1												-38.1
68.0	1	-47.7												-47.7

IRIG RANGE REFERENCE ATMOSPHERE, OCTOBER

TABLE II. 2. 10

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1960 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX
25.0	78	-4.9		-4.2	-1.1	0.0	6.4	14.2	20.5	24.2	30.1	31.2	32.3	33.2
26.0	78	-5.3		-2.6	-1.1	2.4	8.0	14.2	21.3	27.1	31.1	34.2	34.9	35.4
27.0	74	-2.2			0.0	1.0	6.0	15.4	22.8	29.1	34.1	35.1	35.8	36.3
28.0	77	-7.9		-1.2	-0.4	2.7	8.5	15.4	25.0	30.3	35.2	37.1	37.6	38.1
29.0	77	-5.9		-4.2	-1.2	2.7	9.5	17.3	27.4	31.6	35.2	38.1	38.7	39.1
30.0	77	-5.0			-3.2	3.4	9.1	18.5	28.3	34.2	38.2	39.4	40.1	40.6
31.0	77	-6.8			-4.2	2.2	8.6	19.2	29.8	35.1	37.2	42.6	45.2	46.1
32.0	77	-0.0		-7.6	0.8	2.2	9.1	19.8	30.7	37.3	40.2	42.6	43.1	43.5
33.0	77	-8.8		-7.2	-0.2	2.7	10.4	21.1	29.9	37.8	40.2	42.2	49.2	50.0
34.0	77	-14.2		-10.2	-0.6	5.7	11.5	19.8	32.4	39.3	41.2	44.2	49.2	50.0
35.0	77	-13.7		-11.2	-5.2	3.0	12.1	20.3	35.8	39.8	43.1	45.2	48.2	48.7
36.0	77	-11.4		-9.2	-6.1	2.8	13.3	21.5	33.0	40.0	44.2	46.1	46.5	46.8
37.0	76	-9.8		-8.3	-2.7	2.6	15.0	25.0	37.0	44.2	46.7	48.3	49.1	49.6
38.0	74	-8.0		-6.3	-3.6	3.5	14.8	25.3	35.8	43.5	47.1	48.3	58.2	58.8
39.0	75	-8.5		-5.3	-1.7	5.3	18.2	26.8	34.8	45.2	50.1	51.3	55.3	56.4
40.0	75	-9.4		-6.6	-2.2	4.5	17.3	27.5	38.3	45.6	50.3	52.3	53.1	53.6
41.0	72	-9.9		-8.4	-1.7	7.1	16.0	29.0	38.0	45.4	49.0	53.4	56.3	57.1
42.0	71	-19.5		-9.7	-8.4	5.1	18.9	26.5	41.1	45.0	49.5	51.7	67.4	68.3
43.0	64	-16.5		-11.5	-2.6	2.8	15.0	24.8	38.3	46.2	50.6	53.2	53.7	54.0
44.0	67	-13.8		-11.5	-2.6	4.7	16.8	27.1	38.6	49.3	51.7	54.5	56.2	56.6
45.0	66	-12.4		-11.5	-5.7	1.6	15.5	26.0	37.5	48.7	51.3	54.5	55.3	55.7
46.0	64	-9.4		-7.5	-3.8	4.4	15.5	26.0	38.0	52.2	53.3	53.8	54.3	54.9
47.0	61	-9.2		-8.6	-3.0	7.4	15.3	25.8	38.8	52.3	53.5	59.6	60.5	61.2
48.0	60	-12.5		-7.6	-4.0	8.0	17.0	24.5	38.3	52.0	55.0	58.6	66.6	67.5
49.0	60	-15.8		-6.6	-4.0	9.5	18.0	24.2	37.0	50.0	58.0	58.6	68.6	69.5
50.0	58	-5.0		-0.8	0.0	11.4	17.5	24.0	35.8	49.2	58.1	63.7	68.2	68.5
51.0	56	-5.9		-4.7	0.8	7.3	15.5	26.2	38.0	55.4	60.2	62.7	66.4	66.8
52.0	55	-8.5		-3.7	1.4	7.8	16.3	24.8	39.1	48.5	56.7	63.7	76.4	77.0
53.0	51	-10.9		-5.8	1.6	6.1	16.8	23.8	38.3	48.5	51.5	60.8	74.5	75.0
54.0	50	-9.3		-6.0	-2.5	2.0	14.8	22.0	36.4	44.0	53.5	60.0	68.4	68.8
55.0	47	-9.5		-8.0	-4.6	-0.1	9.4	19.8	31.9	45.3	50.7	62.4	62.7	62.9
56.0	41	-14.6			-9.0	0.1	10.6	19.5	31.9	43.0	47.0	57.0	57.4	57.7
57.0	31	-16.9			-15.4	-11.9	2.8	15.3	33.3	38.0	46.3	54.4	55.0	55.4
58.0	24	-18.9			-12.6	-0.5	5.3	14.5	23.8	42.1	49.6	55.3	55.6	55.8
59.0	20	-13.9			-14.0	-5.0	6.7	11.0	19.0	31.0	39.0	39.4	39.7	39.8
60.0	12	0.9					3.0	6.0	11.0	18.8	30.5	30.8	31.0	31.1
61.0	7	-8.1					-2.2	4.5	14.3	20.2	20.5	20.6	20.7	20.7
62.0	5	-38.8					-17.7	-7.5	1.8	8.4	8.6	8.7	8.8	8.8
63.0	1	5.9					--							5.9
64.0	1	3.0												3.0

IRIG RANGE REFERENCE ATMOSPHERE, NOVEMBER

TABLE II. 2. 11

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1960 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	63	-12.0		-0.0	-0.3	1.3	4.9	11.5	16.1	27.7	31.0	35.4	41.5	42.4
26.0	65	-9.3		-2.8	-1.4	0.7	6.2	11.3	17.7	29.3	33.0	38.8	42.5	43.3
27.0	69	-9.0		-2.8	-2.2	-0.6	7.1	12.8	21.0	31.6	37.3	40.4	42.3	42.9
28.0	69	-9.8		-4.4	-3.3	-0.1	7.1	12.8	23.0	32.6	37.0	40.4	41.3	42.0
29.0	70	-9.0		-6.7	-3.5	-1.5	7.1	13.0	23.0	35.0	39.3	39.4	41.4	42.3
30.0	72	-9.0			-4.4	-0.8	8.3	15.4	26.0	35.8	39.2	44.4	54.2	54.5
31.0	71	-7.4		-5.8	-5.1	1.1	7.0	15.5	30.1	35.0	38.7	43.1	43.5	43.8
32.0	72	-6.3			-3.2	1.2	8.8	16.0	31.5	38.3	41.6	46.4	48.2	48.6
33.0	72	-8.4		-5.4	-3.2	2.1	9.0	18.8	33.0	41.3	46.0	50.4	52.4	53.3
34.0	72	-9.7		-8.4	-0.4	2.2	9.5	17.3	29.5	40.0	45.4	53.4	56.4	57.4
35.0	72	-12.2			-0.4	2.6	9.0	18.5	30.0	41.5	44.4	50.4	53.3	54.1
36.0	71	-11.5		-11.4	-0.5	2.0	9.3	19.1	32.3	42.0	45.5	50.4	51.2	51.5
37.0	71	-13.8		-9.4	-0.2	3.1	10.0	19.1	31.3	47.5	49.2	51.4	54.2	54.7
38.0	71	-14.4		-7.4	1.6	4.0	11.7	19.6	33.1	45.3	49.5	53.4	57.4	58.4
39.0	71	-8.3		-5.4	0.6	4.6	13.3	20.8	32.3	44.0	50.2	54.4	65.4	66.4
40.0	69	-5.8		-4.4	-0.4	7.3	14.1	21.3	32.4	48.0	54.6	58.2	58.7	59.1
41.0	69	-9.7		-5.4	-0.3	6.0	12.8	21.8	33.6	49.1	54.3	55.4	56.4	57.4
42.0	66	-4.1		-3.5	1.3	7.8	11.8	22.0	35.3	50.4	59.4	59.5	63.4	64.1
43.0	64	-0.5			2.7	6.8	14.1	21.3	38.2	53.4	63.4	64.5	66.4	67.2
44.0	65	0.1		1.5	3.3	5.5	14.6	20.8	37.8	51.5	61.8	71.5	74.4	75.0
45.0	64	0.0		0.5	5.4	6.7	13.0	22.0	39.0	54.5	61.8	83.5	86.4	87.0
46.0	63	1.3		1.4	4.2	6.7	12.3	22.5	40.3	50.7	65.0	81.4	82.4	83.2
47.0	61	-3.9		0.4	4.5	7.4	14.3	24.5	38.0	53.0	65.0	74.4	76.2	76.6
48.0	60	-3.4		1.2	2.0	5.5	14.0	25.3	42.0	50.0	71.0	74.4	77.5	79.4
49.0	58	-6.3		-3.8	-3.0	4.8	13.8	25.0	37.8	50.6	64.0	69.7	85.2	85.6
50.0	55	-10.0		-7.7	-4.2	3.3	13.8	24.5	38.3	52.5	58.3	84.7	95.4	96.0
51.0	52	-10.0		-8.8	-3.4	4.2	16.0	23.0	41.0	50.8	57.4	60.8	74.6	75.3
52.0	51	-10.1		-4.8	-3.4	3.1	18.4	24.8	39.3	51.0	65.5	70.8	83.3	83.4
53.0	49	-10.8		-2.0	0.4	3.9	16.3	25.5	37.8	58.1	71.4	74.0	79.5	80.0
54.0	45	-12.1			-0.8	4.2	12.1	20.8	37.4	54.5	62.8	77.0	79.5	80.0
55.0	40	-16.4			-4.0	1.0	14.5	23.5	42.0	58.0	70.0	75.1	75.8	76.3
56.0	34	-12.5			-5.1	6.8	12.5	22.0	40.5	66.2	68.1	70.1	70.6	71.0
57.0	32	-5.5				0.2	15.0	22.7	42.0	53.0	62.4	71.3	71.8	72.2
58.0	26	-9.1			-3.7	3.6	8.8	17.0	39.5	51.4	55.7	58.3	59.6	59.8
59.0	17	-12.3				-4.3	2.3	7.5	32.4	43.3	44.2	44.7	45.0	45.2
60.0	11	-15.6				-14.9	2.4	13.5	19.3	33.0	42.3	42.6	42.7	42.8
61.0	5	-10.9					1.3	13.5	18.5	41.7	42.1	42.3	42.4	42.5
62.0	4	-0.6					-1.0	1.0	20.0	41.7	41.0	42.0	42.1	42.1
63.0	3	-6.1						-0.5	17.2	17.5	17.6	17.6	17.6	17.7
64.0	2	-6.7						-7.0	14.5	14.8	14.0	14.0	15.0	15.0
65.0	2	-13.4						-13.0	-11.7	12.0	12.2	12.3	12.3	12.3
66.0	2	-20.1						-20.0	9.3	9.5	9.6	9.6	9.6	9.6
67.0	1	-26.8												-26.8
68.0	1	-33.4												-33.4

