

Nov '01.

Q.1. GREAT CIRCLE DISTANCE BETWEEN

WAYPOINTS 'T' & 'S' = 7003.2

EXTRA DISTANCE = 3507'

a- TOTAL DISTANCE = 10510.2
SINGAPORE TO PANAMA

b- FOR POSITION OF VERTEX,

INITIAL COURSE = N 53° 47.6 E

VERTEX = 40° 41.5 N

172° 42.5 W

c- ETA

STEAMING TIME = $\frac{10510.2}{13.6}$ = 772.80882 Hours
= 32 DAYS 4 Hours 48.5 MIN

| | | | | | |
|---------------------|---|------|----|----|----|
| SINGAPORE DEPARTURE | = | MAY | 17 | 06 | 30 |
| ZONE (-0730) | = | - | | 07 | 30 |
| GMT DEP | = | MAY | 16 | 23 | 00 |
| STEAMING TIME | = | | 32 | 04 | 48 |
| ARRIVAL GMT | = | JUNE | 18 | 03 | 48 |
| ZONE (+05) | = | - | | 05 | 00 |
| PANAMA E.T. ARRIVAL | = | JUNE | 17 | 22 | 48 |

Nadeem An

Q2. Nov. 2001. SQA 2/1 NAV.

(TIMES ARE TO WHOLE MINUTES)

Require C.T. for 16/05/76

From N.A. $35^{\circ}N$ CT = 04 28 LMT

$40^{\circ}N$ CT = 04 13 LMT.

@ $39^{\circ}N$ CT = 04 16 LMT.

INITIAL L.I.T. = + 3 31 (52° 44' W)

1st Approx C.T. 16d 7h 47m GMT

START 15d 18h 30m GMT

1st Approx run 13h 17m @ 24K = 318.8

For Course of P/V
(Note: Must use mercator)
Sailing as direct over 600'

Start $38^{\circ}26'N$ MP 2486.80 $52^{\circ}44'W$

NY. $40^{\circ}45'N$ MP 2666.48 $74^{\circ}00'W$

DMP 179.68 Dly $21^{\circ}16'W$

1276' W

$$\frac{\text{Along}}{\text{DMP}} = \tan Co = \frac{1276}{179.68} \therefore Co = N 81.9845 W$$

1st Approx Plat = Dist Cos Co
= 318.8 Cos 81.9845

= 44.45 N

Dep = Dist Sin Co

= 318.8 Sin 81.9845

= 315.68 W

D-long = Dep ÷ Cos M-lat

= 315.68 ÷ Cos 38° 48.23

= 405.08 W

2nd pos'n D-lat = 329.6 Cos 81.9845

= 45.96 N

Dep = 329.6 Sin 81.9845

= 326.3799 W

Along = $\frac{326.3799}{\text{Cos } 38^{\circ}48.96}$

= 418.88 W

Start $38^{\circ}26'N$ $52^{\circ}44'W$

D-lat $44.45N$ Dly $6^{\circ}45.1W$

1st Approx lat $39^{\circ}10.45N$ $59^{\circ}29.1W$

1/2 D-lat - 22.22

M-lat $38^{\circ}48.23N$

For New C.T. @ $39.2^{\circ}N$ CT = 04 16 LMT.

New LIT for $59^{\circ}29.1W$ = + 3 58

2nd Approx CT = 08 14 (16th) GMT

Start 18 30 (15th) GMT

2nd Approx Run = 13h 44m

@ 24K = 329.6 *

Start $38^{\circ}26'N$ $52^{\circ}44'W$

D-lat $45.96N$ Dly $6^{\circ}58.9W$

RV lat $39^{\circ}11.96N$ lg $59^{\circ}42.9W$ * RV

1/2 D-lat - 23

M-lat $38^{\circ}48.96N$

POSITION

$$\begin{array}{r}
 RV \quad 39^\circ 12.0' N \\
 o/v \quad 36^\circ 50.0' N \\
 \hline
 \text{Dist} \quad 2^\circ 22.0' N \\
 \quad \quad 142' N \\
 \text{M. lat} \quad 38^\circ 01' N
 \end{array}$$

$$\begin{array}{r}
 59^\circ 42.9' W \\
 58^\circ 25.0' W \\
 \hline
 \text{Dly} \quad 1^\circ 17.9' W \\
 \quad \quad 77.9' W
 \end{array}$$

$$\text{Dep} = \text{Along Cos M. lat} = 77.9 \cos 38^\circ 01' = 61.37 W$$

$$\frac{\text{Dep}}{\text{Dist}} = \tan Co = \frac{61.37}{142} = N 23.38148 W \\
 \underline{Co = 336.6 T * Course.}$$

$$\frac{\text{D. lat}}{\cos Co} = \text{Dist} = \frac{142}{\cos 23.38148} = 154.649$$

$$\text{Spd} = \frac{\text{Dist}}{\text{Time}} = \frac{154.649}{13h 44m} = \underline{11.26 K} * \text{Speed.}$$
