

Decision Making & Risk Management

2011 Presentation by Ron Ridenour
DPE, CFIG & SSF Trustee

with credits to Rich Carlson
for some content contribution

SSF *Soaring Safety Foundation*



A Changing Landscape

- Improve Pilot skill level
- Improve Pilot support system
- PHAK chap17, Aeronautical Decision Making
- Many names
 - Aeronautical Decision Making
 - Judgment Training
 - CRM/SPRM
 - Risk Management



Regulatory Requirements

- Private Pilot FAR 61.105 Aeronautical Knowledge
 - (b)(12) Aeronautical Decision Making and Judgment
- Practical Test Standard (PTS)
 - Aeronautical Decision Making and Risk Management
 - Single Pilot Resource Management



ADM – Underlying Principles

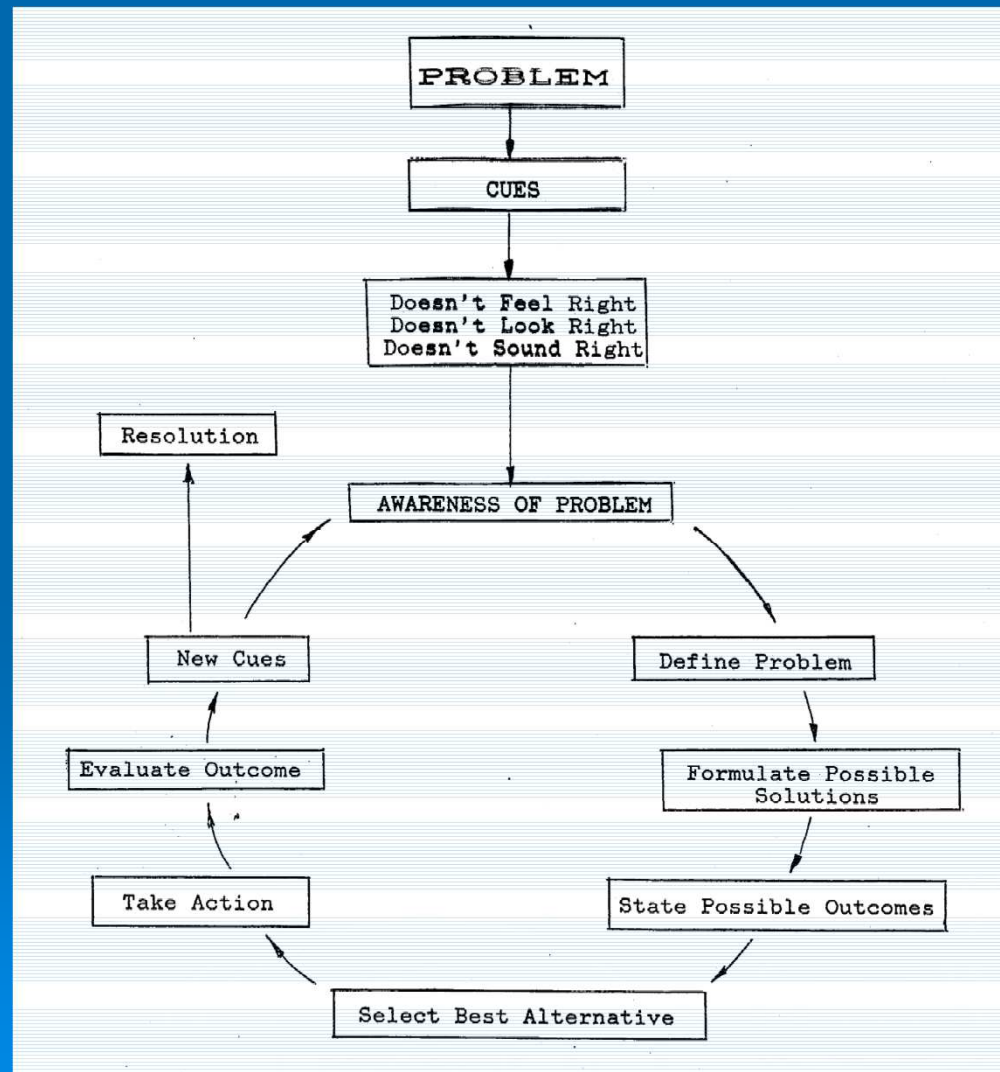
- Good Decision Making and Risk Management skills can be learned
 - Explicit training using available resources
 - Books, pamphlets, AC's
 - Flight Reviews and FAA WINGS Program
 - Implicit training by example
 - What you do vs what you say
 - What do your peers do



