

Air Sailing

Safety in Mountain Flying

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Ridge Flying



This talk is about both Mountain and Ridge flying.

Here, our ridges are the faces of mountains.

Ridge Flying



We tend to associate “Ridge” flying with the orographic effect of wind being lifted upward by a mountain or ridge.

But sometimes, with just a slight amount of wind, we will feel valley thermals being pushed against the ridge face and then experience combined orographic and thermal lifting.

Even with no wind, significant thermal lift may be generated at the base and along the face of the mountain and following the gullies upward.

There are multiple reasons to “Fly the Ridge”

Beware the Dangers



The “West” has a higher incident rate of people hitting mountains.

Although none of these people intentionally hit the mountain, all of these people intentionally got close.

More susceptible to rough air, gusts, and sink.

- *Close to ground; both laterally and vertically*
- *Flying at slower speeds*
- *No proper horizon*
- *Stronger visual illusions*

Ridge Flying Rules

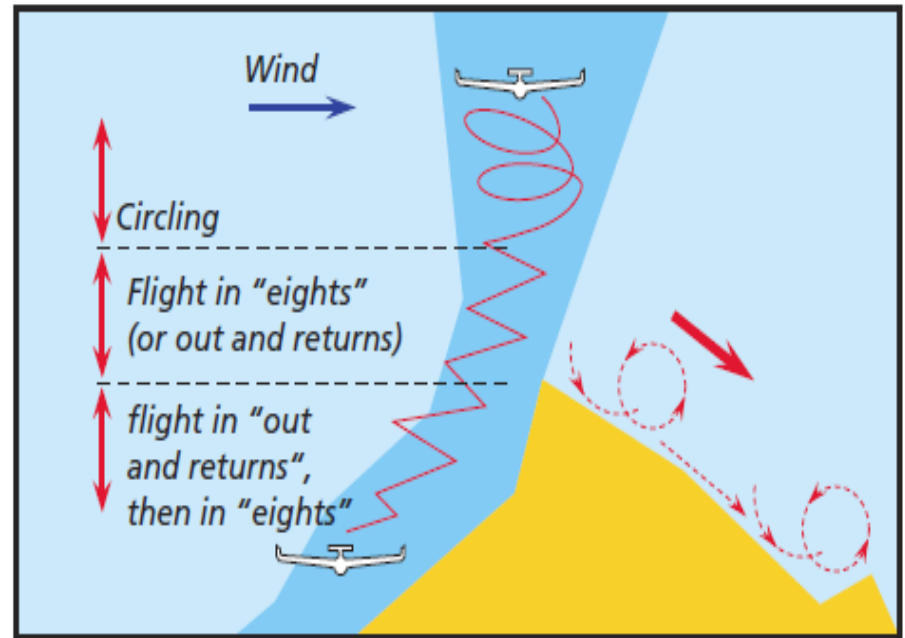
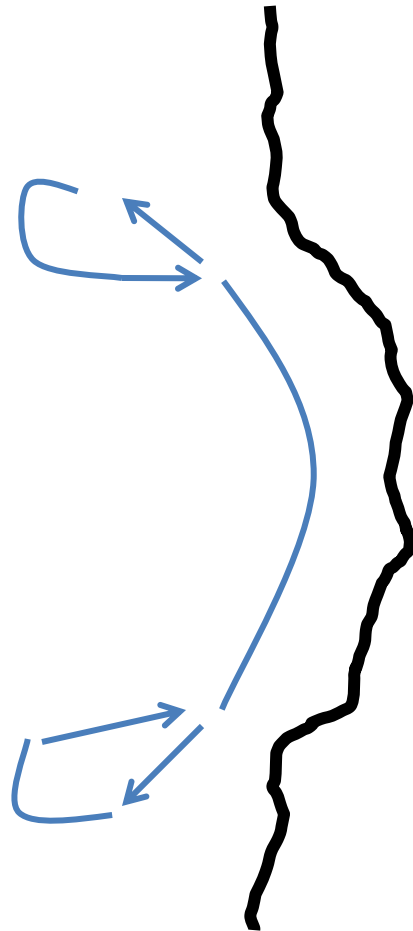


The harder the wind is blowing ... the more important these precautions !!

