

Our ship is still on course, steering  $56^\circ$  (T) towards St. Malo.

On May 26, we take a Afternoon Sun Sight to find our position.

The time of the observation is 15h 00m 16s UT.

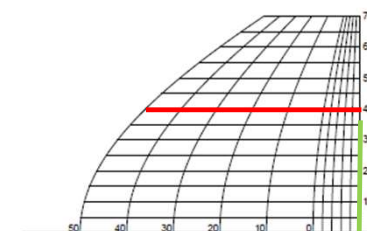
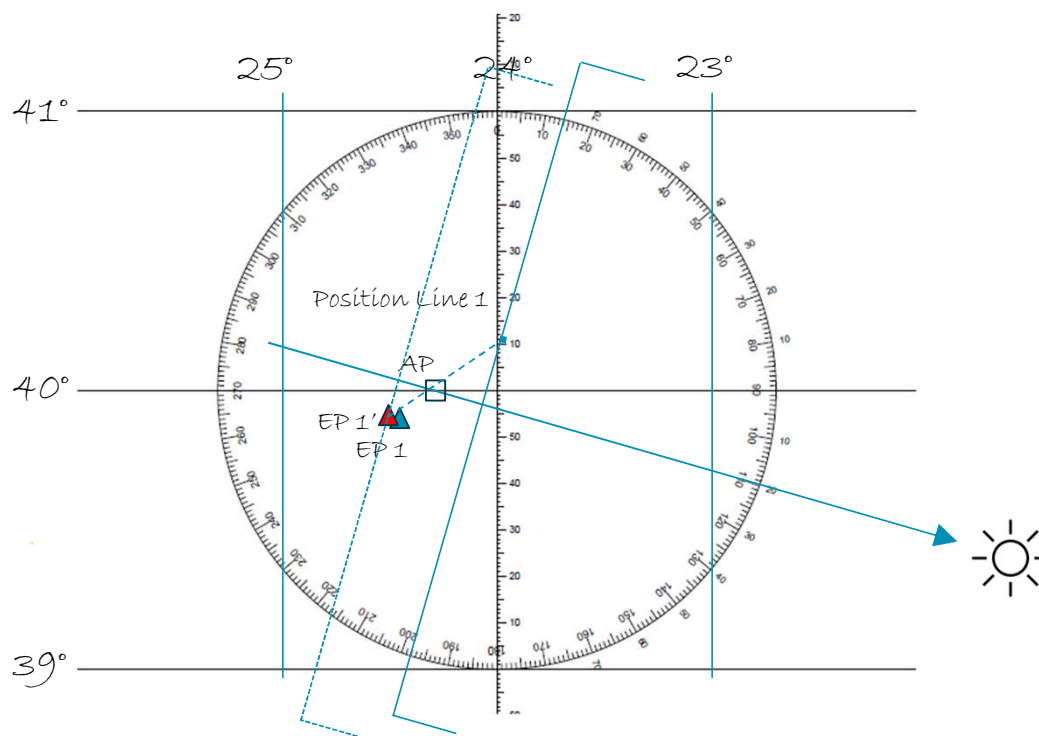
### Prepare the Afternoon Plotting Sheet.

1. Use the 'Morning' Sheet. Plot the Run of a  $56^\circ$  (T) Course Steered, at a SOG of 7kn for 4h10m
2. Determine the 2<sup>nd</sup> EP
3. Move the Morning Line

# Prepare 2nd Result

Prepare the Afternoon Plot

EP  $39^\circ 54' N 024^\circ 28' W$       RUN:  $56^\circ$  7kn 4h10m  
 AP  $40^\circ N 024^\circ 17'.6 W$       EP2  $40^\circ 11' N 024^\circ 00'.5 W$   
 $Z_n = 106^\circ$   
 Intercept  $8.4'$  AWAY





