

# FLIGHT PROFILE

AIRCRAFT: \_\_\_\_\_

1. BEST L/D: \_\_\_\_/1 @ \_\_\_\_ KTS.

PLUS 1/2 WINDSPEED: \_\_\_\_\_ KTS.

= SPEED TO FLY: \_\_\_\_\_ KTS.

2. L/D @ \_\_\_\_ KTS. = \_\_\_\_ / 1  
(wind adjusted glide ratio)

DEPARTURE: \_\_\_\_\_ FIELD ELEV.: \_\_\_\_\_ PATTERN ALT.: \_\_\_\_\_ MSL

DESTINATION: \_\_\_\_\_ FIELD ELEV.: \_\_\_\_\_ PATTERN ALT. \_\_\_\_\_ MSL \_\_\_\_\_

DISTANCE: \_\_\_\_\_ MI.

WIND: \_\_\_\_\_ ° @ \_\_\_\_\_ KTS.

For pattern altitude, add 1,000 ft. to field elevation.

**OBSTACLE CLEARANCE:**

- 1,500 ft. with headwind
- 500 ft. with tailwind

GLIDE RATIO WITH HEADWIND:

Formula: 
$$\frac{\text{Speed to fly — wind}}{\text{Speed to fly}} \times \text{wind adjusted glide ratio} \times .7 = \text{Adjusted glide angle}$$

Formula:  $(\frac{\text{---}}{\text{---}}) = \frac{\text{---}}{\text{---}} \times \frac{\text{---}}{\text{---}} = \frac{\text{---}}{\text{---}} \times \frac{\text{---}}{\text{---}} = \frac{\text{---}}{\text{---}}$

GLIDE RATIO WITH TAILWIND:

Formula:  $\frac{\text{Best L/D speed} + \text{wind}}{\text{Best L/D speed}} \times \text{best L/D glide ratio} \times .7 = \text{Adjusted glide angle}$

Formula:  $( \quad + \quad ) \div \quad = \quad \% \times \quad = \quad \times .7 = \quad /1$



## FLIGHT PROFILE EXAMPLE

Las Vegas Sectional

Departure: Jean, NV 115° 20' w, 35° 46' 30" n 2832 ft. elev.

Destination: Shoshone, NV 116° 16' w, 35° 58' 30" n 1568 ft. elev.

