

How to Avoid Having a Really Bad Day



Introduction

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Welcome!

This presentation was given at a local pilots meeting during a discussion on avoiding pilot errors.

The discussion took place after a fatal accident involving 4 people on a bird survey.

"We have met the enemy, and he is us"

- In 2006:
 - Pilots were responsible for 79% of fatal accidents
 - Mechanical/Maintenance – 10%
 - Other/Unknown – 11%
 - » Source: AOPA Air Safety Foundation
 - » 2007 Nall Report, "Accident Trends and Factors for 2006"
 - We are all human. Humans make mistakes.
 - A simple fact of life

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The Top Five Pilot Mistakes

- Maneuvering Flight - 25%
 - Descent and Approach – 19%
 - Weather – 15%
 - Takeoff and Climb – 14%
 - Fuel – 5%
- Source: AOPA Air Safety Foundation
 - 2007 Nall Report, “Accident Trends and Factors for 2006”

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The Discussion

- Here we will address two of these:
 - Maneuvering Flight
 - Weather: VFR into IMC

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Indiantown, Florida, March 13, 2008

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- The Facts:
 - Cessna 172S (180 hp)
 - Day, Good VFR, ATP, Lear 60 type-rated pilot, ~3000 hr
 - Flight left LNA with pilot, one pax, full fuel
 - At OBE, picked up two more pax + baggage
 - Mission: Bird Survey Flight for FAU
 - Slow and low, as low as 200 ft

What a Witness Saw

- During one “real low” pass [200-250 ft] “the nose dropped and the tail went straight up”
- Witness saw a spin to the right, increase in engine noise
- Aircraft descended into the ground
- No survivors

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More Facts

- Flaps were set to about 14°
- Elevator trim set 5° nose-up
- No evidence of mechanical failure or in-flight fire
- About 10 gal of fuel found in the tanks
 - But the fuel and vent lines were both broken
- Leaving OBE, the airplane was ~250 lb over gross.

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What Happened?

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We had:

- Experienced ATP pilot
- Perfectly operating airplane
- Excellent weather
- Daytime

More than Meets the Eye

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- Pilot: Just back from a week's vacation in Chicago the day before. Flight departed ~0630
- Familiar with the flight profile, but had never flown a survey flight
- Distractions: GPS, demanding ornithologist(s) always wanting lower, slower, maneuvering for photos while avoiding birds
- Birders not happy unless stall horn on LOUD
- This was the last contract flight with FAU
- Pilot not very familiar with specific airplane
- Reportedly, he had raved about the airplane's tremendous stability, stall and spin resistance

How Could This Accident Chain
Have Been Broken?

Aeronautical Decision Making

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- Decision-Making
- Risk Management
- Hazardous Attitudes
- Use of Resources
- Situational Awareness
- Operational Pitfalls



DECIDE

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DECIDE MODEL

Detect the fact that a change has occurred.

Estimate the need to counter or react to the change.

Choose a desirable outcome for the success of the flight.

Identify actions which could successfully control the change.

Do the necessary action to adapt to the change.

Evaluate the effect of the action.

