

ALTITUDE OF STARS

4 15	16	17	18	19	20	t Year
0 0	0 0	0 0	0 0	0 0	0 0	1941
0 0	1 1	1 1	1 1	1 1	1 1	1942
1 1	1 1	1 1	1 1	1 1	1 1	1943
1 1	1 1	1 1	1 1	1 1	1 1	1944
1 1	1 1	2 2	2 2	2 2	2 2	1945
1 2	2 2	2 2	2 2	2 2	2 2	1946
2 2	2 2	2 2	2 2	2 2	2 2	1947
2 2	2 2	2 3	2 3	3 3	3 3	1948
2 2	2 3	3 3	3 3	3 3	3 3	1949
2 2	3 3	3 3	3 3	3 3	3 3	1950
3 3	3 3	3 3	3 3	3 4	3 4	1951
3 3	3 3	3 4	4 4	4 4	4 4	1952
3 3	3 4	4 4	4 4	4 4	4 4	1953
3 4	4 4	4 4	4 4	5 5	5 5	1954
4 4	4 4	4 4	5 5	5 5	5 5	1955
4 4	4 5	5 5	5 5	5 5	5 5	1956
4 4	5 5	5 5	5 5	6 6	6 6	1957
4 4	5 5	5 6	6 6	6 6	6 6	1958
4 5	5 5	6 6	6 6	6 6	6 6	1959
5 5	6 6	6 6	6 6	7 7	7 7	1960
5 5	6 6	6 7	7 7	7 7	7 7	1961
5 6	6 6	7 7	7 7	7 7	7 7	1962
5 6	6 7	7 7	7 7	8 8	8 8	1963
6 6	7 7	7 8	8 8	8 8	8 8	1964
6 6	7 7	8 8	8 8	8 8	8 8	1965
6 6	7 7	8 8	8 9	8 9	8 9	1966
6 7	7 8	8 8	9 9	9 9	9 9	1967
7 7	7 8	8 8	9 9	9 9	9 9	1968
7 7	8 8	9 9	9 10	10 10	10 10	1969
7 8	8 8	9 10	10 10	10 10	10 10	1970
7 8	8 9	9 10	10 10	10 10	10 10	1971
7 8	8 9	9 10	10 10	10 10	10 10	1972
8 8	9 9	10 10	10 10	10 10	10 10	1973
8 8	9 10	10 10	11 11	11 11	11 11	1974
8 9	9 10	10 10	11 11	11 12	12 12	1975
8 9	10 10	11 11	11 12	11 12	11 12	1976
9 9	10 10	11 12	12 12	12 12	12 12	1977
9 10	10 11	12 12	12 13	12 13	12 13	1978
9 10	10 11	12 12	12 13	12 13	12 13	1979
9 10	11 11	12 12	13 13	13 13	13 13	1980
0 10	11 12	12 13	13 14	13 14	13 14	1981
0 10	11 12	13 13	13 14	13 14	13 14	1982
0 11	11 12	13 14	14 14	14 14	14 14	1983
0 11	12 12	13 14	14 14	15 15	15 15	1984
0 11	12 13	14 14	14 15	15 15	15 15	1985
1 12	12 13	14 15	15 15	15 16	16 16	1986
1 12	13 14	15 15	16 16	16 16	16 16	1987
1 12	13 14	14 15	16 16	16 16	16 16	1988
1 12	13 14	15 16	16 16	16 16	16 16	1989
2 12	13 14	15 16	16 17	16 17	16 17	1990
2 13	14 14	15 16	16 17	16 17	16 17	1991
2 13	14 15	16 16	17 17	17 17	17 17	1992
3 13	14 15	16 17	17 18	17 18	17 18	1993
3 14	14 15	16 17	17 18	17 18	17 18	1994
3 14	15 16	17 18	17 18	17 18	17 18	1995
3 14	15 16	17 18	18 19	18 19	18 19	1996
3 14	15 16	17 18	18 19	19 20	19 20	1997
4 14	15 16	17 18	18 19	19 20	19 20	1998
4 15	16 17	18 19	19 20	19 20	20 20	1999
4 15	16 17	18 19	19 20	20 20	20 20	2000

N. 0°-4°

II.—CONVERSION ANGLES

S. 0°-4°

Latitude of Destination	Change of Longitude						Latitude of Destination
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60°	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	S. 60°
55	1 2 3	4 5 6	7 8 9	10 11 12	14 15 16	18 19 21	
50	1 2 2	3 4 5	6 7 8	9 10 11	13 14 15	17 18 20	55
45	1 1 2	3 4 4	5 6 7	8 9 10	11 12 13	15 17 18	50
40	1 1 2	3 3 4	5 5 6	7 8 9	10 11 12	13 14 15	45
N. 35°	1 1 2	2 3 4	4 5 5	6 7 8	8 9 10	11 12 14	S. 35°
30	0 1 2	2 3 3	4 4 5	5 6 7	7 8 9	10 11 12	30
25	0 1 1	2 2 3	3 4 4	5 5 6	6 7 8	8 9 10	25
20	0 1 1	1 2 2	3 3 3	4 4 5	5 6 6	7 8 8	20
15	0 1 1	1 1 2	2 2 3	3 3 4	4 5 5	6 6 7	15
N. 10°	0 0 1	1 1 1	1 2 2	2 2 3	3 3 4	4 4 5	S. 10°
N. 5°	0 0 0	1 1 1	1 1 1	1 2 2	2 2 2	3 3 3	S. 5°
0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0
S. 5°	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	N. 5°
10	0 0 0	*I *I *I	10				
S. 15°	0 0 0	*I *I *I	N. 15°				
20	0 0 *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	20
25	0 *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	25
30	0 *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	30
35	0 *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	35
S. 40°	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	N. 40°
45	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	45
50	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	50
55	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	55
S. 60°	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	*I *I *I	N. 60°

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 2°, but it may be used for any place of departure between latitudes 0° and 4°. Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between 0° and N. 4°, and the one on the right when the place of departure lies between 0° and S. 4°.

The direction in which the conversion angle must be applied is determined by the following rules :

Latitude of Departure	Direction of bearing	To convert a Great Circle to a Rhumb Line bearing	To convert a Rhumb Line bearing to a Great Circle bearing
North	Westerly	Subtract	Add
North	Easterly	Add	Subtract
South	Westerly	Add	Subtract
South	Easterly	Subtract	Add

These rules refer to bearings measured from 000° T. in a clockwise direction. Where the figures are given in italics, preceded by an asterisk, the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

ITUDE OF STARS

	16	17	18	19	20	t	Year
	o	o	o	o	o	1941	
	i	i	i	i	i	1942	
	i	i	i	i	i	1943	
	i	i	i	1	i	1944	
	i	i	2	2	2	1945	
	2	2	2	2	2	1946	
	2	2	2	2	2	1947	
	2	2	2	3	3	1948	
	2	3	3	3	3	1949	
	3	3	3	3	3	1950	
	3	3	3	3	4	1951	
	3	3	4	4	4	1952	
	3	4	4	4	4	1953	
	4	4	4	4	5	1954	
	4	4	4	5	5	1955	
	4	5	5	5	5	1956	
	5	5	5	5	6	1957	
	5	5	5	6	6	1958	
	5	5	6	6	6	1959	
	5	6	6	6	7	1960	
	6	6	6	7	7	1961	
	6	6	7	7	7	1962	
	6	7	7	7	8	1963	
	6	7	7	8	8	1964	
	6	7	8	8	8	1965	
	6	7	8	8	9	1966	
	7	8	8	9	9	1967	
	7	8	8	9	9	1968	
	7	8	9	9	10	1969	
	8	8	9	10	10	1970	
	8	9	9	10	10	1971	
	8	9	10	10	11	1972	
	8	9	10	10	11	1973	
	9	10	10	11	11	1974	
	9	10	10	11	12	1975	
	10	10	11	11	12	1976	
	10	10	11	12	12	1977	
	10	11	11	12	13	1978	
	10	11	12	12	13	1979	
	11	11	12	12	13	1980	
	11	12	12	13	14	1981	
	11	12	13	13	14	1982	
	11	12	13	14	14	1983	
	11	12	12	13	14	1984	
	11	12	13	14	15	1985	
	12	12	13	14	15	1986	
	12	13	14	15	16	1987	
	12	13	14	15	16	1988	
	12	13	15	16	16	1989	
	12	13	14	15	17	1990	
	13	14	15	16	17	1991	
	13	14	15	16	17	1992	
	13	14	16	17	18	1993	
	14	14	15	16	17	1994	
	14	15	16	17	18	1995	
	14	15	16	17	19	1996	
	14	15	16	17	19	1997	
	14	15	16	17	19	1998	
	15	16	17	18	20	1999	
	16	17	18	19	20	2000	