Resources

- FAA-H-8083-25A Pilots Handbook of Aeronautical Knowledge
- FAA-H-8083-2 Risk Management Handbook
- FAA-H-8083-13 Glider Flying Handbook
- Title 14 CFR Parts 1, 61, & 91
- Aeronautical Information Manual
- www.faa.gov
- www.faasafety.gov
- www.soaringsafety.org

ADM – Decision Making Process



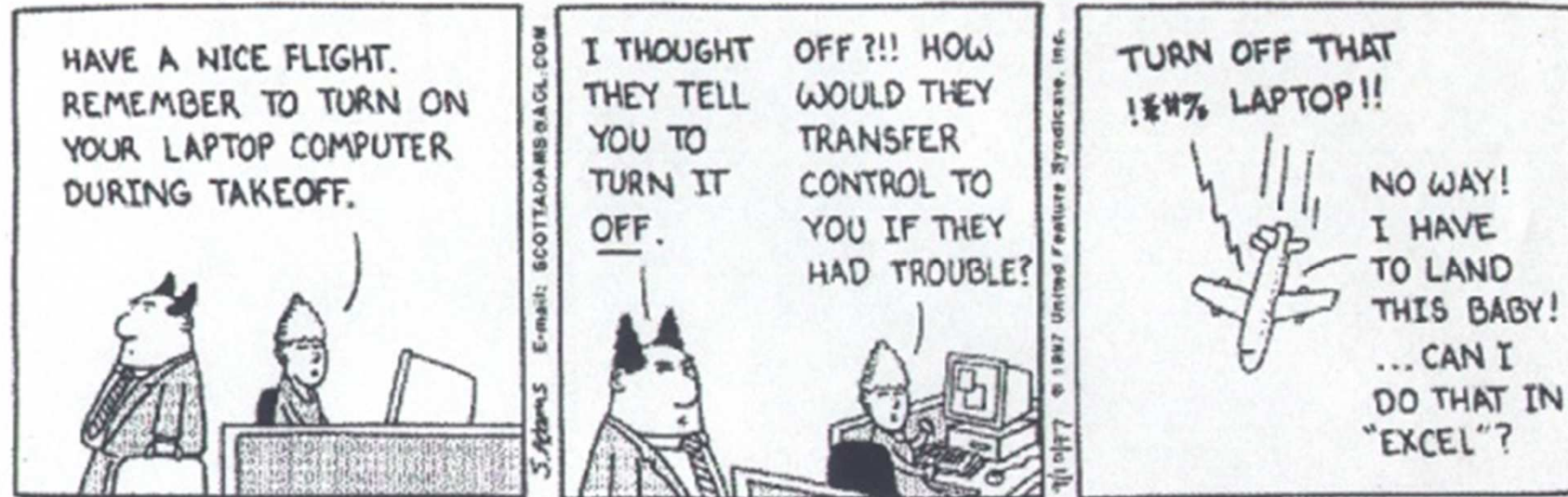


ADM – 5 Hazardous Thoughts

- Based on study of pilots
 - Anti-Authority (follow the rules they're usually right)
 - Invulnerability (it can happen to me)
 - Impulsive (slow down and think first)
 - Macho (taking chances is foolish)
 - Resignation (I can make a difference)

ADM - Example

Strip for 10-Sep-1997



Copyright © 1997 United Feature Syndicate, Inc.
Redistribution in whole or in part prohibited

ADM – Current Thinking

- Decisions are based on
 - Experience
 - Knowledge of multiple facts
 - Expected outcome
 - Evaluation of changing events
 - Known or expected risks
 - Known or expected rewards



ADM – Tools to Improve the Odds

- Erect multiple barriers to prevent mistakes
 - Glider assembly process
 - POH, or other written, instructions
 - Limit distractions
 - Knowledgeable assistant
 - Suitable space
 - Post assembly checklist
 - Positive Control Check
 - Critical Assembly Check

