Fix from 2 or 3 Altitudes

NauticTools2 – report of 23.10.2026, 08:51

Lines of position

	1. line of position	2. line of position	3. line of position
Body	49 – Vega (α Lyrae)	45 – Shaula (λ Scorpii)	Saturn
Date	22.10.26	22.10.26	22.10.26
Time [UTC]	22:08:35	22:09:55	22:12:25
Dead reckoning position	14°30.0'N 061°20.0'W	14°30.0'N 061°20.0'W	14°30.0'N 061°20.0'W
Sextant altitude (Hs)	58° 33'	26° 59'	22° 36'
Index correction (IC)	-1.0'	-1.0'	-1.0'
Height of eye (HE)	3 m	3 m	3 m
COG (course over ground)	280°	280°	–
SOG (speed over ground)	6.0 kn	6.0 kn	–
Δh	-3.3'	+1.2'	-5.3'
Az	324.8°	213.9°	94.6°

Calculation steps · Lines of position

		1. line of position	2. line of position	3. line of position
δ	*Ephemeris calculation*	38°48.4'N	37°07.2'S	01°26.1'N
GHA	*Ephemeris calculation*	084°02.3'	099°58.5'	354°18.3'
t	*Grt + longitude*	022°42.3'	038°38.5'	292°58.3'
Ho	*Ht + HP·cos(Ht)/60 + semi-diameter/120*	58°28.3'	26°53.0'	22°29.6'
Hc	*asin(sinφ · sinδ + cosφ · cosδ · cos t)*	58°31.6'	26°51.8'	22°34.9'
Az	*from hy = −sin t, hz = cosφ · tanδ − sinφ · cos t*	324.8°	213.9°	094.6°
Δh	*(Hb − Hr) · 60*	-3.3'	+1.2'	-5.3'

Result

Observed position	14°27.1'N 061°23.3'W
Fix run (advance)	227.8° / 4.3 nm

Calculation steps

Run	*SOG · Δt in direction of COG*	1: 280°, 0.4 nm
Run	*SOG · Δt in direction of COG*	2: 280°, 0.2 nm
Position	*Centre of the cocked hat*	14°27.1'N 061°23.3'W
DR offset	*DR position of the last line of position → fix*	227.8°, 4.3 nm
Angle of cut	*smallest angle between the lines of position*	50°

Plotting sheet

