

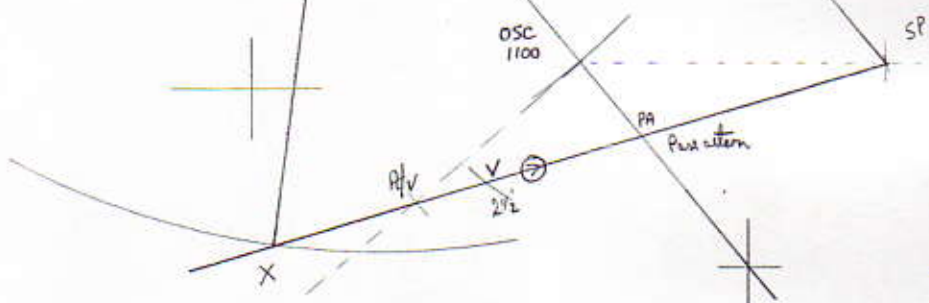
RADAR PLOTTING SHEET

NAV SQA 4, 8/7/03 Q 3(d)

Scale 1 unit = 1 n.m.

**

- i) Co to Stear = 007°T
- ii) Sighting @ 2 1/2' = 1107 hrs.
- iii) Pass astern OSC = 1122 hrs.
- iv) ETA @ SP = 1146 hrs.



X to SP = 10.4, X/V to SP = 8', V to SP = 6.85, PA to SP = 4.2

ii) $\frac{t_2}{(8-6.85)} = \frac{60}{10.4} \therefore t_2 = \frac{1.15 \times 60}{10.4} = 6.6 \text{ min @ } 1107$

iii) $\frac{t_3}{(8-4.2)} = \frac{60}{10.4} \therefore t_3 = \frac{38 \times 60}{10.4} = 21.9 \text{ min @ } 1122$

iv) $\frac{t_4}{8} = \frac{60}{10.4} \therefore t_4 = \frac{8 \times 60}{10.4} = 46.2 \text{ min @ } 1146$

Scale 1 unit = 1 n.m.



(This is not a metric scale)

(Signature)

Signature of Candidate _____

Examination Centre _____

NAV SQA 2/1 Tuesday 8 July 2003 Q2.

D.R. $35^{\circ}40'N$ $145^{\circ}48'E$. SHIP TIME 0820 Set 15th mag '76 Chon 10L 41m 04s (e=NM)

Int 8.0(T.) Brg $125^{\circ}T$. IE 2.0 ON. HE 15.4m $\frac{1}{2}G$. $258^{\circ}T @ 18K$.

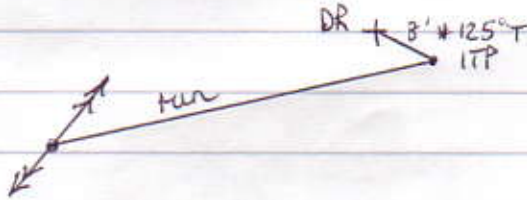
a) GMT of MP⁽⁸⁾ b) Setting to put on heistant LL⁽¹²⁾ Total (30)

Time @ Ship 15d 08h 20m

Zone (E) - 10h

Approx GMT 14d 22h 20m

Chon 14d 22h 41m 04s



Dlat = Dist Cos Co = $63.6 \cos 258 = 13.2 S$

1st App = $8 \cos 125 = 4.6 S$

1st Approx Dlat = $17.8 S$

Dep = Dist Sin Co = $63.6 \sin 258 = 62.2 W$

$8 \sin 125 = 6.6 E$

Dep = $55.6 W$

Dlong = Dep / Cos M. Lat = $55.6 / \cos 35.5183 = 68.3 W$

2nd App. Dlat = $64.8 \cos 258 = 13.5 S$

$8 \cos 125 = 4.6 S$

2nd App. Dlat = $18.1 S$

Dep = $64.8 \sin 258 = 63.4 W$

$8 \sin 125^{\circ} = 6.6 E$

Dep = $56.8 W$

D_g = $56.8 / \cos 35.51667 = 69.8 W$

OA = $73^{\circ} 21.3$

IE(ON) = $+ 2.0$

SA = $73^{\circ} 23.3$ ** (6)