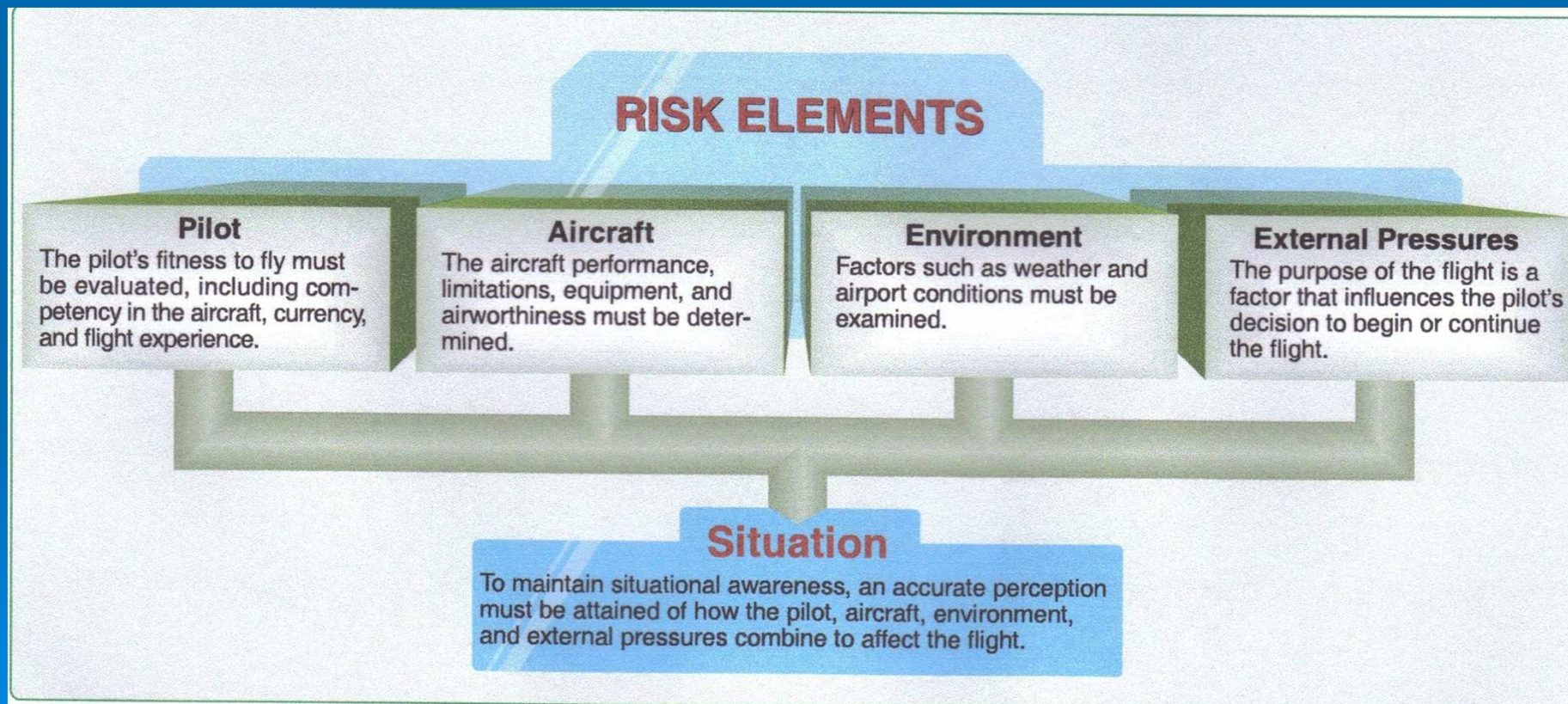


ADM – Tools to Improve the Odds

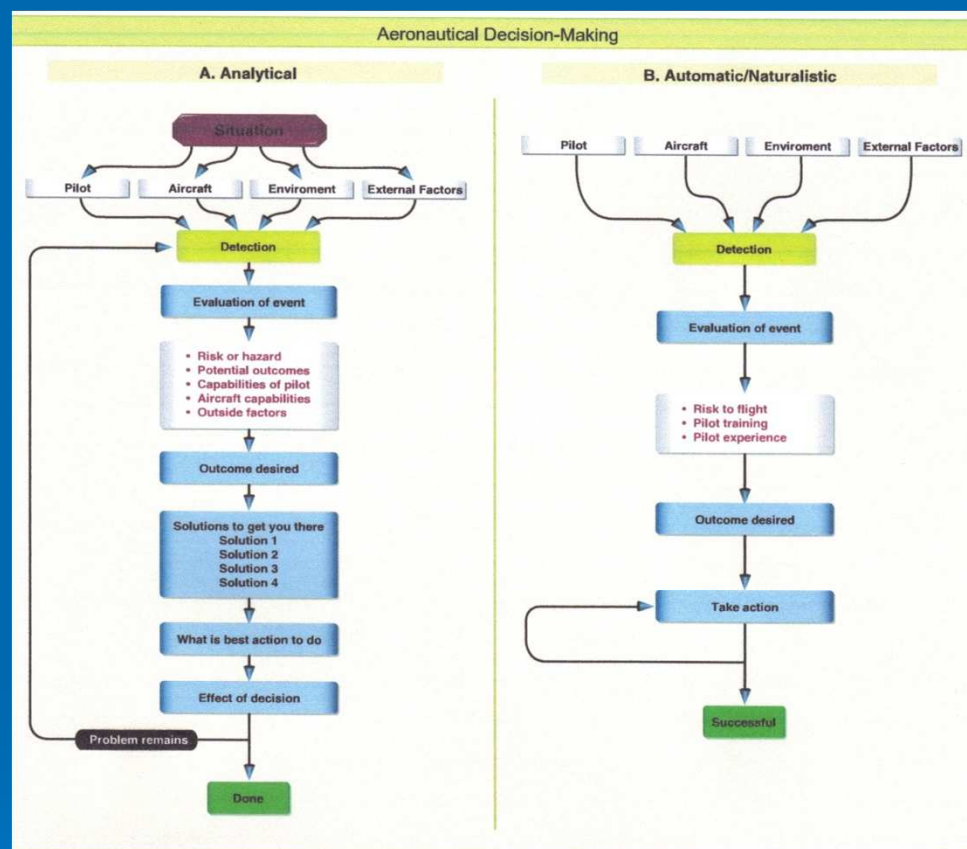
- Evaluate actions, reactions, and responses
 - Pre-flight: Are you ready for this flight?
 - In-flight: Is this the right course of action now?
 - Post-flight: What actions, or inactions, do I feel uncomfortable with and how can I improve things?

Risk Elements

PAVE Model



ADM - DECIDE Model



The DECIDE Model

1. **Detect.** The decision maker detects the fact that change has occurred.
2. **Estimate.** The decision maker estimates the need to counter or react to the change.
3. **Choose.** The decision maker chooses a desirable outcome (in terms of success) for the flight.
4. **Identify.** The decision maker identifies actions which could successfully control the change.
5. **Do.** The decision maker takes the necessary action.
6. **Evaluate.** The decision maker evaluates the effect(s) of his/her action countering the change.

Figure 17-11. The DECIDE model has been recognized worldwide. Its application is illustrated in A while automatic/naturalistic decision-making is shown in B.



ADM - Problems

- Why would items not be accomplished
 - Forgot
 - Rushed
 - Distracted
 - Ignored
 - Deemed unimportant



SPRM - Background

- Grew out of Commercial Airline Operations
 - Flight crew failed to warn the pilot of a problem/mistake
 - Captain didn't listen to other crew members



CRM – Airline Operations

- Individuals the flight crew can use
 - Flight crew members
 - Ground crew
 - Dispatchers
 - Maintenance personnel
 - ATC
 - Weather specialists



SPRM – Glider Operations

- Individuals the Glider Pilot can use
 - Pilot, co-Pilot in multi-place glider
 - Fellow club members
 - Ground crew
 - Wing runner
 - Tow Pilot
 - Instructor
 - FSS
 - Internet Resources



Conclusions

- Every pilot must receive ADM, SPRM and Risk Management instruction
- Good decision making can be taught
- Poor decision making can lead to incidents and accidents
- Use your next flight review to learn new decision making skills
- Critique your flying
- Be Ambassadors of Safety!