Precautions

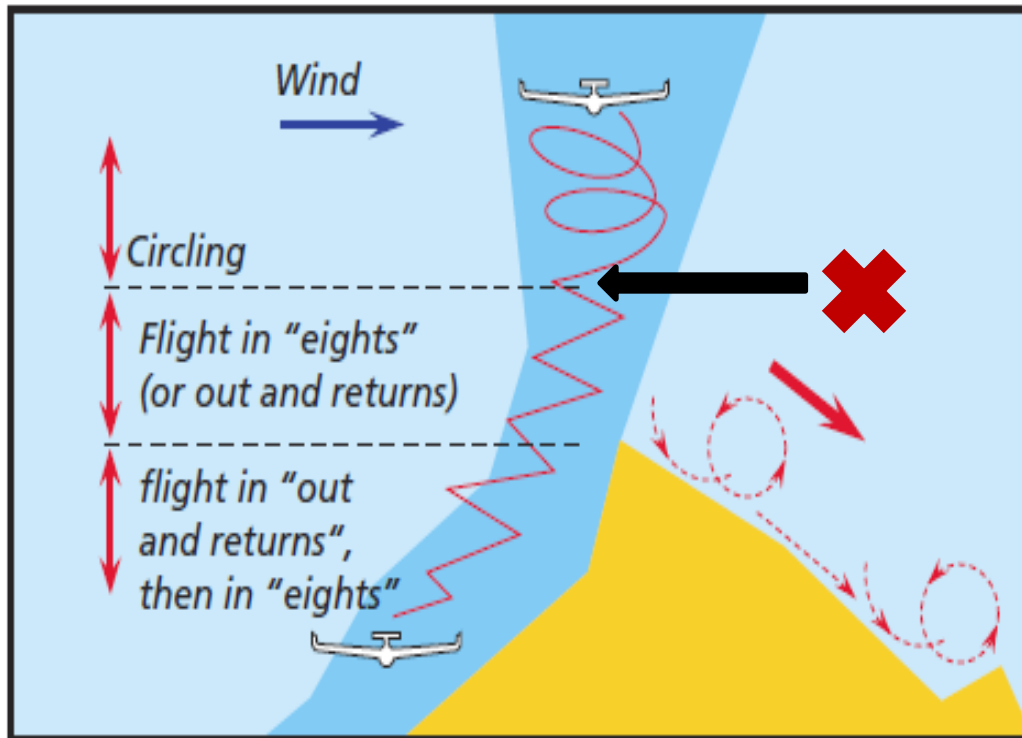
- Maintain extra speed (55+ to 70 Kts; Best L/D)
- Always have an escape plan; be ready to “BAIL”
- Approach at shallow angles (30-45 degrees)
- Climb using “Out & Return” or “Figure 8” maneuvers
- Maintain visual vigilance – eyes outside
- “Circling” below the ridgeline may be a bad idea
- Fly coordinated; Trust your instincts on proximity