SUN SIGHT PRO FORMA																																				
<p>Date: <span style="border: 1px solid black; padding: 2px;">May 26, 2024</span></p> <p>EP/DR: <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">40°</td><td style="border: 1px solid black; padding: 2px;">11'</td><td style="border: 1px solid black; padding: 2px;">N/S</td></tr><tr><td style="border: 1px solid black; padding: 2px;">024°</td><td style="border: 1px solid black; padding: 2px;">00'</td><td style="border: 1px solid black; padding: 2px;">.5 E/W</td></tr></table></p> <p>Sextant Reading  (lower / upper)</p> <p>Hight of Eye <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">3.5</td><td style="border: 1px solid black; padding: 2px;">m</td></tr></table></p> <p>Index Error <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">2.0</td><td style="border: 1px solid black; padding: 2px;">on/off</td></tr></table></p>	40°	11'	N/S	024°	00'	.5 E/W	3.5	m	2.0	on/off	<p>Ship time <table style="display: inline-table; border-collapse: collapse;"><tr><th style="border: 1px solid black; padding: 2px;">h</th><th style="border: 1px solid black; padding: 2px;">m</th><th style="border: 1px solid black; padding: 2px;">s</th></tr><tr><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;"> </td></tr></table></p> <p>(1) Long Time <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;"> </td></tr></table></p> <p>UT time <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;"> </td></tr></table></p> <p>Greenwich Date: <table style="display: inline-table; border-collapse: collapse;"><tr><th style="border: 1px solid black; padding: 2px;">m</th><th style="border: 1px solid black; padding: 2px;">d</th></tr><tr><td style="border: 1px solid black; padding: 2px;">5</td><td style="border: 1px solid black; padding: 2px;">26</td></tr></table></p> <p>Chronometer <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;"> </td></tr></table></p> <p>Correction <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;"> </td></tr></table></p> <p>UT Sight <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">15</td><td style="border: 1px solid black; padding: 2px;">00</td><td style="border: 1px solid black; padding: 2px;">16</td></tr></table></p>	h	m	s										m	d	5	26							15	00	16
40°	11'	N/S																																		
024°	00'	.5 E/W																																		
3.5	m																																			
2.0	on/off																																			
h	m	s																																		
m	d																																			
5	26																																			
15	00	16																																		
<p>Sex. Alt. <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">63°</td><td style="border: 1px solid black; padding: 2px;">27'</td><td style="border: 1px solid black; padding: 2px;">.3</td></tr></table></p> <p>I.E. <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;">2'</td><td style="border: 1px solid black; padding: 2px;">.0 (off +, on -)</td></tr></table></p> <p>(2) DIP <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;">- 3'</td><td style="border: 1px solid black; padding: 2px;">.3 (+/-)</td></tr></table></p> <p>Apparent Alt. <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">63°</td><td style="border: 1px solid black; padding: 2px;">22'</td><td style="border: 1px solid black; padding: 2px;">.0</td></tr></table></p> <p>(3) Alt. corr. <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;">15'</td><td style="border: 1px solid black; padding: 2px;">.5</td></tr></table></p> <p>True Alt. (Ho) <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">63°</td><td style="border: 1px solid black; padding: 2px;">37'</td><td style="border: 1px solid black; padding: 2px;">.5</td></tr></table></p>	63°	27'	.3		2'	.0 (off +, on -)		- 3'	.3 (+/-)	63°	22'	.0		15'	.5	63°	37'	.5	<p>(4) GHA h <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">45°</td><td style="border: 1px solid black; padding: 2px;">43'</td><td style="border: 1px solid black; padding: 2px;">.3</td></tr></table></p> <p>(5) + Incr m <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">0°</td><td style="border: 1px solid black; padding: 2px;">04'</td><td style="border: 1px solid black; padding: 2px;">.0</td></tr></table></p> <p>GHA <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">45°</td><td style="border: 1px solid black; padding: 2px;">47'</td><td style="border: 1px solid black; padding: 2px;">.3</td></tr></table></p> <p>Ass. Long <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">-024°</td><td style="border: 1px solid black; padding: 2px;">47'</td><td style="border: 1px solid black; padding: 2px;">.3 (W-E+)</td></tr></table></p> <p>LHA <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">21°</td><td style="border: 1px solid black; padding: 2px;">00'</td><td style="border: 1px solid black; padding: 2px;">.0</td></tr></table></p>	45°	43'	.3	0°	04'	.0	45°	47'	.3	-024°	47'	.3 (W-E+)	21°	00'	.0		
63°	27'	.3																																		
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21°	00'	.0																																		
<p>Assumed Latitude <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">40°</td><td style="border: 1px solid black; padding: 2px;">N</td><td style="border: 1px solid black; padding: 2px;">S</td></tr></table></p>	40°	N	S	<p>(4) Decl. <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">21°</td><td style="border: 1px solid black; padding: 2px;">16'</td><td style="border: 1px solid black; padding: 2px;">.8 (N) S</td><td style="border: 1px solid black; padding: 2px;">d=0.4+</td><td style="border: 1px solid black; padding: 2px;">(+/-)</td></tr></table></p> <p>(5) d' <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;">0'</td><td style="border: 1px solid black; padding: 2px;">.0 (+/-)</td></tr></table></p> <p>Decl. <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">21°</td><td style="border: 1px solid black; padding: 2px;">16'</td><td style="border: 1px solid black; padding: 2px;">.8 (N) S</td></tr></table></p>	21°	16'	.8 (N) S	d=0.4+	(+/-)		0'	.0 (+/-)	21°	16'	.8 (N) S																					
40°	N	S																																		
21°	16'	.8 (N) S	d=0.4+	(+/-)																																
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<p>(6) SRT Table <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">40°</td><td style="border: 1px solid black; padding: 2px;">/</td><td style="border: 1px solid black; padding: 2px;">21°</td><td style="border: 1px solid black; padding: 2px;">/</td><td style="border: 1px solid black; padding: 2px;">SAME</td></tr></table> <small>SAME if Ass. Lat and Decl are both N or S, CONTRARY when not</small></p> <p>LHA <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">21°</td><td style="border: 1px solid black; padding: 2px;">°</td></tr></table></p> <p>Hc' (6) <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">63°</td><td style="border: 1px solid black; padding: 2px;">54'</td><td style="border: 1px solid black; padding: 2px;">d= 46(+/-)</td><td style="border: 1px solid black; padding: 2px;">Z= 130°</td></tr></table></p> <p>Correction (7) <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;"> </td><td style="border: 1px solid black; padding: 2px;">13'</td><td style="border: 1px solid black; padding: 2px;">46/17</td><td style="border: 1px solid black; padding: 2px;">Decl' rounded to the nearest minute</td></tr></table></p> <p>Hc <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">64°</td><td style="border: 1px solid black; padding: 2px;">07'</td><td style="border: 1px solid black; padding: 2px;">.</td></tr></table></p> <p>Ho <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">63°</td><td style="border: 1px solid black; padding: 2px;">37'</td><td style="border: 1px solid black; padding: 2px;">.5</td></tr></table></p> <p>Intercept <table style="display: inline-table; border-collapse: collapse;"><tr><td style="border: 1px solid black; padding: 2px;">29'</td><td style="border: 1px solid black; padding: 2px;">.5</td><td style="border: 1px solid black; padding: 2px;">To/Away</td><td style="border: 1px solid black; padding: 2px;">Zn = 230</td></tr></table></p> <p><small>(difference Ho and Hc)      if Ho &lt; Hc, Away      if Ho &gt; Hc, To</small></p> <p><small>if N, if LHA &gt; 180, Z = Zn, if LHA &lt; 180, Zn = 360 - Z if S, if LHA &gt; 180, Zn = 180 - Z, if LHA &lt; 180, Zn = 180 + Z</small></p>				40°	/	21°	/	SAME	21°	°	63°	54'	d= 46(+/-)	Z= 130°		13'	46/17	Decl' rounded to the nearest minute	64°	07'	.	63°	37'	.5	29'	.5	To/Away	Zn = 230								
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Our ship is still on course, steering 56° (T) towards St. Malo.

