TABLE 14
Dip of the Sea Short of the Horizon

Distance	Height of eye above the sea, in feet and (meters)										Distance
	5 (1.5)	**10** (3.0)	**15** (4.6)	**20** (6.1)	**25** (7.6)	**30** (9.1)	**35** (10.7)	**40** (12.2)	**45** (13.7)	**50** (15.2)	
Miles	′	′	′	′	′	′	′	′	′	′	*Miles*
0.2	14.2	28.4	42.5	56.7	70.8	84.9	99.1	113.2	127.3	141.5	0.2
0.3	9.6	19.0	28.4	37.8	47.3	56.7	66.1	75.6	85.0	94.4	0.3
0.4	7.2	14.3	21.4	28.5	35.5	42.6	49.7	56.7	63.8	70.9	0.4
0.5	5.9	11.5	17.2	22.8	28.5	34.2	39.8	45.5	51.1	56.8	0.5
0.6	5.0	9.7	14.4	19.1	23.8	28.5	33.3	38.0	42.7	47.4	0.6
0.7	4.3	8.4	12.4	16.5	20.5	24.5	28.6	32.6	36.7	40.7	0.7
0.8	3.9	7.4	10.9	14.5	18.0	21.5	25.1	28.6	32.2	35.7	0.8
0.9	3.5	6.7	9.8	12.9	16.1	19.2	22.4	25.5	28.7	31.8	0.9
1.0	3.2	6.1	8.9	11.7	14.6	17.4	20.2	23.0	25.9	28.7	1.0
1.1	3.0	5.6	8.2	10.7	13.3	15.9	18.5	21.0	23.6	26.2	1.1
1.2	2.9	5.2	7.6	9.9	12.3	14.6	17.0	19.4	21.7	24.1	1.2
1.3	2.7	4.9	7.1	9.2	11.4	13.6	15.8	17.9	20.1	22.3	1.3
1.4	2.6	4.6	6.6	8.7	10.7	12.7	14.7	16.7	18.8	20.8	1.4
1.5	2.5	4.4	6.3	8.2	10.1	11.9	13.8	15.7	17.6	19.5	1.5
1.6	2.4	4.2	6.0	7.7	9.5	11.3	13.0	14.8	16.6	18.3	1.6
1.7	2.4	4.0	5.7	7.4	9.0	10.7	12.4	14.0	15.7	17.3	1.7
1.8	2.3	3.9	5.5	7.0	8.6	10.2	11.7	13.3	14.9	16.5	1.8
1.9	2.3	3.8	5.3	6.7	8.2	9.7	11.2	12.7	14.2	15.7	1.9
2.0	2.2	3.7	5.1	6.5	7.9	9.3	10.7	12.1	13.6	15.0	2.0
2.1	2.2	3.6	4.9	6.3	7.6	9.0	10.3	11.7	13.0	14.3	2.1
2.2	2.2	3.5	4.8	6.1	7.3	8.6	9.9	11.2	12.5	13.8	2.2
2.3	2.2	3.4	4.6	5.9	7.1	8.3	9.6	10.8	12.0	13.3	2.3
2.4	2.2	3.4	4.5	5.7	6.9	8.1	9.2	10.4	11.6	12.8	2.4
2.5	2.2	3.3	4.4	5.6	6.7	7.8	9.0	10.1	11.2	12.4	2.5
2.6	2.2	3.3	4.3	5.4	6.5	7.6	8.7	9.8	10.9	12.0	2.6
2.7	2.2	3.2	4.3	5.3	6.4	7.4	8.5	9.5	10.6	11.6	2.7
2.8	2.2	3.2	4.2	5.2	6.2	7.2	8.2	9.2	10.3	11.3	2.8
2.9	2.2	3.2	4.1	5.1	6.1	7.1	8.0	9.0	10.0	11.0	2.9
3.0	2.2	3.1	4.1	5.0	6.0	6.9	7.8	8.8	9.7	10.7	3.0
3.1	2.2	3.1	4.0	4.9	5.9	6.8	7.7	8.6	9.5	10.4	3.1
3.2	2.2	3.1	4.0	4.9	5.8	6.6	7.5	8.4	9.3	10.2	3.2
3.3	2.2	3.1	3.9	4.8	5.7	6.5	7.4	8.2	9.1	9.9	3.3
3.4	2.2	3.1	3.9	4.7	5.6	6.4	7.2	8.1	8.9	9.7	3.4
3.5	2.2	3.1	3.9	4.7	5.5	6.3	7.1	7.9	8.7	9.5	3.5
3.6	2.2	3.1	3.9	4.6	5.4	6.2	7.0	7.8	8.6	9.4	3.6
3.7	2.2	3.1	3.8	4.6	5.4	6.1	6.9	7.7	8.4	9.2	3.7
3.8	2.2	3.1	3.8	4.6	5.3	6.0	6.8	7.5	8.3	9.0	3.8
3.9	2.2	3.1	3.8	4.5	5.2	6.0	6.7	7.4	8.2	8.9	3.9
4.0	2.2	3.1	3.8	4.5	5.2	5.9	6.6	7.3	8.0	8.7	4.0
4.1	2.2	3.1	3.8	4.5	5.2	5.8	6.5	7.2	7.9	8.6	4.1
4.2	2.2	3.1	3.8	4.4	5.1	5.8	6.5	7.1	7.8	8.5	4.2
4.3	2.2	3.1	3.8	4.4	5.1	5.7	6.4	7.1	7.7	8.4	4.3
4.4	2.2	3.1	3.8	4.4	5.0	5.7	6.3	7.0	7.6	8.3	4.4
4.5	2.2	3.1	3.8	4.4	5.0	5.6	6.3	6.9	7.5	8.2	4.5
4.6	2.2	3.1	3.8	4.4	5.0	5.6	6.2	6.8	7.4	8.1	4.6
4.7	2.2	3.1	3.8	4.4	5.0	5.6	6.2	6.8	7.4	8.0	4.7
4.8	2.2	3.1	3.8	4.4	4.9	5.5	6.1	6.7	7.3	7.9	4.8
4.9	2.2	3.1	3.8	4.3	4.9	5.5	6.1	6.7	7.2	7.8	4.9
5.0	2.2	3.1	3.8	4.3	4.9	5.5	6.0	6.6	7.2	7.7	5.0
5.5	2.2	3.1	3.8	4.3	4.9	5.4	5.9	6.4	6.9	7.4	5.5
6.0	2.2	3.1	3.8	4.3	4.9	5.3	5.8	6.3	6.7	7.2	6.0
6.5	2.2	3.1	3.8	4.3	4.9	5.3	5.7	6.2	6.6	7.1	6.5
7.0	2.2	3.1	3.8	4.3	4.9	5.3	5.7	6.1	6.5	7.0	7.0
7.5	2.2	3.1	3.8	4.3	4.9	5.3	5.7	6.1	6.5	6.9	7.5
8.0	2.2	3.1	3.8	4.3	4.9	5.3	5.7	6.1	6.5	6.9	8.0
8.5	2.2	3.1	3.8	4.3	4.9	5.3	5.7	6.1	6.5	6.9	8.5
9.0	2.2	3.1	3.8	4.3	4.9	5.3	5.7	6.1	6.5	6.9	9.0
9.5	2.2	3.1	3.8	4.3	4.9	5.3	5.7	6.1	6.5	6.9	9.5
10.0	2.2	3.1	3.8	4.3	4.9	5.3	5.7	6.1	6.5	6.9	10.0

TABLE 14
Dip of the Sea Short of the Horizon

Distance	Height of eye above the sea, in feet and (meters)										Distance
	55 (16.8)	**60** (18.3)	**65** (19.8)	**70** (21.3)	**75** (22.9)	**80** (24.4)	**85** (25.9)	**90** (27.4)	**95** (29.0)	**100** (30.5)	
Miles	′	′	′	′	′	′	′	′	′	′	*Miles*
0.2	155.6	169.7	183.3	197.9	212.0	226.1	240.2	254.2	268.3	282.3	0.2
0.3	103.8	113.3	122.7	132.1	141.6	151.0	160.4	169.9	179.3	188.7	0.3
0.4	77.9	85.0	92.1	99.2	106.2	113.3	120.3	127.4	134.5	141.5	0.4
0.5	62.4	68.1	73.8	79.4	85.1	90.7	96.4	102.0	107.7	113.3	0.5
0.6	52.1	56.8	61.5	66.3	71.0	75.7	80.4	85.1	89.8	94.5	0.6
0.7	44.7	48.8	52.8	56.9	60.9	64.9	69.0	73.0	77.1	81.1	0.7
0.8	39.2	42.8	46.3	49.8	53.4	56.9	60.4	64.0	67.5	71.1	0.8
0.9	34.9	38.1	41.2	44.4	47.5	50.7	53.8	56.9	60.1	63.2	0.9
1.0	31.5	34.4	37.2	40.0	42.8	45.7	48.5	51.3	54.2	57.0	1.0
1.1	28.7	31.3	33.9	36.5	39.0	41.6	44.2	46.7	49.3	51.9	1.1
1.2	26.4	28.8	31.1	33.5	35.9	38.2	40.6	42.9	45.3	47.6	1.2
1.3	24.5	26.7	28.8	31.0	33.2	35.4	37.5	39.7	41.9	44.1	1.3
1.4	22.8	24.8	26.8	28.9	30.9	32.9	34.9	37.0	39.0	41.0	1.4
1.5	21.4	23.3	25.1	27.0	28.9	30.8	32.7	34.6	36.5	38.3	1.5
1.6	20.1	21.9	23.6	25.4	27.2	29.0	30.7	32.5	34.3	36.0	1.6
1.7	19.0	20.7	22.3	24.0	25.7	27.3	29.0	30.7	32.3	34.0	1.7
1.8	18.0	19.6	21.2	22.8	24.3	25.9	27.5	29.0	30.6	32.2	1.8
1.9	17.2	18.7	20.1	21.6	23.1	24.6	26.1	27.6	29.1	30.6	1.9
2.0	16.4	17.8	19.2	20.6	22.0	23.5	24.9	26.3	27.7	29.1	2.0
2.1	15.7	17.0	18.4	19.7	21.1	22.4	23.8	25.1	26.5	27.8	2.1
2.2	15.1	16.3	17.6	18.9	20.2	21.5	22.8	24.1	25.3	26.6	2.2
2.3	14.5	15.7	16.9	18.2	19.4	20.6	21.9	23.1	24.3	25.6	2.3
2.4	14.0	15.1	16.3	17.5	18.7	19.9	21.0	22.2	23.4	24.6	2.4
2.5	13.5	14.6	15.8	16.9	18.0	19.1	20.3	21.4	22.5	23.7	2.5
2.6	13.0	14.1	15.2	16.3	17.4	18.5	19.6	20.7	21.8	22.8	2.6
2.7	12.6	13.7	14.7	15.8	16.8	17.9	18.9	20.0	21.0	22.1	2.7
2.8	12.3	13.3	14.3	15.3	16.3	17.3	18.3	19.3	20.4	21.4	2.8
2.9	11.9	12.9	13.9	14.9	15.8	16.8	17.8	18.8	19.7	20.7	2.9
3.0	11.6	12.6	13.5	14.4	15.4	16.3	17.3	18.2	19.2	20.1	3.0
3.1	11.3	12.2	13.2	14.1	15.0	15.9	16.8	17.7	18.6	19.5	3.1
3.2	11.1	11.9	12.8	13.7	14.6	15.5	16.4	17.2	18.1	19.0	3.2
3.3	10.8	11.7	12.5	13.4	14.2	15.1	15.9	16.8	17.7	18.5	3.3
3.4	10.6	11.4	12.2	13.1	13.9	14.7	15.6	16.4	17.2	18.1	3.4
3.5	10.3	11.2	12.0	12.8	13.6	14.4	15.2	16.0	16.8	17.6	3.5
3.6	10.1	10.9	11.7	12.5	13.3	14.1	14.9	15.6	16.4	17.2	3.6
3.7	9.9	10.7	11.5	12.2	13.0	13.8	14.5	15.3	16.1	16.8	3.7
3.8	9.8	10.5	11.3	12.0	12.7	13.5	14.2	15.0	15.7	16.5	3.8
3.9	9.6	10.3	11.1	11.8	12.5	13.2	14.0	14.7	15.4	16.1	3.9
4.0	9.4	10.1	10.9	11.6	12.3	13.0	13.7	14.4	15.1	15.8	4.0
4.1	9.3	10.0	10.7	11.4	12.1	12.7	13.4	14.1	14.8	15.5	4.1
4.2	9.2	9.8	10.5	11.2	11.8	12.5	13.2	13.9	14.5	15.2	4.2
4.3	9.0	9.7	10.3	11.0	11.7	12.3	13.0	13.6	14.3	14.9	4.3
4.4	8.9	9.5	10.2	10.8	11.5	12.1	12.8	13.4	14.0	14.7	4.4
4.5	8.8	9.4	10.0	10.7	11.3	11.9	12.6	13.2	13.8	14.4	4.5
4.6	8.7	9.3	9.9	10.5	11.1	11.8	12.4	13.0	13.6	14.2	4.6
4.7	8.6	9.2	9.8	10.4	11.0	11.6	12.2	12.8	13.4	14.0	4.7
4.8	8.5	9.1	9.7	10.2	10.8	11.4	12.0	12.6	13.2	13.8	4.8
4.9	8.4	9.0	9.5	10.1	10.7	11.3	11.9	12.4	13.0	13.6	4.9
5.0	8.3	8.9	9.4	10.0	10.6	11.1	11.7	12.3	12.8	13.4	5.0
5.5	7.9	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.1	12.6	5.5
6.0	7.7	8.2	8.6	9.1	9.6	10.0	10.5	11.0	11.5	11.9	6.0
6.5	7.5	7.9	8.4	8.8	9.2	9.7	10.1	10.5	11.0	11.4	6.5
7.0	7.4	7.8	8.2	8.6	9.0	9.4	9.8	10.2	10.6	11.0	7.0
7.5	7.3	7.6	8.0	8.4	8.8	9.2	9.5	9.9	10.3	10.7	7.5
8.0	7.2	7.6	7.9	8.3	8.6	9.0	9.3	9.7	10.0	10.4	8.0
8.5	7.2	7.5	7.9	8.2	8.5	8.9	9.2	9.5	9.9	10.2	8.5
9.0	7.2	7.5	7.8	8.1	8.5	8.8	9.1	9.4	9.7	10.0	9.0
9.5	7.2	7.5	7.8	8.1	8.4	8.7	9.0	9.3	9.6	9.9	9.5
10.0	7.2	7.5	7.8	8.1	8.4	8.7	9.0	9.3	9.5	9.8	10.0