Precautions



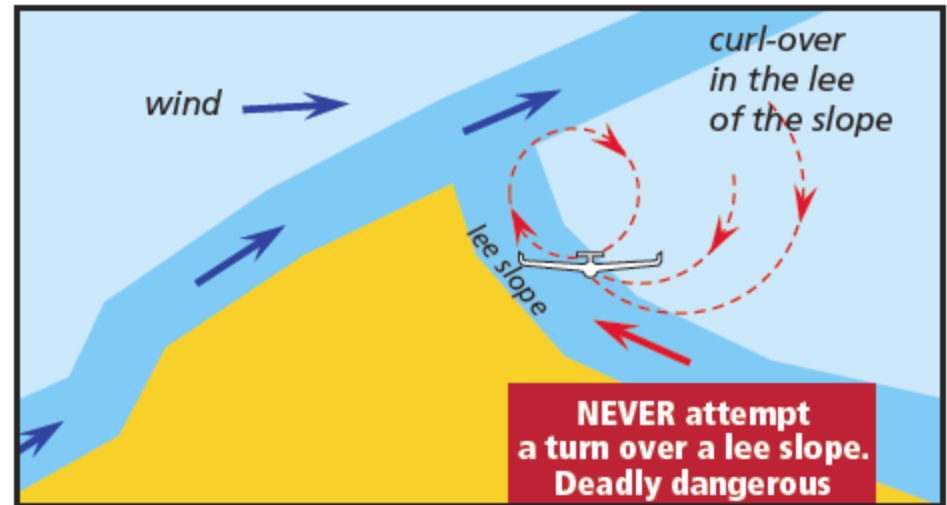
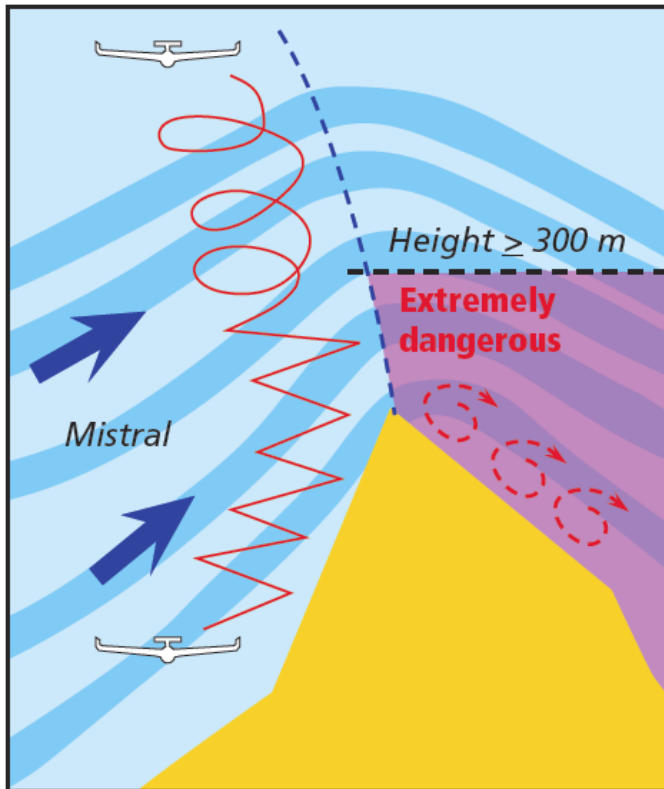
Always turn away from the mountain.
Use O&R or Figure 8 maneuvers to turn.