N. 5°-9°

II.—CONVERSION ANGLES

S. 5°-9°

Latitude of Destina- tion	Change of Longitude						Latitude of Destina- tion
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60	o o o	o o o	o o o	o o o	o o o	o o o	S. 60
55	i 2 3	4 5 6	7 8 9	10 12 13	14 15 17	18 20 22	55
50	i 2 3	4 5 6	7 8 9	10 11 12	13 15 16	17 19 20	50
45	i 2 3	3 4 5	6 7 8	9 10 11	12 13 15	16 18 19	45
40	i 2 2	3 4 5	6 6 7	8 9 10	11 12 14	15 16 18	40
N. 35	i i 2	3 4 4	5 6 7	8 8 9	10 11 12	14 15 16	S. 35
30	i i 2	3 3 4	5 5 6	7 8 8	9 10 11	12 13 15	30
25	i i 2	2 3 3	4 5 5	6 7 7	7 8 9	11 12 13	25
20	o i i	2 2 3	4 4 5	5 6 7	7 8 9	10 10 11	20
15	o i i	2 2 3	3 4 4	4 5 6	6 7 7	8 9 10	15
N. 10	o i i	1 2 2	3 3 3	4 4 5	5 6 6	7 7 8	S. 10
N. 5	o i i	1 1 2	2 2 3	3 3 4	4 4 5	5 6 6	S. 5
0	o o i	1 1 1	1 2 2	2 2 3	3 3 3	4 4 4	0
S. 5	o o o	1 1 1	1 1 1	1 2 2	2 2 2	2 2 2	N. 5
10	o o o	o o o	o o o	o o o	o *I *I	*I *I *I	N. 15
S. 15	o o o	o o o	*I *I *I	*I *I *I	*2 *2 *2	*2 *3 *3	20
20	o o o	o o *I	*I *I *I	*I *I *2	*2 *2 *2	*3 *3 *3	25
25	o o *I	*I *I *I	*I *I *2	*I *I *2	*2 *2 *2	*4 *4 *5	30
30	o o *I	*I *I *2	*I *I *2	*I *I *2	*3 *3 *4	*4 *4 *5	35
35	o *I *I	*I *I *2	*I *I *2	*I *I *2	*2 *3 *3	*4 *4 *5	N. 40
S. 40	*I *I *I	*2 *2 *3	*3 *4 *4	*5 *5 *6	*6 *7 *8	*9 *9 *10	45
45	*I *I *2	*2 *3 *3	*4 *4 *5	*5 *6 *7	*8 *8 *9	*10 *11 *12	50
50	*I *I *2	*2 *3 *4	*4 *5 *6	*6 *7 *8	*9 *10 *11	*12 *13 *14	55
55	*I *I *2	*3 *3 *4	*5 *6 *6	*7 *8 *9	*10 *11 *12	*13 *14 *16	N. 60
S. 60	*I *2 *2	*3 *4 *5	*6 *6 *7	*8 *9 *10	*11 *12 *13	*15 *16 *17	

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a Latitude of Departure of 7°, but it may be used for any place of departure between latitudes 5° and 9°. Of the two argument columns headed Latitude of Destination, the one on the left is to be used when the place of departure lies between N. 5° and N. 9°, and the one on the right when the place of departure lies between S. 5° and S. 9°.

The direction in which the conversion angle must be applied is determined by the following rules:

Latitude of Departure	Direction of bearing	To convert a Great Circle to a Rhumb Line bearing		To convert a Rhumb Line to a Great Circle bearing	
		Subtract Add Add Subtract Subtract Add	Add Subtract Subtract Add		
North	Westerly				
North	Easterly				
South	Westerly				
South	Easterly				

These rules refer to bearings measured from 000° T. in a clockwise direction. Where the figures are given in italics, preceded by an asterisk, the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

LATITUDE OF STARS

N. 10°-14°

II.—CONVERSION ANGLES

S. 10°-14°

5	16	17	18	19	20	t Year
0	0	0	0	0	0	1941
0	I	I	I	I	I	1942
I	I	I	I	I	I	1943
I	I	I	I	I	I	1944
I	I	I	2	2	2	1945
2	2	2	2	2	2	1946
2	2	2	2	2	2	1947
2	2	2	3	3	3	1948
2	2	3	3	3	3	1949
2	3	3	3	3	3	1950
3	3	3	3	3	4	1951
3	3	3	4	4	4	1952
3	3	4	4	4	4	1953
4	4	4	4	4	5	1954
4	4	4	5	5	5	1955
4	4	5	5	5	5	1956
5	5	5	5	5	6	1957
5	5	5	6	6	6	1958
5	5	6	6	6	6	1959
5	5	6	6	7	7	1960
6	6	6	7	7	7	1961
6	6	7	7	7	7	1962
6	7	7	7	8	8	1963
6	7	7	8	8	8	1964
6	7	8	8	8	8	1965
7	7	8	8	9	9	1966
7	7	8	9	9	9	1967
7	7	8	9	9	9	1968
7	8	9	9	10	10	1969
8	8	9	10	10	10	1970
8	9	9	10	10	10	1971
9	9	10	10	11	11	1972
9	9	10	10	11	11	1973
9	10	10	11	11	11	1974
9	10	10	11	12	12	1975
10	10	11	11	12	12	1976
10	10	11	12	12	12	1977
10	11	11	12	13	13	1978
10	11	12	12	13	13	1979
11	11	12	13	13	13	1980
11	12	12	13	14	14	1981
11	12	13	13	14	14	1982
11	12	13	14	14	14	1983
12	12	13	14	15	15	1984
12	13	14	14	15	15	1985
12	13	14	15	15	16	1986
13	13	14	15	16	16	1987
13	14	14	15	16	16	1988
13	14	15	16	16	16	1989
13	14	15	16	17	17	1990
14	14	15	16	17	17	1991
14	15	16	16	17	17	1992
14	15	16	17	18	18	1993
14	15	16	17	18	18	1994
15	16	16	17	18	18	1995
15	16	17	18	19	19	1996
15	16	17	18	19	19	1997
15	16	17	18	19	19	1998
16	17	18	19	20	20	1999
16	17	18	19	20	20	2000

N. 10°-14°

II.—CONVERSION ANGLES

S. 10°-14°

Latitude of Destina- tion	Change of Longitude						Latitude of Destina- tion
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60°	0 0 0	5 6 7	8 10 11	12 13 15	16 18 19	21 23 24	S. 60°
55	I 2 3	4 6 7	8 9 10	12 13 14	16 17 18	20 22 23	55
50	I 2 3	4 5 6	7 9 10	11 12 13	15 16 18	19 21 22	50
45	I 2 3	4 5 6	7 8 9	10 11 13	14 15 17	18 20 21	45
40	I 2 3	4 5 6	6 7 9	10 11 12	13 14 16	17 18 20	40
N. 35	I 2 3	3 4 5	6 7 8	9 10 11	12 13 15	16 17 19	S. 35
30	I 2 2	3 4 5	6 6 7	8 9 10	11 12 13	15 16 17	30
25	I 1 2	3 4 4	5 6 7	7 8 9	10 11 12	13 15 16	25
20	I 1 2	3 3 4	5 5 6	7 8 8	9 10 11	12 13 14	20
15	I 1 2	2 3 3	4 5 5	6 7 7	8 9 10	11 12 13	15
N. 10	0 1 1	2 2 3	4 4 5	5 6 6	7 8 9	9 10 11	S. 10
N. 5	0 1 1	2 2 3	3 4 4	4 5 6	6 7 7	8 9 9	S. 5
0	0 1 1	1 2 2	3 3 3	4 4 5	5 5 6	6 7 8	0
S. 5	0 1 1	1 1 2	2 2 3	3 3 4	4 4 5	5 5 6	N. 5
10	0 0 1	1 1 1	1 2 2	2 2 3	3 3 3	4 4 4	10
S. 15	0 0 0	1 1 1	1 1 1	1 2 2	2 2 2	2 2 2	N. 15
20	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	20
25	0 0 0	0 0 0	0 0 0	0 0 *I	*I *I *I	*I *I *I	25
30	0 0 0	0 *I *I	*I *I *I	*I *I *I	*I *I *2	*2 *2 *2	30
35	0 0 *I	*I *I *I	*I *I *I	*I *2 *2	*2 *2 *3	*3 *4 *4	35
S. 40	0 *I *I	*I *I *2	*2 *2 *3	*3 *4 *4	*4 *5 *6	*6 *7 *8	N. 40
45	0 *I *I	*I *2 *2	*3 *3 *4	*4 *5 *5	*6 *6 *7	*8 *9 *10	45
50	0 *I *I	*2 *2 *3	*3 *4 *4	*5 *6 *6	*7 *8 *9	*9 *10 *12	50
55	*I *I *2	*2 *3 *3	*4 *5 *5	*6 *7 *7	*8 *9 *10	*11 *12 *13	55
S. 60	*I *I *2	*3 *3 *4	*5 *5 *6	*7 *8 *9	*10 *11 *12	*13 *14 *15	N. 60

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 12°, but it may be used for any place of departure between latitudes 10° and 14°. Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between N. 10° and N. 14°, and the one on the right when the place of departure lies between S. 10° and S. 14°.

