

The National FAA Safety Team Presents

Mountain Flying Safety



Federal Aviation
Administration

Presented to: SLC Area Pilots
By: Emerson Borsato, CFI/CFII
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Produced by:
The National FAA Safety Team (FAASTeam)



Welcome

- Exits
- Restrooms
- Emergency Evacuation
- Breaks
- Set phones & pagers to silent or off
- Sponsor Acknowledgment
- Other information



Overview

- **Disclosures**
- **Mountain Flying Basic Education**
- **Good practices**
- **Mission Scenario**
- **Related accidents**



Disclosures

- **This is a mountain flying safety awareness lecture**
 - This is NOT a Mountain Flying Course
- **Instructor**
 - Maintenance Officer for SCFC
 - CFI, CFII



Mountain Flying Basic Education

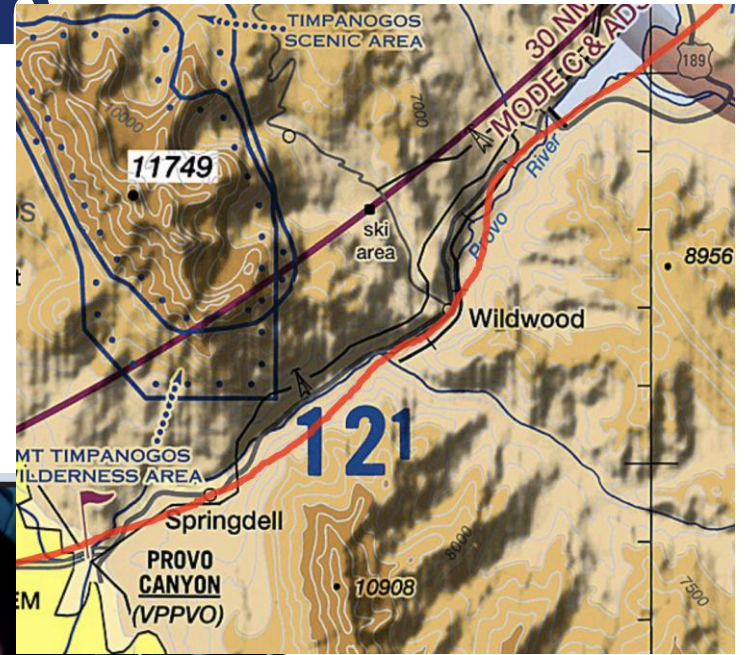
- **Beautiful views**
- **Unforgettable experience**
- **Unique challenges**
- **Right on our backyard**
 - We are in the Rockies
 - Missions will commonly require mountain flying



Mountain Flying Basic Education

Flight Planning

- **Route**
 - Route to avoid topography
 - Altitude to clear terrain
 - Check O₂ Requirements (FAR 91.211)
 - Night time?
 - Favorable time of the day

