

# CORRECTIONS TO BE APPLIED TO SEXTANT ALTITUDE A167

## REFRACTION

To be subtracted from sextant altitude (referred to as observed altitude in A.P. 3270)

$R_o$	Height above sea level in units of 1 000 ft.												$R_o$	$R = R_o \times f$			
	Sextant Altitude													$f$			
														R			
	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	0	0	0	0	0
1	63	59	55	51	46	41	36	31	26	20	17	13	1	1	1	1	1
2	33	29	26	22	19	16	14	11	9	7	6	4	2	2	2	2	2
3	21	19	16	14	12	10	8	7	5	4	2 40	1 40	3	3	3	3	4
4	16	14	12	10	8	7	6	5	3 10	2 20	1 30	0 40	4	4	4	4	5
5	12	11	9	8	7	5	4 00	3 10	2 10	1 30	0 39	+0 05	5	5	5	5	6
6	10	9	7	5 50	4 50	3 50	3 10	2 20	1 30	0 49	+0 11	-0 19	6	5	6	7	7
7	8 10	6 50	5 50	4 50	4 00	3 00	2 20	1 50	1 10	0 24	-0 11	-0 38	7	6	7	8	8
8	6 50	5 50	5 00	4 00	3 10	2 30	1 50	1 20	0 38	+0 04	-0 28	-0 54	8	7	8	9	10
9	6 00	5 10	4 10	3 20	2 40	2 00	1 30	1 00	0 19	-0 13	-0 42	-1 08	9	8	9	10	11
10	5 20	4 30	3 40	2 50	2 10	1 40	1 10	0 35	+0 03	-0 27	-0 53	-1 18	10	9	10	11	12
12	4 30	3 40	2 50	2 20	1 40	1 10	0 37	+0 11	-0 16	-0 43	-1 08	-1 31	12	11	12	13	14
14	3 30	2 50	2 10	1 40	1 10	0 34	+0 09	-0 14	-0 37	-1 00	-1 23	-1 44	14	13	14	15	17
16	2 50	2 10	1 40	1 10	0 37	+0 10	-0 13	-0 34	-0 53	-1 14	-1 35	-1 56	16	14	16	18	19
18	2 20	1 40	1 20	0 43	+0 15	-0 08	-0 31	-0 52	-1 08	-1 27	-1 46	-2 05	18	16	18	20	22
20	1 50	1 20	0 40	+0 23	-0 02	-0 26	-0 46	-1 06	-1 22	-1 39	-1 57	-2 14	20	18	20	22	24
25	1 12	0 44	+0 19	-0 06	-0 28	-0 48	-1 09	-1 27	-1 42	-1 58	-2 14	-2 30	25	22	25	28	30
30	0 34	+0 10	-0 13	-0 36	-0 55	-1 14	-1 32	-1 51	-2 06	-2 21	-2 34	-2 49	30	27	30	33	36
35	+0 06	-0 16	-0 37	-0 59	-1 17	-1 33	-1 51	-2 07	-2 23	-2 37	-2 51	-3 04	35	31	35	38	42
40	-0 18	-0 37	-0 58	-1 16	-1 34	-1 49	-2 06	-2 22	-2 35	-2 49	-3 03	-3 16	40	36	40	44	48
45		-0 53	-1 14	-1 31	-1 47	-2 03	-2 18	-2 33	-2 47	-2 59	-3 13	-3 25	45	40	45	50	54
50		-1 10	-1 28	-1 44	-1 59	-2 15	-2 28	-2 43	-2 56	-3 08	-3 22	-3 33	50	45	50	55	60
55			-1 40	-1 53	-2 09	-2 24	-2 38	-2 52	-3 04	-3 17	-3 29	-3 41	55	49	55	60	66
60				-2 03	-2 18	-2 33	-2 46	-3 01	-3 12	-3 25	-3 37	-3 48	60	54	60	66	72
							-2 53	-3 07	-3 19	-3 31	-3 42	-3 53					

  

$f$	Temperature in °C.												$f$	$f$			
0.9	+47	+36	+27	+18	+10	+3	-5	-13					0.9	0.9	1.0	1.1	1.2
1.0	+26	+16	+6	-4	-13	-22	-31	-40					1.0	1.0	1.0	1.1	1.2
1.1	+5	-5	-15	-25	-36	-46	-57	-68					1.1	1.1	1.1	1.2	1.2
1.2	-16	-25	-36	-46	-58	-71	-83	-95					1.2	1.2	1.2	1.2	1.2
	-37	-45	-56	-67	-81	-95											

For these heights no temperature correction is necessary, so use  $R = R_o$ .

Choose the column appropriate to height, in units of 1 000 ft., and find the range of altitude in which the sextant altitude lies; the corresponding value of  $R_o$  is the refraction, to be subtracted from sextant altitude, unless conditions are extreme. In that case find  $f$  from the lower table, with critical argument temperature. Use the table on the right to form the refraction,  $R = R_o \times f$ .

## CORIOLIS (Z) CORRECTION

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.

G/S KNOTS	Latitude					G/S KNOTS	Latitude				
	0° 10°	20° 30°	40° 50°	60° 70°	80° 90°		0° 10°	20° 30°	40° 50°	60° 70°	80° 90°
150	0 1	1 2	3 3	3 4	4 4	550	0 3	5 7	9 11	12 14	14 14
200	0 1	2 3	3 4	5 5	5 5	600	0 3	5 8	10 12	14 15	16 16
250	0 1	2 3	4 5	6 6	6 7	650	0 3	6 9	11 13	15 16	17 17
300	0 1	3 4	5 6	7 7	8 8	700	0 3	6 9	12 14	16 17	18 18
350	0 2	3 5	6 7	8 9	9 9	750	0 3	7 10	13 15	17 18	19 20
400	0 2	4 5	7 8	9 10	10 10	800	0 4	7 10	13 16	18 20	21 21
450	0 2	4 6	8 9	10 11	12 12	850	0 4	8 11	14 17	19 21	22 22
500	0 2	4 7	8 10	11 12	13 13	900	0 4	8 12	15 18	20 22	23 24