IRIG RANGE REFERENCE ATMOSPHERE, DECEMBER

TABLE II. 2. 12

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1962 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	44	-9.0		-4.0	-2.8	-1.5	4.7	18.0	31.0	37.8	46.0	52.0	53.4	53.7
26.0	46	-9.7		-9.0	-6.7	-1.4	5.7	20.0	35.5	42.4	49.7	51.0	57.3	57.4
27.0	51	-13.9		-13.8	-8.4	-1.9	8.9	23.5	36.1	46.9	52.5	58.8	59.6	60.3
28.0	53	-17.0		-14.8	-10.7	-2.7	12.3	27.5	34.8	46.9	50.7	62.8	63.6	64.2
29.0	53	-20.6		-13.8	-7.3	-2.7	11.3	29.4	39.8	47.4	54.6	64.8	65.6	66.2
30.0	54	-21.7		-15.8	-11.3	-2.6	13.5	29.5	41.2	49.6	63.3	68.8	93.6	84.4
31.0	54	-27.4		-19.8	-12.3	-3.6	15.3	29.3	43.8	53.6	67.3	70.8	84.7	85.5
32.0	53	-29.7		-21.8	-17.3	-2.7	15.3	31.8	42.8	52.7	70.6	74.8	88.4	88.9
33.0	52	-26.3		-18.8	-16.4	-4.8	11.0	32.0	40.8	54.4	71.6	80.8	93.6	94.2
34.0	52	-24.4		-19.0	-19.2	-8.8	16.0	31.0	42.5	56.9	73.6	80.8	93.4	93.4
35.0	53	-27.8		-21.8	-20.3	-10.7	15.6	31.5	45.4	57.7	69.6	80.8	89.6	90.3
36.0	54	-2[illegible].6		-22.5	-20.3	-10.6	15.3	29.7	46.5	59.3	64.7	78.4	87.3	87.7
37.0	54	-21.7		-20.8	-18.3	-9.6	16.8	31.0	47.5	57.8	63.7	74.8	83.4	83.9
38.0	54	-20.0		-15.0	-15.1	-10.8	16.5	32.5	49.8	57.6	65.2	72.8	80.5	81.1
39.0	53	-19.7		-17.8	-14.7	-10.3	17.8	35.5	49.0	56.7	63.6	73.8	77.7	78.6
40.0	53	-21.6		-20.8	-13.3	-10.7	16.3	34.3	50.4	57.7	66.6	73.8	75.5	76.0
41.0	52	-22.8		-14.8	-13.0	-7.8	15.0	31.7	50.0	57.8	64.6	70.8	75.7	76.5
42.0	53	-24.8		-18.8	-14.3	-6.7	14.3	35.5	49.4	57.7	59.7	72.8	77.4	77.9
43.0	53	-33.5		-27.8	-13.7	-4.7	10.6	37.3	46.7	56.7	64.6	67.8	77.5	78.8
44.0	51	-29.0		-22.8	-7.4	-2.9	10.8	40.2	48.5	56.0	64.8	66.8	77.5	78.0
45.0	49	-31.7		-17.0	-7.5	-6.0	11.3	37.5	48.8	57.1	67.4	74.0	75.6	76.2
46.0	48	-34.4		-23.0	-9.5	-4.1	14.5	40.0	49.0	61.2	69.3	70.0	79.4	79.7
47.0	48	-37.1		-36.0	-12.5	-5.2	16.0	37.5	48.5	61.2	68.6	70.0	80.3	80.5
48.0	47	-39.0		-19.0	-16.5	-10.3	16.8	37.5	49.6	59.3	71.7	75.0	80.7	81.4
49.0	46	-39.0		-27.0	-22.7	-2.4	19.2	35.0	50.1	66.4	79.7	83.0	83.6	84.4
50.0	45	-39.9		-35.0	-25.7	-6.5	19.3	31.5	47.9	76.5	81.8	85.0	92.5	93.0
51.0	44	-40.0		-36.0	-30.8	-8.4	20.0	29.5	48.0	72.6	82.8	88.0	92.4	92.7
52.0	43	-40.0			-35.9	6.3	19.0	31.3	55.1	71.7	89.0	90.5	90.7	90.9
53.0	42	-49.5			-34.9	1.2	17.5	33.9	52.3	61.8	88.0	100.1	100.8	101.5
54.0	38	-59.5			-33.1	-16.2	17.5	27.0	47.8	70.2	102.1	106.1	106.7	107.0
55.0	30	-60.0			-28.5	-26.0	12.5	28.0	39.8	65.0	94.8	106.2	106.5	106.7
56.0	23	-60.0			-25.9	-21.7	5.4	22.9	52.3	79.7	99.0	102.3	102.4	102.6
57.0	19	-60.0				-26.1	3.8	18.5	54.3	99.1	101.1	101.6	101.8	102.0
58.0	16	-62.5				-29.4	-13.0	14.0	39.0	97.4	101.2	101.6	101.8	102.0
59.0	13	-70.7				-33.7	-8.7	12.8	55.8	90.7	93.2	93.4	93.6	93.6
60.0	11	-79.8				-38.9	-36.2	11.5	64.3	81.0	82.6	83.0	83.2	83.4
61.0	5	-87.0					-52.7	-11.5	9.8	67.5	67.7	67.9	67.9	68.0
62.0	2	-71.8						-72.0	-16.6	-16.4	-16.3	-16.3	-16.3	-16.3
63.0	1	-91.8												-91.8

IRIG RANGE REFERENCE ATMOSPHERE, ANNUAL

TABLE II. 2.13

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	ZONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1960 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	697	-16.2	-14.2	-11.4	-9.0	-8.0	-4.7	3.7	15.6	27.5	33.8	45.1	53.0	66.4
26.0	709	-19.6	-15.0	-13.0	-11.1	-9.3	-5.5	3.2	16.5	29.3	37.5	45.0	51.9	70.3
27.0	726	-20.4	-16.5	-14.2	-11.9	-10.1	-6.5	3.0	17.6	31.2	39.0	47.6	53.2	71.5
28.0	737	-23.0	-19.3	-14.5	-12.7	-11.0	-7.3	3.0	18.4	32.5	40.7	47.2	54.5	73.2
29.0	750	-28.0	-18.8	-16.4	-13.9	-11.9	-7.7	2.4	19.4	34.2	41.0	48.7	54.5	74.0
30.0	757	-32.9	-19.7	-18.1	-15.2	-12.4	-8.9	3.1	19.7	36.0	43.4	49.9	57.4	84.4
31.0	760	-34.5	-21.0	-20.1	-15.6	-13.1	-9.2	2.5	20.0	36.0	44.0	50.7	60.2	85.5
32.0	766	-31.2	-23.7	-20.5	-16.3	-13.7	-9.4	2.3	20.2	37.7	44.0	50.4	63.2	88.9
33.0	767	-37.0	-25.3	-20.7	-16.7	-14.3	-10.0	1.8	20.7	38.0	44.7	51.8	62.7	94.2
34.0	768	-35.5	-25.7	-20.8	-17.3	-14.9	-10.3	2.4	20.2	38.4	45.5	53.5	64.8	93.8
35.0	772	-33.8	-27.1	-20.0	-18.4	-16.0	-10.0	1.0	20.4	39.2	45.6	52.2	62.8	90.5
36.0	775	-33.7	-25.2	-22.1	-18.9	-16.6	-11.8	1.0	20.8	40.0	46.0	51.8	64.1	89.0
37.0	775	-34.7	-26.2	-21.2	-19.0	-17.1	-11.5	2.4	21.5	39.2	47.7	54.7	63.1	85.7
38.0	771	-34.3	-27.8	-22.5	-18.0	-17.1	-11.0	3.4	22.1	39.4	47.1	56.5	65.1	85.1
39.0	769	-32.6	-31.2	-21.0	-20.0	-17.4	-12.2	4.0	22.0	39.0	47.2	54.8	65.1	82.7
40.0	766	-46.7	-28.8	-23.4	-19.7	-18.1	-12.4	3.0	23.3	39.3	47.0	54.0	62.3	78.4
41.0	759	-50.0	-27.6	-24.7	-20.8	-18.5	-12.8	3.4	23.7	40.2	49.2	54.5	62.2	76.5
42.0	753	-50.3	-29.8	-26.4	-21.7	-19.0	-13.7	2.0	23.8	41.2	49.1	56.0	62.5	77.9
43.0	748	-57.8	-32.8	-27.5	-22.5	-20.3	-14.1	3.5	24.4	41.6	48.8	56.5	64.3	78.0
44.0	737	-59.1	-30.7	-25.8	-22.7	-20.7	-14.7	3.7	24.0	41.0	49.7	56.8	64.6	78.0
45.0	725	-60.3	-30.0	-27.2	-23.0	-21.5	-15.3	2.2	24.4	40.5	48.0	57.5	66.8	87.0
46.0	719	-64.6	-32.0	-28.7	-25.7	-22.6	-16.1	2.0	14.1	41.4	50.7	57.3	65.6	83.2
47.0	711	-65.7	-32.0	-30.2	-26.6	-23.4	-17.3	1.0	24.1	43.0	50.0	59.8	65.0	80.5
48.0	701	-72.8	-34.0	-33.0	-28.1	-24.7	-18.3	2.7	24.0	42.5	52.2	57.8	70.5	81.4
49.0	693	-74.6	-37.1	-31.0	-29.3	-26.1	-18.0	0.8	23.0	40.4	50.7	58.7	69.0	85.6
50.0	682	-79.8	-40.2	-34.2	-30.7	-27.0	-19.0	0.8	23.6	39.5	52.0	59.7	76.2	96.0
51.0	661	-79.0	-39.7	-37.6	-32.8	-29.8	-20.5	-0.5	23.0	39.2	52.0	62.0	73.4	92.7
52.0	653	-74.2	-40.5	-38.5	-34.0	-31.2	-21.5	-1.1	22.0	39.8	52.0	67.1	74.5	90.9
53.0	630	-74.3	-42.3	-39.6	-35.0	-32.8	-23.4	-3.4	21.7	39.3	56.5	65.3	74.0	101.5
54.0	598	-78.6	-44.0	-40.0	-38.3	-34.1	-25.7	-5.8	19.2	37.0	53.6	64.4	76.0	107.0
55.0	549	-78.9	-48.3	-43.3	-39.8	-36.4	-28.0	-8.5	17.1	34.0	50.6	62.2	69.8	106.7
56.0	482	-60.0	-46.4	-44.3	-40.9	-38.1	-29.1	-11.0	15.4	32.3	47.0	62.0	70.2	102.6
57.0	426	-60.0	-48.0	-45.8	-42.7	-39.9	-31.6	-14.9	12.7	31.9	46.4	56.3	67.7	102.0
58.0	371	-62.5	-53.3	-47.8	-44.5	-40.8	-33.5	-14.8	7.0	28.0	41.5	54.6	62.3	102.0
59.0	307	-70.7	-54.0	-52.0	-47.0	-43.6	-36.2	-20.0	5.1	22.3	37.7	53.0	59.9	93.5
60.0	238	-78.8	-65.6	-51.8	-48.8	-45.1	-38.7	-23.5	-1.5	15.1	20.6	36.6	66.6	83.4
61.0	173	-87.0	-78.3	-55.1	-50.4	-46.9	-40.2	-25.2	-5.6	13.4	20.4	28.1	41.3	68.0
62.0	119	-73.9	-72.8	-56.3	-49.1	-48.3	-40.4	-26.0	-11.0	6.0	19.5	37.3	39.8	42.1
63.0	66	-91.8		-60.8	-51.8	-48.4	-40.8	-36.2	-16.2	-0.7	5.6	11.5	17.2	17.7
64.0	43	-61.6			-54.0	-53.7	-48.1	-39.5	-17.7	-6.3	2.0	14.0	14.6	15.0
65.0	27	-65.4			-58.6	-57.3	-51.2	-43.5	-28.7	-13.3	4.7	11.5	12.0	12.3
66.0	19	-62.5				-59.1	-56.1	-43.8	-28.7	-3.0	9.0	9.4	9.5	9.6
67.0	15	-67.2				-63.5	-59.2	-44.5	-37.4	-15.5	-11.7	-11.3	-11.1	-11.0
68.0	12	-64.2				-57.8	-48.5	-42.0	-33.5	-32.2	-19.5	-19.1	-19.0	-18.8
69.0	10	-50.0				-50.0	-45.5	-36.0	-34.5	-27.0	-26.5	-26.2	-26.0	-25.9
70.0	10	-50.8				-51.0	-47.5	-43.5	-35.5	-33.0	-28.6	-28.4	-28.3	-28.2