The direction in which the conversion angle must be applied is determined by the following rules :

Latitude of Departure	Direction of bearing	To convert a Great Circle to a Rhumb Line bearing	To convert a Rhumb Line bearing to a Great Circle
North	Westerly	Subtract	Add
North	Easterly	Add	Subtract
South	Westerly	Add	Subtract
South	Easterly	Subtract	Add

These rules refer to bearings measured from 000° T. in a clockwise direction. Where the figures are given in italics, preceded by an asterisk, the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

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N. $15^{\circ}19'$

II.—CONVERSION ANGLES

S. $15^{\circ}19'$

Latitude of Depar-tu- rati-on	Change of Longitude						Latitude of Destina-tion
	$5^{\circ}10'15''$	$20^{\circ}25'30''$	$35^{\circ}40'45''$	$50^{\circ}55'60''$	$65^{\circ}70'75''$	$80^{\circ}85'90''$	
N. 60	° ° °	° ° °	° ° °	° ° °	° ° °	° ° °	S. 60
55	1 3 4	5 6 8	9 10 12	13 15 16	18 19 21	22 24 26	
50	1 2 4	5 6 7	9 10 11	13 14 15	17 18 20	22 23 25	55
45	1 2 3	5 6 7	8 9 10	11 13 14	15 17 18	20 22 23	50
40	1 2 3	4 5 6	7 8 10	11 12 13	15 16 18	19 21 22	45
N. 35	1 2 3	4 5 6	7 8 9	10 11 13	14 15 17	18 20 21	S. 35
30	1 2 3	4 5 6	6 7 8	10 11 12	13 14 16	17 18 20	30
25	1 2 3	3 4 5	6 7 8	9 10 11	12 13 14	16 17 19	25
20	1 2 2	3 4 5	6 6 7	8 9 10	11 12 13	15 16 17	20
15	1 1 2	3 4 4	5 6 7	7 8 9	10 11 12	13 14 16	15
N. 10	1 1 2	3 3 4	5 5 6	7 8 8	9 10 11	12 13 14	S. 10
N. 5	1 1 2	2 3 3	4 5 5	6 7 7	8 9 10	11 12 13	S. 5
0	0 1 2	2 3 3	4 4 5	5 6 6	7 8 8	9 10 11	0
S. 5	0 1 1	2 2 3	3 4 4	4 5 6	6 7 7	8 8 9	N. 5
10	0 1 1	1 2 2	3 3 3	4 4 4	5 5 6	6 7 7	10
S. 15	0 1 1	1 1 2	2 2 3	3 3 3	4 4 4	5 5 5	N. 15
20	0 0 1	1 1 1	1 2 2	2 2 2	3 3 3	3 3 4	20
25	0 0 0	0 1 1	1 1 1	1 1 1	1 1 1	2 2 2	25
30	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	30
35	0 0 0	0 0 0	0 0 *I	*I *I *I	*I *I *2	*2 *2 *3	35
S. 40	0 0 0	*I *I *I	*I *I *I	*2 *2 *2	*2 *3 *3	*4 *4 *5	N. 40
45	0 0 *I	*I *I *I	*2 *2 *2	*3 *3 *3	*4 *4 *5	*5 *6 *7	45
50	0 *I *I	*I *2 *2	*2 *3 *3	*4 *4 *5	*5 *6 *6	*7 *8 *9	50
55	*I *I *I	*2 *2 *3	*3 *4 *4	*5 *5 *6	*7 *7 *8	*9 *10 *11	55
S. 60	*I *I *2	*2 *3 *3	*4 *4 *5	*6 *6 *7	*8 *9 *10	*11 *12 *13	N. 60

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 17° , but it may be used for any place of departure between latitudes 15° and 19° . Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between N. 15° and N. 19° , and the one on the right when the place of departure lies between S. 15° and S. 19° .

The direction in which the conversion angle must be applied is determined by the following rules:

Latitude of Departure	Direction of bearing	To convert a Great Circle to a Rhumb Line bearing	To convert a Rhumb Line to a Great Circle bearing
North	Westerly	Subtract	Add
North	Easterly	Add	Subtract
South	Westerly	Add	Subtract
South	Easterly	Subtract	Add

These rules refer to bearings measured from 000° T. in a clockwise direction. Where the figures are given in italics, preceded by an asterisk, the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

N. 20°-24°

II.—CONVERSION ANGLES

S. 20°-24°

t	Year
1941	
1942	
1943	
1944	
1945	
1946	N. 60°
1947	55°
1948	50°
1949	45°
1950	40°
1951	N. 35°
1952	30°
1953	25°
1954	20°
1955	15°
1956	N. 10°
1958	N. 5°
1959	0°
1960	S. 5°
1961	10°
1962	S. 15°
1963	20°
1964	25°
1965	30°
1966	35°
1968	S. 40°
1969	45°
1970	50°
1971	55°
1972	S. 60°
1973	
1974	
1975	
1976	
1977	
1978	
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1980	
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2000	

Latitude of Destina- tion	Change of Longitude						Latitude of Destina- tion
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60°	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	S. 60°
55	I 3 4	5 7 8	10 11 13	14 16 17	19 20 22	24 26 28	55
50	I 3 4	5 6 8	9 10 12	13 15 16	18 19 21	23 25 26	50
45	I 2 4	5 6 7	9 10 11	13 14 16	17 19 20	22 24 26	45
40	I 2 3	5 6 7	8 10 11	12 13 15	16 18 19	21 23 25	40
N. 35	I 2 3	4 6 7	8 9 10	12 13 14	16 17 19	20 22 24	S. 35
30	I 2 3	4 5 6	7 9 10	11 12 13	15 16 18	19 21 22	30
25	I 2 3	4 5 6	7 8 9	10 11 13	14 15 17	18 20 21	25
20	I 2 3	4 5 6	7 8 9	10 11 12	13 14 16	17 18 20	20
15	I 2 3	3 4 5	6 7 8	9 10 11	12 13 15	16 17 19	15
N. 10	I 2 2	3 4 5	6 6 7	8 9 10	11 12 13	15 16 17	S. 10
N. 5	I 1 2	3 4 4	5 6 7	8 8 9	10 11 12	13 14 16	S. 5
0	I 1 2	3 3 4	5 5 6	7 8 8	9 10 11	12 13 14	0
S. 5	I 1 2	2 3 4	4 5 5	6 7 7	8 9 10	11 11 12	N. 5
10	O 1 2	2 3 3	4 4 5	5 6 6	7 8 8	9 10 11	10
S. 15	O 1 1	2 2 3	3 4 4	4 5 5	6 6 7	8 8 9	N. 15
20	O 1 1	1 2 2	3 3 3	4 4 4	5 5 6	6 6 7	20
25	O 1 1	1 1 2	2 2 2	3 3 3	4 4 4	4 5 5	25
30	O 0 1	1 1 1	1 2 2	2 2 2	2 2 2	2 2 3	30
35	O 0 0	O 1 1	I 1 1	I 1 1	I 1 1	I 1 1	35
S. 40	O 0 0	O 0 0	O 0 0	O 0 0	O 0 0	*I *I *I	N. 40
45	O 0 0	O 0 0	*I *I *I	*I *I *I	*I *I *2	*2 *2 *2	*3 *3 *4
50	O 0 0	*I *I	*I *I *I	*I *2 *2	*2 *3 *3	*3 *4 *4	*5 *5 *6
55	O *I *I	*I *I *2	*2 *3 *3	*3 *4 *4	*5 *5 *6	*7 *7 *8	55
S. 60	O *I *I	*2 *2 *2	*3 *3 *4	*4 *5 *6	*6 *7 *8	*9 *10 *11	N. 60

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 22°, but it may be used for any place of departure between latitudes 20° and 24°. Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between N. 20° and N. 24°, and the one on the right when the place of departure lies between S. 20° and S. 24°.

The direction in which the conversion angle must be applied is determined by the following rules :

Latitude of Departure	Direction of bearing	To convert a Great Circle to a Rhumb Line bearing	To convert a Rhumb Line bearing to a Great Circle
North	Westerly	Subtract	Add
North	Easterly	Add	Subtract
South	Westerly	Add	Subtract
South	Easterly	Subtract	Add

These rules refer to bearings measured from 000° T. in a clockwise direction. Where the figures are given in italics, preceded by an asterisk, the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

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OF STARS

18	19	20	f
o	o	o	1941
1	1	1	1942
1	1	1	1943
1	1	1	1944
2	2	2	1945
2	2	2	1946
2	2	2	1947
2	3	3	1948
3	3	3	1949
3	3	3	1950
3	3	4	1951
4	4	4	1952
4	4	4	1953
4	4	5	1954
4	5	5	1955
5	5	5	1956
5	5	6	1957
5	6	6	1958
6	6	6	1959
6	6	7	1960
6	7	7	1961
7	7	7	1962
7	7	8	1963
7	8	8	1964
8	8	8	1965
8	8	9	1966
8	9	9	1967
8	9	9	1968
9	9	10	1969
9	10	10	1970
9	10	10	1971
10	10	11	1972
10	10	11	1973
10	11	11	1974
10	11	12	1975
11	11	12	1976
11	12	12	1977
11	12	13	1978
12	12	13	1979
12	13	13	1980
12	13	14	1981
13	13	14	1982
13	14	14	1983
13	14	15	1984
14	14	15	1985
14	15	15	1986
14	15	16	1987
14	15	16	1988
15	16	16	1989
15	16	17	1990
15	16	17	1991
16	16	17	1992
16	17	18	1993
16	17	18	1994
16	17	18	1995
17	18	19	1996
17	18	19	1997
17	18	19	1998
18	19	20	1999
18	19	20	2000

