Teaching Flight Maneuvers

Soaring Safety Foundation

FIRC Presentation
Necessary Flight Maneuvers

• Normal and Crosswind Launch
• Straight and Turning flight
• Ground Reference
• Stalls and Spins
• Slips to Landing
• Normal and Crosswind Landing
• Emergency procedures
Necessary RM/ADM Skills

• Identify potential risks and mitigation strategies before a flight begins
• Monitor risks during a flight and adjust actions as necessary
• Introduce the concept that good decision making skills are a learned behavior
  – These skills enable the pilot to detect mistakes, not completely eliminate them
Necessary Instructor Tasks

• Introduce new material
  – Use books, web-sites, videos, oral lectures, and in-flight demonstrations to present/discuss new flight maneuvers and other necessary tasks

• Evaluate pilot performance and progress

• Evaluate pilot RM/ADM skills
Visual Scanning

- Peripheral vision detects motion
- Foveal vision identifies objects
- Proper scanning procedures
  - Use multiple sectors (10 deg)
  - Stop in each sector for a second or 2
  - Focus on distant object
Old and New Technology
Flight Maneuver Scenarios

- Training pilots to scan effectively
- Evaluating a rated pilots scan technique
- Misuse of electronic visual aids
- Flight planning to stay within gliding distance of the airport
- Misuse of electronic navigation aids
- Student reliance on CFI's decisions
- Evaluating the weight & balance issues
Training Pilots to Scan Effectively

Sam, a new student is making his 3rd glider flight with Ingrid, a new flight instructor. The ground briefing has included a discussion of the proper scanning technique and the need to clear turns before moving the flight controls. After release, Ingrid tells Sam to make a 90 deg left turn. She notices that the flight controls move, but Sam failed to clear the turn. She waits for the turn to complete and then points out the error.
Training Pilots to Scan Effectively

- Pilot
- Aircraft
- Environment
- External
Evaluating a Rated Pilots Scan Technique

Ingrid, an experienced flight instructor, is giving a flight review to Irving, a 100 hr private pilot. As the flight progresses Ingrid notes that Irving appears to be his clearing turns, but he doesn't call out other traffic. While climbing in a weak thermal Ingrid notices another glider climbing faster about 1/2 mile to the east. Irving makes no attempt to join the other glider until Ingrid asks him to compare their respective climb rates. How should Ingrid determine if Irving is seeing these other gliders?
Evaluating a Rated Pilots Scan Technique

- Pilot
- Aircraft
- enVironment
- External
Misuse of Electronic Visual Aids

Sam is a high time X-C pilot who is highly placed in the local club contest. Sam is just about to make his '4 miles out and finishing' radio call when he hears Ingrid make the same call. Sam makes his call and finally spots Ingrid's glider as it pulls up about 1/4 mile in front of him after it crosses into the finish cylinder. After landing, Sam and Ingrid are surprised to learn they flew the 20 miles back from the final turnpoint together without seeing each other. Sam also wonders why the FLARM system never indicated the presence of Ingrid's glider.
Misuse of Electronic Visual Aids

- Pilot
- Aircraft
- enVironment
- External
Ingrid, an experienced CFIG, is flying with Sam a post-solo student preparing for his flight test. After conducting a preflight briefing on how the winds will effect the gliders performance the flight begins. Sam is having problems maintaining airspeed control on his steep turns so Ingrid concentrates on identifying the problems and coaches him on how to improve his performance. Ingrid then realizes that she also needs to get Sam to recognize that he is not monitoring the gliders position in relation to the airport.
Flight Planning to Stay within Gliding Distance of the airport

- Pilot
- Aircraft
- enVironment
- External
Misuse of Electronic Navigation Aids

Sam, a 75 hr private pilot, has recently moved from the northeast to the midwest bringing his trusty Pegasus with him. Sam has gotten a field check-out at his new club and is getting to know the area. Arriving at the field on Saturday morning Sam learns that the hazy conditions will be accompanied by weak, but usable, lift and several club members are planning a X-C task. The database in his old Cambridge flight recorder is current so Sam agrees to tag along with the crowd.
Misuse of Electronic Navigation Aids

- Pilot
- Aircraft
- enVironment
- External
Student Reliance on CFI's Decisions

Ingrid, a new CFI, is conducting a flight review with Sam, a low time private pilot, in the club's 2-33. The flight is being done early in the morning so Ingrid can fly her own glider when the thermals begin. Sam has been having trouble coordinating his turns and Ingrid has focused her attention on identifying and correcting his problem. Ingrid has been expecting Sam to keep track of the glider's position and is surprised to suddenly realize that the glider is now about 1 mile downwind and near pattern entry altitude.
Student Reliance on CFI's Decisions

- Pilot
- Aircraft
- enVironment
- External
Evaluating the Weight & Balance

Irving, an experienced flight instructor, has been assigned to fly with Sam in the club's 2-33. According to the glider's placard, the glider's empty weight is 625 lbs and the useful load is 375 lbs, yet Irving knows that the gross weight of a 2-33 is 1040 lbs, so the useful load should be 415 lbs. Sam and Irving have a combined weight of 380 lbs. The glider is on the flight line now, do you make the flight?
Evaluating the Weight & Balance

- Pilot
- Aircraft
- enVironment
- External