IRIG RANGE REFERENCE ATMOSPHERE, JANUARY

TABLE II. 3. 1

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49'N	147° 52'W	1963-1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59'N	145° 43'W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	46	-49.5		-35.0	-28.7	-24.9	-20.7	-13.7	-4.7	3.4	9.7	12.0	13.5	13.9
26.0	46	-39.7		-30.7	-30.7	-27.7	-21.5	-13.0	-7.8	8.2	9.7	12.0	14.4	14.9
27.0	46	-43.2		-35.0	-33.7	-30.7	-25.5	-15.0	-9.1	7.2	9.7	13.0	14.5	15.0
28.0	47	-49.2		-36.0	-35.5	-32.4	-27.2	-18.5	-9.0	6.5	8.8	9.9	12.5	12.9
29.0	48	-54.5		-38.0	-37.5	-34.2	-29.5	-20.8	-14.5	4.2	7.5	8.0	10.4	10.7
30.0	48	-63.5		-44.0	-40.8	-38.1	-32.5	-22.0	-17.0	4.1	5.6	6.9	11.5	12.0
31.0	47	-65.3		-48.0	-43.4	-41.5	-37.8	-28.8	-17.7	0.5	8.0	8.0	12.3	12.5
32.0	48	-71.7		-51.0	-50.5	-46.2	-40.0	-29.0	-18.5	0.5	7.5	6.0	8.4	8.7
33.0	48	-80.2		-55.0	-53.8	-52.2	-39.0	-30.0	-20.0	1.2	8.4	10.4	10.7	11.8
34.0	48	-82.2		-63.0	-61.8	-53.6	-42.0	-31.0	-20.0	0.1	3.4	7.0	15.6	17.2
35.0	48	-83.7		-71.0	-67.8	-60.2	-47.0	-30.0	-20.0	-3.8	-0.4	2.0	3.8	4.5
36.0	49	-79.7		-78.0	-72.5	-63.5	-41.0	-30.7	-20.1	-3.4	-0.0	1.0	3.5	4.1
37.0	48	-86.5		-78.0	-75.8	-70.2	-48.0	-31.0	-20.0	-0.8	4.5	5.0	7.5	8.0
38.0	48	-95.2		-80.0	-78.8	-70.2	-48.5	-32.0	-19.5	0.4	1.8	4.0	5.5	6.0
39.0	49	-105.6		-83.0	-80.8	-72.8	-50.4	-29.7	-21.1	-2.0	0.8	1.0	7.4	7.8
40.0	49	-114.5		-89.0	-88.5	-73.1	-53.7	-31.5	-19.1	-3.0	1.4	5.0	8.5	9.0
41.0	48	-121.7		-99.0	-95.8	-79.2	-60.0	-31.5	-19.0	-4.8	0.4	6.0	9.4	9.7
42.0	45	-127.0		-109.0	-102.5	-83.2	-59.0	-35.0	-17.0	-4.5	1.8	7.5	7.7	8.0
43.0	48	-132.3		-113.0	-103.8	-81.2	-57.0	-28.0	-17.0	-6.8	-1.8	-0.1	5.7	6.3
44.0	48	-138.2		-117.0	-100.8	-84.2	-63.0	-30.0	-15.5	-7.5	-1.4	2.0	6.4	6.9
45.0	44	-144.0		-120.0	-96.8	-91.4	-58.5	-28.5	-11.7	-4.0	-4.1	-3.0	7.5	7.9
46.0	46	-149.8		-118.0	-95.7	-92.2	-62.2	-29.0	-11.7	-4.5	0.8	1.0	8.5	8.9
47.0	46	-141.0		-112.0	-97.7	-92.7	-61.5	-31.0	-13.5	-4.4	0.7	7.0	7.7	8.3
48.0	46	-131.7		-109.0	-100.5	-99.4	-63.5	-29.0	-11.5	-3.3	0.7	7.0	10.7	11.3
49.0	44	-122.9		-104.0	-101.8	-97.4	-60.0	-28.0	-10.0	-1.4	2.0	8.5	8.7	7.8
50.0	44	-116.8		-104.0	-100.8	-93.6	-57.0	-28.0	-4.5	-0.1	1.8	6.0	11.4	11.9
51.0	41	-113.9			-102.0	-83.0	-48.7	-25.5	-7.2	2.0	5.0	8.0	8.4	8.2
52.0	39	-118.1			-101.5	-80.1	-50.2	-21.7	-8.7	5.1	9.1	12.1	12.5	12.7
53.0	34	-111.9			-100.5	-81.4	-51.5	-23.0	-8.7	2.6	7.7	15.2	15.5	16.7
54.0	32	-105.4			-98.4	-78.8	-52.0	-22.0	-6.0	-0.2	10.6	11.5	11.6	11.0
55.0	28	-108.1			-107.8	-79.2	-44.0	-10.0	-5.0	3.2	8.4	9.3	9.4	9.8
56.0	19	-110.6				-63.1	-41.2	-8.5	3.3	8.1	10.1	10.6	10.8	11.0
57.0	13	-102.6				-59.7	-17.7	-4.5	2.0	9.7	11.5	11.0	12.1	12.3
58.0	11	-86.8				-52.9	-27.2	-4.5	3.3	7.0	13.5	18.4	18.7	18.9
59.0	9	-71.1					-37.7	-11.2	-8.6	5.1	5.7	6.0	6.1	6.3
60.0	6	-67.6					-55.5	-15.0	-7.5	4.5	4.0	5.1	5.2	5.2
61.0	4	-78.8					-76.0	-10.0	1.0	3.7	4.0	4.1	4.2	4.2
62.0	2	-3.5						-3.0	8.7	9.2	9.4	9.4	9.5	9.5

IRIG RANGE REFERENCE ATMOSPHERE, FEBRUARY

TABLE II. 3. 2

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1962 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	68	-31.9	-29.5	-24.5	-20.8	-13.0	-5.0	-0.5	4.5	6.5	10.5	12.5	13.0	
26.0	69	-33.9		-27.4	-24.1	-15.5	-5.7	-0.5	4.0	5.0	7.4	13.5	14.5	
27.0	70	-34.8	-35.4	-29.4	-26.7	-16.5	-6.5	-1.4	3.5	7.0	9.4	12.4	13.4	
28.0	70	-38.1	-37.4	-30.2	-26.7	-20.5	-5.0	-2.5	2.0	5.5	8.4	10.3	10.9	
29.0	72	-41.9	-38.4	-31.7	-29.6	-25.0	-8.5	-5.0	1.0	5.4	8.7	13.3	14.0	
30.0	72	-42.0	-41.4	-35.4	-31.8	-24.5	-8.5	-2.2	1.0	7.4	9.2	9.6	10.0	
31.0	73	-43.6	-40.7	-39.5	-33.8	-27.7	-8.5	-5.3	-1.7	8.8	9.2	9.6	10.0	
32.0	74	-46.5	-44.3	-41.1	-37.7	-28.5	-12.1	-5.0	4.2	7.4	10.2	10.7	11.1	
33.0	74	-47.2	-46.4	-44.2	-40.6	-30.1	-12.0	-4.2	3.5	5.8	12.6	13.3	14.4	
34.0	75	-51.1	-50.6	-48.7	-45.5	-30.7	-13.5	-4.7	1.5	10.5	15.6	16.3	17.9	
35.0	76	-55.5	-52.6	-51.2	-48.5	-39.6	-12.5	-5.4	3.5	10.5	18.5	19.2	19.4	
36.0	74	-61.2	-56.8	-56.1	-53.2	-34.2	-12.0	-4.5	5.2	14.5	17.5	20.2	20.9	
37.0	74	-68.7	-63.5	-61.1	-53.6	-34.2	-14.5	-5.5	5.4	15.2	17.5	18.2	18.8	
38.0	73	-82.3	-65.7	-62.7	-54.7	-34.7	-17.5	-6.2	5.7	12.6	15.2	19.2	19.8	
39.0	72	-93.8	-70.4	-66.4	-56.8	-37.0	-18.0	-4.5	6.4	11.6	19.6	23.6	24.5	
40.0	72	-102.3	-75.4	-70.4	-57.8	-32.5	-14.5	-5.0	4.5	12.6	21.6	23.3	24.2	
41.0	71	-109.7	-80.4	-74.4	-53.0	-37.2	-16.5	-5.6	2.6	10.5	25.6	31.1	31.5	
42.0	71	-115.9	-85.4	-80.4	-53.0	-35.2	-15.5	-4.2	5.0	11.5	31.6	32.2	32.6	
43.0	70	-120.3	-87.7	-83.5	-60.0	-35.2	-16.0	-5.5	6.0	9.0	26.6	40.2	40.7	
44.0	68	-124.8	-91.5	-75.6	-61.2	-36.5	-15.7	-4.5	4.2	9.6	28.5	40.3	40.9	
45.0	66	-132.0	-94.5	-73.6	-67.2	-38.0	-16.0	-4.5	1.2	8.6	22.5	37.2	37.7	
46.0	68	-140.4	-97.5	-77.5	-66.2	-34.5	-14.5	-6.0	2.2	5.6	21.5	33.5	33.9	
47.0	66	-145.0	-100.5	-74.6	-65.2	-35.0	-15.0	-4.0	2.5	5.6	24.5	25.5	26.5	
48.0	65	-141.8	-103.5	-69.7	-60.5	-29.7	-14.5	-6.1	5.5	10.2	21.5	23.2	23.7	
49.0	64	-132.6	-107.5	-77.5	-54.4	-35.0	-13.0	-6.0	7.4	14.6	21.5	40.4	41.1	
50.0	63	-119.8	-98.6	-83.5	-59.7	-29.1	-12.5	-2.7	12.7	15.0	27.6	39.4	40.1	
51.0	61	-103.3	-88.6	-83.5	-60.6	-24.0	-12.7	-2.1	12.9	17.0	31.6	33.5	34.3	
52.0	60	-101.0	-92.6	-82.0	-61.0	-30.0	-12.0	-2.0	10.0	16.0	27.6	34.6	39.4	
53.0	59	-94.7	-94.7	-83.0	-61.1	-31.1	-12.5	0.5	11.5	22.1	26.7	49.2	49.5	
54.0	54	-99.0	-85.5	-74.5	-49.5	-28.5	-12.0	-2.2	13.5	26.5	26.5	41.4	42.0	
55.0	46	-101.0	-50.0	-45.5	-41.5	-24.0	-13.0	-5.0	11.5	19.0	25.0	37.5	37.5	
56.0	34	-94.0		-50.5	-33.6	-22.2	-12.0	-2.5	10.5	23.5	33.2	35.7	34.0	
57.0	26	-80.6		-60.7	-29.4	-21.5	-8.0	-1.2	20.4	23.7	29.2	29.4	29.6	
58.0	20	-80.1		-80.0	-48.0	-23.5	-14.0	-2.0	14.0	18.0	25.5	26.2	26.5	
59.0	16	-75.5			-31.2	-19.5	-12.0	-6.5	10.6	23.1	23.5	23.9	24.0	
60.0	12	-71.7			-18.5	-16.0	-8.0	-3.0	7.4	14.6	14.0	15.1	15.2	
61.0	11	-54.7			-20.0	-13.2	-8.5	-1.4	0.0	5.4	8.6	8.7	8.9	
62.0	9	-35.0				-12.7	-0.5	-1.2	7.1	7.6	7.8	7.9	8.0	
63.0	6	-24.0				-24.0	-12.0	-4.0	7.4	8.1	8.2	8.3	8.4	
64.0	3	-15.9					-3.5	8.2	8.5	8.6	8.7	8.7	8.7	
65.0	1	-2.1											-2.1	
66.0	1	-1.0											-1.0	
67.0	1	0.0											0.0	

