

TABLE 6.—Refraction

To be subtracted from sextant altitude

R <sub>0</sub>	Height above sea level in thousands of feet											R <sub>0</sub>	R = R <sub>0</sub> × f								
	Sextant Altitude												f								
	0	5	10	15	20	25	30	35	40	45	50		55	0.9	1.0	1.1	1.2				
0	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	0	0	0	0	0
1	63	59	55	51	46	41	36	31	26	20	17	13	1	1	1	1	1	1	1	1	1
2	33	29	26	22	19	16	14	11	9	7	6	4	2	2	2	2	2	2	2	2	2
3	21	19	16	14	12	10	8	7	5	4	2	2	4	3	3	3	3	3	3	3	3
4	16	14	12	10	8	7	6	5	4	3	2	2	4	4	4	4	4	4	4	4	4
5	12	11	9	8	7	5	4	3	2	2	2	2	4	4	4	4	4	4	4	4	4
6	10	9	7	5	5	4	3	2	2	2	2	2	4	4	4	4	4	4	4	4	4
7	8	10	6	5	5	4	3	2	2	2	2	2	4	4	4	4	4	4	4	4	4
8	6	5	5	4	4	3	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4
9	6	5	4	4	3	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4
10	5	2	4	3	4	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4
12	4	3	4	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4
14	3	3	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4
16	2	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4
18	1	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4
20	1	1	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4
25	1	1	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4
30	0	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
35	0	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
40	0	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
45	0	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
50	0	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
55	0	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
60	0	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

TABLE 7.—Coriolis (Z) Correction

Ground Speed	Latitude									Ground Speed	
	0°	10°	20°	30°	40°	50°	60°	70°	80°		90°
Kts.	0	0	0	0	0	0	0	0	0	0	Kts.
50	0	0	0	1	1	1	1	1	1	1	50
100	0	0	1	1	2	2	2	2	2	2	100
150	0	1	1	2	3	3	3	3	3	3	150
200	0	1	2	3	3	4	4	4	4	4	200
250	0	1	2	3	4	4	5	5	5	5	250
300	0	1	2	3	4	5	6	6	6	6	300
350	0	2	3	4	5	6	7	7	7	7	350
400	0	2	4	5	6	7	8	8	8	8	400
450	0	2	4	6	8	9	10	10	10	10	450
500	0	2	4	7	8	10	11	11	11	11	500
550	0	3	5	7	9	11	12	12	12	12	550
600	0	3	5	8	10	12	14	14	14	14	600
650	0	3	6	9	11	13	15	15	15	15	650
700	0	3	6	9	12	14	16	16	16	16	700
750	0	3	7	10	13	15	17	17	17	17	750
800	0	4	7	10	13	16	18	18	18	18	800
850	0	4	8	11	14	17	19	19	19	19	850
900	0	4	8	12	15	18	20	20	20	20	900

To be applied by moving the position line a distance Z to starboard (right) of the track in northern latitudes and to port (left) in southern latitudes.

Choose the column appropriate to height, in units of 1,000 feet, and find the range of altitude in which the sextant altitude lies; thus find R<sub>0</sub>. This is the refraction corresponding to the sextant altitude unless conditions are extreme. In that case find f from the lower table corresponding to the range of temperature for the appropriate height, and use the table on the right to find R. Example: at a height of 30,000 feet and temperature (—) 60° C a celestial body is observed at altitude (—) 2°36'. R<sub>0</sub> is 50', f is 1.1 and R is 55'. Subtracting this from the sextant altitude gives (—) 3°31'.

f	Temperature in degrees Celsius (centigrade)											f	Refraction R = R <sub>0</sub> × f								
	0	5	10	15	20	25	30	35	40	45	50		55	0.9	1.0	1.1	1.2				
0.9	+47	+36	+27	+18	+10	+3	—5	—13	—22	—31	—40	—49	—57	—66	—75	—83	—91	—99	—107	—115	—123
1.0	+26	+16	+6	—4	—13	—22	—31	—40	—49	—57	—66	—75	—83	—91	—99	—107	—115	—123	—131	—139	—147
1.1	+5	—5	—15	—25	—36	—46	—57	—68	—78	—88	—98	—108	—118	—128	—138	—148	—158	—168	—178	—188	—198
1.2	—16	—25	—36	—46	—58	—71	—83	—95	—107	—119	—131	—143	—155	—167	—179	—191	—203	—215	—227	—239	—251
	—37	—45	—56	—67	—81	—95	—109	—123	—137	—151	—165	—179	—193	—207	—221	—235	—249	—263	—277	—291	—305