15th MP. LMT 15d 11h 56m

LIT. ($145^{\circ}48'E$) - 9h 43m

1st App. GMT. MP. 15d 02h 13m

Start GMT 14d 22h 41m

1st Steaming time 3h 32m

@ 18K = 63.6' (1st Approx run)

D.R. Start $35^{\circ}40'N$ $145^{\circ}48'E$

1st Dlat $17.8 S$ $1^{\circ}08.3 W$

1st App. $35^{\circ}22.2 N$ $144^{\circ}39.7 E$

M. Lat $35^{\circ}31'$

15th MP. LMT 15d 11h 56m

L.I.T. ($144^{\circ}39.7 E$) 9h 39m

2nd App. GMT. MP. 15d 02h 17m ** (a)

Start GMT. 14d 22h 41m

2nd Steaming time 3h 36m

@ 18K = 64.8

D.R. Start $35^{\circ}40'N$ $145^{\circ}48'E$

2nd Dlat $18.1 S$ $1^{\circ}09.8 W$

MP-DR. $35^{\circ}21.9 N$ $144^{\circ}38.2 E$

M. Lat $35^{\circ}31'$ (New bearing does not change GMT @ 2nd Approx)

Dec @ 15d 02h 17m = N $18^{\circ}52.0$

D.R. Lat = N $35^{\circ}21.9$

ZX = $16^{\circ}29.9$

TA = $73^{\circ}30.1$

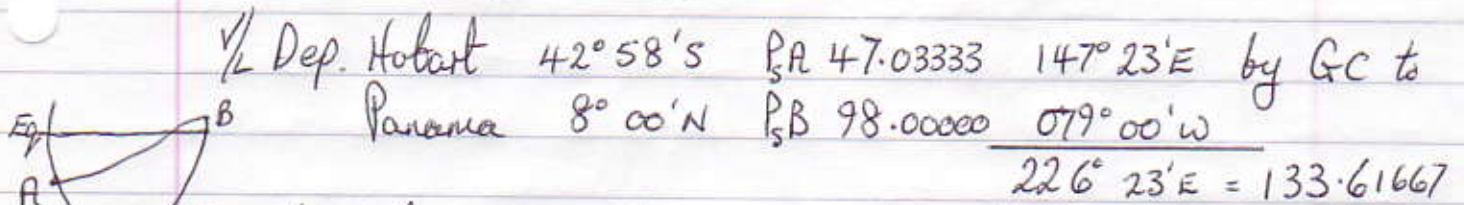
Tc = -15.7

AA = $73^{\circ}14.4$

(HE 15.4m) Dip = $+ 6.9$

OA = $73^{\circ}21.3$

NAV SQA 2¹, Tuesday 8th July 2003. Q1.



$\frac{1}{2}$ Dep. Hobart $42^{\circ}58'S$ $P_A 47.03333$ $147^{\circ}23'E$ by GC to
Panama $8^{\circ}00'N$ $P_B 98.00000$ $079^{\circ}00'W$

$$226^{\circ}23'E = 133.61667$$

Departure time Nov 18th @ 1800 standard time. (Hobart 10hr, Panama 5hr)

a) Dist AB = $\cos^{-1}(\cos d_{AB} \sin PA \sin PB + \cos PA \cos PB)$
 $= \cos^{-1}(\cos 133.61667 * \sin 47.03333 * \sin 98 + \cos 47.03333 * \cos 98)$
 $= 126.49321 = 7589.59 = 7589.6$

+ 50

Total Dist 7639.6 **

b) $\hat{A} = \cos^{-1}((\cos PB - (\cos PA \cos AB)) \div (\sin PA \sin AB))$
 $= \cos^{-1}((\cos 98 - (\cos 47.03333 * \cos 126.49321)) \div (\sin 47.03333 * \sin 126.49321))$

Initial Co = S 63.09766 E = 116.9 T. **

c) Start Hobart Nov 18th 18h 00m S.T.

S.T. Allowance - 10h

Start GMT 18d 08h 00m
 $7639.6 @ 16.3k = 19.52863$ days 19d 12h 41m

Arrive Panama GMT Dec 07d 20h 41m

S.T. All^{ce} Panama - 5h

Arrive Panama ETA Dec 07d 15h 41m S.T. **