Precautions



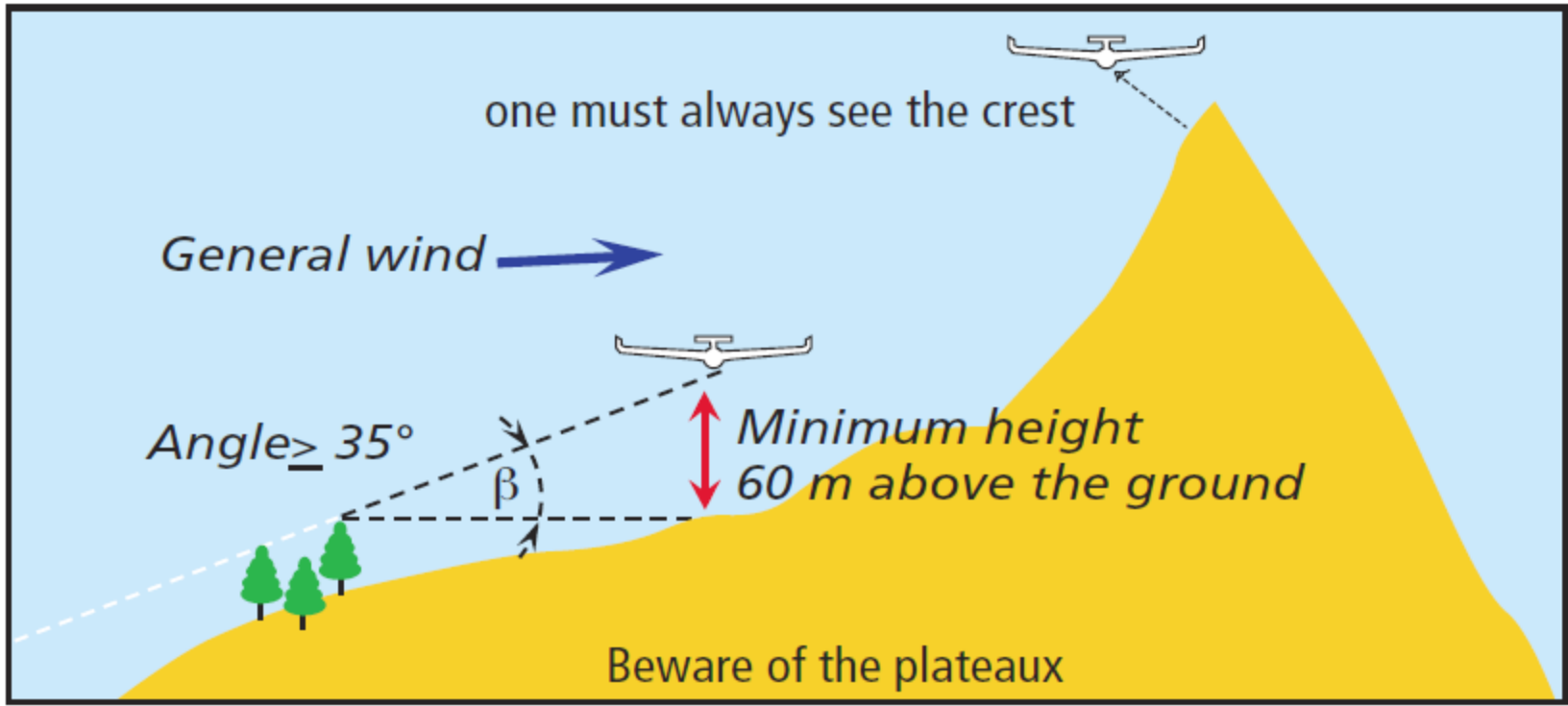
Don't drift
downwind of
the crest.

Precautions



As the winds get stronger, the Lee Side gets more dangerous. Rotor, turbulence, and downdraft may await you.

Precautions



Substitute Horizon



The presence of a mountain prevents you from seeing the true horizon.

The absence of a horizon can lead to “fixation” on improper visual references (mountain features, wing tips, vicinity of the wall). This can lead to uncoordinated flight or improper pitch/bank attitudes.

Need to generate a “substitute horizon” which is a mental image of where the horizon would be if you could see it.

Done by using visual references that exist in other parts of your 360° view and then extrapolating the image.

Oxygen



Remember the rules?

- > 14,000'; Required
- > 12,500' + 30 minutes; Required

These are the legal requirements.

Many people turn on their oxygen at 10,000' to be prudent.

These altitudes are not hard to achieve at Air Sailing!

Collision Avoidance



Right of Way Rules

FARs and Ridge Rules are not the same !!