TABLE 15

Distance by Vertical Angle
Measured Between Sea Horizon and Top of Object Beyond Sea Horizon

Angle	Difference in feet between height of object and height of eye of observer										Angle
	25	30	35	40	45	50	60	70	80	90	
° ′	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	° ′
–0 04	12. 4	12. 8	13. 2	13. 6	14. 0	14. 4	15. 0	15. 7	16. 3	16. 9	–0 04
–0 03	10. 5	10. 9	11. 4	11. 8	12. 2	12. 6	13. 3	14. 0	14. 6	15. 2	–0 03
–0 02	8. 7	9. 2	9. 7	10. 2	10. 6	11. 0	11. 8	12. 5	13. 1	13. 7	–0 02
–0 01	7. 2	7. 7	8. 2	8. 7	9. 1	9. 5	10. 3	11. 0	11. 7	12. 3	–0 01
0 00	5. 8	6. 4	6. 9	7. 4	7. 8	8. 2	9. 0	9. 7	10. 4	11. 1	0 00
0 01	4. 8	5. 3	5. 8	6. 3	6. 7	7. 1	7. 9	8. 6	9. 3	9. 9	0 01
0 02	3. 9	4. 4	4. 9	5. 4	5. 8	6. 2	6. 9	7. 6	8. 3	8. 9	0 02
0 03	3. 3	3. 7	4. 2	4. 6	5. 0	5. 4	6. 1	6. 8	7. 4	8. 0	0 03
0 04	2. 8	3. 2	3. 6	4. 0	4. 4	4. 7	5. 4	6. 1	6. 7	7. 3	0 04
0 05	2. 4	2. 8	3. 1	3. 5	3. 9	4. 2	4. 8	5. 5	6. 0	6. 6	0 05
0 06	2. 1	2. 4	2. 8	3. 1	3. 4	3. 7	4. 3	4. 9	5. 5	6. 0	0 06
0 07	1. 8	2. 2	2. 5	2. 8	3. 1	3. 4	3. 9	4. 5	5. 0	5. 5	0 07
0 08	1. 6	1. 9	2. 2	2. 5	2. 8	3. 1	3. 6	4. 1	4. 6	5. 0	0 08
0 09	1. 5	1. 7	2. 0	2. 3	2. 5	2. 8	3. 3	3. 8	4. 2	4. 7	0 09
0 10	1. 3	1. 6	1. 8	2. 1	2. 3	2. 6	3. 0	3. 5	3. 9	4. 3	0 10
0 15	0. 9	1. 1	1. 3	1. 5	1. 6	1. 8	2. 1	2. 5	2. 8	3. 1	0 15
0 20	0. 7	0. 8	1. 0	1. 1	1. 2	1. 4	1. 6	1. 9	2. 2	2. 4	0 20
0 25	0. 6	0. 7	0. 8	0. 9	1. 0	1. 1	1. 3	1. 5	1. 8	2. 0	0 25
0 30	0. 5	0. 6	0. 7	0. 7	0. 8	0. 9	1. 1	1. 3	1. 5	1. 7	0 30
0 35		0. 5	0. 6	0. 6	0. 7	0. 8	1. 0	1. 1	1. 3	1. 4	0 35
0 40			0. 5	0. 6	0. 6	0. 7	0. 8	1. 0	1. 1	1. 3	0 40
0 45				0. 5	0. 6	0. 6	0. 7	0. 9	1. 0	1. 1	0 45
0 50				0. 5	0. 5	0. 6	0. 7	0. 8	0. 9	1. 0	0 50
0 55					0. 5	0. 5	0. 6	0. 7	0. 8	0. 9	0 55
1 00						0. 5	0. 6	0. 7	0. 8	0. 8	1 00
1 10							0. 5	0. 6	0. 6	0. 7	1 10
1 20								0. 5	0. 6	0. 6	1 20
1 30									0. 5	0. 6	1 30
1 40									0. 5	0. 5	1 40
1 50										0. 5	1 50

TABLE 15

Distance by Vertical Angle
Measured Between Sea Horizon and Top of Object Beyond Sea Horizon

Angle	Difference in feet between height of object and height of eye of observer											Angle
	100	120	140	160	180	200	250	300	350	400	450	
° ′	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	° ′
0 00	11. 7	12. 8	13. 8	14. 8	15. 7	16. 5	18. 4	20. 2	21. 8	23. 3	24. 7	0 00
0 01	10. 5	11. 6	12. 7	13. 6	14. 5	15. 3	17. 3	19. 0	20. 7	22. 2	23. 6	0 01
0 02	9. 5	10. 6	11. 6	12. 5	13. 4	14. 3	16. 2	17. 9	19. 6	21. 0	22. 5	0 02
0 03	8. 6	9. 7	10. 7	11. 6	12. 5	13. 3	15. 2	16. 9	18. 5	20. 0	21. 4	0 03
0 04	7. 8	8. 8	9. 8	10. 7	11. 6	12. 4	14. 3	16. 0	17. 5	19. 0	20. 4	0 04
0 05	7. 1	8. 1	9. 0	9. 9	10. 8	11. 5	13. 4	15. 1	16. 6	18. 1	19. 5	0 05
0 06	6. 5	7. 5	8. 4	9. 2	10. 0	10. 8	12. 6	14. 2	15. 8	17. 2	18. 6	0 06
0 07	6. 0	6. 9	7. 7	8. 6	9. 4	10. 1	11. 9	13. 5	15. 0	16. 4	17. 7	0 07
0 08	5. 5	6. 4	7. 2	8. 0	8. 8	9. 5	11. 2	12. 8	14. 2	15. 6	16. 9	0 08
0 09	5. 1	5. 9	6. 7	7. 5	8. 2	8. 9	10. 6	12. 1	13. 5	14. 9	16. 2	0 09
0 10	4. 7	5. 5	6. 3	7. 0	7. 7	8. 4	10. 0	11. 5	12. 9	14. 2	15. 5	0 10
0 11	4. 4	5. 2	5. 9	6. 6	7. 3	7. 9	9. 5	10. 9	12. 3	13. 6	14. 8	0 11
0 12	4. 1	4. 8	5. 5	6. 2	6. 9	7. 5	9. 0	10. 4	11. 7	13. 0	14. 2	0 12
0 13	3. 9	4. 6	5. 2	5. 9	6. 5	7. 1	8. 5	9. 9	11. 2	12. 5	13. 6	0 13
0 14	3. 6	4. 3	4. 9	5. 6	6. 2	6. 7	8. 1	9. 5	10. 7	11. 9	13. 1	0 14
0 15	3. 4	4. 1	4. 7	5. 3	5. 8	6. 4	7. 8	9. 0	10. 3	11. 5	12. 6	0 15
0 20	2. 7	3. 2	3. 7	4. 2	4. 6	5. 1	6. 3	7. 4	8. 4	9. 5	10. 5	0 20
0 25	2. 2	2. 6	3. 0	3. 4	3. 8	4. 2	5. 2	6. 2	7. 1	8. 0	8. 9	0 25
0 30	1. 8	2. 2	2. 6	2. 9	3. 2	3. 6	4. 4	5. 3	6. 1	6. 9	7. 7	0 30
0 35	1. 6	1. 9	2. 2	2. 5	2. 8	3. 1	3. 9	4. 6	5. 3	6. 0	6. 7	0 35
0 40	1. 4	1. 7	1. 9	2. 2	2. 5	2. 8	3. 4	4. 1	4. 7	5. 4	6. 0	0 40
0 45	1. 2	1. 5	1. 7	2. 0	2. 2	2. 5	3. 1	3. 6	4. 2	4. 8	5. 4	0 45
0 50	1. 1	1. 3	1. 6	1. 8	2. 0	2. 2	2. 8	3. 3	3. 8	4. 4	4. 9	0 50
0 55	1. 0	1. 2	1. 4	1. 6	1. 8	2. 0	2. 5	3. 0	3. 5	4. 0	4. 5	0 55
1 00	0. 9	1. 1	1. 3	1. 5	1. 7	1. 9	2. 3	2. 8	3. 2	3. 7	4. 1	1 00
1 10	0. 8	1. 0	1. 1	1. 3	1. 4	1. 6	2. 0	2. 4	2. 8	3. 2	3. 6	1 10
1 20	0. 7	0. 8	1. 0	1. 1	1. 3	1. 4	1. 8	2. 1	2. 4	2. 8	3. 1	1 20
1 30	0. 6	0. 8	0. 9	1. 0	1. 1	1. 2	1. 6	1. 9	2. 2	2. 5	2. 8	1 30
1 40	0. 6	0. 7	0. 8	0. 9	1. 0	1. 1	1. 4	1. 7	2. 0	2. 2	2. 5	1 40
1 50	0. 5	0. 6	0. 7	0. 8	0. 9	1. 0	1. 3	1. 5	1. 8	2. 0	2. 3	1 50
2 00	0. 5	0. 6	0. 7	0. 8	0. 8	0. 9	1. 2	1. 4	1. 6	1. 9	2. 1	2 00
2 30		0. 5	0. 5	0. 6	0. 7	0. 8	0. 9	1. 1	1. 3	1. 5	1. 7	2 30
3 00				0. 5	0. 6	0. 6	0. 8	0. 9	1. 1	1. 3	1. 4	3 00
3 30					0. 5	0. 5	0. 7	0. 8	0. 9	1. 1	1. 2	3 30
4 00						0. 5	0. 6	0. 7	0. 8	0. 9	1. 1	4 00
4 30							0. 5	0. 6	0. 7	0. 8	0. 9	4 30
5 00							0. 5	0. 6	0. 7	0. 8	0. 8	5 00
6 00								0. 5	0. 5	0. 6	0. 7	6 00
7 00									0. 5	0. 5	0. 6	7 00
8 00										0. 5	0. 5	8 00
10 00												10 00