On May 26, we take a Afternoon Sun Sight to find our position.

The Estimated Position is determined using the Afternoon Plot Sheet.

The time of the observation is 15h 00m 16s UT.

The sextant altitude is 63°27'.3 on the Lower Limb. The Height of the Eye is estimated to be 3.5m. The Index error is 2' off the arc.

Do the Full Afternoon Sight Reduction.

# 2nd Reduction Answers

Full Afternoon Sight Reduction

How to Find the Position Fix

Our ship is still on course, steering  $56^\circ$  (T) towards St. Malo.

On May 26, we take a Afternoon Sun Sight to find our position.

The time of the observation is 15h 00m 16s UT.

Use the prepared Afternoon Plotting Sheet.

1. Note the data
2. Plot the AP
3. Plot the Sun's bearing (Sun line)
4. Plot the Position Line at the Intercept
5. Find the Position Fix

# Fix Result

Plotting the 2nd Sight Reduction Results

EP  $39^\circ 54' N 024^\circ 28' W$   
 AP  $40^\circ N 024^\circ 17'.6 W$   
 $Z_n = 106^\circ$   
 Intercept  $8.4'$  AWAY

RUN:  $56^\circ$  From 4h10m  
 EP2  $40^\circ 11' N 024^\circ 00'.5 W$

AP2  $40^\circ N 024^\circ 47'.3 W$   
 $Z_n = 230^\circ$   
 Intercept  $34.5'$  AWAY

**FIX:  $40^\circ 04'.5 N 024^\circ 02' W$**