Do Not Stay in the Blind Spot of another glider

(Remember, he might decide to “Bail”)

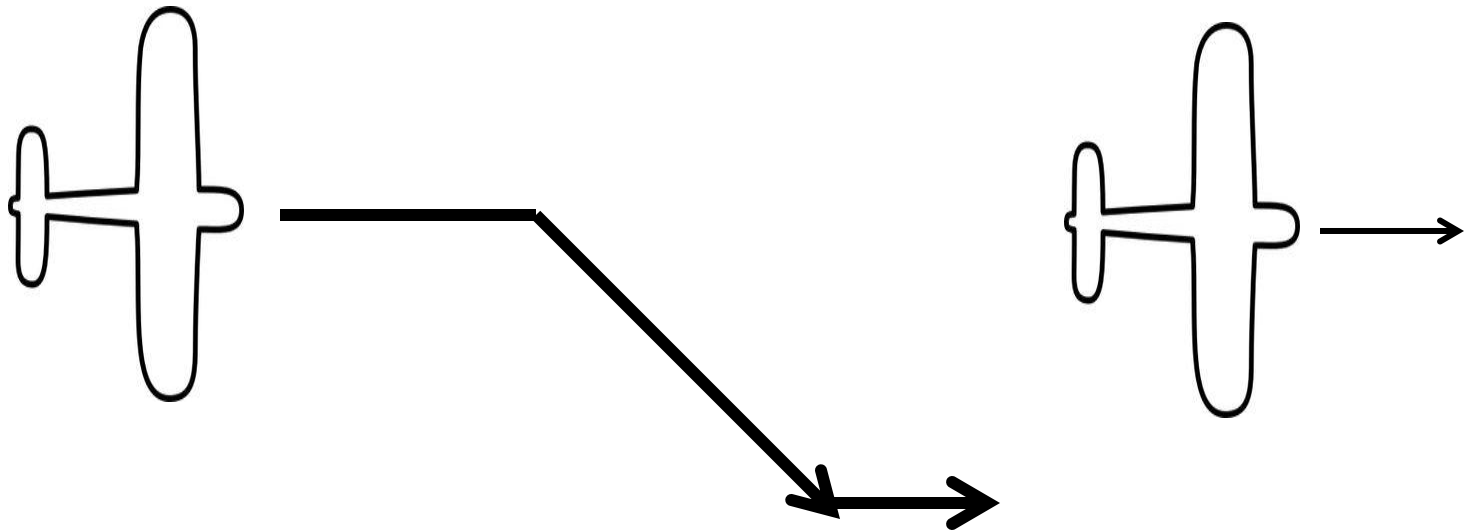
Eyes outside 95% of time

Clear your turns

Collision Avoidance



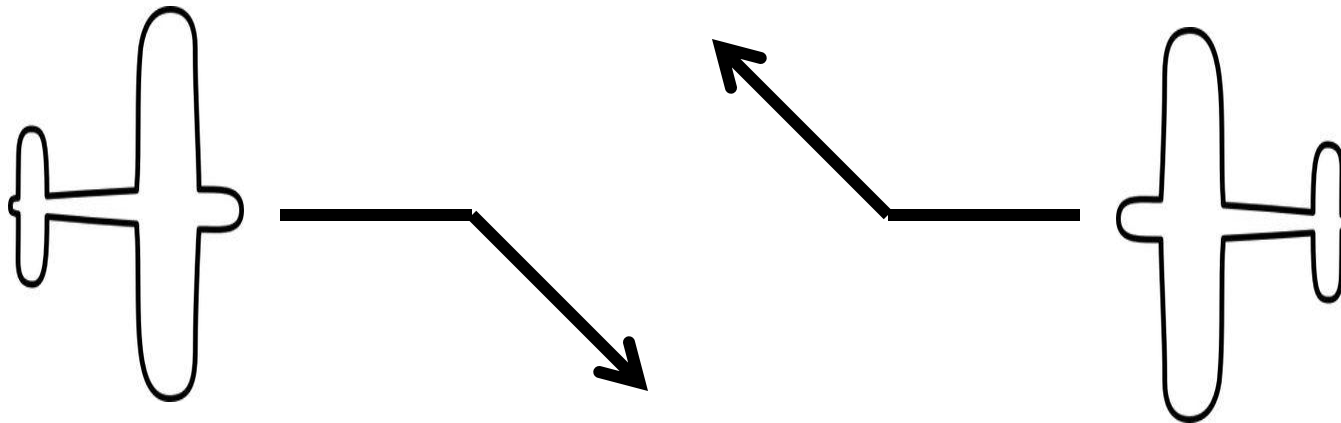
FARs --- Overtake slower traffic on the right.