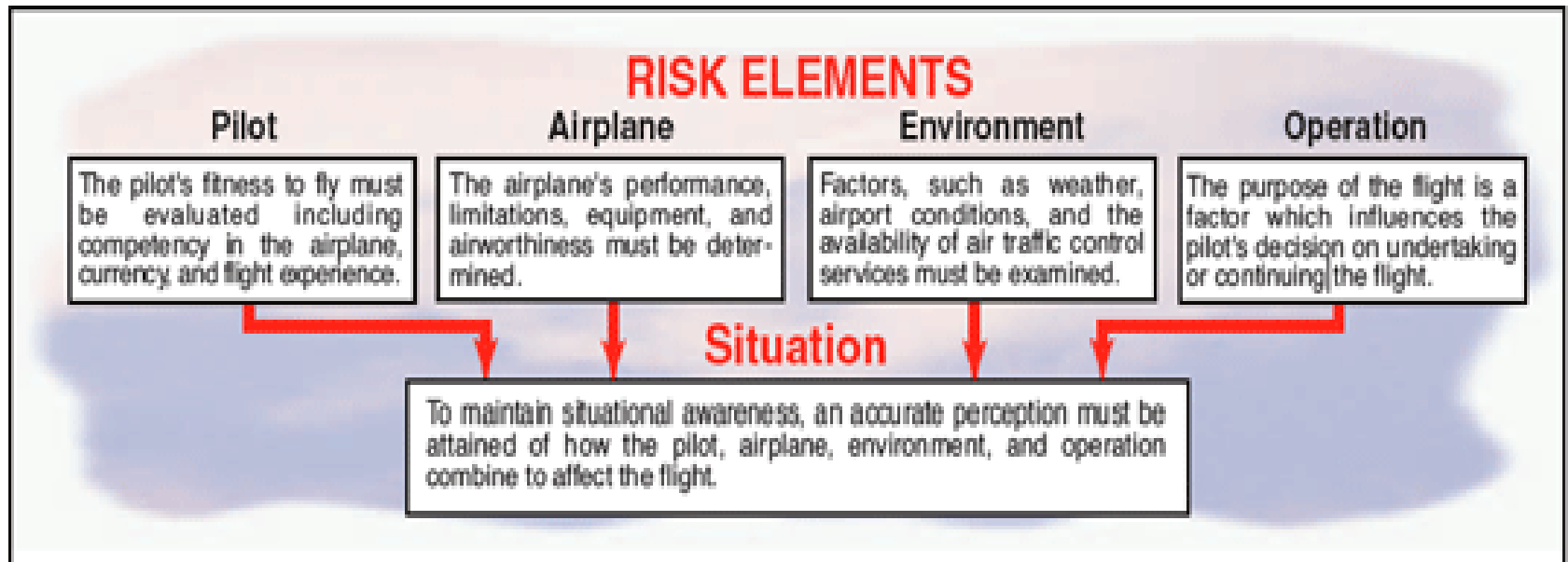
Risk Management

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Self-Risk: Am I Safe?



I'M SAFE CHECKLIST

Illness—Do I have any symptoms?

Medication—Have I been taking prescription or over-the-counter drugs?

Stress—Am I under psychological pressure from the job? Worried about financial matters, health problems, or family discord?

Alcohol—Have I been drinking within 8 hours?
Within 24 hours?

Fatigue—Am I tired and not adequately rested?

Eating—Am I adequately nourished?

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Hazardous Attitudes

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HAZARDOUS ATTITUDES	ANTIDOTES
<p>1. Anti-Authority: Although he knows that flying so low to the ground is prohibited by the regulations, he feels that the regulations are too restrictive in some circumstances.</p>	<p>Follow the rules. They are usually right.</p>
<p>2. Impulsivity: As he is buzzing the park, the airplane does not climb as well as Steve had anticipated and without thinking, Steve pulls back hard on the yoke. The airspeed drops and the airplane is close to a stalling attitude as the wing brushes a power line.</p>	<p>Not so fast. Think first.</p>
<p>3. Invulnerability: Steve is not worried about an accident since he has flown this low many times before and he has not had any problems.</p>	<p>It could happen to me.</p>
<p>4. Macho: Steve often brags to his friends about his skills as a pilot and how close to the ground he flies. During a local pleasure flight in his single-engine airplane, he decides to buzz some friends barbecuing at a nearby park.</p>	<p>Taking chances is foolish.</p>
<p>5. Resignation: Although Steve manages to recover, the wing sustains minor damage. Steve thinks to himself, "It's dangerous for the power company to put those lines so close to a park. If somebody finds out about this I'm going to be in trouble, but it seems like no matter what I do, somebody's always going to criticize."</p>	<p>I'm not helpless. I can make a difference.</p>