TABLE 15

Distance by Vertical Angle

Measured Between Sea Horizon and Top of Object Beyond Sea Horizon

Angle	Difference in feet between height of object and height of eye of observer											Angle
	500	600	700	800	900	1000	1200	1400	1600	1800	2000	
° ′	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	° ′
0 05	20. 8	23. 2	25. 4	27. 5	29. 5	31. 4	34. 8	38. 0	41. 0	43. 8	46. 5	0 05
0 06	19. 8	22. 3	24. 5	26. 6	28. 5	30. 4	33. 8	37. 0	40. 0	42. 8	45. 4	0 06
0 07	19. 0	21. 4	23. 6	25. 6	27. 6	29. 4	32. 9	36. 0	39. 0	41. 8	44. 4	0 07
0 08	18. 2	20. 5	22. 7	24. 7	26. 7	28. 5	31. 9	35. 1	38. 0	40. 8	43. 4	0 08
0 09	17. 4	19. 7	21. 9	23. 9	25. 8	27. 6	31. 0	34. 1	37. 0	39. 8	42. 5	0 09
0 10	16. 7	19. 0	21. 1	23. 1	25. 0	26. 8	30. 1	33. 2	36. 2	38. 9	41. 5	0 10
0 11	16. 0	18. 3	20. 4	22. 3	24. 2	26. 0	29. 3	32. 4	35. 3	38. 0	40. 6	0 11
0 12	15. 4	17. 6	19. 6	21. 6	23. 4	25. 2	28. 5	31. 5	34. 4	37. 1	39. 7	0 12
0 13	14. 8	16. 9	19. 0	20. 9	22. 7	24. 4	27. 7	30. 7	33. 6	36. 3	38. 8	0 13
0 14	14. 2	16. 3	18. 3	20. 2	22. 0	23. 7	26. 9	30. 0	32. 8	35. 4	38. 0	0 14
0 15	13. 7	15. 8	17. 7	19. 6	21. 3	23. 0	26. 2	29. 2	32. 0	34. 6	37. 2	0 15
0 17	12. 7	14. 7	16. 6	18. 4	20. 1	21. 7	24. 8	27. 8	30. 5	33. 1	35. 6	0 17
0 20	11. 4	13. 3	15. 1	16. 8	18. 4	20. 0	23. 0	25. 8	28. 4	31. 0	33. 4	0 20
0 25	9. 7	11. 4	13. 0	14. 6	16. 1	17. 5	20. 3	22. 9	25. 4	27. 8	30. 1	0 25
0 30	8. 4	9. 9	11. 4	12. 8	14. 2	15. 5	18. 1	20. 5	22. 9	25. 2	27. 4	0 30
0 35	7. 4	8. 8	10. 1	11. 4	12. 6	13. 9	16. 3	18. 5	20. 7	22. 9	24. 9	0 35
0 40	6. 6	7. 8	9. 0	10. 2	11. 4	12. 5	14. 7	16. 9	18. 9	20. 9	22. 9	0 40
0 45	6. 0	7. 1	8. 2	9. 3	10. 3	11. 4	13. 4	15. 4	17. 3	19. 2	21. 1	0 45
0 50	5. 4	6. 4	7. 5	8. 5	9. 4	10. 4	12. 3	14. 2	16. 0	17. 7	19. 5	0 50
0 55	5. 0	5. 9	6. 8	7. 8	8. 7	9. 6	11. 4	13. 1	14. 8	16. 5	18. 1	0 55
1 00	4. 6	5. 5	6. 3	7. 2	8. 0	8. 9	10. 5	12. 2	13. 8	15. 3	16. 9	1 00
1 10	3. 9	4. 7	5. 5	6. 2	7. 0	7. 7	9. 2	10. 6	12. 1	13. 5	14. 9	1 10
1 20	3. 5	4. 2	4. 8	5. 5	6. 2	6. 8	8. 1	9. 4	10. 7	12. 0	13. 2	1 20
1 30	3. 1	3. 7	4. 3	4. 9	5. 5	6. 1	7. 3	8. 5	9. 6	10. 8	11. 9	1 30
1 40	2. 8	3. 3	3. 9	4. 4	5. 0	5. 5	6. 6	7. 7	8. 7	9. 8	10. 8	1 40
1 50	2. 5	3. 0	3. 6	4. 1	4. 5	5. 0	6. 0	7. 0	8. 0	9. 0	9. 9	1 50
2 00	2. 3	2. 8	3. 3	3. 7	4. 2	4. 6	5. 5	6. 5	7. 4	8. 2	9. 1	2 00
2 30	1. 9	2. 2	2. 6	3. 0	3. 4	3. 7	4. 5	5. 2	5. 9	6. 7	7. 4	2 30
3 00	1. 6	1. 9	2. 2	2. 5	2. 8	3. 1	3. 7	4. 4	5. 0	5. 6	6. 2	3 00
3 30	1. 3	1. 6	1. 9	2. 1	2. 4	2. 7	3. 2	3. 7	4. 3	4. 8	5. 3	3 30
4 00	1. 2	1. 4	1. 6	1. 9	2. 1	2. 3	2. 8	3. 3	3. 7	4. 2	4. 7	4 00
5 00	0. 9	1. 1	1. 3	1. 5	1. 7	1. 9	2. 3	2. 6	3. 0	3. 4	3. 7	5 00
6 00	0. 8	0. 9	1. 1	1. 3	1. 4	1. 6	1. 9	2. 2	2. 5	2. 8	3. 1	6 00
7 00	0. 7	0. 8	0. 9	1. 1	1. 2	1. 3	1. 6	1. 9	2. 1	2. 4	2. 7	7 00
8 00	0. 6	0. 7	0. 8	0. 9	1. 1	1. 2	1. 4	1. 6	1. 9	2. 1	2. 3	8 00
10 00	0. 5	0. 6	0. 7	0. 7	0. 8	0. 9	1. 1	1. 3	1. 5	1. 7	1. 9	10 00
12 00		0. 5	0. 5	0. 6	0. 7	0. 8	0. 9	1. 1	1. 2	1. 4	1. 5	12 00
15 00				0. 5	0. 6	0. 6	0. 7	0. 9	1. 0	1. 1	1. 2	15 00
20 00						0. 5	0. 5	0. 6	0. 7	0. 8	0. 9	20 00
25 00								0. 5	0. 6	0. 6	0. 7	25 00
30 00									0. 5	0. 5	0. 6	30 00

TABLE 16

Distance by Vertical Angle
Measured Between Waterline at Object and Top of Object

Angle	Height of object above the sea, in **feet** and (meters)										Angle
	10 (3.0)	**15** (4.6)	**20** (6.1)	**25** (7.6)	**30** (9.1)	**35** (10.7)	**40** (12.2)	**45** (13.7)	**50** (15.2)	**55** (16.8)	
° ′	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	° ′
0 10	0. 57	0. 85	1. 13	1. 41	1. 70	1. 98	2. 26	2. 55	2. 83	3. 11	0 10
0 11	0. 51	0. 77	1. 03	1. 29	1. 54	1. 80	2. 06	2. 31	2. 57	2. 83	0 11
0 12	0. 47	0. 71	0. 94	1. 18	1. 41	1. 65	1. 89	2. 12	2. 36	2. 59	0 12
0 13	0. 44	0. 65	0. 87	1. 09	1. 31	1. 52	1. 74	1. 96	2. 18	2. 39	0 13
0 14	0. 40	0. 61	0. 81	1. 01	1. 21	1. 41	1. 62	1. 82	2. 02	2. 22	0 14
0 15	0. 38	0. 57	0. 75	0. 94	1. 18	1. 32	1. 51	1. 70	1. 89	2. 07	0 15
0 20	0. 28	0. 42	0. 57	0. 71	0. 85	0. 99	1. 13	1. 27	1. 41	1. 56	0 20
0 25	0. 23	0. 34	0. 45	0. 57	0. 68	0. 79	0. 91	1. 02	1. 13	1. 24	0 25
0 30	0. 19	0. 28	0. 38	0. 47	0. 57	0. 66	0. 75	0. 85	0. 94	1. 04	0 30
0 35	0. 16	0. 24	0. 32	0. 40	0. 46	0. 57	0. 65	0. 73	0. 81	0. 89	0 35
0 40	0. 14	0. 21	0. 28	0. 35	0. 42	0. 50	0. 57	0. 64	0. 71	0. 78	0 40
0 45	0. 13	0. 19	0. 25	0. 31	0. 38	0. 44	0. 50	0. 57	0. 63	0. 69	0 45
0 50	0. 11	0. 17	0. 23	0. 28	0. 34	0. 40	0. 45	0. 51	0. 57	0. 62	0 50
0 55	0. 10	0. 15	0. 21	0. 26	0. 31	0. 36	0. 41	0. 46	0. 51	0. 57	0 55
1 00		0. 14	0. 19	0. 24	0. 28	0. 33	0. 38	0. 42	0. 47	0. 52	1 00
1 10		0. 12	0. 16	0. 20	0. 24	0. 28	0. 32	0. 36	0. 40	0. 44	1 10
1 20		0. 11	0. 14	0. 18	0. 21	0. 25	0. 28	0. 32	0. 35	0. 39	1 20
1 30		0. 09	0. 13	0. 16	0. 19	0. 22	0. 25	0. 28	0. 31	0. 35	1 30
1 40			0. 11	0. 14	0. 17	0. 20	0. 23	0. 25	0. 28	0. 31	1 40
1 50			0. 10	0. 13	0. 15	0. 18	0. 21	0. 23	0. 26	0. 28	1 50
2 00				0. 12	0. 14	0. 16	0. 19	0. 21	0. 24	0. 26	2 00
2 15				0. 10	0. 13	0. 15	0. 17	0. 19	0. 21	0. 23	2 15
2 30					0. 11	0. 13	0. 15	0. 17	0. 19	0. 21	2 30
2 45					0. 10	0. 12	0. 14	0. 15	0. 17	0. 19	2 45
3 00						0. 11	0. 13	0. 14	0. 16	0. 17	3 00
3 20						0. 10	0. 11	0. 13	0. 14	0. 16	3 20
3 40							0. 10	0. 12	0. 13	0. 14	3 40
4 00								0. 11	0. 12	0. 13	4 00
4 20								0. 10	0. 11	0. 12	4 20
4 40									0. 10	0. 11	4 40
5 00										0. 10	5 00

TABLE 16

Distance by Vertical Angle
Measured Between Waterline at Object and Top of Object

Angle	Height of object above the sea, in **feet** and (meters)										Angle
	60 (18.3)	**65** (19.8)	**70** (21.3)	**75** (22. 9)	**80** (24.4)	**85** (25.9)	**90** (27.4)	**95** (29.0)	**100** (30.5)	**105** (32.0)	
° ′	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	° ′
0 10	3 .39	3 .68	3 .96	4 .24	4 .53	4 .81					0 10
0 11	3 .09	3 .34	3 .60	3 .86	4 .11	4 .37	4 .63	4 .89			0 11
0 12	2 .83	3 .06	3 .30	3 .54	3 .77	4 .01	4 .24	4 .48	4 .71	4 .95	0 12
0 13	2 .61	2 .83	3 .05	3 .26	3 .48	3 .70	3 .92	4 .13	4 .35	4 .57	0 13
0 14	2 .42	2 .63	2 .83	3 .03	3 .23	3 .44	3 .64	3 .84	4 .04	4 .24	0 14
0 15	2 .26	2 .45	2 .64	2 .83	3 .02	3 .21	3 .39	3 .58	3 .77	3 .96	0 15
0 20	1 .70	1 .84	1 .98	2 .12	2 .26	2 .40	2 .55	2 .69	2 .83	2 .97	0 20
0 25	1 .36	1 .47	1 .58	1 .70	1 .81	1 .92	2 .04	2 .15	2 .26	2 .38	0 25
0 30	1 .13	1 .23	1 .32	1 .41	1 .51	1 .60	1 .70	1 .79	1 .89	1 .98	0 30
0 35	0 .97	1 .05	1 .13	1 .21	1 .29	1 .37	1 .45	1 .54	1 .62	1 .70	0 35
0 40	0 .85	0 .92	0 .99	1 .06	1 .13	1 .20	1 .27	1 .34	1 .41	1 .49	0 40
0 45	0 .75	0 .82	0 .88	0 .94	1 .01	1 .07	1 .13	1 .19	1 .26	1 .32	0 45
0 50	0 .68	0 .74	0 .79	0 .85	0 .91	0 .96	1 .02	1 .07	1 .13	1 .19	0 50
0 55	0 .62	0 .67	0 .72	0 .77	0 .82	0 .87	0 .93	0 .98	1 .03	1 .08	0 55
1 00	0 .57	0 .61	0 .66	0 .71	0 .75	0 .80	0 .85	0 .90	0 .94	0 .99	1 00
1 10	0 .48	0 .53	0 .57	0 .61	0 .65	0 .69	0 .73	0 .77	0 .81	0 .85	1 10
1 20	0 .42	0 .46	0 .49	0 .53	0 .57	0 .60	0 .64	0 .67	0 .71	0 .74	1 20
1 30	0 .38	0 .41	0 .44	0 .47	0 .50	0 .53	0 .57	0 .60	0 .63	0 .66	1 30
1 40	0 .34	0 .37	0 .40	0 .42	0 .45	0 .48	0 .51	0 .54	0 .57	0 .59	1 40
1 50	0 .31	0 .33	0 .36	0 .39	0 .41	0 .44	0 .46	0 .49	0 .51	0 .54	1 50
2 00	0 .28	0 .31	0 .33	0 .35	0 .38	0 .40	0 .42	0 .45	0 .47	0 .49	2 00
2 15	0 .25	0 .27	0 .29	0 .31	0 .34	0 .36	0 .38	0 .40	0 .42	0 .44	2 15
2 30	0 .23	0 .25	0 .26	0 .28	0 .30	0 .32	0 .34	0 .36	0 .38	0 .40	2 30
2 45	0 .21	0 .22	0 .24	0 .26	0 .27	0 .29	0 .31	0 .33	0 .34	0 .36	2 45
3 00	0 .19	0 .20	0 .22	0 .24	0 .25	0 .27	0 .28	0 .30	0 .31	0 .33	3 00
3 20	0 .17	0 .18	0 .20	0 .21	0 .23	0 .24	0 .25	0 .27	0 .28	0 .30	3 20
3 40	0 .15	0 .17	0 .18	0 .19	0 .21	0 .22	0 .23	0 .24	0 .26	0 .27	3 40
4 00	0 .14	0 .15	0 .16	0 .18	0 .19	0 .20	0 .21	0 .22	0 .24	0 .25	4 00
4 20	0 .13	0 .14	0 .15	0 .16	0 .17	0 .18	0 .20	0 .21	0 .22	0 .23	4 20
4 40	0 .12	0 .13	0 .14	0 .15	0 .16	0 .17	0 .18	0 .19	0 .20	0 .21	4 40
5 00	0 .11	0 .12	0 .13	0 .14	0 .15	0 .16	0 .17	0 .18	0 .19	0 .20	5 00
5 20	0 .11	0 .11	0 .12	0 .13	0 .14	0 .15	0 .16	0 .17	0 .18	0 .19	5 20
5 40	0 .10	0 .11	0 .12	0 .12	0 .13	0 .14	0 .15	0 .16	0 .17	0 .17	5 40
6 00		0 .10	0 .11	0 .12	0 .13	0 .13	0 .14	0 .15	0 .16	0 .16	6 00
6 20			0 .10	0 .11	0 .12	0 .13	0 .13	0 .14	0 .15	0 .16	6 20
6 40				0 .11	0 .11	0 .12	0 .13	0 .13	0 .14	0 .15	6 40
7 00				0 .10	0 .11	0 .11	0 .12	0 .13	0 .13	0 .14	7 00
7 20					0 .10	0 .11	0 .12	0 .12	0 .13	0 .13	7 20
7 40						0 .10	0 .11	0 .12	0 .12	0 .13	7 40
8 00							0 .11	0 .11	0 .12	0 .12	8 00
8 20							0 .10	0 .11	0 .11	0 .12	8 20
8 40								0 .10	0 .11	0 .11	8 40
9 00									0 .10	0 .11	9 00
9 30										0 .10	9 30
10 00											10 00

