

## CORRECTION FOR PRECESSION AND NUTATION

LHA Υ	North latitudes						0°	South latitudes						LHA Υ
	N 80°	N 70°	N 60°	N 50°	N 40°	N 20°		S 20°	S 40°	S 50°	S 60°	S 70°	S 80°	
<b>2007</b>														
0	0.9 014	1.0 033	1.3 046	1.5 054	1.7 059	2.0 065	2.2 067	2.1 066	1.9 062	1.7 058	1.4 052	1.2 043	1.0 029	0
30	1.1 039	1.3 050	1.5 057	1.8 062	1.9 065	2.2 068	2.2 068	2.0 065	1.6 058	1.3 052	1.1 041	0.9 025	0.8 002	30
60	1.2 062	1.5 068	1.7 071	1.9 073	2.1 074	2.2 075	2.1 075	1.8 072	1.2 063	0.9 054	0.7 036	0.6 004	0.6 329	60
90	1.2 084	1.5 085	1.8 086	2.0 086	2.1 086	2.2 087	2.0 086	1.6 085	1.0 082	0.6 078	0.3 062	0.2 315	0.5 285	90
120	1.2 106	1.5 102	1.8 101	2.0 099	2.1 099	2.2 098	2.0 099	1.6 101	1.1 108	0.7 116	0.4 138	0.3 195	0.6 235	120
150	1.1 128	1.4 120	1.6 115	1.9 112	2.0 110	2.2 108	2.1 109	1.8 112	1.4 120	1.1 128	0.9 143	0.7 166	0.7 196	150
180	1.0 151	1.2 137	1.4 128	1.7 122	1.9 118	2.1 114	2.2 113	2.0 115	1.7 121	1.5 126	1.3 134	1.0 147	0.9 166	180
210	0.8 178	0.9 155	1.1 139	1.3 128	1.6 122	2.0 115	2.2 112	2.2 112	1.9 115	1.8 118	1.5 123	1.3 130	1.1 141	210
240	0.6 211	0.6 176	0.7 144	0.9 126	1.2 117	1.8 108	2.1 105	2.2 105	2.1 106	1.9 107	1.7 109	1.5 112	1.2 118	240
270	0.5 255	0.2 225	0.3 118	0.6 102	1.0 098	1.6 095	2.0 094	2.2 093	2.1 094	2.0 094	1.8 094	1.5 095	1.2 096	270
300	0.6 305	0.3 345	0.4 042	0.7 064	1.1 072	1.6 079	2.0 081	2.2 082	2.1 081	2.0 081	1.8 079	1.5 078	1.2 074	300
330	0.7 344	0.7 014	0.9 037	1.1 052	1.4 060	1.8 068	2.1 071	2.2 072	2.0 070	1.9 068	1.6 065	1.4 060	1.1 052	330
360	0.9 014	1.0 033	1.3 046	1.5 054	1.7 059	2.0 065	2.2 067	2.1 066	1.9 062	1.7 058	1.4 052	1.2 043	1.0 029	360
<b>2008</b>														
0	1.3 017	1.5 035	1.8 047	2.2 055	2.5 060	2.9 065	3.1 067	3.0 065	2.6 061	2.3 057	2.0 051	1.6 041	1.4 026	0
30	1.5 042	1.9 053	2.2 059	2.5 063	2.8 066	3.1 069	3.1 068	2.8 066	2.2 059	1.8 052	1.5 041	1.2 023	1.1 359	30
60	1.7 065	2.1 070	2.4 073	2.7 075	2.9 076	3.1 077	2.9 076	2.4 073	1.7 065	1.3 056	0.9 037	0.7 001	0.9 325	60
90	1.7 086	2.1 087	2.5 088	2.8 088	3.0 088	3.1 088	2.9 088	2.3 087	1.4 086	0.9 083	0.4 073	0.2 300	0.7 278	90
120	1.7 108	2.1 105	2.5 102	2.8 101	3.0 100	3.1 100	2.9 100	2.4 103	1.6 110	1.1 119	0.7 139	0.5 189	0.8 229	120
150	1.6 130	1.9 122	2.3 117	2.6 113	2.8 111	3.1 109	3.0 110	2.6 113	2.0 121	1.6 128	1.3 142	1.1 163	1.0 191	150
180	1.4 154	1.6 139	2.0 129	2.3 123	2.6 119	3.0 115	3.1 113	2.9 115	2.5 120	2.2 125	1.8 133	1.5 145	1.3 163	180
210	1.1 181	1.2 157	1.5 139	1.8 128	2.2 121	2.8 114	3.1 112	3.1 111	2.8 114	2.5 117	2.2 121	1.9 127	1.5 138	210
240	0.9 215	0.7 179	0.9 143	1.3 124	1.7 115	2.4 107	2.9 104	3.1 103	2.9 104	2.7 105	2.4 107	2.1 110	1.7 115	240
270	0.7 262	0.2 240	0.4 107	0.9 097	1.4 094	2.3 093	2.9 092	3.1 092	3.0 092	2.8 092	2.5 092	2.1 093	1.7 094	270