Distance: 47 NM

True course: 285°

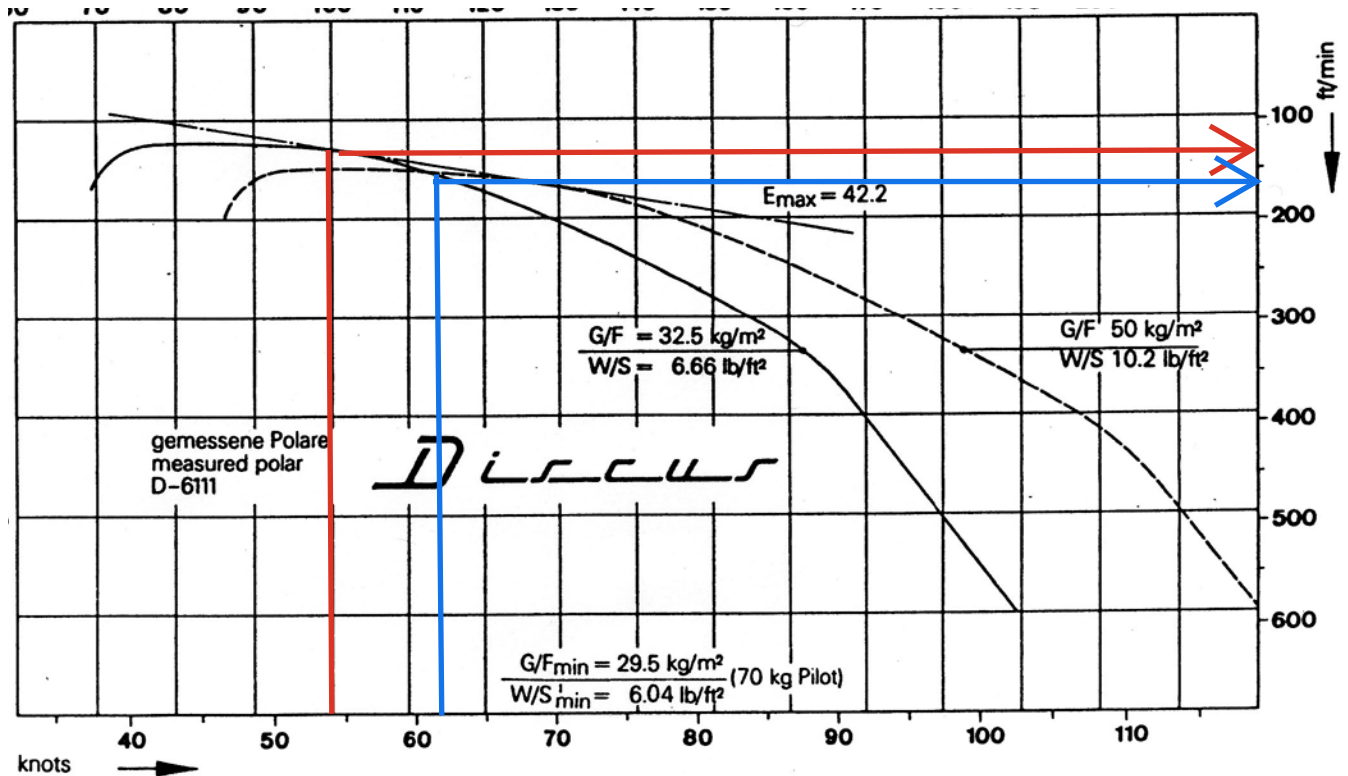
Magnetic heading: 271°

Wind: 270° @ 16 kts.

Obstacle at 10 mi. from Shoshone at 4900 ft.

Obstacle at 7.5 mi. from Jean at 5152 ft.

Aircraft: Discus B 42:1 max. L/D @ 54 kts.



54 kts  
1.3 kts  $\approx 42$

62 kts  
1.6 kts  $\approx 38$

# FLIGHT PROFILE

AIRCRAFT: Discus  
 1. BEST L/D: 42 /1 @ 54 KTS.  
 PLUS 1/2 WINDSPEED: 8 KTS.  
 = SPEED TO FLY: 62 KTS.  
 2. L/D @ 62 S. = 38 /1  
 (wind adjusted glide ratio)

DEPARTURE: Jean, NV FIELD ELEV. 2832 PATTERN ALT. 3800 MSL  
 DESTINATION: Shoshone, NV FIELD ELEV. 1568 PATTERN ALT. 2600 MSL  
 DISTANCE: 47 nm MI.  
 WIND: 270 ° @ 16 KTS.

For pattern altitude, add 1,000 ft. to field elevation.  
 OBSTACLE CLEARANCE: • 1,500 ft. with headwind  
 • 500 ft. with tailwind

## GLIDE RATIO WITH HEADWIND:

Formula:  $\frac{\text{Speed to fly} - \text{wind}}{\text{Speed to fly}} \times \text{wind adjusted glide ratio} \times .7 = \text{Adjusted glide angle}$

Formula:  $\left( \frac{62 - 16}{62} \right) = \frac{75}{100} \% \times \frac{38}{1} = \frac{28.5}{100} \times .7 = \frac{20}{100}$

## GLIDE RATIO WITH TAILWIND:

Formula:  $\frac{\text{Best L/D speed} + \text{wind}}{\text{Best L/D speed}} \times \text{best L/D glide ratio} \times .7 = \text{Adjusted glide angle}$

Formula:  $\left( \frac{54 + 16}{54} \right) = \frac{130}{100} \% \times \frac{42}{1} = \frac{54.6}{100} \times .7 = \frac{38}{100}$