TABLE 16

Distance by Vertical Angle
Measured Between Waterline at Object and Top of Object

Angle	Height of object above the sea, in **feet** and (meters)										Angle
	110 (33.5)	**115** (35.1)	**120** (36.6)	**125** (38.1)	**130** (39.6)	**135** (41.1)	**140** (42.7)	**145** (44.2)	**150** (45.7)	**155** (47.2)	
° ′	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	° ′
0 10											0 10
0 11											0 11
0 12											0 12
0 13	4.79	5.00									0 13
0 14	4.45	4.65	4.85								0 14
0 15	4.15	4.34	4.53	4.71	4.90						0 15
0 20	3.11	3.25	3.39	3.54	3.68	3.82	3.96	4.10	4.24	4.38	0 20
0 25	2.49	2.60	2.72	2.83	2.94	3.06	3.17	3.28	3.30	3.51	0 25
0 30	2.07	2.17	2.26	2.36	2.45	2.55	2.64	2.73	2.83	2.92	0 30
0 35	1.78	1.86	1.94	2.02	2.10	2.18	2.26	2.34	2.42	2.51	0 35
0 40	1.56	1.63	1.70	1.77	1.84	1.91	1.98	2.05	2.12	2.19	0 40
0 45	1.30	1.45	1.51	1.57	1.63	1.70	1.76	1.82	1.89	1.95	0 45
0 50	1.24	1.30	1.36	1.41	1.47	1.53	1.58	1.64	1.70	1.75	0 50
0 55	1.13	1.18	1.23	1.29	1.34	1.39	1.44	1.49	1.54	1.59	0 55
1 00	1.04	1.08	1.13	1.18	1.23	1.27	1.32	1.37	1.41	1.46	1 00
1 10	0.89	0.93	0.97	1.01	1.05	1.09	1.13	1.17	1.21	1.25	1 10
1 20	0.78	0.81	0.85	0.88	0.92	0.95	0.99	1.03	1.06	1.10	1 20
1 30	0.69	0.72	0.75	0.79	0.82	0.85	0.88	0.91	0.94	0.97	1 30
1 40	0.62	0.65	0.66	0.71	0.74	0.76	0.79	0.82	0.85	0.88	1 40
1 50	0.57	0.59	0.62	0.64	0.67	0.69	0.72	0.75	0.77	0.80	1 50
2 00	0.52	0.54	0.57	0.59	0.61	0.64	0.66	0.68	0.71	0.73	2 00
2 15	0.46	0.48	0.50	0.52	0.54	0.57	0.59	0.61	0.63	0.65	2 15
2 30	0.41	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57	0.58	2 30
2 45	0.38	0.39	0.41	0.43	0.45	0.46	0.48	0.50	0.51	0.53	2 45
3 00	0.35	0.36	0.38	0.39	0.41	0.42	0.44	0.46	0.47	0.49	3 00
3 20	0.31	0.32	0.34	0.35	0.37	0.38	0.40	0.41	0.42	0.44	3 20
3 40	0.28	0.30	0.31	0.32	0.33	0.35	0.36	0.37	0.39	0.40	3 40
4 00	0.26	0.27	0.28	0.29	0.31	0.32	0.33	0.34	0.35	0.36	4 00
4 20	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.33	0.34	4 20
4 40	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	4 40
5 00	0.21	0.22	0.23	0.24	0.24	0.25	0.26	0.27	0.28	0.29	5 00
5 20	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.26	0.27	5 20
5 40	0.18	0.19	0.20	0.21	0.22	0.22	0.23	0.24	0.25	0.26	5 40
6 00	0.17	0.18	0.19	0.20	0.20	0.21	0.22	0.23	0.23	0.24	6 00
6 20	0.16	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.22	0.23	6 20
6 40	0.15	0.17	0.17	0.18	0.18	0.19	0.20	0.20	0.21	0.22	6 40
7 00	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.19	0.20	0.21	7 00
7 20	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.19	0.20	7 20
7 40	0.13	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.18	0.19	7 40
8 00	0.13	0.13	0.14	0.15	0.15	0.16	0.16	0.17	0.18	0.18	8 00
8 20	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.16	0.17	0.17	8 20
8 40	0.12	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.16	0.17	8 40
9 00	0.11	0.12	0.12	0.13	0.14	0.14	0.15	0.15	0.16	0.16	9 00
9 30	0.11	0.11	0.12	0.13	0.13	0.13	0.14	0.14	0.15	0.15	9 30
10 00	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.14	10 00
10 30		0.10	0.11	0.11	0.12	0.12	0.12	0.13	0.13	0.14	10 30
11 00			0.10	0.11	0.11	0.11	0.12	0.12	0.13	0.13	11 00
11 30				0.10	0.11	0.11	0.11	0.12	0.12	0.13	11 30
12 00					0.10	0.10	0.11	0.11	0.12	0.12	12 00
12 30							0.10	0.11	0.11	0.12	12 30
13 00								0.10	0.11	0.11	13 00
13 30									0.10	0.11	13 30
14 00										0.10	14 00

TABLE 16

Distance by Vertical Angle
Measured Between Waterline at Object and Top of Object

Angle	Height of object above the sea, in **feet** and (meters)										Angle
	160 (48.8)	**165** (50.3)	**175** (53.3)	**185** (56.4)	**195** (59.4)	**200** (61.0)	**225** (68.6)	**250** (76.2)	**275** (83.8)	**300** (91.4)	
° ′	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	° ′
0 15											0 15
0 20	4.53	4.67	4.95								0 20
0 25	3.62	3.73	3.96	4.19	4.41	4.53					0 25
0 30	3.02	3.11	3.30	3.49	3.68	3.77	4.24	4.71			0 30
0 35	2.59	2.67	2.83	2.99	3.15	3.23	3.64	4.04	4.45	4.85	0 35
0 40	2.26	2.33	2.48	2.62	2.76	2.83	3.18	3.54	3.89	4.24	0 40
0 45	2.01	2.07	2.20	2.33	2.45	2.51	2.83	3.14	3.46	3.77	0 45
0 50	1.81	1.87	1.98	2.09	2.21	2.26	2.55	2.83	3.11	3.39	0 50
0 55	1.65	1.70	1.80	1.90	2.01	2.06	2.31	2.57	2.83	3.09	0 55
1 00	1.51	1.56	1.65	1.74	1.84	1.89	2.12	2.36	2.59	2.83	1 00
1 10	1.20	1.33	1.41	1.50	1.58	1.62	1.82	2.02	2.22	2.42	1 10
1 20	1.13	1.17	1.24	1.31	1.38	1.41	1.59	1.77	1.94	2.12	1 20
1 30	1.01	1.04	1.10	1.16	1.23	1.26	1.41	1.57	1.73	1.89	1 30
1 40	0.91	0.93	0.99	1.05	1.10	1.13	1.27	1.41	1.56	1.70	1 40
1 50	0.82	0.85	0.90	0.95	1.00	1.03	1.16	1.29	1.41	1.54	1 50
2 00	0.75	0.78	0.82	0.87	0.92	0.94	1.06	1.18	1.30	1.41	2 00
2 15	0.67	0.69	0.73	0.77	0.82	0.84	0.94	1.05	1.15	1.26	2 15
2 30	0.60	0.62	0.66	0.70	0.74	0.75	0.85	0.94	1.04	1.13	2 30
2 45	0.55	0.57	0.60	0.63	0.67	0.69	0.77	0.86	0.94	1.03	2 45
3 00	0.50	0.52	0.55	0.58	0.61	0.63	0.71	0.79	0.86	0.94	3 00
3 20	0.45	0.47	0.49	0.52	0.55	0.57	0.64	0.71	0.78	0.85	3 20
3 40	0.41	0.42	0.45	0.48	0.50	0.51	0.58	0.64	0.71	0.77	3 40
4 00	0.38	0.39	0.41	0.44	0.46	0.47	0.53	0.59	0.65	0.71	4 00
4 20	0.35	0.36	0.38	0.40	0.42	0.43	0.49	0.54	0.60	0.65	4 20
4 40	0.32	0.33	0.35	0.37	0.39	0.40	0.45	0.50	0.55	0.60	4 40
5 00	0.30	0.31	0.33	0.35	0.37	0.38	0.42	0.47	0.52	0.56	5 00
5 20	0.28	0.29	0.31	0.33	0.34	0.35	0.40	0.44	0.48	0.53	5 20
5 40	0.27	0.27	0.29	0.31	0.32	0.33	0.37	0.41	0.46	0.50	5 40
6 00	0.25	0.26	0.27	0.29	0.31	0.31	0.35	0.39	0.43	0.47	6 00
6 20	0.24	0.24	0.26	0.27	0.29	0.30	0.33	0.37	0.41	0.44	6 20
6 40	0.23	0.23	0.25	0.26	0.27	0.28	0.32	0.35	0.39	0.42	6 40
7 00	0.21	0.22	0.23	0.25	0.26	0.27	0.30	0.34	0.37	0.40	7 00
7 20	0.20	0.21	0.22	0.24	0.25	0.26	0.29	0.32	0.35	0.38	7 20
7 40	0.20	0.20	0.21	0.23	0.24	0.24	0.28	0.31	0.34	0.37	7 40
8 00	0.19	0.19	0.20	0.22	0.23	0.23	0.26	0.29	0.32	0.35	8 00
8 20	0.18	0.19	0.20	0.21	0.22	0.22	0.25	0.28	0.31	0.34	8 20
8 40	0.17	0.19	0.19	0.20	0.21	0.22	0.24	0.27	0.30	0.32	8 40
9 00	0.17	0.17	0.18	0.19	0.20	0.21	0.23	0.26	0.29	0.31	9 00
9 30	0.16	0.16	0.17	0.18	0.19	0.20	0.22	0.25	0.27	0.30	9 30
10 00	0.15	0.15	0.16	0.17	0.18	0.19	0.21	0.23	0.26	0.28	10 00
10 30	0.14	0.15	0.16	0.16	0.17	0.18	0.20	0.22	0.24	0.27	10 30
11 00	0.14	0.14	0.15	0.16	0.17	0.17	0.19	0.21	0.23	0.25	11 00
11 30	0.13	0.13	0.14	0.15	0.16	0.16	0.18	0.20	0.22	0.24	11 30
12 00	0.12	0.13	0.14	0.14	0.15	0.15	0.17	0.19	0.21	0.23	12 00
12 30	0.12	0.12	0.13	0.14	0.14	0.15	0.17	0.19	0.20	0.22	12 30
13 00	0.11	0.11	0.12	0.13	0.14	0.14	0.16	0.18	0.20	0.21	13 00
13 30	0.11	0.11	0.12	0.13	0.13	0.14	0.15	0.17	0.19	0.21	13 30
14 00	0.11	0.11	0.12	0.12	0.13	0.13	0.15	0.17	0.18	0.20	14 00
14 30	0.10	0.10	0.11	0.12	0.12	0.13	0.14	0.16	0.18	0.19	14 30
15 00			0.11	0.11	0.12	0.12	0.14	0.15	0.17	0.18	15 00
16 00			0.10	0.11	0.11	0.11	0.13	0.14	0.16	0.17	16 00
17 00				0.10	0.10	0.11	0.12	0.13	0.15	0.16	17 00
18 00						0.10	0.11	0.13	0.14	0.15	18 00
19 00							0.11	0.12	0.13	0.14	19 00
20 00							0.10	0.11	0.12	0.14	20 00

TABLE 17

Distance by Vertical Angle
Measured Between Waterline at Object and Sea Horizon Beyond Object

Distance	Height of eye above the sea, in feet										Distance
	5	10	15	20	25	30	35	40	45	50	
Yards	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	*Yards*
100	0 55	1 52	2 48	3 45	4 41	5 37	6 34	7 30	8 26	9 21	100
200	27	0 54	1 22	1 50	2 18	2 46	3 15	3 43	4 11	4 39	200
300	17	35	0 54	1 12	1 31	1 49	2 08	2 27	2 45	3 04	300
400	12	26	39	0 53	1 07	1 21	1 35	1 49	2 02	2 16	400
500	9	20	31	42	0 53	1 04	1 15	1 26	1 37	1 48	500
600		16	25	34	43	0 52	1 01	1 10	1 20	1 29	600
700		13	21	29	36	44	0 52	0 59	1 07	1 15	700
800		11	18	24	31	38	45	51	0 58	1 05	800
900		10	16	21	27	33	39	45	51	0 57	900
1, 000			14	19	24	29	35	40	45	51	1, 000
1, 100			12	17	21	26	31	36	41	45	1, 100
1, 200			11	15	19	24	28	32	37	41	1, 200
1, 300			10	14	17	21	25	29	33	37	1, 300
1, 400				12	16	20	23	27	31	34	1, 400
1, 500				11	15	18	21	25	28	32	1, 500
1, 600				10	13	17	20	23	26	29	1, 600
1, 700					12	15	18	21	24	27	1, 700
1, 800					11	14	17	20	23	25	1, 800
1, 900					11	13	16	18	21	24	1, 900
2, 000					10	12	15	17	20	22	2, 000
2, 100						11	14	16	18	21	2, 100
2, 200						11	13	15	17	20	2, 200
2, 300						10	12	14	16	19	2, 300
2, 400							11	13	15	18	2, 400
2, 500							11	13	15	17	2, 500
2, 600							10	12	14	16	2, 600
2, 700								11	13	15	2, 700
2, 800								11	12	14	2, 800
2, 900								10	12	14	2, 900
3, 000									11	13	3, 000
3, 100									11	12	3, 100
3, 200									10	12	3, 200
3, 300										11	3, 300
3, 400										11	3, 400
3, 500										10	3, 500