300	0.8 311	0.5 351	0.7 041	1.1 061	1.6 070	2.4 077	2.9 080	3.1 080	3.0 080	2.8 079	2.5 078	2.1 075	1.7 072	300
330	1.0 349	1.1 017	1.3 038	1.6 052	2.0 059	2.6 067	3.0 070	3.1 071	2.8 069	2.6 067	2.3 063	1.9 058	1.6 050	330
360	1.3 017	1.5 035	1.8 047	2.2 055	2.5 060	2.9 065	3.1 067	3.0 065	2.6 061	2.3 057	2.0 051	1.6 041	1.4 026	360
<b>2009</b>														
0	1.7 020	2.0 037	2.4 048	2.8 055	3.2 060	3.8 065	4.0 067	3.8 065	3.3 061	2.9 057	2.5 050	2.1 040	1.8 024	0
30	2.0 044	2.4 054	2.9 060	3.3 064	3.6 067	4.0 069	4.0 069	3.5 066	2.7 059	2.3 052	1.9 040	1.5 022	1.4 357	30
60	2.2 066	2.7 071	3.1 074	3.5 076	3.8 077	4.0 078	3.8 077	3.1 074	2.1 066	1.6 057	1.1 038	0.9 359	1.1 321	60
90	2.2 088	2.8 089	3.2 089	3.6 089	3.9 089	4.0 089	3.7 089	2.9 089	1.8 088	1.1 086	0.5 081	0.3 286	0.9 274	90
120	2.2 110	2.7 106	3.2 104	3.5 102	3.8 101	4.0 101	3.8 101	3.1 104	2.0 111	1.5 120	1.0 140	0.7 186	1.1 226	120
150	2.0 132	2.5 123	2.9 118	3.3 114	3.6 112	4.0 110	3.9 110	3.4 113	2.6 121	2.2 128	1.7 141	1.4 162	1.4 189	150
180	1.8 156	2.1 140	2.5 130	2.9 123	3.3 119	3.8 115	4.0 113	3.8 115	3.2 120	2.8 125	2.4 132	2.0 143	1.7 160	180
210	1.4 183	1.5 158	1.9 140	2.3 128	2.7 121	3.5 114	4.0 111	4.0 111	3.6 113	3.3 116	2.9 120	2.4 126	2.0 136	210
240	1.1 219	0.9 181	1.1 142	1.6 123	2.1 114	3.1 106	3.8 103	4.0 102	3.8 103	3.5 104	3.1 106	2.7 109	2.2 114	240
270	0.9 266	0.3 254	0.5 099	1.1 094	1.8 092	2.9 091	3.7 091	4.0 091	3.9 091	3.6 091	3.2 091	2.8 091	2.2 092	270
300	1.1 314	0.7 354	1.0 040	1.5 060	2.0 069	3.1 076	3.8 079	4.0 079	3.8 079	3.5 078	3.2 076	2.7 074	2.2 070	300
330	1.4 351	1.4 018	1.7 039	2.2 052	2.6 059	3.4 067	3.9 070	4.0 070	3.6 068	3.3 066	2.9 062	2.5 057	2.0 048	330
360	1.7 020	2.0 037	2.4 048	2.8 055	3.2 060	3.8 065	4.0 067	3.8 065	3.3 061	2.9 057	2.5 050	2.1 040	1.8 024	360

The above table gives the correction to be applied to a position line or a fix for the effects of precession and nutation from the mean equinox of 2005.0. Each entry consists of the distance (in bold type) in nautical miles, and the direction (true bearing) in which the position line or fix is to be moved. The table is entered firstly by the year, then by choosing the column nearest the latitude and finally the entry nearest the LHA Υ of observation; no interpolation is necessary, though in extreme cases near the beginning or end of a year (but not the end of 2004 or the beginning of 2005 when the corrections are zero) values midway towards those of the previous or following years may be taken.

*Example.* In 2009 a fix is obtained in latitude N 57° when LHA Υ is 95°. Entering the table with the year 2009, latitude N 60°, and LHA Υ 90° gives **3.2° 089°** which indicates that the fix is to be transferred 3.2 miles in true bearing 089°.