Stressors

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STRESSORS

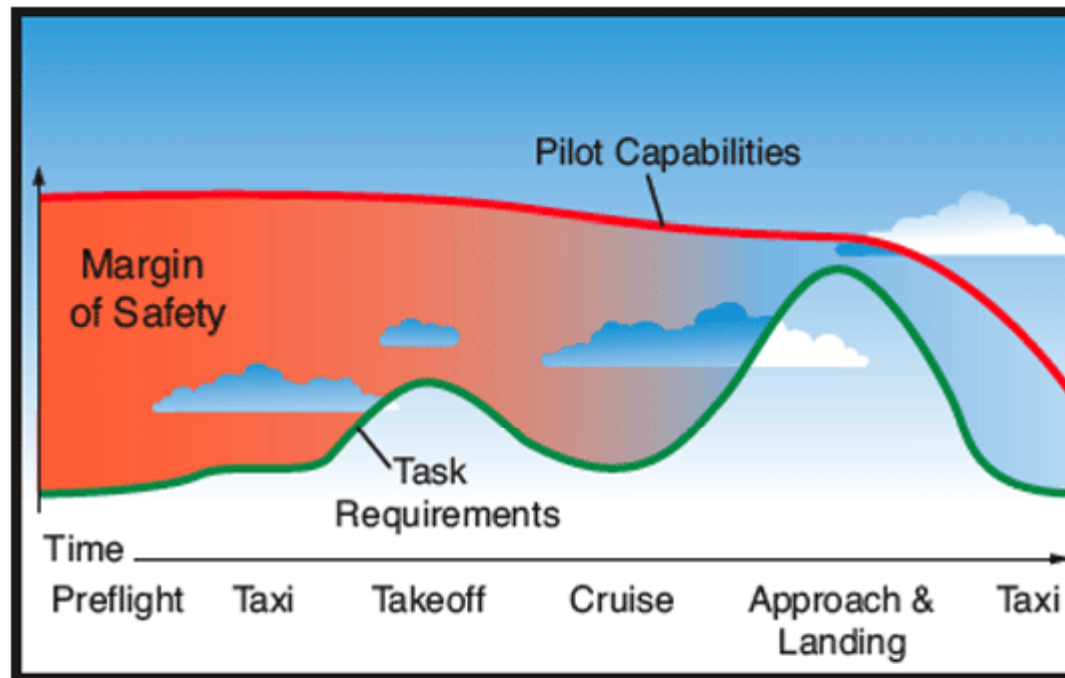
Physical Stress—Conditions associated with the environment, such as temperature and humidity extremes, noise, vibration, and lack of oxygen.

Physiological Stress—Physical conditions, such as fatigue, lack of physical fitness, sleep loss, missed meals (leading to low blood sugar levels), and illness.

Psychological Stress—Social or emotional factors, such as a death in the family, a divorce, a sick child, or a demotion at work. This type of stress may also be related to mental workload, such as analyzing a problem, navigating an aircraft, or making decisions.

Use of Resources

- Use of Resources- Inside and Out
 - Examples?
- Workload Management



Situational Awareness

- All adversely affect situational awareness:
 - Fatigue
 - Stress
 - Work Overload
 - Complacency
 - Distraction
 - Fixation

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Operational Pitfalls

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- Peer Pressure
- Mind set – unable to cope with change
- Get-there-itis
- Insufficient fuel
- Descent below MEA
- Duck-under-syndrome
- Neglect of flight planning, preflight inspection, use of checklists
- Loss of positional or situational awareness
- Flying outside the envelope
- Getting behind the airplane
- Scud-Running
- **VFR into IMC**

Movie

- Let's watch the following movie
- What would you have done differently?
- What aspects of ADM apply here?

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178 Seconds to Live

- The following is a video from ASF's *Top 5 Mistakes Pilots Make* Seminar
- It is provided courtesy of the AOPA Air Safety Foundation (www.asf.org)
 - Kim Catania and Tracy Kursch

[178 Seconds To Live](#)

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Thank you all for coming!