TABLE 17

Distance by Vertical Angle
Measured Between Waterline at Object and Sea Horizon Beyond Object

Distance	Height of eye above the sea, in feet										Distance
	55	60	65	70	75	80	85	90	95	100	
Yards	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	*Yards*
100	10 16	11 11	12 06	13 00	13 54	14 48	15 41	16 34	17 26	18 17	100
200	5 07	5 35	6 03	6 31	6 59	7 27	7 55	8 23	8 51	9 18	200
300	3 23	3 41	4 00	4 19	4 38	4 56	5 15	5 34	5 52	6 11	300
400	2 30	2 44	2 58	3 12	3 26	3 40	3 54	4 08	4 22	4 36	400
500	1 59	2 10	2 21	2 32	2 43	2 55	3 06	3 17	3 28	3 39	500
600	1 38	1 47	1 56	2 06	2 15	2 24	2 33	2 43	2 52	3 01	600
700	1 23	1 31	1 39	1 47	1 54	2 02	2 10	2 18	2 26	2 34	700
800	1 12	1 19	1 25	1 32	1 39	1 46	1 53	2 00	2 07	2 14	800
900	1 03	1 09	1 15	1 21	1 27	1 33	1 39	1 46	1 52	1 58	900
1, 000	0 56	1 01	1 07	1 12	1 18	1 23	1 29	1 34	1 40	1 45	1, 000
1, 100	50	0 55	1 00	1 05	1 10	1 15	1 20	1 25	1 30	1 35	1, 100
1, 200	46	50	0 55	0 59	1 03	1 08	1 12	1 17	1 22	1 26	1, 200
1, 300	42	46	50	54	0 58	1 02	1 06	1 10	1 15	1 19	1, 300
1, 400	38	42	46	49	53	0 57	1 01	1 05	1 09	1 12	1, 400
1, 500	35	39	42	46	49	53	0 56	1 00	1 03	1 07	1, 500
1, 600	33	36	39	42	46	49	52	0 56	0 59	1 02	1, 600
1, 700	30	33	36	39	43	46	49	52	55	0 58	1, 700
1, 800	28	31	34	37	40	43	46	48	51	54	1, 800
1, 900	26	29	32	35	37	40	43	45	48	51	1, 900
2, 000	25	27	30	32	35	38	40	43	45	48	2, 000
2, 100	23	26	28	31	33	35	38	40	43	45	2, 100
2, 200	22	24	27	29	31	33	36	38	40	43	2, 200
2, 300	21	23	25	27	29	32	34	36	38	41	2, 300
2, 400	20	22	24	26	28	30	32	34	36	39	2, 400
2, 500	19	21	23	25	27	29	31	33	35	37	2, 500
2, 600	18	19	21	23	25	27	29	31	33	35	2, 600
2, 700	17	19	20	22	24	26	28	30	31	33	2, 700
2, 800	16	18	19	21	23	25	26	28	30	32	2, 800
2, 900	15	17	18	20	22	24	25	27	29	30	2, 900
3, 000	14	16	18	19	21	23	24	26	27	29	3, 000
3, 100	14	15	17	18	20	22	23	25	26	28	3, 100
3, 200	13	15	16	18	19	21	22	24	25	27	3, 200
3, 300	13	14	15	17	18	20	21	23	24	26	3, 300
3, 400	12	13	15	16	18	19	20	22	23	25	3, 400
3, 500	12	13	14	16	17	18	20	21	22	24	3, 500
3, 600	11	12	14	15	16	18	19	20	22	23	3, 600
3, 700	11	12	13	14	16	17	18	19	21	22	3, 700
3, 800	10	11	13	14	15	16	17	19	20	21	3, 800
3, 900		11	12	13	14	16	17	18	19	21	3, 900
4, 000		11	12	13	14	15	16	17	19	20	4, 000
4, 100		10	11	12	13	15	16	17	18	19	4, 100
4, 200			11	12	13	14	15	16	17	18	4, 200
4, 300			10	11	12	14	15	16	17	18	4, 300
4, 400			10	11	12	13	14	15	16	17	4, 400
4, 500			10	11	12	13	14	15	16	17	4, 500
4, 600				10	11	12	13	14	15	16	4, 600
4, 700					11	12	13	14	15	16	4, 700
4, 800					11	11	12	13	14	15	4, 800
4, 900					10	11	12	13	14	15	4, 900
5, 000					10	11	12	12	13	14	5, 000

TABLE 18
Distance of an Object by Two Bearings

Difference between the course and second bearing	Difference between the course and first bearing													
	20°		22°		24°		26°		28°		30°		32°	
°														
30	1.97	0.98												
32	1.64	0.87	2.16	1.14										
34	1.41	0.79	1.80	1.01	2.34	1.31								
36	1.24	0.73	1.55	0.91	1.96	1.15	2.52	1.48						
38	1.11	0.68	1.36	0.84	1.68	1.04	2.11	1.30	2.70	1.66				
40	1.00	0.64	1.21	0.78	1.48	0.95	1.81	1.16	2.26	1.45	2.88	1.85		
42	0.91	0.61	1.10	0.73	1.32	0.88	1.59	1.06	1.94	1.30	2.40	1.61	3.05	2.04
44	0.84	0.58	1.00	0.69	1.19	0.83	1.42	0.98	1.70	1.18	2.07	1.44	2.55	1.77
46	0.78	0.56	0.92	0.66	1.09	0.78	1.28	0.92	1.52	1.09	1.81	1.30	2.19	1.58
48	0.73	0.54	0.85	0.64	1.00	0.74	1.17	0.87	1.37	1.02	1.62	1.20	1.92	1.43
50	0.68	0.52	0.80	0.61	0.93	0.71	1.08	0.83	1.25	0.96	1.46	1.12	1.71	1.31
52	0.65	0.51	0.75	0.59	0.87	0.68	1.00	0.79	1.15	0.91	1.33	1.05	1.55	1.22
54	0.61	0.49	0.71	0.57	0.81	0.66	0.93	0.76	1.07	0.87	1.23	0.99	1.41	1.14
56	0.58	0.48	0.67	0.56	0.77	0.64	0.88	0.73	1.00	0.83	1.14	0.95	1.30	1.08
58	0.56	0.47	0.64	0.54	0.73	0.62	0.83	0.70	0.94	0.80	1.07	0.90	1.21	1.03
60	0.53	0.46	0.61	0.53	0.69	0.60	0.78	0.68	0.89	0.77	1.00	0.87	1.13	0.98
62	0.51	0.45	0.58	0.51	0.66	0.58	0.75	0.66	0.84	0.74	0.94	0.83	1.06	0.94
64	0.49	0.44	0.56	0.50	0.63	0.57	0.71	0.64	0.80	0.72	0.89	0.80	1.00	0.90
66	0.48	0.43	0.54	0.49	0.61	0.56	0.68	0.62	0.76	0.70	0.85	0.78	0.95	0.87
68	0.46	0.43	0.52	0.48	0.59	0.54	0.66	0.61	0.73	0.68	0.81	0.75	0.90	0.84
70	0.45	0.42	0.50	0.47	0.57	0.53	0.63	0.59	0.70	0.66	0.78	0.73	0.86	0.81
72	0.43	0.41	0.49	0.47	0.55	0.52	0.61	0.58	0.68	0.64	0.75	0.71	0.82	0.78
74	0.42	0.41	0.48	0.46	0.53	0.51	0.59	0.57	0.65	0.63	0.72	0.69	0.79	0.76
76	0.41	0.40	0.46	0.45	0.52	0.50	0.57	0.56	0.63	0.61	0.70	0.67	0.76	0.74
78	0.40	0.39	0.45	0.44	0.50	0.49	0.56	0.54	0.61	0.60	0.67	0.66	0.74	0.72
80	0.39	0.39	0.44	0.44	0.49	0.48	0.54	0.53	0.60	0.59	0.65	0.64	0.71	0.70
82	0.39	0.38	0.43	0.43	0.48	0.47	0.53	0.52	0.58	0.57	0.63	0.63	0.69	0.69
84	0.38	0.38	0.42	0.42	0.47	0.47	0.52	0.51	0.57	0.56	0.62	0.61	0.67	0.67
86	0.37	0.37	0.42	0.42	0.46	0.46	0.51	0.50	0.55	0.55	0.60	0.60	0.66	0.65
88	0.37	0.37	0.41	0.41	0.45	0.45	0.50	0.50	0.54	0.54	0.59	0.59	0.64	0.64
90	0.36	0.36	0.40	0.40	0.45	0.45	0.49	0.49	0.53	0.53	0.58	0.58	0.62	0.62
92	0.36	0.36	0.40	0.40	0.44	0.44	0.48	0.48	0.52	0.52	0.57	0.57	0.61	0.61
94	0.36	0.35	0.39	0.39	0.43	0.43	0.47	0.47	0.51	0.51	0.56	0.55	0.60	0.60
96	0.35	0.35	0.39	0.39	0.43	0.43	0.47	0.46	0.51	0.50	0.55	0.54	0.59	0.59
98	0.35	0.35	0.39	0.38	0.42	0.42	0.46	0.46	0.50	0.50	0.54	0.53	0.58	0.57
100	0.35	0.34	0.38	0.38	0.42	0.41	0.46	0.45	0.49	0.49	0.53	0.52	0.57	0.56
102	0.35	0.34	0.38	0.37	0.42	0.41	0.45	0.44	0.49	0.48	0.53	0.51	0.56	0.55
104	0.34	0.33	0.38	0.37	0.41	0.40	0.45	0.43	0.48	0.47	0.52	0.50	0.56	0.54
106	0.34	0.33	0.38	0.36	0.41	0.39	0.45	0.43	0.48	0.46	0.52	0.50	0.55	0.53
108	0.34	0.32	0.38	0.36	0.41	0.39	0.44	0.42	0.48	0.45	0.51	0.49	0.55	0.52
110	0.34	0.32	0.37	0.35	0.41	0.38	0.44	0.41	0.47	0.44	0.51	0.48	0.54	0.51
112	0.34	0.32	0.37	0.35	0.41	0.38	0.44	0.41	0.47	0.44	0.50	0.47	0.54	0.50
114	0.34	0.31	0.37	0.34	0.41	0.37	0.44	0.40	0.47	0.43	0.50	0.46	0.54	0.49
116	0.34	0.31	0.38	0.34	0.41	0.37	0.44	0.39	0.47	0.42	0.50	0.45	0.53	0.48
118	0.35	0.31	0.38	0.33	0.41	0.36	0.44	0.39	0.47	0.41	0.50	0.44	0.53	0.47
120	0.35	0.30	0.38	0.33	0.41	0.36	0.44	0.38	0.47	0.41	0.50	0.43	0.53	0.46
122	0.35	0.30	0.38	0.32	0.41	0.35	0.44	0.37	0.47	0.40	0.50	0.42	0.53	0.45
124	0.35	0.29	0.38	0.32	0.41	0.34	0.44	0.37	0.47	0.39	0.50	0.42	0.53	0.44
126	0.36	0.29	0.39	0.31	0.42	0.34	0.45	0.36	0.47	0.38	0.50	0.41	0.53	0.43
128	0.36	0.28	0.39	0.31	0.42	0.33	0.45	0.35	0.48	0.38	0.50	0.40	0.53	0.42
130	0.36	0.28	0.39	0.30	0.42	0.32	0.45	0.35	0.48	0.37	0.51	0.39	0.54	0.41
132	0.37	0.27	0.40	0.30	0.43	0.32	0.46	0.34	0.48	0.36	0.51	0.38	0.54	0.40
134	0.37	0.27	0.40	0.29	0.43	0.31	0.46	0.33	0.49	0.35	0.52	0.37	0.54	0.39
136	0.38	0.26	0.41	0.28	0.44	0.30	0.47	0.32	0.49	0.34	0.52	0.36	0.55	0.38
138	0.39	0.26	0.42	0.28	0.45	0.30	0.47	0.32	0.50	0.33	0.53	0.35	0.55	0.37
140	0.39	0.25	0.42	0.27	0.45	0.29	0.48	0.31	0.51	0.33	0.53	0.34	0.56	0.36
142	0.40	0.25	0.43	0.27	0.46	0.28	0.49	0.30	0.51	0.32	0.54	0.33	0.56	0.35
144	0.41	0.24	0.44	0.26	0.47	0.28	0.50	0.29	0.52	0.31	0.55	0.32	0.57	0.34
146	0.42	0.24	0.45	0.25	0.48	0.27	0.51	0.28	0.53	0.30	0.56	0.31	0.58	0.32
148	0.43	0.23	0.46	0.25	0.49	0.26	0.52	0.27	0.54	0.29	0.57	0.30	0.59	0.31
150	0.45	0.22	0.48	0.24	0.50	0.25	0.53	0.26	0.55	0.28	0.58	0.29	0.60	0.30
152	0.46	0.22	0.49	0.23	0.52	0.24	0.54	0.25	0.57	0.27	0.59	0.28	0.61	0.29
154	0.48	0.21	0.50	0.22	0.53	0.23	0.56	0.24	0.58	0.25	0.60	0.26	0.62	0.27
156	0.49	0.20	0.52	0.21	0.55	0.22	0.57	0.23	0.60	0.24	0.62	0.25	0.64	0.26
158	0.51	0.19	0.54	0.20	0.57	0.21	0.59	0.22	0.61	0.23	0.63	0.24	0.66	0.25
160	0.53	0.18	0.56	0.19	0.59	0.20	0.61	0.21	0.63	0.22	0.65	0.22	0.67	0.23