Collision Avoidance



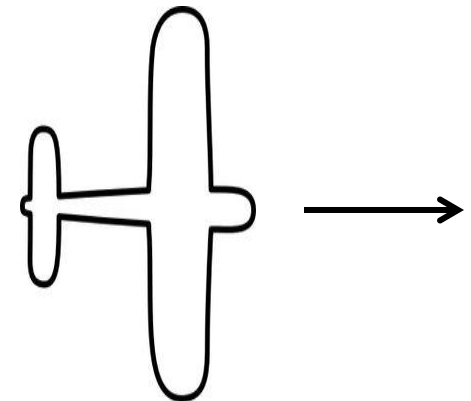
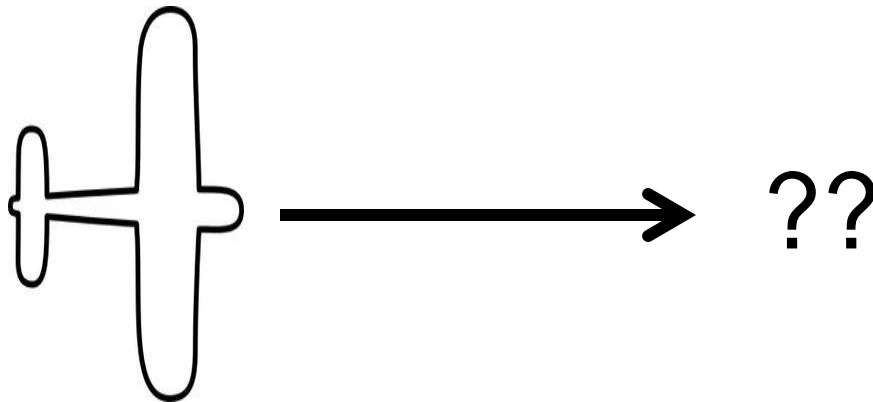
FARs --- Yield to converging traffic by turning to the right.



Collision Avoidance



Ridge



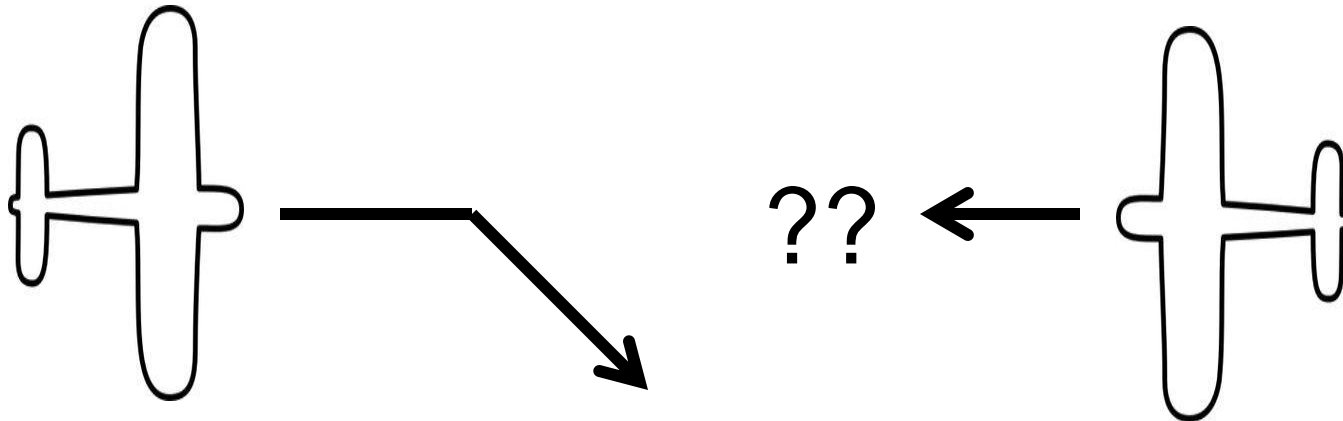
**You can't pass left (mountain side).
You can't pass right (outside).**

