

6-8 Starpath Celestial Navigation Course

Longitude, and from these figure the LHA. Then round off the DR-Lat to the nearest whole degree for the Assumed Latitude. With LHA, Dec (given), and Lat, go to the special section of Sight Reduction Tables (in the Tables Selections) to find Hc, d, and Z. Convert Z to Zn (remember there are different rules for N and S latitudes), correct Hc for the d-correction, and then figure the a-value by comparing Hc with the Ho that is given. Plot the LOP neatly and carefully, and label it with its WT.

STEP (3). To save time on your practice, you might cheat" a bit here and check that the answer does lie along this last LOP. Since we want position at the last WT, the answer must be along this line, we just

don't know where until we advance an earlier line. (Of course you won't have this luxury in the ocean). If your LOP does not go through the answer, then the LOP or plotting is wrong and we might as well stop here to look for the problem. The proper a-Lat and a-Lon are listed in the answers to check that stage.

STEP (4). Now do the sight reduction for the first or second line just as you did for the last one, then plot it, then advance it to get the running fix. For more practice you can reduce, plot, and advance both of the earlier lines. They should give the same answer.

PRACTICE WITH RUNNING FIXES

(1) DR position at 0900 WT, Aug. 12, 1982 was $21^{\circ} 56.4' N$, $124^{\circ} 10.4' W$. Course $250^{\circ} T$, Speed 13 kts. Find 1425 position from the 3 sunlines listed.

WT	GMT	GHA sun	Ho	Dec
1015	18h 16m 08s	$092^{\circ} 47.1'$	$59^{\circ} 09.7'$	$N 14^{\circ} 54.5'$
1156	19h 57m 15s	$118^{\circ} 04.1'$	$80^{\circ} 38.0'$	$N 14^{\circ} 53.2'$
1425	22h 26m 10s	$155^{\circ} 18.1'$	$60^{\circ} 54.9'$	$N 14^{\circ} 51.3'$

(2) DR position at 0840 WT, Dec. 22, 1982 was $28^{\circ} 24.2' N$, $06^{\circ} 18.2' W$. Course $120^{\circ} T$, Speed 9 kts. Find 1420 position from the 3 sunlines listed.

WT	GMT	GHA sun	Ho	Dec
1015	10h 14m 30s	$334^{\circ} 00.4'$	$29^{\circ} 50.8'$	$S 23^{\circ} 26.5'$
1200	11h 59m 40s	$000^{\circ} 17.4'$	$38^{\circ} 12.6'$	$S 23^{\circ} 26.4'$
1420	14h 19m 07s	$035^{\circ} 08.4'$	$31^{\circ} 10.7'$	$S 23^{\circ} 26.4'$

(3) DR position at 0800 WT, July 13, 1982 was $28^{\circ} 14.1' N$, $135^{\circ} 37.3' E$. Course $190^{\circ} T$, Speed 11 kts. Find 1646 position from the 3 sunlines listed.

WT	GMT	GHA sun	Ho	Dec
1013	01h 12m 15s	$196^{\circ} 39.7'$	$64^{\circ} 04.5'$	$N 21^{\circ} 54.0'$
1255	03h 54m 28s	$237^{\circ} 12.8'$	$77^{\circ} 18.6'$	$N 21^{\circ} 53.1'$
1646	05h 45m 10s	$264^{\circ} 53.1'$	$53^{\circ} 16.2'$	$N 21^{\circ} 52.4'$

(4) DR position at 0815 WT, July 12, 1982 was $20^{\circ} 05.8' S$, $32^{\circ} 13.0' W$. Course $220^{\circ} T$, Speed 10 kts. Find 1404 position from the 3 sunlines listed.

WT	GMT	GHA sun	Ho	Dec
1018	12h 18m 20s	$003^{\circ} 12.0'$	$38^{\circ} 49.9'$	$N 21^{\circ} 58.6'$
1255	14h 55m 36s	$042^{\circ} 30.8'$	$46^{\circ} 14.4'$	$N 21^{\circ} 57.7'$
1404	16h 04m 22s	$059^{\circ} 42.2'$	$39^{\circ} 48.7'$	$N 21^{\circ} 57.3'$

(5) DR position at 0815 WT, Mar. 30, 1982 was $29^{\circ} 46.7' S$, $36^{\circ} 25.9' E$. Course $295^{\circ} T$, Speed 12 kts. Find 1455 position from the 3 sunlines listed.

WT	GMT	GHA sun	Ho	Dec
1000	08h 01m 05s	$299^{\circ} 06.8'$	$49^{\circ} 04.8'$	$N 3^{\circ} 41.2'$
1235	10h 36m 00s	$337^{\circ} 51.1'$	$54^{\circ} 33.3'$	$N 3^{\circ} 43.7'$
1455	12h 56m 20s	$012^{\circ} 56.5'$	$33^{\circ} 31.2'$	$N 3^{\circ} 46.0'$

(6) DR position at 0900 WT, Aug. 13, 1982 was $28^{\circ} 30.4' S$, $62^{\circ} 33.2' E$. Course $010^{\circ} T$, Speed 15 kts. Find 1620 position from the 3 sunlines listed.

WT	GMT	GHA sun	Ho	Dec
1016	06h 16m 10s	$272^{\circ} 48.9'$	$40^{\circ} 59.9'$	$N 14^{\circ} 45.4'$
1230	08h 30m 05s	$306^{\circ} 17.9'$	$46^{\circ} 47.1'$	$N 14^{\circ} 43.7'$
1620	12h 20m 13s	$003^{\circ} 50.3'$	$13^{\circ} 06.0'$	$N 14^{\circ} 40.8'$