N. 25°-29°

II.—CONVERSION ANGLES

S. 25°-29°

Latitude of Destina- tion	Change of Longitude						Latitude of Destina- tion
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60°	1 3 4	6 7 9	10 12 13	15 17 18	20 22 24	25 27 29	S. 60°
55	1 3 4	6 7 9	10 12 13	15 16 18	20 21 23	25 27 29	55
50	1 3 4	6 7 8	10 11 13	14 16 18	19 21 23	24 26 28	50
45	1 3 4	5 7 8	9 11 12	14 15 17	19 20 22	24 26 28	45
40	1 3 4	5 6 8	9 11 12	13 15 16	18 20 21	23 25 27	40
N. 35°	1 2 4	5 6 7	9 10 11	13 14 16	17 19 21	22 24 26	S. 35°
30	1 2 4	5 6 7	8 10 11	12 14 15	17 18 20	21 23 25	30
25	1 2 3	4 6 7	8 9 10	12 13 14	16 17 19	20 22 24	25
20	1 2 3	4 5 6	8 9 10	11 12 14	15 16 18	19 21 23	20
15	1 2 3	4 5 6	7 8 9	10 12 13	14 16 17	19 20 22	15
N. 10°	1 2 3	4 5 6	7 8 9	10 11 12	13 15 16	17 19 20	S. 10°
N. 5°	1 2 3	4 4 5	6 7 8	9 10 11	12 14 15	16 17 19	S. 5°
0	1 2 2	3 4 5	6 7 8	8 9 10	11 12 14	15 16 17	0
S. 5°	1 1 2	3 4 4	5 6 7	8 9 9	10 11 12	13 15 16	N. 5°
10	1 1 2	3 3 4	5 5 6	7 8 8	9 10 11	12 13 14	10
S. 15°	1 1 2	2 3 4	4 5 5	6 7 8	8 9 10	11 11 12	N. 15°
20	1 1 2	2 3 3	4 4 5	5 6 6	7 8 8	9 10 10	20
25	0 1 1	2 2 3	3 4 4	4 5 5	6 6 7	7 8 8	25
30	0 1 1	1 2 2	2 3 3	4 4 4	5 5 5	6 6 6	30
35	0 1 1	1 1 2	2 2 2	3 3 3	3 3 4	4 4 4	35
S. 40°	0 0 1	1 1 1	1 1 1	2 2 2	2 2 2	2 2 2	N. 40°
45	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	45
50	0 0 0	0 0 0	0 0 0	*I *I *I	*I *I *I	*I *I *I	50
55	0 0 0	*I *I *I	*I *I *I	*I *I *I	*2 *2 *2	*3 *3 *4	55
S. 60°	0 *I *I	*I *I *I	*2 *2 *3	*3 *4 *4	*5 *5 *6	*6 *7 *8	N. 60°

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 27°, but it may be used for any place of departure between latitudes 25° and 29°. Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between N. 25° and N. 29°, and the one on the right when the place of departure lies between S. 25° and S. 29°.

The direction in which the conversion angle must be applied is determined by the following rules :

Latitude of Departure	Direction of bearing	To convert a Great Circle to a Rhumb Line bearing	To convert a Rhumb Line to a Great Circle bearing
North	Westerly	Subtract	Add
North	Easterly	Add	Subtract
South	Westerly	Add	Subtract
South	Easterly	Subtract	Add

These rules refer to bearings measured from 000° T. in a clockwise direction. Where the figures are given in italics, preceded by an asterisk, the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

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STARS

	t Year
9 20	
0 0	1941
1 1	1942
2 2	1943
3 3	1944
4 4	1945
5 5	1946
6 6	1947
7 7	1948
8 8	1949
9 9	1950
10 10	1951
11 11	1952
12 12	1953
13 13	1954
14 14	1955
15 15	1956
16 16	1957
17 17	1958
18 18	1959
19 19	1960
20 20	1961
21 21	1962
22 22	1963
23 23	1964
24 24	1965
25 25	1966
26 26	1967
27 27	1968
28 28	1969
29 29	1970
30 30	1971
31 31	1972
32 32	1973
33 33	1974
34 34	1975
35 35	1976
36 36	1977
37 37	1978
38 38	1979
39 39	1980
40 40	1981
41 41	1982
42 42	1983
43 43	1984
44 44	1985
45 45	1986
46 46	1987
47 47	1988
48 48	1989
49 49	1990
50 50	1991
51 51	1992
52 52	1993
53 53	1994
54 54	1995
55 55	1996
56 56	1997
57 57	1998
58 58	1999
59 59	2000

N. 30°-34°

II.—CONVERSION ANGLES

S. 30°-34°

1 ACHAR

2

ACRUX

3

ALDEBAN

4

ALPHAZ

5

ALTAIR

6

ANTARES

7

ARCTUS

8

BETELUS

9

CANOPUS

10

CAPELLA

11

DENEK

12

DUBHE

13

FOMALT

14

PEACOCK

15

POLLUX

16

PROCYON

17

REGULUS

18

RIGEL

19

RIENT

20

SIRIUS

21

SPICA

22

Latitude of Destina- tion	Change of Longitude						Latitude of Destina- tion
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60°	○ ○ ○	○ ○ ○	○ ○ ○	○ ○ ○	○ ○ ○	○ ○ ○	S. 60°
	2 3 5	6 8 9	11 13 14	16 18 20	21 23 25	27 29 31	
	55	2 3 5	6 8 9	11 12 14	16 17 19	21 23 25	55
	50	1 3 4	6 8 9	11 12 14	15 17 19	21 22 24	50
	45	1 3 4	6 7 9	10 12 13	15 17 18	20 22 24	45
	40	1 3 4	6 7 9	10 12 13	15 16 18	20 21 23	40
	N. 35°	1 3 4	5 7 8	10 11 13	14 16 17	19 21 23	S. 35°
	30	1 3 4	5 7 8	9 11 12	14 15 17	18 20 22	30
	25	1 3 4	5 6 8	9 10 12	13 15 16	18 19 21	25
	20	1 2 4	5 6 7	9 10 11	13 14 15	17 19 20	20
N. 10°	1 2 3	5 6 7	8 9 11	12 13 15	16 18 19	21 23 24	15
	N. 5°	1 2 3	4 5 7	8 9 10	11 13 14	15 17 18	S. 10°
	0	1 2 3	4 5 6	7 8 10	11 12 13	15 16 17	S. 5°
	S. 5°	1 2 3	4 5 5	6 7 8	9 10 12	13 14 15	N. 5°
	10	1 2 2	3 4 5	6 7 8	9 10 11	12 13 14	10
	S. 15°	1 2 2	3 4 5	5 6 7	8 9 10	11 12 12	N. 15°
	20	1 1 2	3 3 4	5 6 6	7 8 9	9 10 11	20
	25	1 1 2	2 3 4	4 5 6	6 7 8	8 9 10	25
	30	1 1 2	2 3 3	4 4 5	5 6 6	7 7 8	30
	35	0 1 1	2 2 3	3 3 4	4 5 5	6 6 6	35
S. 40°	0 1 1	1 2 2	2 3 3	3 4 4	4 4 5	5 5 5	N. 40°
	45	0 0 1	1 1 1	2 2 2	2 2 2	3 3 3	45
	50	0 0 0	0 1 1	1 1 1	1 1 1	1 1 1	50
	55	0 0 0	0 0 0	0 0 0	0 0 *1	*1 *1 *1	55
	S. 60°	0 0 0	*1 *1 *1	*1 *1 *1	*2 *2 *2	*3 *3 *3	N. 60°

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 32°, but it may be used for any place of departure between latitudes 30° and 34°. Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between N. 30° and N. 34°, and the one on the right when the place of departure lies between S. 30° and S. 34°.