You can't pass !!

Collision Avoidance



Ridge



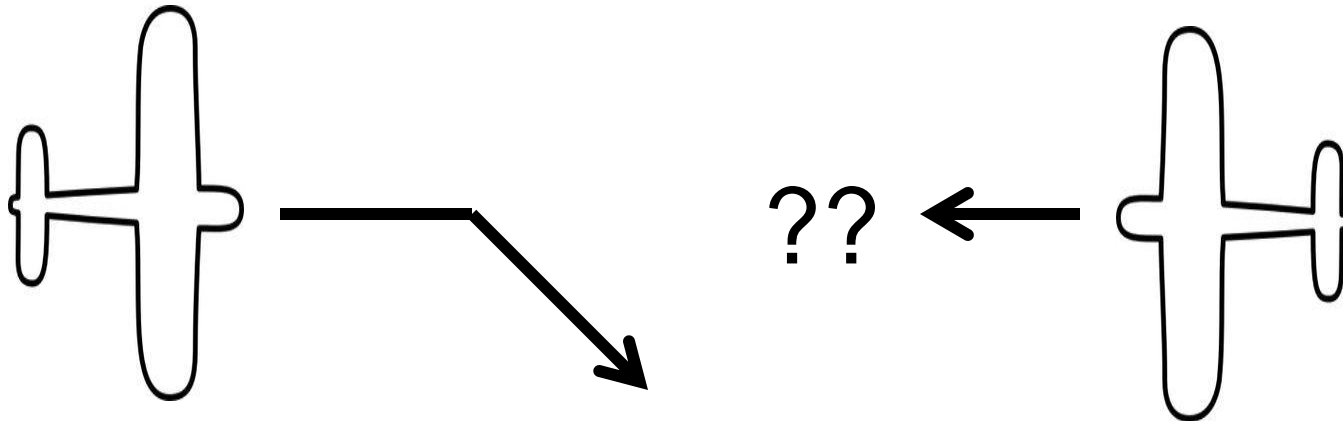
Dive !!

**Don't turn right
Don't turn left
Don't climb**

Collision Avoidance



Ridge



Dive !!

**Don't turn right
Don't turn left
Don't climb**

Take Offs and Landings



Re-emphasize Checklists

- *Assembly*
- *Positive Control*
- *Pre-Flight*
- *Pre-Take Off (Includes belts on and tight!)*
- *Pre-Landing*

ASG's "Soaring Safety Subjects" has an article on Checklists

The Pre-Landing checklist should be memorized and completed prior to reaching the IP

Take Offs and Landings



While on Tow

- *Stay behind the tow plane*
- *Remember the 2 second rule*
- *Expect a rough tow; Seat belt tight!?*
- *Planned release altitude?*
- *Remember the 5 second rule*