IRIG RANGE REFERENCE ATMOSPHERE, MARCH

TABLE II. 3. 3

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1962 – 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED – m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	82	-41.1		-39.8	-30.0	-28.4	-14.5	-4.9	-0.0	3.0	3.8	6.1	9.1	9.8
26.0	82	-47.1		-38.1	-32.0	-29.8	-14.5	-4.2	-1.2	2.0	3.8	7.1	8.1	8.4
27.0	82	-50.0		-38.1	-33.7	-30.4	-15.0	-5.6	-0.8	2.4	4.0	7.1	9.1	9.8
28.0	83	-52.7		-40.1	-36.0	-31.8	-18.1	-5.4	-0.4	3.7	6.0	8.1	8.7	9.1
29.0	84	-55.9		-47.1	-38.4	-33.3	-19.0	-5.8	-1.4	3.0	6.8	7.7	8.2	9.0
30.0	84	-57.1		-54.1	-38.4	-35.8	-20.3	-6.0	-0.8	4.3	7.4	9.0	9.4	10.0
31.0	84	-64.6		-58.1	-37.0	-35.8	-20.0	-7.0	-2.3	3.4	6.0	10.8	11.2	12.2
32.0	85	-63.0			-40.7	-35.7	-19.2	-7.2	-0.7	5.2	8.4	12.1	13.2	14.1
33.0	86	-68.8		-63.0	-43.7	-37.1	-19.2	-7.4	-1.5	6.3	8.7	15.0	19.1	19.6
34.0	85	-66.0		-63.1	-44.7	-38.2	-19.8	-6.3	1.4	7.4	9.0	21.1	23.1	24.0
35.0	84	-64.0			-43.7	-33.5	-20.8	-6.7	0.7	7.3	10.8	21.1	29.1	29.8
36.0	85	-62.7		-58.1	-43.7	-33.5	-21.4	-5.5	0.0	8.5	10.0	15.1	34.2	35.4
37.0	85	-58.1		-53.1	-37.7	-32.5	-20.2	-5.8	2.3	8.0	12.0	19.1	37.1	37.7
38.0	84	-55.0		-54.1	-35.8	-30.6	-18.7	-5.7	2.3	8.0	9.0	25.1	32.2	33.2
39.0	83	-60.4		-54.1	-38.0	-28.7	-18.6	-5.5	2.3	7.5	9.0	32.1	35.1	35.4
40.0	82	-54.5		-53.1	-34.0	-25.0	-18.5	-5.0	0.0	6.0	8.0	25.1	29.1	29.8
41.0	82	-51.0		-48.1	-30.0	-28.4	-16.2	-5.4	0.2	5.0	7.0	25.1	33.1	33.6
42.0	82	-49.5		-45.1	-31.0	-26.8	-14.8	-4.0	0.5	5.5	7.0	30.1	37.1	37.5
43.0	82	-46.7		-45.1	-33.0	-26.8	-15.2	-4.0	0.7	6.3	8.0	28.1	40.1	40.6
44.0	81	-43.5		-42.2	-31.0	-25.0	-12.6	-3.1	2.0	8.0	13.0	26.2	42.1	42.7
45.0	74	-40.8		-34.2	-32.1	-24.1	-12.6	-4.2	2.7	10.1	16.1	33.2	43.1	43.7
46.0	70	-42.2		-34.2	-32.1	-24.1	-13.7	-3.1	1.3	8.7	19.1	34.2	38.3	39.8
47.0	74	-42.3		-34.2	-29.6	-23.6	-14.5	-3.7	2.8	9.4	16.1	31.2	38.2	38.0
48.0	77	-39.8		-37.2	-31.1	-21.3	-12.6	-3.5	0.4	9.2	12.2	27.2	30.2	30.5
49.0	76	-33.8		-32.3	-29.6	-19.7	-11.6	-4.0	4.3	10.4	20.0	24.3	45.2	45.0
50.0	73	-36.7		-34.3	-28.3	-20.7	-11.4	-2.3	4.4	9.0	22.4	24.3	44.2	44.7
51.0	64	-42.6		-38.8	-34.3	-20.2	-11.2	-2.8	5.7	11.6	18.6	27.8	49.4	50.2
52.0	67	-43.9		-42.7	-39.6	-21.3	-11.1	-1.6	7.1	13.1	19.7	34.5	38.3	38.9
53.0	62	-58.0		-44.6	-33.0	-21.4	-8.7	1.7	6.3	11.0	18.0	26.6	41.8	42.2
54.0	53	-50.0		-49.8	-37.3	-22.7	-0.7	-1.3	6.6	12.7	18.4	20.8	43.8	44.0
55.0	48	-55.3		-39.0	-38.4	-20.8	-11.4	-0.8	7.6	18.3	20.4	21.0	32.4	32.8
56.0	34	-37.3			-32.2	-26.4	-13.0	0.0	8.8	15.4	21.2	23.2	23.9	24.3
57.0	30	-30.6			-26.5	-24.0	-7.5	-0.3	7.5	12.0	19.8	25.3	25.7	26.1
58.0	24	-26.3			-20.8	-18.6	-8.0	-1.5	5.0	13.6	14.8	29.8	29.6	30.2
59.0	18	-33.3				-24.1	-14.1	-2.7	1.3	17.1	33.1	33.8	34.1	34.3
60.0	12	-49.0				-17.8	-15.0	-4.0	1.0	12.4	12.7	12.0	13.0	13.1
61.0	8	-28.0					-13.3	-7.0	-2.0	8.6	8.0	9.0	9.0	9.1
62.0	4	-2.6					-3.0	-2.0	1.0	3.6	3.8	4.0	4.0	4.1
63.0	2	-9.0						-2.2	-0.4	5.7	8.8	8.8	8.8	5.0
64.0	1	14.3												14.3

IRIG RANGE REFERENCE ATMOSPHERE, APRIL

TABLE II. 3. 4

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1961 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
			CUMULATIVE PERCENTAGE FREQUENCY											
25.0	70	-14.8		-15.4	-11.8	-8.0	-3.1	-0.8	2.4	6.0	8.8	9.5	9.8	10.0
26.0	70	-14.3			-12.2	-8.0	-3.7	-0.8	2.8	5.0	10.2	10.8	11.3	12.0
27.0	70	-14.1		-14.4	-14.2	-10.0	-4.0	-0.7	2.1	6.0	9.8	12.2	12.4	12.9
28.0	69	-11.7		-11.8	-10.8	-8.1	-5.4	-0.8	2.1	6.1	8.4	14.4	16.4	17.3
29.0	69	-10.1		-14.4	-13.8	-8.7	-4.3	-1.2	1.0	6.4	10.4	16.4	19.4	20.8
30.0	68	-14.9		-14.7	-13.8	-9.1	-3.0	-0.0	1.0	8.1	12.4	14.4	14.2	16.6
31.0	68	-21.7		-19.4	-14.4	-11.1	-5.1	-0.4	2.0	8.1	12.4	15.4	16.3	17.0
32.0	68	-25.1		-18.7	-14.4	-10.4	-5.4	-1.4	1.7	7.1	12.8	14.4	15.3	16.0
33.0	68	-25.5		-17.7	-12.4	-10.4	-5.4	-1.0	1.5	8.1	11.4	15.4	17.2	17.7
34.0	69	-25.0		-19.4	-11.8	-10.1	-6.7	-1.5	3.0	7.1	11.8	13.4	15.3	16.0
35.0	68	-25.6		-20.8	-13.4	-10.4	-6.0	-1.0	3.0	7.2	13.8	15.2	15.7	16.0
36.0	67	-26.5		-25.8	-13.4	-10.4	-5.4	-1.1	3.1	6.4	14.8	16.8	17.3	18.0
37.0	67	-28.0		-24.4	-13.8	-11.3	-4.2	-0.4	4.0	7.8	14.7	15.7	16.4	19.1
38.0	66	-37.5		-25.8	-12.3	-11.8	-5.3	-0.5	2.0	6.0	11.7	15.8	19.3	20.0
39.0	64	-34.7		-18.8	-14.0	-12.4	-4.0	-0.7	2.4	8.8	11.7	14.8	16.4	17.3
40.0	66	-34.0		-17.8	-14.7	-10.4	-4.3	-0.3	3.1	5.0	11.0	16.2	16.7	17.0
41.0	64	-44.2		-18.4	-14.4	-11.2	-4.4	-0.3	3.7	9.2	10.0	13.4	14.3	14.9
42.0	64	-37.2		-16.8	-13.8	-11.4	-4.4	0.4	4.5	7.0	8.0	10.8	11.4	12.1
43.0	63	-18.1			-14.4	-10.7	-4.1	-0.8	3.3	8.4	9.8	9.0	11.8	12.8
44.0	63	-18.4		-17.4	-12.8	-9.7	-3.7	-0.9	4.1	9.2	10.0	12.4	16.2	16.7
45.0	61	-17.8			-14.0	-8.0	-4.0	-0.4	3.7	9.4	10.7	12.4	13.3	15.4
46.0	61	-19.1			-15.0	-8.0	-4.4	-0.4	3.4	7.3	10.0	11.8	13.3	13.4
47.0	60	-20.0		-20.4	-16.0	-10.0	-4.7	-0.0	3.4	7.3	9.8	12.4	14.2	14.4
48.0	60	-22.7		-20.4	-16.3	-11.0	-4.0	0.3	3.0	9.0	12.0	14.4	15.2	15.4
49.0	59	-20.0			-16.1	-11.1	-1.8	1.0	4.3	9.4	13.0	15.4	16.4	17.0
50.0	59	-18.4		-16.8	-14.0	-10.8	-1.3	3.2	6.8	11.4	16.0	16.8	17.4	18.1
51.0	57	-18.0		-18.0	-15.1	-6.3	-0.2	4.3	8.4	11.3	17.2	18.7	20.4	20.8
52.0	57	-16.7		-14.0	-14.1	-5.7	1.4	6.4	9.4	14.3	17.2	18.7	19.3	19.4
53.0	56	-17.7		-13.7	-12.2	-7.4	1.0	7.3	10.0	15.4	18.2	20.7	25.4	26.0
54.0	54	-17.0		-14.8	-13.3	-4.4	0.3	7.2	10.3	13.4	19.2	21.8	25.3	26.0
55.0	51	-15.3		-14.8	-10.4	-1.8	0.2	7.4	11.7	18.0	19.8	23.8	25.3	26.0
56.0	42	-17.9			-8.0	-1.8	1.4	7.7	13.3	16.0	20.0	21.3	21.8	22.0
57.0	36	-10.0			-4.2	-0.2	3.5	8.0	14.0	18.4	20.2	23.1	23.4	23.6
58.0	26	-10.0			-3.7	1.4	3.4	9.3	16.8	19.4	20.7	27.3	27.4	27.8
59.0	20	-0.3			0.0	1.0	6.3	8.8	18.0	17.0	23.0	33.4	33.0	34.2
60.0	16	3.7				7.4	9.0	10.0	14.0	17.7	27.2	27.4	27.8	28.0
61.0	16	3.7					8.8	12.3	18.4	17.8	21.3	21.8	22.0	22.2
62.0	11	2.0				6.1	6.0	10.3	14.4	16.0	17.8	17.7	17.0	18.0
63.0	8	0.7					7.0	8.0	11.0	20.1	20.3	20.4	20.5	20.5
64.0	6	-0.1					4.4	4.4	11.3	15.3	15.4	15.7	15.8	15.9
65.0	5	4.8						9.4	10.1	10.4	10.8	10.8	10.4	10.4
66.0	3	4.3						11.2	11.5	11.7	11.8	11.8	11.8	11.8
67.0	2	6.1						4.0	12.4	12.4	12.4	12.7	12.7	12.7
68.0	1	13.8												13.8
69.0	1	14.0												14.0
70.0	1	14.1												14.1

IRIG RANGE REFERENCE ATMOSPHERE, MAY

TABLE II. 3. 5

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1961 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	60	-4.3			-3.0	-2.4	-0.8	1.9	2.7	5.0	6.5	6.0	7.5	7.7
26.0	63	-5.6		-5.8	-3.0	-2.2	-0.2	1.0	2.4	3.4	5.0	5.5	5.4	6.0
27.0	66	-4.9		-4.8	-4.2	-1.8	-0.5	0.7	2.1	3.8	4.7	5.5	5.8	9.2
28.0	64	-0.0		-4.8	-3.7	-2.4	-0.8	0.7	2.5	4.2	5.0	7.2	7.5	7.7
29.0	67	-0.0		-3.8	-3.2	-2.5	-0.7	0.9	2.0	4.1	5.7	7.5	8.2	8.6
30.0	67	-0.0		-5.5	-4.5	-2.7	-0.5	0.7	2.5	4.4	5.8	7.5	8.2	8.5
31.0	66	-7.7		-7.4	-4.7	-2.7	-0.8	0.7	2.5	4.2	5.4	6.5	7.5	9.0
32.0	64	-12.8		-5.7	-4.7	-2.6	-0.6	0.9	2.0	3.0	5.4	7.4	8.0	8.5
33.0	67	-5.4				-4.1	-0.7	1.1	2.9	4.4	5.6	6.1	6.4	6.4
34.0	67	-4.8		-4.7	-3.0	-3.4	-1.0	0.6	2.7	4.0	4.4	4.0	5.5	6.0
35.0	68	-4.0			-4.4	-3.1	-1.5	0.8	3.0	4.4	5.8	7.5	9.5	10.0
36.0	68	-7.6		-7.5	-3.4	-2.5	-1.0	0.4	2.5	4.5	6.4	8.5	14.5	15.1
37.0	68	-8.9		-4.8	-4.2	-3.1	-1.1	1.0	3.1	5.5	6.0	8.7	15.2	15.7
38.0	68	-7.9		-7.5	-3.5	-2.1	-0.6	1.0	4.2	5.5	6.5	7.5	15.3	16.0
39.0	68	-8.7		-5.8	-5.2	-1.8	-0.7	0.6	3.4	6.5	7.5	10.5	15.5	16.0
40.0	67	-5.6		-4.8	-4.2	-3.1	-1.0	1.5	3.5	5.5	5.0	8.5	13.5	14.0
41.0	67	-4.1			-4.4	-3.1	-0.8	0.4	2.7	4.4	5.4	10.2	10.7	11.0
42.0	67	-7.1		-4.7	-5.0	-4.8	-1.7	0.5	3.4	5.5	7.5	8.5	9.0	9.5
43.0	67	-8.8		-7.7	-5.4	-4.1	-1.8	0.2	4.1	6.5	7.5	7.8	8.4	9.2
44.0	66	-8.0		-7.5	-5.7	-3.5	-0.5	1.4	4.1	7.4	8.0	10.5	11.2	11.7
45.0	64	-6.3			-4.4	-3.5	-0.8	2.8	4.8	7.2	8.0	11.5	13.3	13.6
46.0	66	-10.4		-8.5	-4.0	-2.4	-0.7	2.7	4.0	7.7	8.7	9.5	10.5	11.4
47.0	65	-6.6		-6.5	-6.4	-3.5	-0.1	2.5	4.4	7.0	8.4	9.0	10.5	11.4
48.0	64	-9.5		-8.5	-5.5	-2.5	0.2	3.4	4.4	8.2	9.0	10.7	11.0	11.3
49.0	64	-7.4		-8.8	-3.0	-1.8	1.8	3.0	7.2	9.4	10.0	12.5	14.4	15.2
50.0	64	-5.6		-5.8	-2.8	-0.9	0.8	4.5	7.0	10.7	14.4	15.5	16.5	17.4
51.0	64	-7.2		-4.8	-3.0	-1.7	-1.8	3.5	7.0	11.2	12.4	14.4	15.2	15.7
52.0	63	-4.4			-2.0	-1.2	2.0	4.5	8.1	10.0	12.0	13.5	17.4	18.2
53.0	61	-3.2			-2.0	-1.0	2.1	6.4	8.3	12.5	14.0	15.7	19.4	20.0
54.0	60	-10.9		-4.4	-3.0	-0.3	2.0	4.0	10.2	12.5	13.7	19.4	20.3	20.9
55.0	57	-8.2		-6.0	-5.4	-1.8	2.2	5.4	8.8	13.7	16.4	20.7	28.3	28.8
56.0	53	-1.3		-0.8	0.2	0.9	4.0	7.5	11.4	15.7	18.4	21.4	26.2	26.5
57.0	51	-5.3		-0.0	-0.4	1.1	4.8	7.8	11.4	15.0	17.2	17.0	18.7	19.4
58.0	46	-2.6		-2.0	-0.0	-0.3	3.5	8.0	11.5	13.0	16.7	17.5	17.8	18.0
59.0	37	-7.6			-4.4	-3.3	1.4	7.3	12.2	15.1	15.7	17.2	17.7	18.2
60.0	30	-10.5			-5.5	-2.0	2.5	7.0	12.5	15.0	16.8	22.5	23.0	23.5
61.0	25	-4.1			-0.9	-0.2	4.5	8.5	12.0	15.8	17.0	21.5	21.7	21.9
62.0	18	-0.3				1.8	5.5	10.0	13.5	22.2	25.1	25.0	26.2	26.5
63.0	9	-4.4					-4.4	10.4	13.4	15.1	15.4	15.4	15.4	15.7
64.0	6	6.0					6.5	13.0	15.2	15.4	15.8	15.8	15.0	15.9
65.0	4	8.0						12.8	14.5	15.7	15.8	15.0	16.0	16.0
66.0	1	12.2												12.2
67.0	1	12.0												12.0
68.0	1	12.0												12.0
69.0	1	12.0												12.0
70.0	1	12.0												12.0