TABLE 18
Distance of an Object by Two Bearings

Difference between the course and second bearing	Difference between the course and first bearing													
	34°		36°		38°		40°		42°		44°		46°	
°														
44	3.22	2.24												
46	2.69	1.93	3.39	2.43										
48	2.31	1.72	2.83	2.10	3.55	2.63								
50	2.03	1.55	2.43	1.86	2.96	2.27	3.70	2.84						
52	1.81	1.43	2.13	1.68	2.54	2.01	3.09	2.44	3.85	3.04				
54	1.63	1.32	1.90	1.54	2.23	1.81	2.66	2.15	3.22	2.60	4.00	3.24		
56	1.49	1.24	1.72	1.42	1.99	1.65	2.33	1.93	2.77	2.29	3.34	2.77	4.14	3.43
58	1.37	1.17	1.57	1.33	1.80	1.53	2.08	1.76	2.43	2.06	2.87	2.44	3.46	2.93
60	1.28	1.10	1.45	1.25	1.64	1.42	1.88	1.63	2.17	1.88	2.52	2.18	2.97	2.57
62	1.19	1.05	1.34	1.18	1.51	1.34	1.72	1.52	1.96	1.73	2.25	1.98	2.61	2.30
64	1.12	1.01	1.25	1.13	1.40	1.26	1.58	1.42	1.79	1.61	2.03	1.83	2.33	2.09
66	1.06	0.96	1.18	1.07	1.31	1.20	1.47	1.34	1.65	1.51	1.85	1.69	2.10	1.92
68	1.00	0.93	1.11	1.03	1.23	1.14	1.37	1.27	1.53	1.42	1.71	1.58	1.92	1.78
70	0.95	0.89	1.05	0.99	1.16	1.09	1.29	1.21	1.43	1.34	1.58	1.49	1.77	1.66
72	0.91	0.86	1.00	0.95	1.10	1.05	1.21	1.15	1.34	1.27	1.48	1.41	1.64	1.56
74	0.87	0.84	0.95	0.92	1.05	1.01	1.15	1.10	1.26	1.21	1.39	1.34	1.53	1.47
76	0.84	0.81	0.91	0.89	1.00	0.97	1.09	1.06	1.20	1.16	1.31	1.27	1.44	1.40
78	0.80	0.79	0.88	0.86	0.96	0.94	1.04	1.02	1.14	1.11	1.24	1.22	1.36	1.33
80	0.78	0.77	0.85	0.83	0.92	0.91	1.00	0.98	1.09	1.07	1.18	1.16	1.28	1.27
82	0.75	0.75	0.82	0.81	0.89	0.88	0.96	0.95	1.04	1.03	1.13	1.12	1.22	1.21
84	0.73	0.73	0.79	0.79	0.86	0.85	0.93	0.92	1.00	0.99	1.08	1.07	1.17	1.16
86	0.71	0.71	0.77	0.77	0.83	0.83	0.89	0.89	0.96	0.96	1.04	1.04	1.12	1.12
88	0.69	0.69	0.75	0.75	0.80	0.80	0.86	0.86	0.93	0.93	1.00	1.00	1.08	1.07
90	0.67	0.67	0.73	0.73	0.78	0.78	0.84	0.84	0.90	0.90	0.97	0.97	1.04	1.04
92	0.66	0.66	0.71	0.71	0.76	0.76	0.82	0.82	0.87	0.87	0.93	0.93	1.00	1.00
94	0.65	0.64	0.69	0.69	0.74	0.74	0.79	0.79	0.85	0.85	0.91	0.90	0.97	0.97
96	0.63	0.63	0.68	0.67	0.73	0.72	0.78	0.77	0.83	0.82	0.88	0.88	0.94	0.93
98	0.62	0.62	0.67	0.66	0.71	0.70	0.76	0.75	0.81	0.80	0.86	0.85	0.91	0.90
100	0.61	0.60	0.65	0.64	0.70	0.69	0.74	0.73	0.79	0.78	0.84	0.83	0.89	0.88
102	0.60	0.59	0.64	0.63	0.68	0.67	0.73	0.71	0.77	0.76	0.82	0.80	0.87	0.85
104	0.60	0.58	0.63	0.61	0.67	0.65	0.72	0.69	0.76	0.74	0.80	0.78	0.85	0.82
106	0.59	0.57	0.63	0.60	0.66	0.64	0.70	0.68	0.74	0.72	0.79	0.76	0.83	0.80
108	0.58	0.55	0.62	0.59	0.66	0.62	0.69	0.66	0.73	0.70	0.77	0.74	0.81	0.77
110	0.58	0.54	0.61	0.57	0.65	0.61	0.68	0.64	0.72	0.68	0.76	0.71	0.80	0.75
112	0.57	0.53	0.61	0.56	0.64	0.59	0.68	0.63	0.71	0.66	0.75	0.69	0.79	0.73
114	0.57	0.52	0.60	0.55	0.63	0.58	0.67	0.61	0.70	0.64	0.74	0.68	0.78	0.71
116	0.56	0.51	0.60	0.54	0.63	0.57	0.66	0.60	0.70	0.63	0.73	0.66	0.77	0.69
118	0.56	0.50	0.59	0.52	0.63	0.55	0.66	0.58	0.69	0.61	0.72	0.64	0.76	0.67
120	0.56	0.49	0.59	0.51	0.62	0.54	0.65	0.57	0.68	0.59	0.72	0.62	0.75	0.65
122	0.56	0.47	0.59	0.50	0.62	0.53	0.65	0.55	0.68	0.58	0.71	0.60	0.74	0.63
124	0.56	0.46	0.59	0.49	0.62	0.51	0.65	0.54	0.68	0.56	0.71	0.58	0.74	0.61
126	0.56	0.45	0.59	0.48	0.62	0.50	0.64	0.52	0.67	0.54	0.70	0.57	0.73	0.59
128	0.56	0.44	0.59	0.46	0.62	0.49	0.64	0.51	0.67	0.53	0.70	0.55	0.73	0.57
130	0.56	0.43	0.59	0.45	0.62	0.47	0.64	0.49	0.67	0.51	0.70	0.53	0.72	0.55
132	0.56	0.42	0.59	0.44	0.62	0.46	0.64	0.48	0.67	0.50	0.70	0.52	0.72	0.54
134	0.57	0.41	0.59	0.43	0.62	0.45	0.64	0.46	0.67	0.48	0.69	0.50	0.72	0.52
136	0.57	0.40	0.60	0.41	0.62	0.43	0.65	0.45	0.67	0.47	0.70	0.48	0.72	0.50
138	0.58	0.39	0.60	0.40	0.63	0.42	0.65	0.43	0.67	0.45	0.70	0.47	0.72	0.48
140	0.58	0.37	0.61	0.39	0.63	0.40	0.65	0.42	0.68	0.43	0.70	0.45	0.72	0.46
142	0.59	0.36	0.61	0.38	0.63	0.39	0.66	0.41	0.68	0.42	0.70	0.43	0.72	0.45
144	0.60	0.35	0.62	0.36	0.64	0.38	0.66	0.39	0.68	0.40	0.71	0.41	0.73	0.43
146	0.60	0.34	0.63	0.35	0.65	0.36	0.67	0.37	0.69	0.39	0.71	0.40	0.73	0.41
148	0.61	0.32	0.63	0.34	0.66	0.35	0.68	0.36	0.70	0.37	0.72	0.38	0.74	0.39
150	0.62	0.31	0.64	0.32	0.66	0.33	0.68	0.34	0.70	0.35	0.72	0.36	0.74	0.37
152	0.63	0.30	0.65	0.31	0.67	0.32	0.69	0.33	0.71	0.33	0.73	0.34	0.75	0.35
154	0.65	0.28	0.67	0.29	0.68	0.30	0.70	0.31	0.72	0.32	0.74	0.32	0.76	0.33
156	0.66	0.27	0.68	0.28	0.70	0.28	0.72	0.29	0.73	0.30	0.75	0.30	0.77	0.31
158	0.67	0.25	0.69	0.26	0.71	0.27	0.73	0.27	0.74	0.28	0.76	0.28	0.78	0.29
160	0.69	0.24	0.71	0.24	0.73	0.25	0.74	0.25	0.76	0.26	0.77	0.26	0.79	0.27

TABLE 18
Distance of an Object by Two Bearings

Difference between the course and second bearing	Difference between the course and first bearing													
	48°		50°		52°		54°		56°		58°		60°	
°														
58	4.28	3.63												
60	3.57	3.10	4.41	3.82										
62	3.07	2.71	3.68	3.25	4.54	4.01								
64	2.70	2.42	3.17	2.85	3.79	3.41	4.66	4.19						
66	2.40	2.20	2.78	2.54	3.26	2.98	3.89	3.55	4.77	4.36				
68	2.17	2.01	2.48	2.30	2.86	2.65	3.34	3.10	3.99	3.71	4.88	4.53		
70	1.98	1.86	2.24	2.10	2.55	2.39	2.94	2.76	3.43	3.22	4.08	3.83	4.99	4.69
72	1.83	1.74	2.04	1.94	2.30	2.19	2.62	2.49	3.01	2.86	3.51	3.33	4.17	3.96
74	1.70	1.63	1.88	1.81	2.10	2.02	2.37	2.27	2.68	2.58	3.08	2.96	3.58	3.44
76	1.58	1.54	1.75	1.70	1.94	1.88	2.16	2.10	2.42	2.35	2.74	2.66	3.14	3.05
78	1.49	1.45	1.63	1.60	1.80	1.76	1.99	1.95	2.21	2.16	2.48	2.43	2.80	2.74
80	1.40	1.38	1.53	1.51	1.68	1.65	1.85	1.82	2.04	2.01	2.26	2.23	2.53	2.49
82	1.33	1.32	1.45	1.43	1.58	1.56	1.72	1.71	1.89	1.87	2.08	2.06	2.31	2.29
84	1.26	1.26	1.37	1.36	1.49	1.48	1.62	1.61	1.77	1.76	1.93	1.92	2.13	2.12
86	1.21	1.20	1.30	1.30	1.41	1.41	1.53	1.52	1.66	1.65	1.81	1.80	1.98	1.97
88	1.16	1.16	1.24	1.24	1.34	1.34	1.45	1.45	1.56	1.56	1.70	1.70	1.84	1.84
90	1.11	1.11	1.19	1.19	1.28	1.28	1.38	1.38	1.48	1.48	1.60	1.60	1.73	1.73
92	1.07	1.07	1.14	1.14	1.23	1.23	1.31	1.31	1.41	1.41	1.52	1.52	1.63	1.63
94	1.03	1.03	1.10	1.10	1.18	1.17	1.26	1.26	1.35	1.34	1.44	1.44	1.55	1.54
96	1.00	0.99	1.06	1.06	1.13	1.13	1.21	1.20	1.29	1.28	1.38	1.37	1.47	1.47
98	0.97	0.96	1.03	1.02	1.10	1.08	1.16	1.15	1.24	1.23	1.32	1.31	1.41	1.39
100	0.94	0.93	1.00	0.98	1.06	1.04	1.12	1.11	1.19	1.18	1.27	1.25	1.35	1.33
102	0.92	0.90	0.97	0.95	1.03	1.01	1.09	1.06	1.15	1.13	1.22	1.19	1.29	1.27
104	0.90	0.87	0.95	0.92	1.00	0.97	1.06	1.02	1.12	1.08	1.18	1.14	1.25	1.21
106	0.88	0.84	0.92	0.89	0.97	0.94	1.03	0.99	1.09	1.04	1.14	1.10	1.20	1.16
108	0.86	0.82	0.90	0.86	0.95	0.90	1.00	0.95	1.05	1.00	1.11	1.05	1.17	1.11
110	0.84	0.79	0.88	0.83	0.93	0.87	0.98	0.92	1.02	0.96	1.08	1.01	1.13	1.06
112	0.83	0.77	0.87	0.80	0.91	0.84	0.95	0.88	1.00	0.93	1.05	0.97	1.10	1.02
114	0.81	0.74	0.85	0.78	0.89	0.82	0.93	0.85	0.98	0.89	1.02	0.93	1.07	0.98
116	0.80	0.72	0.84	0.75	0.88	0.79	0.92	0.82	0.96	0.85	1.00	0.90	1.04	0.94
118	0.79	0.70	0.83	0.73	0.86	0.76	0.90	0.79	0.94	0.83	0.98	0.86	1.02	0.90
120	0.78	0.68	0.82	0.71	0.85	0.74	0.89	0.77	0.91	0.80	0.96	0.83	1.00	0.87
122	0.77	0.66	0.81	0.68	0.84	0.71	0.87	0.74	0.90	0.77	0.95	0.80	0.98	0.83
124	0.77	0.63	0.80	0.66	0.83	0.69	0.86	0.71	0.90	0.74	0.93	0.77	0.96	0.80
126	0.76	0.61	0.79	0.64	0.82	0.66	0.85	0.69	0.88	0.71	0.91	0.74	0.95	0.77
128	0.75	0.59	0.78	0.62	0.81	0.64	0.84	0.66	0.87	0.69	0.90	0.71	0.93	0.74
130	0.75	0.57	0.78	0.60	0.81	0.62	0.83	0.64	0.86	0.66	0.89	0.68	0.92	0.71
132	0.75	0.56	0.77	0.57	0.80	0.59	0.83	0.61	0.85	0.64	0.88	0.66	0.91	0.68
134	0.74	0.54	0.77	0.55	0.80	0.57	0.82	0.59	0.85	0.61	0.87	0.63	0.90	0.65
136	0.74	0.52	0.77	0.53	0.80	0.55	0.82	0.57	0.84	0.58	0.87	0.60	0.89	0.62
138	0.74	0.50	0.77	0.51	0.79	0.53	0.81	0.54	0.84	0.56	0.86	0.58	0.89	0.59
140	0.74	0.48	0.77	0.49	0.79	0.51	0.81	0.52	0.83	0.54	0.86	0.55	0.88	0.57
142	0.74	0.46	0.77	0.47	0.79	0.49	0.81	0.50	0.83	0.51	0.85	0.52	0.87	0.54
144	0.75	0.44	0.77	0.45	0.79	0.46	0.81	0.48	0.83	0.49	0.85	0.50	0.87	0.51
146	0.75	0.42	0.77	0.43	0.79	0.44	0.81	0.45	0.83	0.46	0.85	0.47	0.87	0.49
148	0.76	0.40	0.77	0.41	0.79	0.42	0.81	0.43	0.83	0.44	0.85	0.45	0.87	0.46
150	0.76	0.38	0.78	0.39	0.80	0.40	0.81	0.41	0.83	0.42	0.85	0.42	0.87	0.43
152	0.77	0.36	0.78	0.37	0.80	0.38	0.82	0.38	0.83	0.39	0.85	0.40	0.87	0.41
154	0.77	0.34	0.79	0.35	0.81	0.35	0.82	0.36	0.84	0.37	0.85	0.37	0.87	0.38
156	0.78	0.32	0.80	0.32	0.81	0.33	0.83	0.34	0.84	0.34	0.86	0.35	0.87	0.35
158	0.79	0.30	0.81	0.30	0.82	0.31	0.83	0.31	0.85	0.32	0.86	0.32	0.87	0.33
160	0.80	0.27	0.82	0.28	0.83	0.28	0.84	0.29	0.85	0.29	0.86	0.30	0.88	0.30