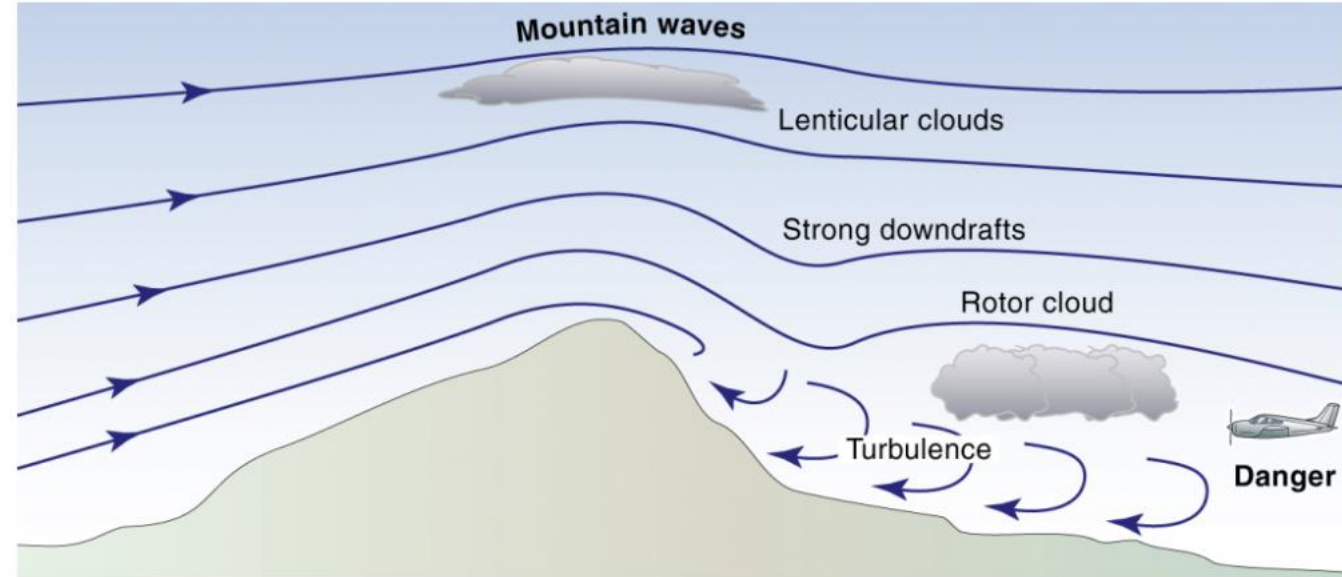


Mountain Flying Basic Education

Flight Planning

- **Weather**

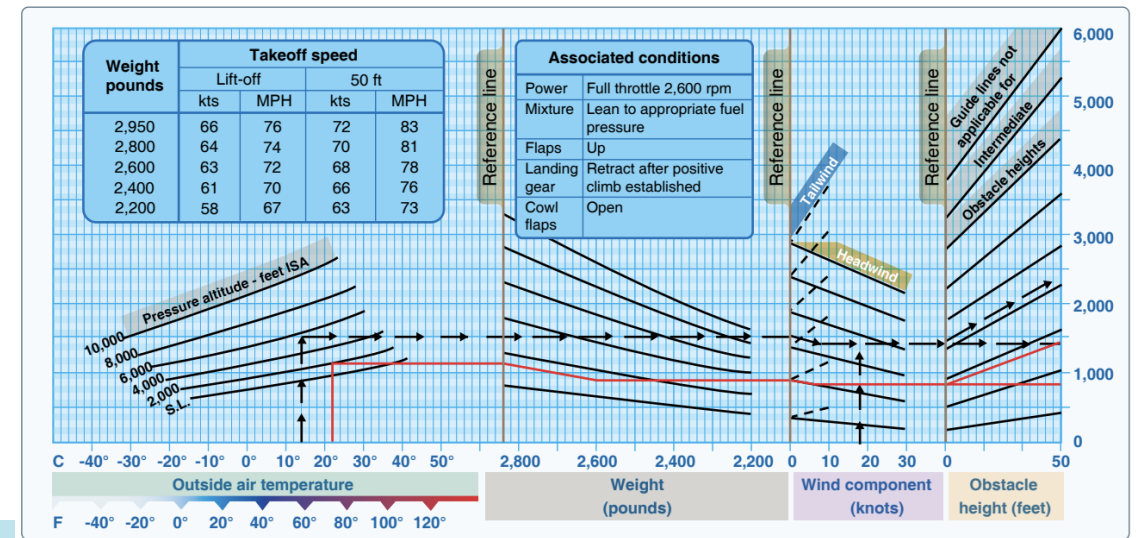
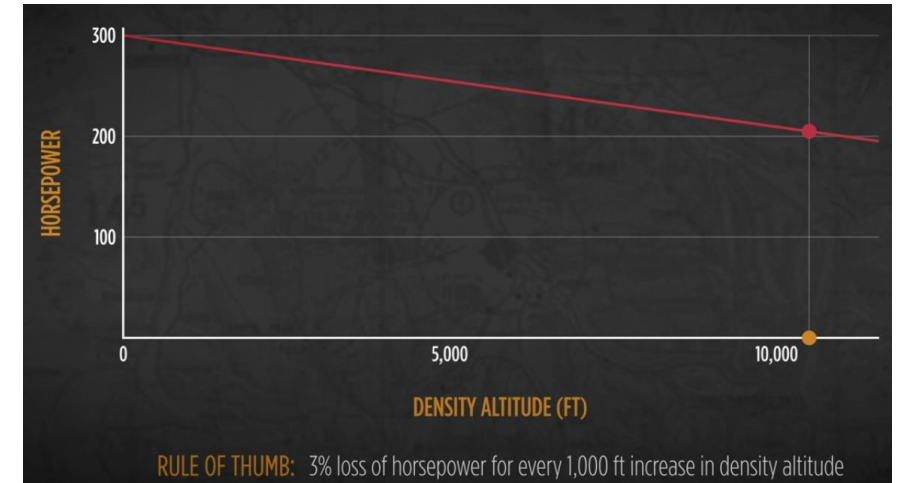
- Winds aloft (no more than 25 knots)
- Obscurations (can be deceiving)
- Icing
- Turbulence