IRIG RANGE REFERENCE ATMOSPHERE, JUNE

TABLE II.3.6

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49'N	147° 52'W	1964-1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59'N	145° 43'W	UNITS: WIND SPEED-m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	44	-2.2					-1.0	0.0	-1.2	-1.9	2.0	4.0	4.5	4.9
26.0	44	-2.0		-2.0	-1.9	-1.6	-0.8	0.3	1.6	2.5	3.0	4.0	4.6	5.0
27.0	45	-2.5				-1.9	-0.7	0.3	1.8	2.8	3.0	4.0	4.6	5.0
28.0	48	-1.6		-1.6	-1.4	-1.4	-0.6	0.6	2.1	3.3	3.0	4.9	6.6	7.1
29.0	52	-2.3		-2.0	-1.6	-1.0	-0.3	0.6	1.8	2.7	3.4	4.8	7.5	7.9
30.0	53	-2.2			-1.9	-1.6	-0.7	1.1	2.1	2.9	3.7	5.2	5.4	5.5
31.0	54	-2.4			-1.6	-0.9	-0.1	1.3	2.6	3.7	5.2	5.0	6.6	7.2
32.0	54	-2.6		-2.6	-2.2	-1.0	-0.3	1.1	2.6	4.1	4.7	5.0	5.3	5.7
33.0	54	-4.8		-3.0	-3.2	-1.7	-0.5	0.9	2.4	3.9	4.8	5.8	7.3	7.7
34.0	55	-3.1			-2.8	-2.1	-0.7	0.7	2.2	4.1	4.8	5.4	5.7	6.0
35.0	57	-2.4					-0.2	1.3	2.8	3.9	4.7	6.5	7.0	7.4
36.0	59	-8.0		-2.7	-1.8	-1.0	-0.3	1.3	3.5	5.0	6.0	6.4	6.6	6.8
37.0	62	-3.5		-2.0	-2.3	-1.3	-0.3	1.8	3.2	5.4	7.3	7.8	8.0	8.2
38.0	63	-2.5			-1.8	-1.3	0.7	2.3	4.0	4.8	5.0	7.6	8.2	8.6
39.0	63	-2.1		-1.0	-1.6	-0.9	-0.0	0.8	3.0	4.0	7.2	7.7	7.9	8.1
40.0	63	-4.8		-4.7	-4.3	-2.4	-0.3	2.0	4.1	5.6	6.0	6.8	7.4	8.0
41.0	63	-8.3		-4.8	-3.0	-2.0	-0.8	1.6	3.5	5.4	6.6	7.6	9.5	10.4
42.0	63	-5.6		-5.6	-3.4	-2.3	-0.5	1.1	3.2	5.1	5.6	5.9	8.4	9.0
43.0	63	-7.5		-5.8	-3.9	-2.7	-1.0	0.8	3.0	5.1	5.6	5.9	7.2	7.6
44.0	63	-7.0		-6.6	-3.6	-2.7	-0.6	1.2	3.5	5.0	6.7	7.3	7.7	8.0
45.0	63	-5.4			-3.4	-2.8	-0.5	1.8	4.0	7.4	8.6	9.1	9.4	9.5
46.0	63	-5.0		-4.0	-4.3	-2.7	0.6	2.6	4.9	7.0	8.0	8.8	11.4	12.0
47.0	63	-6.9		-4.6	-2.7	-1.9	-0.6	3.1	5.6	7.0	9.0	12.4	13.2	13.6
48.0	63	-4.0		-2.8	-1.9	-0.7	1.2	3.2	5.9	8.5	9.6	10.6	12.2	12.7
49.0	63	-2.5		-2.3	-1.6	-0.7	0.8	4.1	7.1	10.2	11.0	14.6	15.4	16.1
50.0	62	-7.6		-3.6	-2.0	-0.9	1.7	4.6	8.1	10.5	13.8	14.6	15.4	15.9
51.0	62	-4.9		-2.8	-1.0	-0.8	3.1	[illegible]	7.9	11.3	12.0	15.6	17.5	18.2
52.0	62	-4.7		-4.6	-0.9	1.4	3.1	6.5	4.1	11.6	14.8	15.6	18.5	19.2
53.0	62	-7.4		-3.6	-1.7	-0.8	3.3	7.0	8.6	10.9	12.0	13.3	13.6	13.9
54.0	62	-5.1		-2.8	-1.9	0.1	3.5	7.2	10.1	11.9	13.0	15.6	18.3	18.7
55.0	60	-1.5		-0.9	-0.3	1.0	3.2	7.3	10.2	13.5	18.7	15.6	17.4	17.9
56.0	59	-3.8		-1.7	1.0	1.7	4.1	7.3	9.6	14.5	16.1	17.7	22.4	23.0
57.0	57	-3.8		-1.0	-1.1	3.2	5.0	7.8	10.7	13.7	14.5	14.9	18.4	18.9
58.0	50	-5.6		2.1	3.3	4.2	5.7	8.0	11.9	15.9	17.3	17.9	19.5	20.0
59.0	47	0.0				0.7	4.4	8.9	13.4	15.9	17.7	19.9	21.7	22.4
60.0	38	0.7				1.4	3.8	9.3	14.3	18.1	19.1	20.1	20.6	21.0
61.0	31	-4.7			-0.5	2.1	3.6	10.5	14.1	16.0	20.8	21.4	21.9	22.4
62.0	21	1.8			3.0	3.4	5.1	7.3	10.4	13.9	15.0	22.7	23.0	23.3
63.0	16	0.8				3.3	5.0	7.5	9.7	14.4	21.2	21.7	21.9	22.0
64.0	11	-7.7				-0.9	2.8	6.5	13.3	17.0	20.4	20.6	20.7	20.8
65.0	11	-28.3				-0.9	1.8	6.8	11.3	18.9	19.3	19.4	19.5	19.5
66.0	8	-32.9					1.0	4.0	13.0	17.2	17.6	17.9	18.0	18.1
67.0	6	-45.5					-1.5	0.0	15.3	15.9	16.2	16.3	16.3	16.4
68.0	3	-6.5						14.2	14.5	14.6	14.7	14.7	14.7	14.7
69.0	1	12.9												12.9
70.0	1	11.2												11.2

IRIG RANGE REFERENCE ATMOSPHERE, JULY

TABLE II. 3. 7

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1960 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	44	-2.0		-2.0	-1.4	-0.4	-0.1	0.4	1.0	3.5	4.4	5.0	5.3	5.5
26.0	48	-3.0		-3.0	-2.5	-1.9	-0.9	0.2	1.5	3.7	4.8	5.0	7.6	8.1
27.0	49	-3.0				-2.6	-1.3	-0.3	0.7	2.0	2.9	3.5	3.8	4.1
28.0	54	-3.0		-3.0	-2.7	-2.3	-1.2	0.2	1.6	2.9	3.6	3.9	4.1	4.3
29.0	56	-2.9		-2.8	-2.4	-1.6	-0.5	1.0	2.3	3.4	3.9	4.4	4.7	5.0
30.0	59	-6.4		-2.8	-2.0	-1.6	-0.5	0.9	2.2	4.0	4.8	5.7	6.5	7.3
31.0	63	-3.0		-2.8	-2.0	-1.2	-0.3	0.8	2.3	3.2	4.0	4.8	5.4	6.0
32.0	65	-3.7			-2.7	-1.9	-1.0	0.6	2.3	3.7	4.8	5.8	6.5	7.3
33.0	66	-3.5		-3.4	-2.0	-1.9	-0.6	0.7	2.2	3.0	5.4	6.5	7.3	8.0
34.0	66	-3.3			-2.7	-2.1	-0.5	1.1	2.4	3.7	4.7	5.7	6.9	7.1
35.0	68	-3.6		-3.5	-2.4	-1.7	-0.3	1.0	2.6	3.9	4.0	5.7	8.3	9.0
36.0	69	-6.4		-4.7	-3.5	-2.0	-0.2	1.6	3.6	5.0	5.0	7.4	8.3	9.0
37.0	69	-6.7		-2.7	-1.8	-0.8	0.8	2.2	3.7	5.4	6.5	7.4	8.2	8.7
38.0	70	-8.0		-5.4	-4.2	-1.0	1.1	2.8	4.1	5.0	5.0	8.2	8.6	8.9
39.0	70	-7.2			-5.5	-1.7	-0.1	2.2	4.0	5.2	5.0	7.5	7.8	8.0
40.0	71	-9.7		-6.4	-3.8	-2.4	-0.6	1.5	3.2	4.8	5.6	7.4	8.2	8.4
41.0	71	-6.6			-5.3	-2.0	-0.5	1.1	3.3	5.0	5.0	7.1	7.5	7.7
42.0	71	-6.7		-4.7	-3.4	-0.9	0.0	1.9	3.8	6.5	7.8	8.7	9.3	9.9
43.0	71	-7.2			-3.7	-2.5	-0.7	1.8	4.1	6.0	7.4	8.1	8.4	8.6
44.0	69	-8.0		-5.4	-4.3	-3.4	-1.0	0.8	3.8	5.7	6.8	7.7	9.2	9.4
45.0	69	-8.0		-6.4	-4.8	-4.2	-0.8	1.9	4.2	7.0	8.4	9.4	10.2	10.6
46.0	69	-6.5		-6.4	-4.7	-4.0	-1.0	1.4	4.0	7.0	8.3	9.1	10.4	11.3
47.0	69	-7.8		-5.7	-4.5	-2.0	-0.1	2.8	5.0	8.0	8.0	10.4	13.4	14.2
48.0	67	-8.2		-7.5	-4.3	-0.9	0.9	3.8	6.1	9.4	11.8	12.7	17.2	17.8
49.0	67	-9.4		-7.5	-2.6	-0.6	2.3	4.8	8.2	10.4	11.8	14.5	16.2	16.5
50.0	67	-8.9		-7.5	-2.9	-0.6	2.7	5.3	8.6	9.9	11.8	12.7	13.5	14.4
51.0	67	-7.6		-7.5	-1.8	-0.7	2.6	5.1	8.8	9.8	10.4	10.9	12.3	12.8
52.0	66	-8.2			-0.9	0.8	2.8	6.4	8.8	10.5	11.4	11.9	12.3	12.9
53.0	65	-11.2		-8.5	-2.7	-0.8	1.9	5.9	9.2	10.5	12.6	13.5	15.2	15.7
54.0	64	-11.4		-8.5	-2.9	-0.5	1.7	4.6	9.1	10.9	12.4	13.5	14.2	14.6
55.0	64	-10.5		-8.5	-5.8	-1.6	1.9	5.0	8.5	11.2	12.0	13.8	17.5	18.3
56.0	62	-10.5		-9.6	-2.9	0.2	3.2	6.5	8.7	10.6	12.0	14.6	17.4	18.2
57.0	60	-15.3		-12.6	-3.0	0.0	3.0	7.0	9.6	13.3	13.6	15.6	20.4	21.0
58.0	56	-16.6		-10.7	-8.6	-0.7	2.0	7.7	11.2	15.3	15.8	18.7	19.4	19.9
59.0	51	-17.6		-5.8	-2.8	-0.5	3.7	8.6	11.3	16.9	18.7	19.8	21.6	22.1
60.0	43	-18.1			-4.9	-1.4	4.3	8.5	13.6	17.9	18.6	20.0	20.7	21.2
61.0	32	-15.3			-10.4	-1.9	1.0	9.5	12.9	17.8	18.6	19.0	19.1	19.3
62.0	22	-10.6			-10.5	-1.9	0.5	7.5	12.5	16.8	21.0	23.5	23.8	24.0
63.0	11	-3.0				0.1	2.3	7.8	13.3	15.9	23.8	23.7	23.9	24.0
64.0	6	-2.9					-1.5	6.0	8.5	15.3	15.8	15.7	15.7	15.8
65.0	2	7.7												8.1