TABLE 18
Distance of an Object by Two Bearings

Difference between the course and second bearing	Difference between the course and first bearing													
	62°		64°		66°		68°		70°		72°		74°		76°	
°																
72	5.08	4.84														
74	4.25	4.08	5.18	4.98												
76	3.65	3.54	4.32	4.19	5.26	5.10										
78	3.20	3.13	3.72	3.63	4.39	4.30	5.34	5.22								
80	2.86	2.81	3.26	3.21	3.78	3.72	4.46	4.39	5.41	5.33						
82	2.58	2.56	2.91	2.88	3.31	3.28	3.83	3.80	4.52	4.48	5.48	5.42				
84	2.36	2.34	2.63	2.61	2.96	2.94	3.36	3.35	3.88	3.86	4.57	4.55	5.54	5.51		
86	2.17	2.17	2.40	2.39	2.67	2.66	3.00	2.99	3.41	3.40	3.93	3.92	4.62	4.61	5.59	5.57
88	2.01	2.01	2.21	2.21	2.44	2.44	2.71	2.71	3.04	3.04	3.45	3.45	3.97	3.97	4.67	4.66
90	1.88	1.88	2.05	2.05	2.25	2.25	2.48	2.48	2.75	2.75	3.08	3.08	3.49	3.49	4.01	4.01
92	1.77	1.76	1.91	1.91	2.08	2.08	2.28	2.28	2.51	2.51	2.78	2.78	3.11	3.11	3.52	3.52
94	1.67	1.66	1.80	1.79	1.95	1.94	2.12	2.11	2.31	2.30	2.54	2.53	2.81	2.80	3.14	3.13
96	1.58	1.57	1.70	1.69	1.83	1.82	1.97	1.96	2.14	2.13	2.34	2.33	2.57	2.55	2.84	2.82
98	1.50	1.49	1.61	1.59	1.72	1.71	1.85	1.84	2.00	1.98	2.17	2.15	2.36	2.34	2.59	2.56
100	1.43	1.41	1.53	1.51	1.63	1.61	1.75	1.72	1.88	1.85	2.03	2.00	2.19	2.16	2.39	2.35
102	1.37	1.34	1.46	1.43	1.55	1.52	1.66	1.62	1.77	1.73	1.90	1.86	2.05	2.00	2.21	2.16
104	1.32	1.28	1.40	1.36	1.48	1.44	1.58	1.53	1.68	1.63	1.79	1.74	1.92	1.87	2.07	2.01
106	1.27	1.22	1.34	1.29	1.42	1.37	1.51	1.45	1.60	1.54	1.70	1.63	1.81	1.74	1.94	1.87
108	1.23	1.17	1.29	1.23	1.37	1.30	1.44	1.37	1.53	1.45	1.62	1.54	1.72	1.63	1.83	1.74
110	1.19	1.12	1.25	1.17	1.32	1.24	1.39	1.30	1.46	1.37	1.54	1.45	1.64	1.54	1.74	1.63
112	1.15	1.07	1.21	1.12	1.27	1.18	1.33	1.24	1.40	1.30	1.48	1.37	1.56	1.45	1.65	1.53
114	1.12	1.02	1.17	1.07	1.23	1.12	1.29	1.18	1.35	1.24	1.42	1.30	1.50	1.37	1.58	1.44
116	1.09	0.98	1.14	1.03	1.19	1.07	1.25	1.12	1.31	1.17	1.37	1.23	1.44	1.29	1.51	1.36
118	1.07	0.94	1.11	0.98	1.16	1.02	1.21	1.07	1.26	1.12	1.32	1.17	1.38	1.22	1.45	1.28
120	1.04	0.90	1.08	0.94	1.13	0.98	1.18	1.02	1.23	1.06	1.28	1.11	1.34	1.16	1.40	1.21
122	1.02	0.86	1.06	0.90	1.10	0.93	1.15	0.97	1.19	1.01	1.24	1.05	1.29	1.10	1.35	1.14
124	1.00	0.83	1.04	0.86	1.08	0.89	1.12	0.93	1.16	0.96	1.21	1.00	1.25	1.04	1.31	1.08
126	0.98	0.79	1.02	0.82	1.05	0.85	1.09	0.88	1.13	0.92	1.18	0.95	1.22	0.99	1.27	1.02
128	0.97	0.76	1.00	0.79	1.03	0.82	1.07	0.84	1.11	0.87	1.15	0.90	1.19	0.94	1.23	0.97
130	0.95	0.73	0.98	0.75	1.02	0.78	1.05	0.80	1.09	0.83	1.12	0.86	1.16	0.89	1.20	0.92
132	0.94	0.70	0.97	0.72	1.00	0.74	1.03	0.77	1.06	0.79	1.10	0.82	1.13	0.84	1.17	0.87
134	0.93	0.67	0.96	0.69	0.99	0.71	1.01	0.73	1.04	0.75	1.08	0.77	1.11	0.80	1.14	0.82
136	0.92	0.64	0.95	0.66	0.97	0.68	1.00	0.69	1.03	0.71	1.06	0.74	1.09	0.76	1.12	0.78
138	0.91	0.61	0.94	0.63	0.96	0.64	0.99	0.66	1.01	0.68	1.04	0.70	1.07	0.72	1.10	0.74
140	0.90	0.58	0.93	0.60	0.95	0.61	0.97	0.63	1.00	0.64	1.03	0.66	1.05	0.68	1.08	0.69
142	0.90	0.55	0.92	0.57	0.94	0.58	0.96	0.59	0.99	0.61	1.01	0.62	1.04	0.64	1.06	0.65
144	0.89	0.52	0.91	0.54	0.93	0.55	0.96	0.56	0.98	0.57	1.00	0.59	1.02	0.60	1.05	0.62
146	0.89	0.50	0.91	0.51	0.93	0.52	0.95	0.53	0.97	0.54	0.99	0.55	1.01	0.57	1.03	0.58
148	0.89	0.47	0.90	0.48	0.92	0.49	0.94	0.50	0.96	0.51	0.98	0.52	1.00	0.53	1.02	0.54
150	0.88	0.44	0.90	0.45	0.92	0.46	0.94	0.47	0.95	0.48	0.97	0.49	0.99	0.50	1.01	0.50
152	0.88	0.41	0.90	0.42	0.92	0.43	0.93	0.44	0.95	0.45	0.97	0.45	0.98	0.46	1.00	0.47
154	0.88	0.39	0.90	0.39	0.91	0.40	0.93	0.41	0.94	0.41	0.96	0.42	0.98	0.43	0.99	0.43
156	0.89	0.36	0.90	0.37	0.91	0.37	0.93	0.38	0.94	0.38	0.96	0.39	0.97	0.39	0.99	0.40
158	0.89	0.33	0.90	0.34	0.91	0.34	0.93	0.35	0.94	0.35	0.95	0.36	0.97	0.36	0.98	0.37
160	0.89	0.30	0.90	0.31	0.91	0.31	0.93	0.32	0.94	0.32	0.95	0.33	0.96	0.33	0.98	0.33