The direction in which the conversion angle must be applied is determined by the following rules :

Latitude of Departure	Direction of bearing	To convert a Great Circle to a Rhumb Line bearing	To convert a Rhumb Line to a Great Circle bearing
North	Westerly	Subtract	Add
North	Easterly	Add	Subtract
South	Westerly	Add	Subtract
South	Easterly	Subtract	Add

These rules refer to bearings measured from 000° T. in a clockwise direction. Where the figures are given in italics, preceded by an asterisk, the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

LATITUDE OF STARS

	16	17	18	19	20	<i>t</i>	Year
0	0	0	0	0	0		1941
0	1	1	1	1	1		1942
1	1	1	1	1	1		1943
1	1	1	1	1	1		1944
1	1	1	2	2	2		1945
2	2	2	2	2	2		1946
2	2	2	2	2	2		1947
2	2	2	2	3	3		1948
2	2	3	3	3	3		1949
2	3	3	3	3	3		1950
3	3	3	3	3	4		1951
3	3	3	4	4	4		1952
3	3	4	4	4	4		1953
4	4	4	4	4	5		1954
4	4	4	4	5	5		1955
4	4	5	5	5	5		1956
4	5	5	5	6	6		1957
4	5	5	6	6	6		1958
5	5	6	6	6	6		1959
5	6	6	6	7			1960
6	6	6	7	7			1961
6	6	7	7	7			1962
6	7	7	7	8			1963
6	7	7	8	8			1964
6	7	8	8	8			1965
7	7	8	8	9			1966
7	8	8	9	9			1967
7	8	8	9	9			1968
7	8	9	9	10			1969
8	8	9	10	10			1970
8	9	9	10	10			1971
8	9	10	10	11			1972
8	9	10	10	11			1973
9	10	10	11	11			1974
9	10	10	11	12			1975
9	10	11	11	12			1976
9	10	11	12	12			1977
10	11	11	12	13			1978
10	11	12	12	13			1979
10	11	12	13	13			1980
11	12	12	13	14			1981
11	12	13	13	14			1982
11	12	13	14	14			1983
11	12	13	14	15			1984
11	12	13	14	15			1985
12	13	14	15	15			1986
13	13	14	15	16			1987
13	14	14	15	16			1988
12	13	14	15	16			1989
13	14	15	16	17			1990
13	14	15	16	17			1991
14	15	16	16	17			1992
13	14	15	16	17			1993
14	15	16	17	18			1994
14	15	16	16	17			1995
15	16	16	17	18			1996
14	16	17	18	19			1997
15	16	17	18	19			1998
15	16	17	18	19			1999
15	16	17	18	20			2000

N. 35°-39°

II.—CONVERSION ANGLES

S. 35°-39°

Latitude of Destination	Change of Longitude						Latitude of Destination
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60°	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	S. 60°
	2 3 5	7 8 10	12 13 15	17 19 21	23 24 26	28 30 33	
	55	2 3 5	7 8 10	12 13 15	17 19 20	22 24 26	55
	50	2 3 5	6 8 10	11 13 15	17 18 20	22 24 26	50
	45	2 3 5	6 8 10	11 13 15	16 18 20	22 24 26	45
	40	2 3 5	6 8 9	11 13 14	16 18 19	21 23 25	40
N. 35°	1 3 4	6 8 9	11 12 14	16 17 19	21 23 25	27 29 31	S. 35°
	30	1 3 4	6 7 9	10 12 13	15 17 18	20 22 24	30
	25	1 3 4	6 7 9	10 12 13	15 16 18	20 21 23	25
	20	1 3 4	5 7 8	10 11 13	14 16 17	19 21 22	20
	15	1 3 4	5 7 8	9 11 12	14 15 17	18 20 22	15
	N. 10°	1 2 4	5 6 8	9 10 12	13 14 16	18 19 21	S. 10°
N. 5°	1 2 4	5 6 7	8 10 11	12 14 15	17 18 20	22 23 25	S. 5°
	0	1 2 3	5 6 7	8 9 11	12 13 14	16 17 19	0
	S. 5°	1 2 3	4 5 6	8 9 10	11 12 14	15 16 18	N. 5°
	10	1 2 3	4 5 6	7 8 9	10 12 13	14 15 17	10
	S. 15°	1 2 3	4 5 6	7 8 9	10 11 12	13 14 15	S. 15°
	20	1 2 3	3 4 5	6 7 8	9 10 11	12 13 14	20
S. 30°	1 2 2	3 4 5	6 6 7	8 9 10	11 12 13	14 15 16	25
	25	1 1 2	3 3 4	5 6 6	7 8 9	9 10 11	30
	30	1 1 2	3 3 4	5 6 6	7 8 9	9 10 11	30
	35	1 1 2	2 3 4	4 5 5	6 7 7	8 9 9	35
	S. 40°	1 1 2	2 3 3	4 4 5	5 6 6	7 7 8	N. 40°
	45	0 1 1	2 2 2	3 3 4	4 4 5	5 5 6	45
S. 50°	0 1 1	1 1 2	2 2 2	2 2 2	3 3 3	3 3 4	50
	55	0 0 0	1 1 1	1 1 1	1 1 1	2 1 1	55
	S. 60°	0 0 0	0 0 0	0 0 0	0 0 0	0 *I *I	N. 60°
						*I *2 *2	

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 37°, but it may be used for any place of departure between latitudes 35° and 39°. Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between N. 35° and N. 39°, and the one on the right when the place of departure lies between S. 35° and S. 39°.

The direction in which the conversion angle must be applied is determined by the following rules:

Latitude of Departure	Direction of bearing	To convert a Great Circle to a Rhumb Line bearing	To convert a Rhumb Line to a Great Circle bearing
North	Westerly	Subtract	Add
North	Easterly	Add	Subtract
South	Westerly	Add	Subtract
South	Easterly	Subtract	Add

These rules refer to bearings measured from 000° T. in a clockwise direction. Where the figures are given in italics, preceded by an asterisk, the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

ACHAR

ACRUX

3 ALDEBAN

4 ALPHAZ

5 ALTAIR

6 ANTARES

7 ARCTUS

8 BETELUS

9 CANOPUS

10 CAPELLA

11 DENEBO

12 DUBHE

13 FOMALT

14 PEACOCK

15 POLLUX

16 PROCYON

17 REGULUS

18 RIGEL

19 RIENET

20 SIRIUS

21 SPICA

22 VEGA

ITUDE OF STARS

16	17	18	19	20	t	Year
0	0	0	0	0	1941	
1	1	1	1	1	1942	
1	1	1	1	1	1943	
1	1	1	1	1	1944	
1	1	2	2	2	1945	
2	2	2	2	2	1946	
2	2	2	2	2	1947	
2	2	2	3	3	1948	
2	3	3	3	3	1949	
3	3	3	3	3	1950	
3	3	3	3	4	1951	
3	3	4	4	4	1952	
3	4	4	4	4	1953	
4	4	4	4	5	1954	
4	4	4	5	5	1955	
4	5	5	5	5	1956	
5	5	5	6		1957	
5	5	5	6		1958	
5	5	6	6		1959	
5	6	6	7		1960	
6	6	7	7		1961	
6	7	7	7		1962	
6	7	7	8		1963	
6	7	8	8		1964	
7	7	8	8		1965	
7	7	8	9		1966	
7	8	9	9		1967	
7	8	9	9		1968	
8	8	9	10		1969	
8	9	10	10		1970	
8	9	9	10		1971	
9	9	10	10		1972	
9	9	10	10		1973	
9	10	10	11		1974	
9	10	10	12		1975	
10	10	11	11		1976	
10	10	11	12		1977	
10	11	11	12		1978	
10	11	12	12		1979	
11	11	12	13		1980	
11	12	12	13		1981	
11	12	13	13		1982	
11	12	13	14		1983	
12	12	13	14		1984	
12	13	14	14		1985	
12	13	14	15		1986	
13	13	14	15		1987	
13	14	14	15		1988	
13	14	15	16		1989	
13	14	15	16		1990	
14	14	15	16		1991	
14	15	16	16		1992	
14	15	16	17		1993	
14	15	16	17		1994	
15	16	16	17		1995	
15	16	17	18		1996	
15	16	17	18		1997	
15	16	17	18		1998	
16	17	18	19		1999	
16	17	18	19		2000	

N. 40°-44°

II.—CONVERSION ANGLES

S. 40°-44°

Latitude of Destina- tion	Change of Longitude						Latitude of Destina- tion
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60°	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	S. 60°
55	2 4 5	7 9 11	12 14 16	18 20 22	24 26 28	30 32 34	55
50	2 3 5	7 9 10	12 14 16	18 20 22	24 26 28	30 32 34	50
45	2 3 5	7 9 10	12 14 16	18 19 21	23 25 27	30 32 34	45
40	2 3 5	7 8 10	12 14 15	17 19 21	23 25 27	29 31 34	40
N. 35°	2 3 5	7 8 10	12 13 15	17 19 21	23 25 27	29 31 33	S. 35°
30	2 3 5	6 8 10	11 13 15	16 18 20	22 24 26	28 30 33	30
25	2 3 5	6 8 9	11 13 14	16 18 20	22 23 25	28 30 32	25
20	2 3 5	6 8 9	11 12 14	16 17 19	21 23 25	27 29 31	20
15	1 3 4	6 7 9	10 12 14	15 17 19	20 22 24	26 28 30	15
N. 10°	1 3 4	6 7 9	10 12 13	15 16 18	20 21 23	25 27 29	S. 10°
N. 5°	1 3 4	5 7 8	10 11 13	14 16 17	19 21 22	24 26 28	S. 5°
0	1 3 4	5 7 8	9 11 12	14 15 17	18 20 22	23 25 27	0
S. 5°	1 2 4	5 6 8	9 10 12	13 14 16	17 19 21	22 24 26	N. 5°
10	1 2 4	5 6 7	8 10 11	12 14 15	16 18 19	21 23 25	10
S. 15°	1 2 3	4 6 7	8 9 10	12 13 14	15 17 18	20 21 23	N. 15°
20	1 2 3	4 5 6	7 8 10	11 12 13	14 16 17	18 20 21	20
25	1 2 3	4 5 6	7 8 9	10 11 12	13 14 16	17 18 20	25
30	1 2 3	4 4 5	6 7 8	9 10 11	12 13 14	15 16 18	30
35	1 2 2	3 4 5	6 6 7	8 9 10	11 12 12	13 14 15	35
S. 40°	1 1 2	3 3 4	5 6 6	7 8 8	9 10 11	11 12 13	N. 40°
45	1 1 2	2 3 4	4 5 5	6 6 7	8 8 9	9 10 10	45
50	0 1 1	2 2 3	3 4 4	5 5 5	6 6 7	7 7 8	50
55	0 1 1	1 2 2	2 3 3	3 4 4	4 4 4	4 5 5	55
S. 60°	0 0 1	1 1 1	1 2 2	2 2 2	2 2 2	2 2 2	N. 60°

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 42°, but it may be used for any place of departure between latitudes 40° and 44°. Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between N. 40° and N. 44°, and the one on the right when the place of departure lies between S. 40° and S. 44°.

