

2/1 SQA-NAV-2000 JUNE - Q2. RYA.

- 2) 15th May '76 @ 2130 GMT, Cargo V/L 31°18'N 69°26'W.
 Passenger V/L 29°42'N 65°14'W, Co 260°T @ 23K. R/V @ 16th
 Calc. a) GMT Sunrise b) R/V pos'n c) Co & Spd req'd of C.V.

a) 16 th May ☉ 29°N 16d 05h 08m LMT	☉ LMT
65°14'W LIT. 4h 21m	NA '76 30°N 05 06
1 st App ☉ 16d 09h 29m GMT	MAY 16 th 20°N 05 24
Start time 15d 21h 30m GMT	∴ 29°N = 05 08
1 st App Run time/dist. 11h 59m @ 23K = 275'.6	

$$\begin{aligned} D_{\text{lat}} &= \text{Dist} \cos Co \\ &= 275.6 \cos 260^\circ \\ &= 47.9 S \end{aligned}$$

$$\begin{aligned} \text{Dep} &= \text{Dist} \sin Co \\ &= 275.6 \sin 260^\circ \\ &= 271.4 W \end{aligned}$$

$$\begin{aligned} D_{\text{lg}} &= \text{Dep} / \cos M_{\text{lat}} \\ &= 311.2 W \end{aligned}$$

$$\begin{aligned} D_{\text{lat}} &= 283.7 \cos 260 = 49.3 S \\ \text{Dep} &= 283.7 \sin 260 = 279.4 W \\ D_{\text{lg}} &= 279.4 / \cos 29^\circ 17.6 = 320.4 W \end{aligned}$$

$$\begin{aligned} \text{Dep} &= D_{\text{lg}} \cos M_{\text{lat}} \\ &= 68.4 \cos 30^\circ 06' = 59.176 W \end{aligned}$$

$$\begin{aligned} \text{Tan} Co &= \text{Dep} / D_{\text{lat}} \\ &= 59.176 / 145.3 \\ &= 522.15948 W \end{aligned}$$

$$\begin{aligned} \text{Dist} &= D_{\text{lat}} / \cos Co \\ &= 145.3 / \cos 22.15948 \\ &= 156.9 \text{ in } 12.33 \text{ hrs} \\ &= 12.72 \text{ knots} \end{aligned}$$

$$\begin{aligned} \text{Start Lat } 29^\circ 42' N & \quad \text{Lg } 065^\circ 14' W \\ D_{\text{lat}} & \quad 47.9 S \quad D_{\text{lg}} \quad 5^\circ 11.2 W \\ \hline \text{1st App Lat } & \quad 28^\circ 54.1 N \quad \text{Lg } 070^\circ 25.2 W \\ \text{Mean Lat } & \quad 29^\circ 18' \end{aligned}$$

$$\begin{aligned} 16^\circ \text{ @ } 29^\circ N & \quad 16d \quad 05h \quad 08m \quad \text{LMT} \\ 070^\circ 25.2 W & \quad \text{LIT.} \quad 4h \quad 42m \\ \hline \text{2nd App } & \quad 16d \quad 09h \quad 50m \quad \text{GMT} \quad ** \\ \text{Start} & \quad 15d \quad 21h \quad 30m \end{aligned}$$

$$\text{2nd App Run Time/dist. } 12h \quad 20m \quad @ \quad 23K = 283.7$$

$$\begin{aligned} \text{PV Start Lat } 29^\circ 42' N & \quad M_{\text{lat}} \quad \text{Lg } 065^\circ 14' W \\ D_{\text{lat}} & \quad 49.3 S \quad 29^\circ 17.6 \quad 5^\circ 20.4 W \end{aligned}$$

$$\text{2nd App Pos'n } 28^\circ 52.7 N \quad \text{Lg } 070^\circ 34.4 W \quad **b)$$

$$\begin{aligned} \text{C/V Start } & \quad 31^\circ 18' N \quad 069^\circ 26' W \\ D_{\text{lat}} & \quad 2^\circ 25.3 S \quad D_{\text{lg}} \quad 1^\circ 08.4 W \\ & \quad 145.3 S \quad M_{\text{lat}} 30^\circ 06' \quad 68.4 W \end{aligned}$$

$$\text{c) C/V Course } 202.16 T \quad @ \quad 12.72 \text{ knots } **$$