TABLE 18
Distance of an Object by Two Bearings

Difference between the course and second bearing	Difference between the course and first bearing															
	78°		80°		82°		84°		86°		88°		90°		92°	
°																
88	5. 63	5. 63														
90	4. 70	4. 70	5. 67	5. 67												
92	4. 04	4. 04	4. 74	4. 73	5. 70	5. 70										
94	3. 55	3. 54	4. 07	4. 06	4. 76	4. 75	5. 73	5. 71								
96	3. 17	3. 15	3. 57	3. 55	4. 09	4. 07	4. 78	4. 76	5. 74	5. 71						
98	2. 86	2. 83	3. 19	3. 16	3. 59	3. 56	4. 11	4. 07	4. 80	4. 75	5. 76	5. 70				
100	2. 61	2. 57	2. 88	2. 84	3. 20	3. 16	3. 61	3. 55	4. 12	4. 06	4. 81	4. 73	5. 76	5. 67		
102	2. 40	2. 35	2. 63	2. 57	2. 90	2. 83	3. 22	3. 15	3. 62	3. 54	4. 13	4. 04	4. 81	4. 70	5. 76	5. 63
104	2. 23	2. 16	2. 42	2. 35	2. 64	2. 56	2. 91	2. 82	3. 23	3. 13	3. 63	3. 52	4. 13	4. 01	4. 81	4. 66
106	2. 08	2. 00	2. 25	2. 16	2. 43	2. 34	2. 65	2. 55	2. 92	2. 80	3. 23	3. 11	3. 63	3. 49	4. 13	3. 97
108	1. 96	1. 86	2. 10	2. 00	2. 26	2. 15	2. 45	2. 33	2. 66	2. 53	2. 92	2. 78	3. 24	3. 08	3. 63	3. 45
110	1. 85	1. 73	1. 97	1. 85	2. 11	1. 98	2. 27	2. 13	2. 45	2. 31	2. 67	2. 51	2. 92	2. 75	3. 23	3. 04
112	1. 75	1. 62	1. 86	1. 72	1. 98	1. 83	2. 12	1. 96	2. 28	2. 11	2. 46	2. 28	2. 67	2. 48	2. 92	2. 71
114	1. 66	1. 52	1. 76	1. 61	1. 87	1. 71	1. 99	1. 82	2. 12	1. 94	2. 28	2. 08	2. 46	2. 25	2. 67	2. 44
116	1. 59	1. 43	1. 68	1. 51	1. 77	1. 59	1. 88	1. 69	2. 00	1. 79	2. 13	1. 91	2. 28	2. 05	2. 46	2. 21
118	1. 52	1. 34	1. 60	1. 41	1. 68	1. 49	1. 78	1. 57	1. 88	1. 66	2. 00	1. 76	2. 13	1. 88	2. 28	2. 01
120	1. 46	1. 27	1. 53	1. 33	1. 61	1. 39	1. 69	1. 47	1. 78	1. 54	1. 89	1. 63	2. 00	1. 73	2. 13	1. 84
122	1. 41	1. 19	1. 47	1. 25	1. 54	1. 31	1. 62	1. 37	1. 70	1. 44	1. 79	1. 52	1. 89	1. 60	2. 00	1. 70
124	1. 36	1. 13	1. 42	1. 18	1. 48	1. 23	1. 55	1. 28	1. 62	1. 34	1. 70	1. 41	1. 79	1. 48	1. 89	1. 56
126	1. 32	1. 06	1. 37	1. 11	1. 43	1. 15	1. 48	1. 20	1. 55	1. 26	1. 62	1. 31	1. 70	1. 38	1. 79	1. 45
128	1. 28	1. 01	1. 33	1. 04	1. 38	1. 08	1. 43	1. 13	1. 49	1. 17	1. 55	1. 23	1. 62	1. 28	1. 70	1. 34
130	1. 24	0. 95	1. 29	0. 98	1. 33	1. 02	1. 38	1. 06	1. 44	1. 10	1. 49	1. 14	1. 56	1. 19	1. 62	1. 24
132	1. 21	0. 90	1. 25	0. 93	1. 29	0. 96	1. 34	0. 99	1. 39	1. 03	1. 44	1. 07	1. 49	1. 11	1. 55	1. 16
134	1. 18	0. 85	1. 22	0. 88	1. 26	0. 90	1. 30	0. 93	1. 34	0. 97	1. 39	1. 00	1. 44	1. 04	1. 49	1. 07
136	1. 15	0. 80	1. 19	0. 83	1. 22	0. 85	1. 26	0. 88	1. 30	0. 90	1. 34	0. 93	1. 39	0. 97	1. 44	1. 00
138	1. 13	0. 76	1. 16	0. 78	1. 19	0. 80	1. 23	0. 82	1. 27	0. 85	1. 30	0. 87	1. 35	0. 90	1. 39	0. 93
140	1. 11	0. 71	1. 14	0. 73	1. 17	0. 75	1. 20	0. 77	1. 23	0. 79	1. 27	0. 82	1. 31	0. 84	1. 34	0. 86
142	1. 09	0. 67	1. 12	0. 69	1. 14	0. 70	1. 17	0. 72	1. 20	0. 74	1. 24	0. 76	1. 27	0. 78	1. 30	0. 80
144	1. 07	0. 63	1. 10	0. 64	1. 12	0. 66	1. 15	0. 67	1. 18	0. 69	1. 21	0. 71	1. 24	0. 73	1. 27	0. 75
146	1. 05	0. 59	1. 08	0. 60	1. 10	0. 62	1. 13	0. 63	1. 15	0. 64	1. 18	0. 66	1. 21	0. 67	1. 24	0. 69
148	1. 04	0. 55	1. 06	0. 56	1. 08	0. 57	1. 11	0. 59	1. 13	0. 60	1. 15	0. 61	1. 18	0. 62	1. 21	0. 64
150	1. 03	0. 51	1. 05	0. 52	1. 07	0. 53	1. 09	0. 54	1. 11	0. 55	1. 13	0. 57	1. 15	0. 58	1. 18	0. 59
152	1. 02	0. 48	1. 04	0. 49	1. 05	0. 49	1. 07	0. 50	1. 09	0. 51	1. 11	0. 52	1. 13	0. 53	1. 15	0. 54
154	1. 01	0. 44	1. 02	0. 45	1. 04	0. 46	1. 06	0. 46	1. 08	0. 47	1. 09	0. 48	1. 11	0. 49	1. 13	0. 50
156	1. 00	0. 41	1. 01	0. 41	1. 03	0. 42	1. 05	0. 43	1. 06	0. 43	1. 08	0. 44	1. 09	0. 45	1. 11	0. 45
158	0. 99	0. 37	1. 01	0. 38	1. 02	0. 38	1. 03	0. 39	1. 05	0. 39	1. 06	0. 40	1. 08	0. 40	1. 09	0. 41
160	0. 99	0. 34	1. 00	0. 34	1. 01	0. 35	1. 02	0. 35	1. 04	0. 35	1. 05	0. 36	1. 06	0. 36	1. 08	0. 37
	94°		96°		98°		100°		102°		104°		106°		108°	
°																
104	5. 74	5. 57														
106	4. 80	4. 61	5. 73	5. 51												
108	4. 12	3. 92	4. 78	4. 55	5. 70	5. 42										
110	3. 62	3. 40	4. 11	3. 86	4. 76	4. 48	5. 67	5. 33								
112	3. 23	2. 99	3. 61	3. 35	4. 09	3. 80	4. 74	4. 40	5. 63	5. 22						
114	2. 92	2. 66	3. 22	2. 94	3. 59	3. 28	4. 07	3. 72	4. 70	4. 30	5. 59	5. 10				
116	2. 66	2. 39	2. 91	2. 61	3. 20	2. 88	3. 57	3. 21	4. 04	3. 63	4. 67	4. 19	5. 54	4. 98		
118	2. 45	2. 17	2. 65	2. 34	2. 90	2. 56	3. 19	2. 81	3. 55	3. 13	4. 01	3. 54	4. 62	4. 08	5. 48	4. 84
120	2. 28	1. 97	2. 45	2. 12	2. 64	2. 29	2. 88	2. 49	3. 17	2. 74	3. 52	3. 05	3. 97	3. 44	4. 57	3. 96
122	2. 12	1. 80	2. 27	1. 92	2. 43	2. 06	2. 63	2. 23	2. 86	2. 43	3. 14	2. 66	3. 49	2. 96	3. 93	3. 33
124	2. 00	1. 65	2. 12	1. 76	2. 26	1. 87	2. 42	2. 01	2. 61	2. 16	2. 84	2. 35	3. 11	2. 58	3. 45	2. 86
126	1. 88	1. 52	1. 99	1. 61	2. 11	1. 71	2. 25	1. 82	2. 40	1. 95	2. 59	2. 10	2. 81	2. 27	3. 08	2. 49
128	1. 78	1. 41	1. 88	1. 48	1. 98	1. 56	2. 10	1. 65	2. 23	1. 76	2. 39	1. 88	2. 57	2. 02	2. 78	2. 19
130	1. 70	1. 30	1. 78	1. 36	1. 87	1. 43	1. 97	1. 51	2. 08	1. 60	2. 21	1. 70	2. 36	1. 81	2. 54	1. 94
132	1. 62	1. 20	1. 69	1. 26	1. 77	1. 32	1. 86	1. 38	1. 96	1. 45	2. 07	1. 54	2. 19	1. 63	2. 34	1. 74
134	1. 55	1. 12	1. 62	1. 16	1. 68	1. 21	1. 76	1. 27	1. 85	1. 33	1. 94	1. 40	2. 05	1. 47	2. 17	1. 56
136	1. 49	1. 04	1. 55	1. 07	1. 61	1. 12	1. 68	1. 16	1. 75	1. 22	1. 83	1. 27	1. 92	1. 34	2. 03	1. 41
138	1. 44	0. 96	1. 49	0. 99	1. 54	1. 03	1. 60	1. 07	1. 66	1. 11	1. 74	1. 16	1. 81	1. 21	1. 90	1. 27
140	1. 39	0. 89	1. 43	0. 92	1. 48	0. 95	1. 53	0. 98	1. 59	1. 02	1. 65	1. 06	1. 72	1. 10	1. 79	1. 15
142	1. 34	0. 83	1. 38	0. 85	1. 43	0. 88	1. 47	0. 91	1. 52	0. 94	1. 58	0. 97	1. 64	1. 01	1. 70	1. 05
144	1. 30	0. 77	1. 34	0. 79	1. 38	0. 81	1. 42	0. 83	1. 46	0. 86	1. 51	0. 89	1. 56	0. 92	1. 62	0. 95
146	1. 27	0. 71	1. 30	0. 73	1. 33	0. 75	1. 37	0. 77	1. 41	0. 79	1. 45	0. 81	1. 50	0. 84	1. 54	0. 86
148	1. 23	0. 65	1. 26	0. 67	1. 29	0. 69	1. 33	0. 70	1. 36	0. 72	1. 40	0. 74	1. 44	0. 76	1. 48	0. 78
150	1. 20	0. 60	1. 23	0. 61	1. 26	0. 63	1. 29	0. 64	1. 32	0. 66	1. 35	0. 67	1. 38	0. 69	1. 42	0. 71
152	1. 18	0. 55	1. 20	0. 56	1. 22	0. 57	1. 25	0. 59	1. 28	0. 60	1. 31	0. 61	1. 34	0. 63	1. 37	0. 64
154	1. 15	0. 50	1. 17	0. 51	1. 19	0. 52	1. 22	0. 53	1. 24	0. 54	1. 27	0. 56	1. 29	0. 57	1. 32	0. 58
156	1. 13	0. 46	1. 15	0. 47	1. 17	0. 47	1. 19	0. 48	1. 21	0. 49	1. 23	0. 50	1. 25	0. 51	1. 28	0. 52
158	1. 11	0. 42	1. 13	0. 42	1. 14	0. 43	1. 16	0. 44	1. 18	0. 44	1. 20	0. 45	1. 22	0. 46	1. 24	0. 47
160	1. 09	0. 37	1. 11	0. 38	1. 12	0. 38	1. 14	0. 39	1. 15	0. 39	1. 17	0. 40	1. 19	0. 41	1. 21	0. 41

TABLE 18
Distance of an Object by Two Bearings

Difference between the course and second bearing	Difference between the course and first bearing															
	110°		112°		114°		116°		118°		120°		122°			
°																
120	5. 41	4. 69														
122	4. 52	3. 83	5. 34	4. 53												
124	3. 88	3. 22	4. 46	3. 70	5. 26	4. 36										
126	3. 41	2. 76	3. 83	3. 10	4. 39	3. 55	5. 18	4. 19								
128	3. 04	2. 40	3. 36	2. 65	3. 78	2. 98	4. 32	3. 41	5. 08	4. 01						
130	2. 75	2. 10	3. 00	2. 30	3. 31	2. 54	3. 72	2. 85	4. 25	3. 25	4. 99	3. 82				
132	2. 51	1. 86	2. 71	2. 01	2. 96	2. 20	3. 26	2. 42	3. 65	2. 71	4. 17	3. 10	4. 88	3. 63		
134	2. 31	1. 66	2. 48	1. 78	2. 67	1. 92	2. 91	2. 09	3. 20	2. 30	3. 58	2. 57	4. 08	2. 93		
136	2. 14	1. 49	2. 28	1. 58	2. 44	1. 69	2. 63	1. 83	2. 86	1. 98	3. 14	2. 18	3. 51	2. 44		
138	2. 00	1. 34	2. 12	1. 42	2. 25	1. 50	2. 40	1. 61	2. 58	1. 73	2. 80	1. 88	3. 08	2. 06		
140	1. 88	1. 21	1. 97	1. 27	2. 08	1. 34	2. 21	1. 42	2. 36	1. 52	2. 53	1. 63	2. 74	1. 76		
142	1. 77	1. 09	1. 85	1. 14	1. 95	1. 20	2. 05	1. 26	2. 17	1. 34	2. 31	1. 42	2. 48	1. 53		
144	1. 68	0. 99	1. 75	1. 03	1. 83	1. 07	1. 91	1. 13	2. 01	1. 18	2. 13	1. 25	2. 26	1. 33		
146	1. 60	0. 89	1. 66	0. 93	1. 72	0. 96	1. 80	1. 01	1. 88	1. 05	1. 98	1. 10	2. 08	1. 17		
148	1. 53	0. 81	1. 58	0. 84	1. 63	0. 87	1. 70	0. 90	1. 77	0. 94	1. 84	0. 98	1. 93	1. 03		
150	1. 46	0. 73	1. 51	0. 75	1. 55	0. 78	1. 61	0. 80	1. 67	0. 83	1. 73	0. 87	1. 81	0. 90		
152	1. 40	0. 66	1. 44	0. 68	1. 48	0. 70	1. 53	0. 72	1. 58	0. 74	1. 63	0. 77	1. 70	0. 80		
154	1. 35	0. 59	1. 39	0. 61	1. 42	0. 62	1. 46	0. 64	1. 50	0. 66	1. 55	0. 68	1. 60	0. 70		
156	1. 31	0. 53	1. 33	0. 54	1. 37	0. 56	1. 40	0. 57	1. 43	0. 58	1. 47	0. 60	1. 52	0. 62		
158	1. 26	0. 47	1. 29	0. 48	1. 32	0. 49	1. 34	0. 50	1. 37	0. 51	1. 41	0. 53	1. 44	0. 54		
160	1. 23	0. 42	1. 25	0. 43	1. 27	0. 43	1. 29	0. 44	1. 32	0. 45	1. 35	0. 46	1. 38	0. 47		
	124°		126°		128°		130°		132°		134°		136°			
134	4. 77	3. 43														
136	3. 99	2. 77	4. 66	3. 24												
138	3. 43	2. 29	3. 89	2. 60	4. 54	3. 04										
140	3. 01	1. 93	3. 34	2. 15	3. 79	2. 44	4. 41	2. 84								
142	2. 68	1. 65	2. 94	1. 81	3. 26	2. 01	3. 68	2. 27	4. 28	2. 63						
144	2. 42	1. 42	2. 62	1. 54	2. 86	1. 68	3. 17	1. 86	3. 57	2. 10	4. 14	2. 43				
146	2. 21	1. 24	2. 37	1. 32	2. 55	1. 43	2. 78	1. 55	3. 07	1. 72	3. 46	1. 93	4. 00	2. 24		
148	2. 04	1. 08	2. 16	1. 14	2. 30	1. 22	2. 48	1. 31	2. 70	1. 43	2. 97	1. 58	3. 34	1. 77		
150	1. 89	0. 95	1. 99	0. 99	2. 10	1. 05	2. 24	1. 12	2. 40	1. 20	2. 61	1. 30	2. 87	1. 44		
152	1. 77	0. 83	1. 85	0. 87	1. 94	0. 91	2. 04	0. 96	2. 17	1. 02	2. 33	1. 09	2. 52	1. 18		
154	1. 66	0. 73	1. 72	0. 76	1. 80	0. 79	1. 88	0. 83	1. 98	0. 87	2. 10	0. 92	2. 25	0. 99		
156	1. 56	0. 64	1. 62	0. 66	1. 68	0. 68	1. 75	0. 71	1. 83	0. 74	1. 92	0. 78	2. 03	0. 83		
158	1. 48	0. 56	1. 53	0. 57	1. 58	0. 59	1. 63	0. 61	1. 70	0. 64	1. 77	0. 66	1. 85	0. 69		
160	1. 41	0. 48	1. 45	0. 49	1. 49	0. 51	1. 53	0. 52	1. 58	0. 54	1. 64	0. 56	1. 71	0. 58		
	138°		140°		142°		144°		146°		148°		150°			
148	3. 85	2. 04														
150	3. 22	1. 61	3. 70	1. 85												
152	2. 77	1. 30	3. 09	1. 45	3. 55	1. 66										
154	2. 43	1. 06	2. 66	1. 16	2. 96	1. 30	3. 38	1. 48								
156	2. 17	0. 88	2. 33	0. 95	2. 54	1. 04	2. 83	1. 15	3. 22	1. 31						
158	1. 96	0. 73	2. 08	0. 78	2. 23	0. 84	2. 43	0. 91	2. 69	1. 01	3. 05	1. 14				
160	1. 79	0. 61	1. 88	0. 64	1. 99	0. 68	2. 13	0. 73	2. 31	0. 79	2. 55	0. 87	2. 88	0. 98		