IRIG RANGE REFERENCE ATMOSPHERE, AUGUST

TABLE II.3.8

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1960 – 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED – m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	45	-3.8		-2.7	-2.4	-1.7	-0.6	0.7	1.9	2.4	4.4	5.0	7.7	8.3
26.0	45	-2.7		-2.7	-2.4	-1.9	-0.8	0.5	1.6	2.9	3.0	5.0	6.6	7.1
27.0	47	-4.5		-4.0	-3.3	-2.1	-0.9	0.5	2.2	3.6	4.7	7.0	11.6	12.1
28.0	48	-4.5		-4.5	-2.9	-2.5	-0.7	0.7	2.3	4.1	4.0	5.0	7.3	7.4
29.0	49	-3.3			-2.8	-1.9	-1.1	0.3	1.5	3.1	4.8	5.0	8.5	9.0
30.0	49	-5.4			-3.5	-2.4	-0.9	-0.2	1.2	2.5	2.0	3.9	4.5	5.0
31.0	49	-5.0		-3.0	-2.8	-2.8	-0.8	0.1	1.3	2.0	3.6	4.9	6.5	7.1
32.0	49	-4.5		-4.5	-3.5	-1.6	-0.6	1.2	2.3	3.0	4.6	5.9	8.4	8.4
33.0	49	-3.9			-2.8	-1.1	0.1	1.4	2.7	4.0	5.6	6.9	7.3	7.7
34.0	49	-4.1			-2.9	-2.0	0.3	1.7	3.3	4.7	7.6	8.9	12.3	12.6
35.0	49	-2.8		-2.7	-2.6	-2.0	-0.2	1.6	3.5	4.4	6.7	6.9	11.3	11.7
36.0	49	-10.3		-5.0	-4.5	-3.0	-0.9	1.5	3.4	4.9	5.8	7.9	9.6	10.3
37.0	49	-3.8		-3.7	-1.8	-2.4	-0.8	1.4	3.6	5.1	7.3	7.9	10.3	10.6
38.0	49	-2.4			-1.5	-0.7	0.4	1.9	3.6	5.6	6.8	7.9	8.4	8.9
39.0	49	-2.5		-2.5	-2.3	-1.6	-0.8	2.3	4.6	6.5	6.0	7.5	7.9	8.8
40.0	49	-6.0		-3.0	-2.9	-2.4	-0.6	1.9	4.3	5.9	6.8	7.9	9.3	9.6
41.0	49	-5.1		-4.0	-4.3	-3.8	-0.6	2.1	3.8	6.0	6.6	7.0	7.6	8.0
42.0	49	-3.5			-2.8	-1.9	-0.7	1.6	4.2	5.8	6.8	9.3	9.5	9.7
43.0	49	-5.5			-4.9	-4.0	-1.5	1.8	4.7	6.6	7.6	8.0	10.5	10.8
44.0	48	-5.8		-4.0	-3.9	-3.1	-0.4	2.0	5.5	7.1	8.6	9.4	9.7	9.9
45.0	48	-3.3		-2.0	-1.3	-0.6	1.3	3.5	6.0	8.1	9.4	9.0	10.2	10.4
46.0	48	-1.0		-1.0	-0.6	-0.1	1.0	4.4	7.2	8.5	8.0	10.0	11.6	12.2
47.0	48	-3.6		-2.0	-1.3	-0.6	1.7	4.5	6.6	10.1	10.0	11.6	11.9	12.2
48.0	48	-1.8		-1.7	-0.9	-0.1	1.7	4.1	7.8	9.7	11.6	12.5	12.9	13.8
49.0	48	-3.6		-3.5	-3.3	-0.8	1.5	4.6	7.6	11.1	12.3	13.0	14.3	14.5
50.0	48	-6.8		-2.0	-1.3	-0.1	2.3	5.2	7.7	12.1	12.0	13.9	15.4	15.8
51.0	47	-4.0		-3.0	-2.6	-0.4	2.0	5.5	8.3	12.2	15.7	16.0	17.5	17.6
52.0	47	-4.3				-0.8	2.7	5.8	9.6	13.2	16.7	17.0	18.5	18.9
53.0	47	-4.4			-1.6	-0.1	2.6	6.8	11.6	14.7	17.7	18.0	21.3	21.5
54.0	47	-2.0		-1.0	-0.6	0.0	3.7	8.4	12.3	16.3	18.7	19.5	19.8	20.0
55.0	46	-3.0		-1.0	-0.3	0.8	3.8	7.6	14.2	17.8	19.5	19.8	20.1	20.3
56.0	45	-5.6		-4.0	-0.9	1.3	5.5	8.8	14.4	17.5	18.0	20.0	20.4	20.8
57.0	41	-4.5			-2.0	-0.5	5.6	7.0	12.4	16.0	20.0	28.1	28.7	29.1
58.0	39	-2.0			-0.5	1.3	4.3	7.5	12.8	17.3	17.8	18.2	19.8	19.4
59.0	37	-1.8			-1.1	0.4	3.1	7.5	11.6	16.7	17.2	18.1	18.5	18.8
60.0	31	-5.0			-4.4	-0.7	1.8	8.2	14.3	17.9	19.8	23.4	23.9	24.4
61.0	21	-3.5			-1.0	-0.7	1.3	8.8	10.0	15.0	15.5	15.8	15.9	16.0
62.0	15	-3.0				-0.5	1.9	5.8	15.3	17.5	19.4	19.7	19.9	20.0
63.0	10	-1.4					3.5	8.0	15.3	16.0	20.7	21.0	21.2	21.3
64.0	6	-4.8					-2.5	9.0	10.5	20.4	20.7	20.9	21.0	21.1
65.0	4	-3.1					-3.0	-1.0	3.0	7.7	7.0	8.1	8.1	8.2
66.0	3	1.2						1.5	6.3	6.9	7.1	7.2	7.2	7.3
67.0	3	3.2						5.5	15.3	15.4	15.8	16.0	16.0	16.1
68.0	3	2.3						7.5	9.2	9.7	9.8	9.9	9.9	10.0
69.0	4	0.2					0.0	4.0	12.0	13.9	14.4	14.2	14.3	14.3
70.0	3	-5.4						-0.5	0.2	0.7	0.8	0.0	0.9	0.9

IRIG RANGE REFERENCE ATMOSPHERE, SEPTEMBER

TABLE II. 3. 9

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49'N	147° 52'W	1961 – 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59'N	145° 43'W	UNITS: WIND SPEED – m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	53	-7.0				-5.7	-3.7	-0.5	3.3	6.4	8.4	9.5	9.9	10.2
26.0	53	-8.1		-7.0	-7.2	-6.2	-3.7	-0.5	3.2	4.9	7.2	7.9	8.5	9.0
27.0	53	-7.5				-6.9	-4.2	-0.4	2.4	5.2	6.4	7.8	8.5	9.0
28.0	53	-8.3			-7.3	-6.4	-4.0	-1.9	1.6	4.7	7.2	7.9	9.3	9.5
29.0	53	-10.1			-8.7	-6.6	-4.4	-1.4	1.0	5.6	6.7	7.8	9.3	9.6
30.0	53	-9.0				-6.6	-4.7	-1.8	1.0	3.9	4.8	6.8	10.5	11.0
31.0	53	-6.7				-6.6	-4.5	-2.5	0.7	2.7	4.4	6.8	8.6	9.2
32.0	53	-7.9		-7.0	-7.2	-5.9	-4.1	-2.2	1.5	2.9	5.8	5.9	6.7	7.4
33.0	52	-8.5				-7.3	-3.3	-0.6	2.0	4.0	4.8	5.8	7.7	8.5
34.0	53	-9.1			-8.3	-7.2	-4.4	-0.7	2.4	4.5	5.4	7.4	7.7	8.0
35.0	52	-11.5			-9.4	-6.9	-3.7	-0.8	2.0	3.7	7.4	8.3	8.6	8.9
36.0	52	-14.7		-12.8	-10.4	-5.6	-2.7	-1.0	1.9	4.4	6.4	7.8	10.4	10.9
37.0	52	-11.7		-11.5	-7.7	-5.6	-3.0	-0.5	2.3	3.9	6.2	6.9	9.5	10.1
38.0	50	-9.0			-8.7	-6.0	-3.5	0.2	3.1	5.0	5.8	6.9	10.5	11.0
39.0	50	-9.0		-8.9	-7.9	-7.4	-4.2	-1.0	2.7	5.0	6.5	7.3	7.5	7.7
40.0	50	-14.3		-13.9	-9.5	-8.0	-5.1	0.0	2.9	5.5	6.3	6.9	7.5	8.0
41.0	49	-13.5		-9.0	-8.5	-7.7	-5.2	-1.1	2.3	5.1	6.8	7.0	9.5	9.9
42.0	48	-10.9		-10.9	-10.3	-7.5	-4.5	-0.3	4.0	6.5	7.8	8.9	10.4	10.8
43.0	48	-11.9		-10.9	-8.8	-7.6	-4.0	0.8	4.7	8.1	8.9	11.9	13.6	14.1
44.0	46	-15.8		-9.0	-8.3	-6.4	-3.7	2.0	5.4	7.4	8.6	10.9	14.7	15.4
45.0	46	-12.7		-10.0	-7.7	-5.2	-2.2	2.2	6.1	7.6	8.7	10.0	12.6	13.2
46.0	44	-9.9		-9.9	-6.9	-4.6	-2.0	2.0	5.2	7.9	9.8	10.4	10.7	10.9
47.0	44	-9.4		-9.0	-6.9	-3.8	-1.2	3.7	7.0	11.5	12.8	14.0	16.6	17.0
48.0	44	-9.4			-7.8	-5.3	-0.7	3.8	9.5	14.2	14.0	16.0	16.3	16.5
49.0	44	-11.3		-10.0	-8.8	-7.3	-1.2	5.3	9.5	12.8	14.8	18.0	18.8	18.4
50.0	44	-10.8		-10.8	-8.8	-5.6	1.5	5.8	10.2	11.8	14.0	17.0	19.5	19.9
51.0	43	-6.7			-4.9	-1.0	2.8	7.1	10.1	13.0	16.0	23.0	23.3	23.6
52.0	43	-5.2			-4.4	-2.7	1.9	5.9	11.4	13.0	19.0	40.0	40.8	41.3
53.0	42	-8.9			-5.9	-2.4	1.3	5.5	13.2	15.7	16.0	46.1	46.7	47.1
54.0	39	-5.5			-5.0	-4.0	1.6	6.5	13.6	17.5	20.1	34.1	34.6	35.0
55.0	37	-9.6			-6.6	-5.6	1.1	7.5	14.9	19.3	20.6	21.1	21.5	21.8
56.0	30	-10.0			-9.5	-2.5	1.9	8.0	15.2	16.7	17.6	18.3	18.6	18.9
57.0	30	-8.1			-5.5	0.0	4.8	10.3	14.1	18.0	20.3	20.8	21.0	21.2
58.0	28	-7.1			-6.8	-6.1	1.0	10.3	13.7	16.2	18.6	20.5	21.0	21.4
59.0	19	-10.6					0.8	6.8	11.1	16.1	18.0	18.3	18.4	18.5
60.0	16	-17.6				-1.4	4.5	8.5	15.0	19.4	22.3	22.0	23.2	23.5
61.0	12	-19.5				-1.8	6.0	11.5	15.0	20.8	21.2	21.4	21.5	21.6
62.0	6	-2.0					2.3	3.0	20.5	25.3	25.5	25.6	25.6	25.7
63.0	1	0.1												0.1
64.0	1	-8.5												-8.5
65.0	1	-17.3												-17.3
66.0	1	-26.2												-26.2
67.0	1	-35.0												-35.0
68.0	1	-43.9												-43.9