Take Offs and Landings



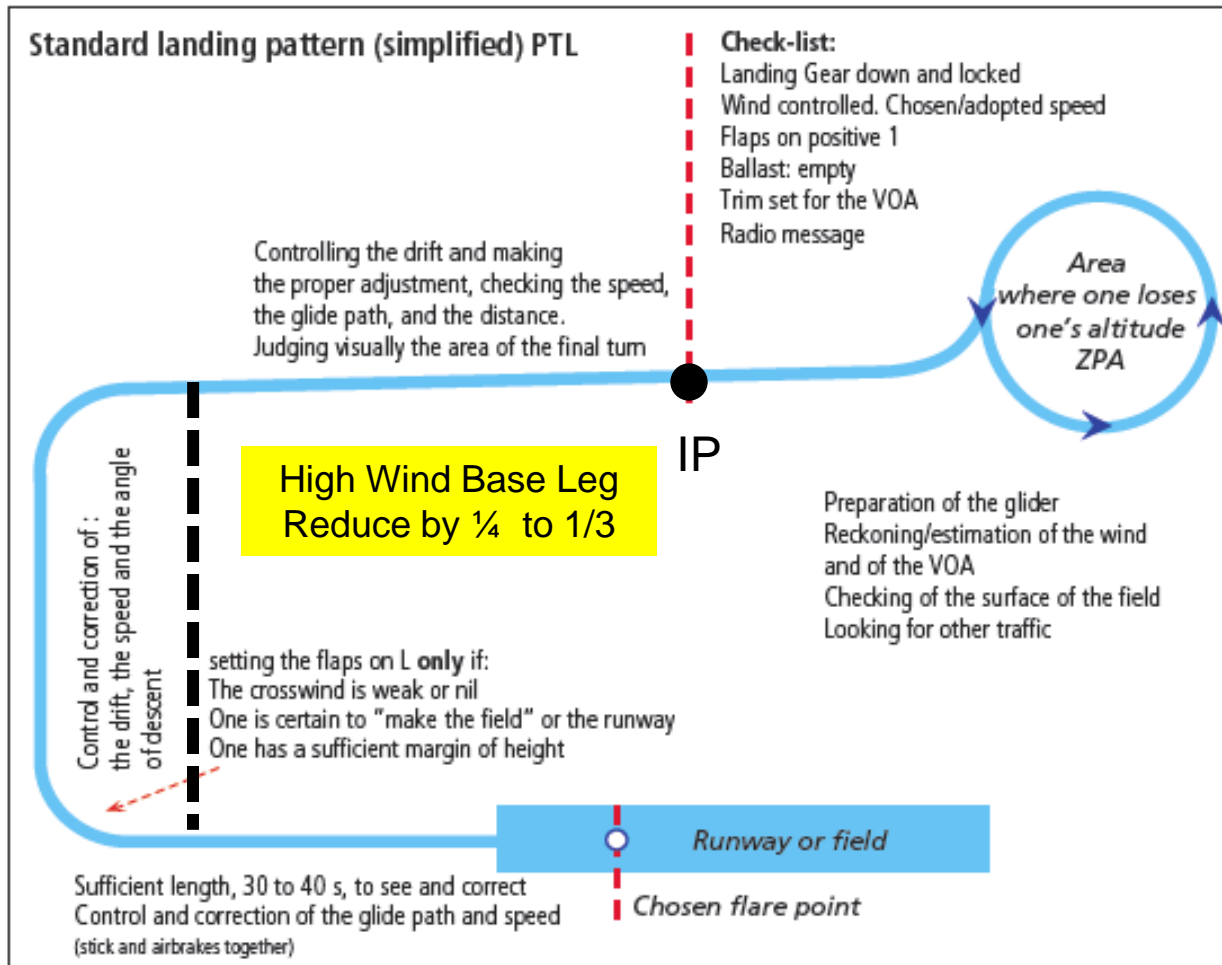
Winds stronger, gusts stronger, turbulence more pronounced.

Remember your X-Wind techniques

Landings in Strong Winds

- *$V_{appr} = 1.5 V_s + \frac{1}{2} Wind$*
- *Maintain V_{appr} until the flare*
- *Expect high GS on downwind*
- *Expect low GS and steeper angle on final*
- *Don't float; spoilers out for landing*
- *Stay planted; spoiler full & stick back*

Landing Patterns



Safety in Mountain Flying

THE END