

Basics of Cross-Country Soaring

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Before You Begin

- Pilot's License
- Effective Thermaling Technique
- Short Field Landing Practice
- Landing Out Site Selection Check List

What You Will Need

- Glider
- Transceiver
- GPS
- Hydration System
- P-System
- Sectional Chart
- (Barograph & Camera or Data logger)

Practical L/D Calculations

- Example for L/D 35:1
- 1 mile high travels 35 miles
- 5280 ft 35 miles
- 1000 ft $35/5 =$ 7 miles
- Apply a Safety Factor
- 1000 ft 4 or 5 or 6 miles
- Decide on your comfort level start out being conservative.

35:1 L/D Conservative Case

- I can travel 4 miles per 1000 ft of altitude
- Arrive with 1000ft for pattern
- I am at 5000 ft
- $5000 - 1000 = 4000$
- $4000 \text{ ft} = 4 \times 4 \text{ miles} = 16 \text{ miles}$
- At 5000 ft I can be 16 miles from my destination.

35:1 L/D Realistic Safe Case

- I can travel 5 miles per 1000 ft of altitude
- $5000 - 1000 = 4000$
- $4000 \text{ ft} = 4 \times 5 \text{ miles} = 20 \text{ miles}$
- At 5000 ft I can be 20 miles from my destination.

35:1 L/D Optimistic Case

- Factor 6
- $4 \times 6 = 24$ miles

Schweitzer 1-26

- L/D 21:1
- $21/5 = 4$
- Factor 2 or 3 or 4 miles per 1000 ft.
- $4 \times 2 = 8$ miles at 5000 ft
- $4 \times 3 = 12$ miles
- $4 \times 4 = 16$ miles

Speeds to Fly When Cruising

- Best L/D in still air or with a tail wind.
- Best L/D + $\frac{1}{2}$ Wind Speed into Head Wind
- “Minimum Sink” Speed Through Lift
- Best L/D + 50% or faster in Sink

Adjusting for Wind

- Fly on a relatively calm day < 10 Kts aloft.
- Use your conservative factor flying upwind.
- Use your Realistic factor flying down wind.

Cutting the Umbilical Cord

Step 1

- Fly within a 5 mile radius of BHS
- Stay up for 2 hours
- Climb then leave thermal
- Travel minimum 2 miles between thermals
- Visit minimum 2 thermals before revisiting a thermal.

Cutting the Umbilical Cord

Step 2

- Fly directly up-wind of BHS
- Climb in thermals
- Move on further directly up-wind
- Use your conservative L/D factor and a 2000 ft arrival altitude.
- When you reach your limit (eg.1-26 at 6 miles and 5000 ft) return on final glide to BHS.
- Note your altitude upon reaching BHS.

Cutting the Umbilical Cord

Step 3

- Fly directly up-wind of BHS
- Climb in thermals
- Move on further directly up-wind
- Use your conservative L/D factor and a 1000 ft arrival altitude.
- When you reach your limit (eg.1-26 at 8 miles and 5000 ft) return on final glide to BHS.
- Note your altitude upon reaching BHS.

Cutting the Umbilical Cord

Step 4

- Fly out and return to Pageland 12 miles.
- At half way point calculate for Pageland, stop referencing BHS.

Cutting the Umbilical Cord

Step 5

- Fly out and return to Camden 21 miles
- At half way point calculate for Camden, stop referencing BHS.

Silver Distance

- Fly out and return to Anson County 34 m
- Max tow 1500 ft (1% of 34 miles –300 ft)
- Fly via Pageland
- Pglnd to Anson = BHS to Camden
- You've already done it.
- BHS to A.C. = BHS to Pg + BHS to Cmd

Stress Free Cross-Country

- Use a safety factor + 1000 ft.
- Never fly beyond reach of home or next way point.
- Identify alternate emergency landing sites between planned way points.
- Fly on 5000+ft days and stay above 3000 ft.
- Carry a spare GPS.