

Guide 2 - 60D/S*T Get distances from Chartlet

1. Alpha to Beta, at 3.5 – how long will it take?

7.2nm |

$$60D/ST = 60 \cdot 7.2 / 3.5 \cdot T = 432 / 3.5 \cdot T = 432 / 3.5 = T = 123 \text{ min}$$

$$T = 123 \text{ min} = 2+03$$

2. Delta to Phi at 6.5 kts. How long?

4.78nm |

$$60D/ST = 60 \cdot 4.78 / 6.5 \cdot T = 286.5 / 6.5 \cdot T = 286.5 / 6.5 = T = 44.12 \text{ min}$$

$$0+44$$

3. Epsilon to Beta at 5.4 kts.

12.72nm

$$60D/ST = 60 \cdot 12.72 / 5.4 \cdot T = 763 / 5.4 \cdot T = T = 141 \text{ min}$$

$$T = 2+21$$

4. 3+15 at 3 – How far?

$$60D / (3+15) \cdot 3 = 60D / 195 \cdot 3 = 60D / 585$$

$$60D = 585; D = 585 / 60 = 9.75 \text{ nm}$$

5. 1+01 at 8 – How far?

$$60D / (61 \cdot 8) \cdot 8 = 60D / 488 = 60D / 488$$

$$D = 488 / 60 = 8.13 \text{ nm}$$

6. 0+45 at 3 – How far?

$$60D / (0+45 \cdot 3) = 60D / 45 \cdot 3 = 60D / 135$$

$$D = 135 / 60 = 2.25 \text{ nm}$$

7. Went from Beta to Delta in 0+45 – what is SOG?

6nm

$$60D/ST=60*6/45S = 360/45 = 8 \text{ kts}$$

8. Went from Beta to Phi in 1+35 – what is SOG?

8.81nm

$$60D/ST=60*8.81/95S = 528.6/95T = 5.56 \text{ kts}$$

9. Burning 0.78 gal/hr, how much fuel is consumed in Question 1?

$$2+03 * .78 = 123 * .78 = 95.94/60 = 1.6 \text{ gal}$$

10. Burning 0.78 gal/hr, how much fuel is consumed in Question 2?

$$44 * .78 = 34.32/60 = .6 \text{ gal.}$$

11. If you have a 38 gal tank and set a 20% minimum level, how far can you go at 0.78 gal/hr if you make 6 knots on average at 3000 rpm?

$$.8*38 = \text{useable fuel} = 30.4 \text{ available}$$

$$30.4/.78 = 39 \text{ hours cruising}$$

$$39 * 6 = 234 \text{ miles range}$$

12. You leave the dock with a full tank in calm conditions. Your engine hour meter indicates 1215 hours. You are forced to motor to your first destination. The meter now says 1222.4 hours how much fuel do you have available for the remainder of the trip. How far can you go.

$$1222.4 - 1215 = 7.4 \text{ Hrs}$$

$$7.4 * .78 = 5.8 \text{ fuel consumed}$$

$$30.4 - 5.8 = 24.6 \text{ useable fuel remaining}$$

$$24.6/.78 = 31.53 \text{ cruising hours}$$

$$31.53 * 6 = 189 \text{ nm}$$

13. On day two, you wake up with the wind pushing the meter to 30 kts. It's coming directly from where you're headed, which is 106 nm away. You weigh anchor and set the throttle for 3000 rpm. Your SOG on the GPS is 6 as you leave the anchorage, but later is 4. You get a fix and calculate your average SOG at 4.9. You've got 100 nm to go

How much fuel will you have when you arrive?

If you don't lose any more SOG, you'll make the run in $100/4 = 25$ hours.

$25 * .78 = 19.5$ gals .for the leg

You've burned 5.8 so far, so total burned will be 25.3

Fuel remaining is $38 - 25.3 = 12.7$ until flameout – about another 16 hours but only 5.1 gals or 6.5 hours until you're into your reserve.