Mountain Flying Basic Education

Flight Planning

- Density altitude
- Performance decrease with DA
 - Performance is not a linear function!
- Always consult POH for the conditions



Mountain Flying Basic Education

Flight Planning

- **Airports**
 - Location
 - Change in conditions (snow, mud, grass)
- **Backup plan**
- **Emergency preparedness**
 - First aid kits
 - Basic supplies
- **ADM**
 - PAVE, 5Ps, etc

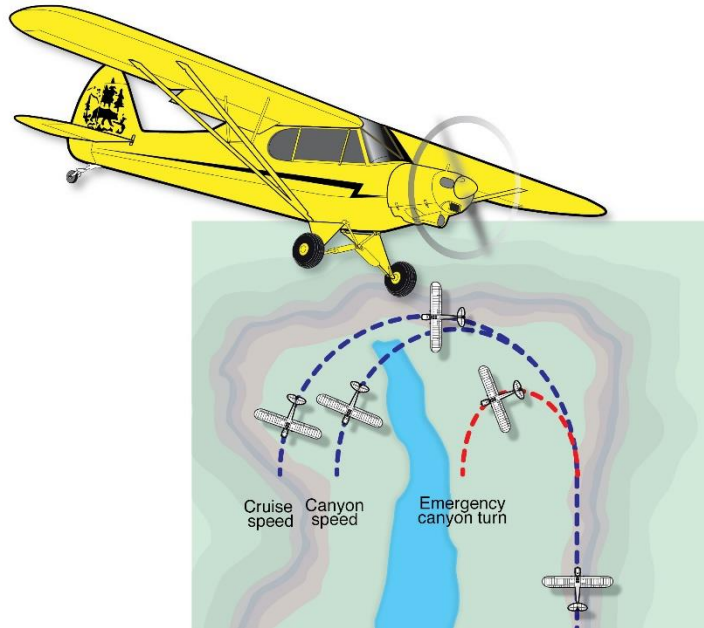


Mountain flying - Good practices

- **Plan ahead:**
 - time of day, route, alternates, suitable emergency landing spots, check weather (unstable air)
- **Prefer populated areas**
- **Climb before**
 - Adequate altitude before committing to cross a pass or a canyon.
- **Cross ridges at 45 angle**
- **Stay alert**
 - Keep a vigilant lookout for other aircraft and unexpected weather changes.
- **Check Airport conditions**
 - Runway surface, slope, and nearby obstacles. (it may change often)