The direction in which the conversion angle must be applied is determined by the following rules :

Latitude of Departure	Direction of bearing	To convert a Great Circle bearing to a Rhumb Line bearing
North	Westerly	Subtract
North	Easterly	Add
South	Westerly	Add
South	Easterly	Subtract

These rules refer to bearings measured from 000° T. in a clockwise direction. To convert Rhumb Line bearings to Great Circle bearings the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

ALTITUDE OF STARS

	16	17	18	19	20	<i>t</i>	Year
0	0	0	0	0	0	1941	
0	1	1	1	1	1	1942	
1	1	1	1	1	1	1943	
1	1	1	1	1	1	1944	
1	1	1	2	2	2	1945	
2	2	2	2	2	2	1946	
2	2	2	2	2	2	1947	
2	2	2	2	3	3	1948	
2	2	3	3	3	3	1949	
2	3	3	3	3	3	1950	
3	3	3	3	3	4	1951	
3	3	3	4	4	4	1952	
3	3	4	4	4	4	1953	
4	4	4	4	4	5	1954	
4	4	4	4	5	5	1955	
4	4	5	5	5	5	1956	
4	5	5	5	5	6	1957	
4	5	5	5	6	6	1958	
5	5	6	6	6	6	1959	
5	5	6	6	6	7	1960	
5	6	6	7	7	7	1961	
6	6	7	7	7	7	1962	
6	7	7	7	8	8	1963	
6	7	7	8	8	8	1964	
6	7	8	8	8	8	1965	
6	7	7	8	8	9	1966	
7	7	8	8	9	9	1967	
7	8	8	9	9	9	1968	
7	8	9	9	10	10	1969	
8	8	9	10	10	10	1970	
8	9	9	10	10	10	1971	
8	9	9	10	10	11	1972	
8	9	10	10	11	11	1973	
8	10	10	11	11	11	1974	
9	10	10	11	12	12	1975	
9	10	11	11	12	12	1976	
9	10	11	12	12	12	1977	
10	11	11	12	13	13	1978	
10	11	12	12	13	13	1979	
10	11	12	13	13	13	1980	
10	11	12	13	14	14	1981	
10	11	12	13	14	14	1982	
11	12	13	14	14	14	1983	
11	12	13	14	15	1984		
11	12	13	14	14	15	1985	
12	12	13	14	15	15	1986	
12	13	13	14	15	16	1987	
12	13	14	14	15	16	1988	
12	13	14	15	16	16	1989	
12	13	14	15	16	17	1990	
13	14	14	15	16	17	1991	
13	14	15	16	16	17	1992	
13	14	15	16	17	18	1993	
13	14	15	16	17	18	1994	
13	14	15	16	17	18	1995	
13	14	15	16	17	18	1996	
13	15	16	17	18	19	1997	
14	15	16	17	18	19	1998	
14	16	17	18	19	20	1999	
14	16	17	18	19	20	2000	

N. 45°-49°

II.—CONVERSION ANGLES

S. 45°-49°

Latitude of Destina- tion	Change of Longitude						Latitude of Destina- tion
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60°	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	S. 60°
55	2 4 6	7 9 11	13 15 17	19 21 23	25 27 29	32 34 36	55
50	2 4 6	7 9 11	13 15 17	19 21 23	25 27 29	32 34 36	50
45	2 4 5	7 9 11	13 15 17	19 21 23	25 27 29	31 34 36	45
40	2 4 5	7 9 11	13 15 17	19 21 23	25 27 29	31 34 36	40
N. 35°	2 4 5	7 9 11	13 14 16	18 20 22	24 26 29	31 33 36	S. 35°
30	2 3 5	7 9 11	12 14 16	18 20 22	24 26 28	30 33 35	30
25	2 3 5	7 9 10	12 14 16	18 20 22	24 26 28	30 32 35	25
20	2 3 5	7 8 10	12 14 15	17 19 21	23 25 27	29 32 34	20
15	2 3 5	6 8 10	12 13 15	17 19 21	23 25 27	29 31 33	15
N. 10°	2 3 5	6 8 10	11 13 15	16 18 20	22 24 26	28 30 33	S. 10°
N. 5°	2 3 5	6 8 9	11 12 14	16 18 19	21 23 25	27 29 32	S. 5°
0	1 3 4	6 7 9	10 12 14	15 17 19	21 22 24	26 28 31	0
S. 5°	1 3 4	6 7 9	10 12 13	15 16 18	20 22 23	25 27 30	N. 5°
10	1 3 4	5 7 8	10 11 13	14 16 17	19 21 22	24 26 28	10
S. 15°	1 3 4	5 7 8	9 11 12	13 15 16	18 20 21	23 25 27	N. 15°
20	1 2 4	5 6 7	9 10 11	13 14 16	17 19 20	22 24 25	20
25	1 2 3	5 6 7	8 9 11	12 13 15	16 17 19	20 22 24	25
30	1 2 3	4 5 6	8 9 10	11 12 13	15 16 17	19 20 22	30
35	1 2 3	4 5 6	7 8 9	10 11 12	13 15 16	17 18 20	35
S. 40°	1 2 3	4 4 5	6 7 8	9 10 11	12 13 14	15 16 17	N. 40°
45	1 2 2	3 4 5	6 6 7	8 9 10	10 11 12	13 14 15	45
50	1 1 2	3 3 4	5 5 6	7 7 8	9 9 10	11 11 12	50
55	1 1 2	2 3 3	4 4 5	5 6 6	7 7 8	8 8 9	55
S. 60°	0 1 1	2 2 2	3 3 3	4 4 4	5 5 5	5 5 5	N. 60°

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 47°, but it may be used for any place of departure between latitudes 45° and 49°. Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between N. 45° and N. 49°, and the one on the right when the place of departure lies between S. 45° and S. 49°.

The direction in which the conversion angle must be applied is determined by the following rules:

Latitude of Departure	Direction of bearing	To convert a Great Circle bearing to a Rhumb Line bearing
North	Westerly	Subtract
North	Easterly	Add
South	Westerly	Add
South	Easterly	Subtract

These rules refer to bearings measured from 000° T. in a clockwise direction. To convert Rhumb Line bearings to Great Circle bearings the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

LATITUDE OF STARS

	16	17	18	19	20	<i>t</i>	Year
0	0	0	0	0	0		1941
0	1	1	1	1	1		1942
1	1	1	1	1	1		1943
1	1	1	1	1	1		1944
1	1	1	2	2	2		1945
2	2	2	2	2	2		1946
2	2	2	2	2	2		1947
2	2	2	2	3	3		1948
2	2	3	3	3	3		1949
2	3	3	3	3	3		1950
3	3	3	3	3	4		1951
3	3	3	4	4	4		1952
3	3	4	4	4	4		1953
4	4	4	4	4	5		1954
4	4	4	4	5	5		1955
4	4	5	5	5	5		1956
4	5	5	5	5	6		1957
4	5	5	5	6	6		1958
5	5	6	6	6	6		1959
5	6	6	6	7			1960
6	6	6	7	7			1961
6	6	7	7	7			1962
6	7	7	7	8			1963
6	7	7	8	8			1964
6	7	8	8	8			1965
6	7	8	8	9			1966
7	7	8	9	9			1967
7	8	8	9	9			1968
7	8	9	9	10			1969
8	8	9	10	10			1970
8	9	9	10	10			1971
8	9	10	10	11			1972
8	9	10	10	11			1973
9	10	10	11	11			1974
9	10	10	11	12			1975
9	10	11	11	12			1976
9	10	11	12	12			1977
0	10	11	12	13			1978
0	10	11	12	13			1979
0	11	12	13	13			1980
0	11	12	13	14			1981
0	11	12	13	14			1982
1	11	12	13	14			1983
1	12	13	14	14			1984
1	12	13	14	14	15		1985
2	12	13	14	15	15		1986
2	13	13	14	15	16		1987
2	13	14	14	15	16		1988
2	13	14	15	16	16		1989
2	13	14	15	16	17		1990
3	14	14	15	16	17		1991
3	14	15	16	16	17		1992
3	14	15	16	17	18		1993
4	14	15	16	17	18		1994
4	15	16	16	17	18		1995
4	15	16	17	18	19		1996
4	15	16	17	18	19		1997
4	15	16	17	18	19		1998
5	16	17	18	19	20		1999
5	16	17	18	19	20		2000