IRIG RANGE REFERENCE ATMOSPHERE, OCTOBER

TABLE II. 3.10

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1960 – 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED – m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX
25.0	78	-16.8		-14.9	-10.1	-7.4	-3.1	2.0	5.3	8.6	10.1	12.2	13.2	13.9
26.0	79	-15.4		-12.2	-9.6	-7.3	-4.2	1.3	5.8	8.6	11.1	15.2	17.2	17.8
27.0	78	-12.0		-11.7	-11.0	-8.6	-3.7	0.5	5.1	10.1	13.1	16.2	17.3	18.4
28.0	77	-20.3		-14.2	-12.7	-10.4	-4.9	-0.1	5.0	10.3	12.7	15.2	16.1	16.6
29.0	77	-19.2		-16.6	-15.1	-11.8	-5.0	-0.4	3.8	11.1	12.6	14.1	14.6	14.9
30.0	77	-19.2		-18.2	-17.1	-13.6	-6.9	-1.1	3.4	9.7	12.1	13.2	13.9	14.4
31.0	77	-32.1		-23.2	-19.7	-16.3	-6.8	-2.3	2.7	7.8	11.7	13.2	13.8	14.3
32.0	77	-32.7		-26.2	-20.6	-17.6	-6.9	-1.9	2.6	9.3	11.2	15.2	15.8	16.3
33.0	77	-33.0		-28.2	-21.7	-18.3	-8.0	-1.1	2.9	9.3	12.1	14.2	16.1	16.6
34.0	77	-33.2		-32.2	-22.1	-15.8	-9.7	-2.5	3.9	11.1	11.8	13.2	15.1	15.6
35.0	77	-32.6		-30.2	-23.6	-17.6	-11.6	-3.8	4.9	9.8	11.6	15.2	20.1	20.5
36.0	77	-36.1		-29.2	-24.1	-18.8	-11.4	-5.1	3.9	9.7	11.1	11.7	15.3	16.4
37.0	76	-33.9		-30.3	-23.6	-18.4	-12.0	-3.0	4.0	7.9	10.8	11.3	13.3	14.2
38.0	75	-38.8		-26.8	-26.1	-20.2	-12.7	-4.2	1.9	8.6	9.8	14.3	15.2	15.9
39.0	75	-33.3		-30.6	-27.2	-23.2	-13.7	-6.2	0.3	7.3	10.1	10.8	11.1	11.4
40.0	75	-35.8		-35.3	-30.2	-23.5	-15.6	-4.5	0.1	6.2	8.3	10.5	11.2	11.6
41.0	72	-37.6		-37.4	-28.4	-24.9	-15.0	-6.7	-2.2	5.8	10.0	12.4	14.2	14.6
42.0	71	-38.5		-33.4	-31.4	-25.9	-17.1	-5.9	1.3	7.5	10.2	11.4	17.2	17.7
43.0	68	-39.8		-39.5	-32.6	-28.6	-18.5	-5.5	3.0	8.6	11.5	12.1	12.4	12.7
44.0	67	-41.1		-39.5	-35.6	-29.3	-20.2	-6.5	0.9	9.1	12.2	12.8	17.2	17.6
45.0	66	-42.9		-38.5	-31.9	-29.8	-15.9	-4.8	1.8	9.7	13.0	14.7	15.2	15.7
46.0	64	-46.2		-42.5	-34.9	-30.6	-19.5	-3.3	1.8	10.6	12.0	14.8	16.3	16.9
47.0	61	-46.9		-45.6	-32.9	-28.9	-16.9	-3.2	4.8	12.0	13.5	15.6	18.3	18.8
48.0	60	-47.3		-44.6	-36.5	-32.0	-21.0	-4.5	2.0	10.0	14.0	16.5	17.0	17.4
49.0	60	-49.0		-41.6	-37.0	-38.3	-18.0	-6.0	3.7	9.0	14.0	23.3	23.7	24.0
50.0	58	-49.6		-41.7	-38.1	-36.4	-21.5	-5.0	4.8	13.5	18.1	23.7	24.3	24.6
51.0	56	-49.1			-41.2	-35.2	-22.0	-5.5	8.5	13.4	19.2	23.7	30.4	30.9
52.0	55	-52.9		-46.7	-44.2	-37.5	-22.1	-4.2	6.3	15.5	20.3	34.7	35.3	35.7
53.0	51	-56.6		-48.8	-47.4	-40.9	-16.2	-5.5	6.3	15.9	19.5	30.9	43.3	43.7
54.0	50	-60.4		-50.9	-49.5	-44.0	-17.5	-6.0	8.2	16.0	25.5	31.9	49.3	49.6
55.0	47	-60.0		-54.9	-51.5	-37.1	-14.6	-3.8	8.4	24.3	29.7	41.9	55.3	55.5
56.0	41	-60.0			-44.9	-38.9	-11.7	-0.7	7.9	21.9	28.0	30.0	30.4	30.6
57.0	31	-60.0			-44.4	-38.9	-12.2	-1.8	12.3	21.9	30.5	31.3	31.7	32.0
58.0	29	-60.0			-41.6	-40.1	-14.7	-2.5	6.8	20.1	28.6	33.4	33.9	34.2
59.0	20	-39.7			-40.0	-37.0	-13.0	-7.0	3.7	23.0	34.0	34.7	35.0	35.3
60.0	12	-39.2				-32.8	-14.0	-8.0	23.0	24.9	38.5	39.0	39.2	39.4
61.0	7	-28.0					-18.2	-14.5	-5.7	18.3	18.6	18.8	18.9	19.0
62.0	4	-23.5					-15.7	-8.5	-6.2	14.5	14.7	14.9	14.9	15.0
63.0	1	-7.0												-7.0
64.0	1	-8.0												-8.0

IRIG RANGE REFERENCE ATMOSPHERE, NOVEMBER

TABLE II. 3. 11

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1960 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED – m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX.
25.0	63	-43.7		-38.6	-30.4	-19.7	-8.2	-0.0	5.3	12.0	17.0	22.6	25.0	25.6
26.0	65	-39.0			-31.7	-23.5	-11.2	-0.5	6.4	13.5	19.0	23.5	27.4	28.1
27.0	69	-39.9		-38.7	-33.6	-27.1	-13.4	-3.3	4.0	14.0	16.6	36.4	38.2	39.8
28.0	69	-45.0		-41.4	-36.6	-28.6	-15.0	-2.7	6.4	16.4	26.3	31.3	32.0	32.5
29.0	70	-46.0		-40.4	-36.5	-28.0	-18.1	-4.3	6.3	17.5	24.5	31.4	45.2	45.7
30.0	72	-53.0		-46.4	-40.4	-33.8	-20.5	-7.0	4.8	17.4	29.4	35.4	48.3	49.2
31.0	71	-57.6		-50.4	-43.4	-32.0	-21.6	-7.5	0.3	19.2	27.5	34.4	48.4	49.2
32.0	72	-54.7		-53.4	-48.4	-38.0	-24.5	-7.7	4.7	17.8	28.4	34.4	46.2	46.7
33.0	72	-59.9		-57.4	-47.4	-41.3	-26.0	-9.0	5.0	20.8	25.4	30.4	46.2	46.7
34.0	72	-60.7		-60.4	-48.4	-42.5	-27.5	-8.7	7.3	20.2	25.0	33.4	49.2	49.8
35.0	72	-60.4		-59.4	-49.7	-43.8	-29.5	-10.5	6.0	19.7	28.4	42.4	56.4	57.5
36.0	71	-62.7		-55.4	-49.4	-43.6	-28.2	-9.2	5.5	18.0	27.5	51.4	63.2	63.8
37.0	71	-69.6		-56.4	-46.7	-40.0	-30.4	-11.2	4.3	15.0	29.5	53.4	62.4	63.2
38.0	71	-67.0		-56.4	-51.4	-44.0	-31.5	-12.2	4.3	15.0	25.5	51.4	54.4	55.3
39.0	71	-62.7		-57.4	-52.2	-46.0	-32.5	-11.7	4.5	13.0	15.7	46.4	56.3	57.1
40.0	69	-65.6		-56.7	-51.5	-47.1	-32.0	-10.2	3.0	13.1	18.0	48.4	54.3	54.9
41.0	69	-68.8		-59.4	-49.5	-44.7	-33.7	-10.2	1.8	14.1	23.5	51.4	61.2	61.8
42.0	66	-66.0		-57.5	-49.8	-48.2	-33.5	-11.7	1.2	10.4	18.7	21.5	51.5	52.4
43.0	66	-60.1		-53.5	-52.3	-46.4	-31.5	-14.0	-2.7	9.2	17.7	22.5	54.3	54.9
44.0	65	-61.5		-59.5	-52.7	-46.5	-33.4	-12.2	-0.7	8.8	12.0	23.4	24.0	24.4
45.0	64	-61.3			-54.8	-44.3	-32.3	-11.5	-1.0	6.5	15.0	24.5	25.5	26.4
46.0	63	-65.3		-60.0	-54.0	-45.7	-33.1	-11.5	1.1	8.7	15.0	27.6	29.3	29.7
47.0	61	-69.8		-59.6	-53.0	-49.4	-35.7	-14.7	0.4	10.2	13.0	28.4	28.8	29.2
48.0	50	-73.8		-65.6	-64.0	-48.0	-35.0	-16.0	-2.5	11.0	18.0	25.6	27.3	27.9
49.0	58	-70.2		-68.7	-63.1	-50.1	-32.5	-16.0	-3.5	8.2	20.1	21.7	26.5	27.2
50.0	55	-79.0		-74.7	-64.2	-51.5	-34.2	-10.2	2.1	9.5	18.3	21.7	26.4	27.0
51.0	52	-75.6		-65.8	-61.4	-50.0	-30.0	-7.0	3.0	12.8	19.4	21.8	26.5	27.0
52.0	51	-74.8		-74.7	-61.4	-52.0	-27.2	-5.2	6.1	12.0	17.5	20.8	29.3	29.7
53.0	49	-68.5		-59.0	-59.3	-52.1	-27.7	-5.5	1.8	14.4	20.6	21.0	34.5	35.1
54.0	45	-64.6		-62.0	-51.7	-39.5	-31.0	-8.8	0.3	6.5	17.0	20.0	39.8	40.5
55.0	40	-64.0			-54.0	-38.0	-25.3	-12.5	-2.5	3.0	21.0	37.1	37.4	37.7
56.0	38	-62.2			-57.1	-39.2	-26.5	-15.0	-0.5	12.2	22.1	31.1	31.5	31.9
57.0	32	-59.7			-39.4	-35.9	-30.0	-9.0	5.0	23.9	25.2	25.7	25.9	26.0
58.0	24	-65.5			-57.7	-40.4	-35.2	-5.0	8.8	24.4	25.7	33.4	33.8	34.1
59.0	17	-74.7				-60.3	-35.7	-6.5	9.8	19.3	35.2	35.9	36.2	36.5
60.0	11	-59.4				-35.0	-32.6	-8.5	6.3	9.0	12.3	12.4	12.5	12.6
61.0	5	-61.2					-27.7	-16.5	-7.2	4.5	4.0	4.9	5.0	5.1
62.0	4	-63.1					-63.0	-31.0	-0.0	-2.7	-2.6	-2.5	-2.5	-2.5
63.0	3	-25.9						-10.7	-10.2	-9.8	-9.7	-9.7	-9.7	-9.6
64.0	2	-11.7						-12.0	-10.7	-10.5	-10.4	-10.4	-10.4	-10.3
65.0	2	-13.3						-13.0	-11.5	-11.3	-11.2	-11.1	-11.1	-11.1
66.0	2	-15.0						-15.0	-12.4	-12.1	-11.0	-11.0	-11.0	-11.8
67.0	-1	-16.7												-16.7
68.0	1	-18.4												-18.4