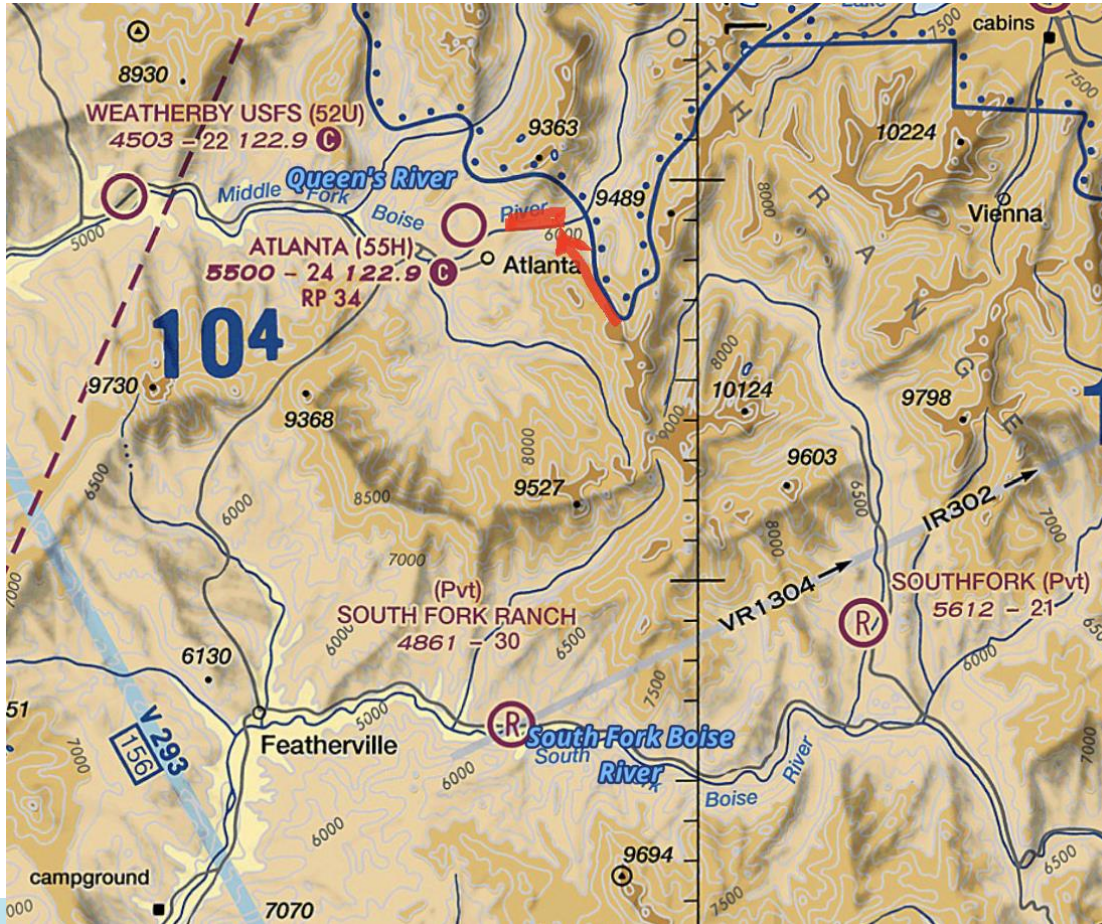
Mountain flying - Good practices



- **Canyons or Narrow Valleys**
 - The slower the better (turn radius)
 - Pick a side (watch for conditions, light/wind)
 - Always have an exit strategy
- **File and activate a flight plan**
- **Consider effects of high altitude**
 - impact on takeoff, climb, and landing
- **Be proficient at Short/Soft field TO/landings**
 - Able to hit your spot and center line every time
- **Stay within your comfort level**
 - If you are not experienced, get advice of an experienced instructor or avoiding the area altogether.



Scenario Based Mission



- **Mission**
 - Rescue a stranded plane in a remote area of Idaho before snows (1 nm east of 55H airport)
- **Planning**
 - Use charts, Satellite images, Flight simulator)
- **Restrictions**
 - Only two people onboard
- **Fuel plan and load**
- **Density altitude and time of day considerations**
- **Backup plan**
- **Lessons learned**
- **Risk Management**



Mission Risk Management

Hazard Identification	Risk Assessment	Risk Mitigation
Unfamiliar/uncharted airfield. Airfield positive identification.	Medium	Practice on simulators, do not descend beyond comfort level, return home
Weather	Medium	If wx not what forecasted (turbulence, poor visibility, etc), return home
Poor Climbing Performance	Medium	Reviewed performance charts with realistic different conditions and assess the climb. Under 2000 lbs gross weight. Knowledge of plane performance (Vx vs Vy)
Density altitude as day progress	High	We will depart at 10:30am, regardless if able to restore stranded plane.



Recent accidents

Date	NTSB#	Location	Aircraft	Conditions	Status	Pilot experience	Fatalities	Probable cause
7/3/21	CEN21FA305	Aspen, CO	Beech Bonanza G36	VMC	Final	ATP: 12,000 hrs (est)	2	The pilot's failure to navigate through mountainous terrain, which resulted in CFIT
10/5/20	CEN21FA007	Telluride, CO	Beech Bonanza S35	VMC	Final	ATP: 5750 hrs (est)	2	The pilot's loss of control during the climb to cruise flight resulting in the airplane's impact with terrain. Contributing to the accident was the pilot's decision to not climb to a higher altitude before proceeding over high terrain
7/3/20	WPR20LA203	Alpine, UT	Cessna 172M	VMC	Final	Commercial: 450 hrs (est)	4	The pilot's exceedance of the airplane's critical angle-of-attack while maneuvering in a canyon, which resulted in a loss of airplane control.
7/13/17	WPR17FA149	Herriman, UT	Aviat A-1B (Husky)	VMC	Final	ATP/CFI: 1553 hrs	2	The flight instructor's decision to conduct a low-altitude flight into a box canyon in high density altitude conditions and his failure to maintain airspeed while maneuvering to escape the canyon, which resulted in an exceedance of the airplane's critical angle of attack and an aerodynamic stall.
8/15/21	WPR21FA321	Bountiful, UT	Cessna 182H	VMC	Preliminar	New CFI (two CFIs among the victims)	3	N/A
4/23/22	WPR22FA164	Cedar City, UT	Diamond DA-40	VMC	Preliminar	N/A	4	N/A



Questions?



Thank you for attending

- You are vital members of our GA safety community