N. 50°-54°

II.—CONVERSION ANGLES

S. 50°-54°

Latitude of Destination	Change of Longitude						Latitude of Destination
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60°	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	S. 60°
55	2 4 6	8 10 12	14 16 18	20 22 24	27 29 31	33 35 38	55
50	2 4 5	8 10 12	14 16 18	20 22 24	27 29 31	33 36 38	50
45	2 4 6	8 10 12	14 16 18	20 22 24	27 29 31	33 36 38	45
40	2 4 6	8 10 12	14 16 18	20 22 24	26 29 31	33 36 38	40
N. 35°	2 4 6	8 10 12	14 16 18	20 22 24	26 28 31	33 36 38	S. 35°
30	2 4 6	8 10 11	13 15 17	19 22 24	26 28 30	33 35 38	30
25	2 4 6	7 9 11	13 15 17	19 21 23	26 28 30	32 35 37	25
20	2 4 5	7 9 11	13 15 17	19 21 23	25 27 30	32 34 37	20
15	2 4 5	7 9 11	13 15 17	19 21 23	25 27 29	31 34 36	15
N. 10°	2 3 5	7 9 11	12 14 16	18 20 22	24 26 29	31 33 36	S. 10°
N. 5°	2 3 5	7 9 10	12 14 16	18 20 22	24 26 28	30 33 35	S. 5°
0	2 3 5	7 8 10	12 14 15	17 19 21	23 25 27	29 32 34	0
S. 5°	2 3 5	6 8 10	11 13 15	17 19 20	22 24 26	29 31 33	N. 5°
10	2 3 5	6 8 9	11 13 14	16 18 20	22 24 26	28 30 32	10
S. 15°	2 3 4	6 8 9	11 12 14	16 17 19	21 23 25	27 29 31	N. 15°
20	1 3 4	6 7 9	10 12 13	15 16 18	20 22 23	25 27 30	20
25	1 3 4	5 7 8	10 11 13	14 16 17	19 21 22	24 26 28	25
30	1 3 4	5 6 8	9 10 12	13 15 16	18 19 21	23 24 26	30
35	1 2 4	5 6 7	8 10 11	12 14 15	16 18 19	21 23 24	35
S. 40°	1 2 3	4 6 7	8 9 10	11 13 14	15 16 18	19 21 22	N. 40°
45	1 2 3	4 5 6	7 8 9	10 11 12	13 15 16	17 18 19	45
50°	1 2 3	4 4 5	6 7 8	9 10 11	12 13 14	15 16 17	50
55	1 2 2	3 4 4	5 6 7	7 8 9	10 10 11	12 13 13	55
S. 60°	1 1 2	2 3 4	4 5 5	6 6 7	7 8 8	9 9 10	N. 60°

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a Latitude of Departure of 52°, but it may be used for any place of departure between latitudes 50° and 54°. Of the two argument columns headed Latitude of Destination, the one on the left is to be used when the place of departure lies between N. 50° and N. 54°, and the one on the right when the place of departure lies between S. 50° and S. 54°.

The direction in which the conversion angle must be applied is determined by the following rules:

Latitude of Departure	Direction of bearing	To convert a Great Circle bearing to a Rhumb Line bearing
North	Westerly	Subtract
North	Easterly	Add
South	Westerly	Add
South	Easterly	Subtract

These rules refer to bearings measured from 000° T. in a clockwise direction. To convert Rhumb Line bearings to Great Circle bearings the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

N. 55°-59°

II.—CONVERSION ANGLES

S. 55°-59°

E OF STARS

17	18	19	20	21
0	0	0	0	1941
1	1	1	1	1942
2	2	2	2	1943
3	3	3	3	1944
4	4	4	4	1945
5	5	5	5	1946
6	6	6	6	1947
7	7	7	7	1948
8	8	8	8	1949
9	9	9	9	1950
10	10	10	10	1951
11	11	11	11	1952
12	12	12	12	1953
13	13	13	13	1954
14	14	14	14	1955
15	15	15	15	1956
16	16	16	16	1957
17	17	17	17	1958
18	18	18	18	1959
19	19	19	19	1960
20	20	20	20	1961
21	21	21	21	1962
22	22	22	22	1963
23	23	23	23	1964
24	24	24	24	1965
25	25	25	25	1966
26	26	26	26	1967
27	27	27	27	1968
28	28	28	28	1969
29	29	29	29	1970
30	30	30	30	1971
31	31	31	31	1972
32	32	32	32	1973
33	33	33	33	1974
34	34	34	34	1975
35	35	35	35	1976
36	36	36	36	1977
37	37	37	37	1978
38	38	38	38	1979
39	39	39	39	1980
40	40	40	40	1981
41	41	41	41	1982
42	42	42	42	1983
43	43	43	43	1984
44	44	44	44	1985
45	45	45	45	1986
46	46	46	46	1987
47	47	47	47	1988
48	48	48	48	1989
49	49	49	49	1990
50	50	50	50	1991
51	51	51	51	1992
52	52	52	52	1993
53	53	53	53	1994
54	54	54	54	1995
55	55	55	55	1996
56	56	56	56	1997
57	57	57	57	1998
58	58	58	58	1999
59	59	59	59	2000

Latitude of Destina- tion	Change of Longitude						Latitude of Destina- tion
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60°	° ° °	° ° °	° ° °	° ° °	° ° °	° ° °	S. 60°
55	2 4 6	8 10 13	15 17 19	21 23 26	28 30 33	35 37 40	55
50	2 4 6	8 11 13	15 17 19	21 24 26	28 31 33	35 38 40	50
45	2 4 6	8 11 13	15 17 19	21 24 26	28 31 33	36 38 41	45
40	2 4 6	8 10 13	15 17 19	21 24 26	28 31 33	36 38 41	40
N. 35°	2 4 6	8 10 13	15 17 19	21 23 26	28 31 33	35 38 41	S. 35°
30	2 4 6	8 10 12	15 17 19	21 23 26	28 30 33	35 38 40	30
25	2 4 6	8 10 12	14 16 19	21 23 25	28 30 33	35 38 40	25
20	2 4 6	8 10 12	14 16 18	21 23 25	27 30 32	35 37 40	20
15	2 4 6	8 10 12	14 16 18	20 23 25	27 29 32	34 37 40	15
N. 10°	2 4 6	8 10 12	14 16 18	20 22 24	27 29 31	34 36 39	S. 10°
N. 5°	2 4 6	8 10 12	13 16 18	20 22 24	26 28 31	33 36 38	S. 5°
0	2 4 6	7 9 11	13 15 17	19 21 23	26 28 30	33 35 38	0
S. 5°	2 4 5	7 9 11	13 15 17	19 21 23	25 27 30	32 34 37	N. 5°
10	2 4 5	7 9 11	13 14 16	18 20 22	24 27 29	31 34 36	10
S. 15°	2 3 5	7 9 10	12 14 16	18 20 22	24 26 28	30 33 35	N. 15°
20	2 3 5	7 8 10	12 13 15	17 19 21	23 25 27	29 31 34	20
25	2 3 5	6 8 10	11 13 15	16 18 20	22 24 26	28 30 32	25
30	2 3 5	6 8 9	11 12 14	16 17 19	21 23 25	27 29 31	30
35	1 3 4	6 7 9	10 12 13	15 16 18	20 21 23	25 27 29	35
S. 40°	1 3 4	5 7 8	9 11 12	14 15 17	18 20 22	23 25 27	N. 40°
45	1 2 4	5 6 7	9 10 11	13 14 15	17 18 20	21 23 25	45
50	1 2 3	4 6 7	8 9 10	11 13 14	15 16 18	19 20 22	50
55	1 2 3	4 5 6	7 8 9	10 11 12	13 14 15	16 17 19	55
S. 60°	1 2 2	3 4 5	6 7 7	8 9 10	11 12 12	13 14 15	N. 60°

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 57°, but it may be used for any place of departure between latitudes 55° and 59°. Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between N. 55° and N. 59°, and the one on the right when the place of departure lies between S. 55° and S. 59°.