IRIG RANGE REFERENCE ATMOSPHERE, DECEMBER

TABLE II. 3. 12

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 49' N	147° 52' W	1962-1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX
25.0	44	-29.3		-28.0	-25.8	-22.3	-14.0	-2.0	10.3	15.6	22.0	24.6	3.0	25.1
26.0	46	-33.2		-32.0	-29.7	-25.2	-17.5	-4.2	0.9	13.7	20.7	26.0		29.0
27.0	51	-38.3		-35.8	-34.7	-32.0	-21.2	-5.5	4.3	15.0	20.5	25.8		30.0
28.0	53	-51.4		-43.8	-42.3	-36.3	-25.7	-4.0	4.0	16.7	25.2	25.0		33.4
29.0	53	-60.6		-49.8	-43.3	-40.7	-27.4	-7.2	4.0	16.7	21.0	23.8	32.4	32.8
30.0	54	-70.8		-53.8	-44.3	-38.8	-30.7	-9.2	4.3	17.9	20.7	24.9	30.3	30.6
31.0	54	-75.5		-61.8	-50.3	-38.6	-33.5	-12.0	4.5	17.6	22.2	22.0	30.6	31.4
32.0	53	-80.8		-67.8	-59.3	-41.7	-33.7	-10.5	4.3	17.7	23.5	23.0	34.5	35.1
33.0	52	-87.8		-71.8	-62.4	-46.4	-34.0	-9.0	5.3	19.8	22.0	24.0	36.3	36.6
34.0	52	-95.3		-83.8	-69.4	-49.8	-37.0	-11.0	5.0	16.0	25.2	28.0	35.7	36.4
35.0	53	-102.6		-87.0	-75.3	-51.7	-34.0	-12.5	4.0	19.6	26.4	27.0	38.3	38.6
36.0	54	-118.1		-109.8	-90.3	-58.6	-38.5	-15.0	3.8	16.6	25.3	29.0	39.2	38.5
37.0	54	-120.4		-110.8	-96.3	-60.6	-39.2	-14.0	3.8	15.5	24.3	31.0	36.6	37.3
38.0	54	-120.4		-111.8	-103.3	-62.5	-38.5	-9.7	3.5	12.8	21.3	29.8	32.3	32.7
39.0	53	-118.8		-111.8	-110.3	-67.7	-36.7	-5.5	4.4	13.4	17.6	27.8	28.3	28.7
40.0	53	-112.2		-110.8	-104.3	-70.7	-38.7	-11.2	5.4	18.7	17.0	22.0	27.6	28.2
41.0	52	-110.8		-110.6	-92.4	-70.8	-38.0	-8.0	3.0	13.0	18.7	19.8	26.5	27.0
42.0	53	-111.5		-110.8	-105.3	-69.7	-30.7	-11.5	3.4	12.4	16.0	24.8	25.6	27.3
43.0	53	-109.4		-102.8	-97.3	-70.3	-36.7	-9.5	4.8	12.0	16.4	22.8	34.3	34.6
44.0	51	-108.3		-95.8	-89.4	-59.0	-41.2	-9.5	5.6	12.0	22.5	23.8	40.6	41.2
45.0	49	-102.2		-90.0	-64.5	-54.1	-26.7	-10.7	6.8	17.6	23.6	31.0	45.5	46.0
46.0	48	-101.1		-94.0	-58.6	-55.2	-25.5	-10.0	3.5	20.1	25.6	35.2	42.3	42.5
47.0	44	-104.8		-87.0	-68.6	-48.2	-21.0	-11.3	2.0	18.6	29.6	33.5	33.0	34.1
48.0	47	-88.7		-78.0	-45.6	-39.3	-18.8	-11.5	0.3	18.3	31.3	32.0	33.3	33.5
49.0	46	-78.7		-68.0	-37.7	-28.8	-21.2	-11.0	-1.5	13.4	28.7	41.0	53.7	54.3
50.0	45	-75.7		-54.0	-31.7	-30.2	-19.0	-13.2	1.4	14.5	26.0	49.0	54.8	59.5
51.0	44	-73.2		-47.0	-36.8	-29.6	-22.0	-13.0	2.0	14.6	26.0	50.0	60.4	60.7
52.0	43	-71.2			-40.8	-36.3	-24.2	-11.5	0.3	15.7	28.0	65.0	65.4	65.6
53.0	42	-69.1			-44.8	-39.8	-28.2	-10.0	-0.9	12.9	24.0	71.0	71.6	72.1
54.0	34	-74.2			-57.1	-51.2	-19.7	-15.0	0.8	19.2	30.1	76.1	76.3	76.5
55.0	30	-91.1			-76.5	-42.0	-24.5	-12.0	-2.5	4.0	10.6	19.3	19.7	20.0
56.0	23	-73.5			-68.8	-56.7	-20.1	-9.2	-0.7	12.7	17.0	19.3	19.8	20.0
57.0	19	-60.1				-57.1	-15.2	-11.2	2.3	16.1	17.0	17.5	17.8	18.0
58.0	16	-40.9				-29.4	-19.0	-14.0	3.0	14.2	14.6	14.8	15.0	15.0
59.0	13	-26.3				-25.7	-20.0	-14.5	-3.6	11.7	12.5	13.0	13.2	13.4
60.0	11	-24.3				-23.9	-18.2	-9.5	-2.7	8.0	12.2	12.8	12.5	12.5
61.0	5	-20.5					-18.7	-8.5	-0.2	14.6	14.0	15.0	15.1	15.2
62.0	2	-17.9						-18.0	26.7	27.0	27.2	27.2	27.3	27.3
63.0	1	39.5												39.5

IRIG RANGE REFERENCE ATMOSPHERE, ANNUAL

TABLE II. 3. 13

STATION	ELEVATION MSL (meters)	LOCATION LATITUDE	LOCATION LONGITUDE	PERIOD OF DATA	MERIDIONAL WIND COMPONENTS
FAIRBANKS ALASKA	134	64° 45' N	147° 52' W	1960 - 1967	FORT GREELY MISSILE RANGE LAUNCH SITE
FORT GREELY LAUNCH SITE	392	63° 59' N	145° 43' W	UNITS: WIND SPEED - m/sec	

ALT. (km) MSL	NO. OBS.	MIN.	CUMULATIVE PERCENTAGE FREQUENCY 1.0	2.28	5.0	10.0	25.0	50.0	75.0	90.0	95.0	97.72	99.0	MAX
25.0	697	-45.5	-34.0	-29.0	-22.4	-16.3	-5.5	-0.5	2.4	6.3	9.6	12.0	17.0	25.5
26.0	709	-47.1	-35.0	-31.2	-25.1	-18.3	-5.0	-0.7	2.2	6.1	9.[illegible]	13.2	1[illegible].0	29.0
27.0	724	-50.0	-37.0	-33.6	-27.0	-19.0	-7.0	-0.3	1.0	6.1	10.0	14.3	17.7	35.9
28.0	737	-52.7	-41.6	-36.6	-30.1	-22.8	-7.8	-1.0	1.0	6.2	9.7	15.6	21.0	33.4
29.0	750	-60.6	-42.7	-38.5	-31.4	-24.4	-8.7	-1.0	1.0	5.3	10.5	15.5	21.5	45.7
30.0	757	-70.9	-44.8	-39.8	-35.1	-26.1	-10.2	-1.2	1.7	5.3	10.0	15.3	20.7	49.2
31.0	760	-75.5	-50.2	-41.0	-37.0	-29.4	-10.1	-1.4	1.6	5.5	10.0	15.2	22.2	49.2
32.0	764	-80.8	-53.3	-48.0	-39.0	-30.3	-11.1	-1.0	1.0	5.5	10.5	15.2	23.4	46.7
33.0	767	-87.8	-60.3	-47.0	-40.2	-31.4	-11.7	-1.3	2.0	5.0	10.5	16.3	22.8	46.7
34.0	764	-95.3	-61.7	-52.2	-43.4	-32.7	-11.5	-1.3	2.4	5.3	11.5	15.7	25.1	49.4
35.0	772	-102.6	-64.4	-54.7	-46.4	-32.0	-11.8	-1.3	2.4	6.2	11.1	19.5	26.3	57.5
36.0	774	-118.1	-65.6	-56.8	-47.6	-33.7	-12.4	-1.2	2.5	6.1	11.1	17.3	25.3	53.4
37.0	775	-120.4	-71.2	-60.0	-49.1	-34.1	-13.2	-0.8	2.0	6.8	10.0	15.2	25.3	53.2
38.0	771	-120.4	-74.3	-62.5	-49.0	-34.4	-13.2	-0.4	3.3	6.4	10.2	15.6	25.1	55.7
39.0	765	-119.8	-80.7	-64.2	-50.8	-34.0	-13.1	-1.0	3.3	7.0	10.7	15.1	23.3	57.1
40.0	754	-114.5	-58.3	-68.8	-51.7	-34.6	-13.1	-1.3	2.8	6.3	9.7	15.6	22.3	54.9
41.0	752	-121.7	-58.4	-70.0	-51.0	-35.1	-12.4	-1.7	2.6	6.1	9.0	14.6	25.2	61.9
42.0	753	-127.0	-55.5	-73.0	-51.2	-34.0	-12.7	-1.5	2.2	6.6	9.2	14.4	21.5	52.4
43.0	744	-132.3	-94.5	-74.0	-52.4	-35.3	-12.7	-1.0	3.3	6.0	9.3	14.5	22.3	54.9
44.0	737	-138.2	-91.6	-70.6	-52.1	-34.2	-12.0	-1.5	3.3	7.1	9.0	14.1	23.5	42.7
45.0	725	-144.0	-91.7	-69.5	-49.8	-32.2	-11.6	-1.1	3.8	7.7	10.5	15.5	24.3	45.0
46.0	714	-149.8	-92.0	-69.4	-46.7	-32.5	-11.5	-0.8	3.3	7.0	10.6	17.3	25.8	42.5
47.0	711	-145.0	-92.0	-68.0	-48.5	-32.5	-11.8	-0.3	4.5	8.0	12.1	17.4	25.2	38.7
48.0	701	-141.8	-90.0	-69.5	-45.5	-32.0	-11.7	0.1	5.2	8.4	13.0	16.7	25.0	33.6
49.0	694	-132.6	-97.1	-67.2	-47.5	-30.4	-10.7	0.7	6.0	9.0	13.5	18.3	24.1	54.3
50.0	682	-114.8	-93.2	-64.8	-48.0	-28.2	-10.2	1.3	6.7	10.2	14.5	18.7	25.1	54.5
51.0	651	-113.9	-83.8	-62.0	-44.0	-28.2	-8.2	2.5	7.5	11.3	15.6	20.0	27.4	50.7
52.0	651	-119.1	-80.5	-62.1	-43.2	-28.3	-8.0	3.0	8.0	12.0	16.1	20.1	34.7	55.5
53.0	630	-111.9	-81.[illegible]	-61.7	-45.2	-28.5	-8.0	3.1	8.5	12.0	16.0	21.0	32.7	72.1
54.0	594	-103.4	-79.0	-59.4	-46.1	-29.5	-7.2	2.8	8.0	13.4	17.7	21.2	30.0	76.5
55.0	545	-108.1	-75.5	-54.8	-39.8	-22.5	-6.0	3.5	8.0	15.1	18.0	21.8	29.8	55.5
56.0	482	-110.6	-63.2	-56.0	-33.0	-19.8	-3.5	5.0	8.5	15.5	19.3	22.3	27.5	34.0
57.0	424	-102.6	-60.2	-44.3	-30.7	-17.1	-1.1	5.1	10.0	15.2	19.4	23.3	25.0	32.0
58.0	371	-86.8	-50.3	-42.6	-27.5	-16.0	-1.2	6.2	11.5	15.8	18.3	20.2	27.3	34.2
59.0	307	-75.5	-60.0	-40.0	-25.5	-14.8	-2.3	5.7	11.1	15.7	18.5	22.5	33.6	36.5
60.0	234	-71.7	-59.6	-39.6	-23.1	-14.1	-0.0	7.3	12.6	17.4	19.0	22.2	24.8	39.4
61.0	174	-75.8	-61.3	-28.1	-20.2	-11.7	-0.5	7.1	12.5	16.0	18.6	21.0	21.8	22.4
62.0	114	-63.1	-33.8	-31.3	-18.1	-9.6	1.1	6.4	11.3	15.7	22.0	25.1	25.0	27.3
63.0	65	-25.9		-24.5	-10.0	-5.4	2.5	7.4	11.3	15.7	20.0	23.5	39.5	39.5
64.0	43	-13.9			-10.8	-8.6	-1.2	7.5	12.3	15.7	17.0	20.5	20.8	21.1
65.0	27	-20.3			-17.6	-13.3	-1.2	6.8	10.1	15.3	19.7	19.2	19.4	19.6
66.0	13	-32.9				-26.1	-1.2	3.8	11.4	15.1	17.1	17.6	17.0	18.1
67.0	15	-45.5				-35.5	-1.2	5.3	12.3	15.7	15.0	16.2	16.3	15.4
68.0	12	-43.9				-18.8	-15.0	2.0	1[illegible].0	14.3	14.5	14.5	14.7	14.7
69.0	10	0.2				0.0	0.5	11.5	13.5	15.0	32.6	32.2	33.1	33.2
70.0	10	-5.4				-5.0	-0.5	1.0	11.5	14.0	15.6	16.0	16.1	15.3