The direction in which the conversion angle must be applied is determined by the following rules :

Latitude of Departure	Direction of bearing	To convert a Great Circle bearing to a Rhumb Line bearing
North	Westerly	Subtract
North	Easterly	Add
South	Westerly	Add
South	Easterly	Subtract

These rules refer to bearings measured from 000° T. in a clockwise direction. To convert Rhumb Line bearings to Great Circle bearings the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

LITUDE OF STARS

6	17	18	19	20	f Year
0	0	0	0	0	1941
1	1	1	1	1	1942
1	1	1	1	1	1943
1	1	1	1	1	1944
1	2	2	2	2	1945
2	2	2	2	2	1946
2	2	2	2	2	1947
2	2	2	3	3	1948
2	3	3	3	3	1949
3	3	3	3	3	1950
3	3	3	3	4	1951
3	3	4	4	4	1952
3	4	4	4	4	1953
4	4	4	4	5	1954
4	4	4	5	5	1955
4	5	5	5	5	1956
5	5	5	6	6	1957
5	5	5	6	6	1958
5	5	6	6	6	1959
5	6	6	6	7	1960
6	6	6	7	7	1961
6	6	7	7	7	1962
6	7	7	8	8	1963
6	7	7	8	8	1964
7	7	8	8	8	1965
7	7	8	9	9	1966
7	8	8	9	9	1967
7	8	9	9	9	1968
8	8	9	10	10	1969
8	8	9	10	10	1970
8	9	9	10	10	1971
9	9	10	10	11	1972
9	9	10	10	11	1973
9	10	10	11	11	1974
9	10	10	11	12	1975
0	10	11	11	12	1976
0	10	11	12	12	1977
0	11	11	12	13	1978
0	11	12	12	13	1979
1	12	12	13	13	1980
1	12	12	13	14	1981
1	12	13	13	14	1982
1	12	13	14	14	1983
2	12	13	14	15	1984
2	13	14	14	15	1985
2	13	14	15	15	1986
3	13	14	15	16	1987
3	14	14	15	16	1988
3	14	15	16	16	1989
3	14	15	16	17	1990
4	14	15	16	17	1991
4	15	16	16	17	1992
4	15	16	17	18	1993
4	15	16	17	18	1994
5	16	16	17	18	1995
5	16	17	18	19	1996
5	16	17	18	19	1997
5	16	17	18	19	1998
6	17	18	19	20	1999
6	17	18	19	20	2000

N. 60°-64°

II.—CONVERSION ANGLES

S. 60°-64°

Latitude of Destina- tion	Change of Longitude						Latitude of Destina- tion
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60	2 4 7	9 11 13	16 18 20	22 25 27	30 32 34	37 39 42	S. 60
55	2 4 7	9 11 13	16 18 20	23 25 27	30 32 35	37 40 42	55
50	2 4 7	9 11 14	16 18 20	23 25 28	30 33 35	38 40 43	50
45	2 4 7	9 11 14	16 18 21	23 25 28	30 33 35	38 40 43	45
40	2 4 7	9 11 14	16 18 21	23 25 28	30 33 35	38 41 43	40
N. 35	2 4 7	9 11 14	16 18 20	23 25 28	30 33 35	38 41 43	S. 35
30	2 4 7	9 11 13	16 18 20	23 25 28	30 33 35	38 41 43	30
25	2 4 7	9 11 13	16 18 20	23 25 27	30 32 35	38 40 43	25
20	2 4 7	9 11 13	15 18 20	22 25 27	30 32 35	38 40 43	20
15	2 4 6	9 11 13	15 18 20	22 25 27	29 32 35	37 40 43	15
N. 10	2 4 6	9 11 13	15 17 20	22 24 27	29 32 34	37 40 42	S. 10
N. 5	2 4 6	8 11 13	15 17 19	22 24 26	29 31 34	36 39 42	S. 5
0	2 4 6	8 10 13	15 17 19	21 24 26	28 31 33	36 39 41	0
S. 5	2 4 6	8 10 12	14 17 19	21 23 26	28 30 33	35 38 41	N. 5
10	2 4 6	8 10 12	14 16 18	21 23 25	27 30 32	35 37 40	10
S. 15	2 4 6	8 10 12	14 16 18	20 22 24	27 29 32	34 37 39	N. 15
20	2 4 6	8 9 11	13 15 17	19 22 24	26 28 31	33 36 38	20
25	2 4 5	7 9 11	13 15 17	19 21 23	25 27 30	32 35 37	25
30	2 4 5	7 9 11	12 14 16	18 20 22	24 26 29	31 33 36	30
35	2 3 5	7 8 10	12 14 16	17 19 21	23 25 27	30 32 34	35
S. 40	2 3 5	6 8 10	11 13 15	16 18 20	22 24 26	28 30 32	N. 40
45	2 3 4	6 8 9	11 12 14	15 17 19	21 22 24	26 28 30	45
50	1 3 4	6 7 8	10 11 13	14 16 17	19 21 22	24 26 28	50
55	1 2 4	5 6 8	9 10 11	13 14 16	17 18 20	21 23 24	55
S. 60	1 2 3	4 6 7	8 9 10	11 12 13	15 16 17	18 19 21	N. 60

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 62°, but it may be used for any place of departure between latitudes 60° and 64°. Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between N. 60° and N. 64°, and the one on the right when the place of departure lies between S. 60° and S. 64°.

The direction in which the conversion angle must be applied is determined by the following rules:

Latitude of Departure	Direction of bearing	To convert a Great Circle bearing to a Rhumb Line bearing
North	Westerly	Subtract
North	Easterly	Add
South	Westerly	Add
South	Easterly	Subtract

These rules refer to bearings measured from 000° T. in a clockwise direction. To convert Rhumb Line bearings to Great Circle bearings the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.

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NL. 65°-69°

II.—CONVERSION ANGLES

S. 65°-69°

Latitude of Destination	Change of Longitude						Latitude of Destination
	5° 10° 15°	20° 25° 30°	35° 40° 45°	50° 55° 60°	65° 70° 75°	80° 85° 90°	
N. 60°	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	S. 60°
55	2 5 7	9 12 14	17 19 21	24 26 29	31 34 36	39 41 44	
50	2 5 7	10 12 14	17 19 22	24 27 29	32 34 37	39 42 45	55
45	2 5 7	10 12 15	17 19 22	24 27 30	32 35 37	40 43 45	50
40	2 5 7	10 12 15	17 20 22	25 27 30	32 35 38	40 43 46	45
N. 35	2 5 7	10 12 15	17 20 22	25 27 30	32 35 38	41 43 46	S. 35
30	2 5 7	10 12 15	17 19 22	25 27 30	32 35 38	41 43 46	30
25	2 5 7	10 12 14	17 19 22	24 27 30	32 35 38	41 43 46	25
20	2 5 7	10 12 14	17 19 22	24 27 30	32 35 38	40 43 46	20
15	2 5 7	9 12 14	17 19 22	24 27 29	32 35 38	40 43 46	15
N. 10	2 5 7	9 12 14	17 19 22	24 27 29	32 35 37	40 43 46	S. 10
N. 5	2 5 7	9 12 14	16 19 21	24 26 29	32 34 37	40 43 46	S. 5
0	2 5 7	9 12 14	16 19 21	24 26 29	31 34 37	40 42 45	0
S. 5	2 5 7	9 11 14	16 18 21	23 26 28	31 34 36	39 42 45	N. 5
10	2 4 7	9 11 14	16 18 21	23 25 28	30 33 36	39 41 44	10
S. 15	2 4 7	9 11 13	16 18 20	23 25 27	30 33 35	38 41 44	N. 15
20	2 4 6	9 11 13	15 17 20	22 24 27	29 32 35	37 40 43	20
25	2 4 6	8 11 13	15 17 19	22 24 26	29 31 34	36 39 42	25
30	2 4 6	8 10 12	14 17 19	21 23 26	28 30 33	36 38 41	30
35	2 4 6	8 10 12	14 16 18	20 22 25	27 29 32	34 37 40	35
S. 40	2 4 6	8 9 11	13 15 17	19 22 24	26 28 31	33 36 38	N. 40
45	2 4 5	7 9 11	13 15 17	19 21 23	25 27 29	31 34 36	45
50	2 3 5	7 8 10	12 14 16	17 19 21	23 25 27	29 32 34	50
55	2 3 5	6 8 9	11 13 14	16 18 20	21 23 25	27 29 31	55
S. 60	1 3 4	6 7 9	10 11 13	14 16 18	19 21 22	24 26 28	N. 60

The table gives the angle necessary to convert a Great Circle bearing to a Rhumb Line bearing and the reverse in a *Latitude of Departure* of 67° , but it may be used for any place of departure between latitudes 65° and 69° . Of the two argument columns headed *Latitude of Destination*, the one on the left is to be used when the place of departure lies between N. 65° and N. 69° , and the one on the right when the place of departure lies between S. 65° and S. 69° .

The direction in which the conversion angle must be applied is determined by the following rules :

Latitude of Departure	Direction of bearing	To convert a Great Circle bearing to a Rhumb Line bearing
North	Westerly	Subtract
North	Easterly	Add
South	Westerly	Add
South	Easterly	Subtract

These rules refer to bearings measured from 000° T. in a clockwise direction. To convert Rhumb Line bearings to Great Circle bearings the conversion angle must be applied in the reverse sense.

The conversion angle at the place of destination may be taken as equal to that at the place of departure for distances up to 1,000 miles; for much greater distances, the corresponding table in the volume appropriate to the latitude of destination should be used, the places of destination and departure being interchanged.