



NATIONAL ASSOCIATION OF FLIGHT INSTRUCTORS

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The background of the slide is a soft-focus photograph of three cardinals. One cardinal is perched on a branch on the left, another is in flight with its wings spread on the right, and a third is perched on a branch in the lower center. The text is overlaid on this image.

Turning Fledglings into Fliers

Three Challenges for Flight Instructors

Paul J. Preidecker
FlightDeck Insights

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FAA Safety Briefing Magazine

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Tonight's Hosts



Paul J. Preidecker



Susan Parson

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The Challenges

Managing risk (and staying alive) while giving flight instruction



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Transferring knowledge, skills, & critical thinking ability for independence



Determining when the fledgling is ready to leave the nest.



Challenge #1

Managing risk (and staying alive!) while giving flight instruction



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Challenge #1

- Experience level
- Language skills
- Behavior, attitudes, learning styles



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Challenge #1

- Mechanical problems
- Teaching in an unfamiliar aircraft or situation



Challenge #1

- Weather
- ATC and airspace challenges
- Airport conditions



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Challenge #1

- Pressure from student to get signed off
 - Financial constraints; need sign off for a new job
- Pressure from flight school schedules
- Student volume can contribute to fatigue



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Challenge #1

Managing risk (and staying alive!) while giving flight instruction

- Flight instruction inherently involves multitasking - attention is constantly shifting.
- Many ways to get hurt if you don't pay attention to the right thing at the right time.
- Long-term stakes are high; what you teach affects how the trainee flies in the future.
- Draft instructor ACS addresses teaching risk management elements in the foundational ACS, and managing the risk of a particular phase of flight or maneuver.
- The Safety of Flight appendix (Appendix 6) in the instructor ACS outlines the scope of risk management that an instructor-applicant will need to demonstrate.

- Use ACS risk management elements to prepare yourself as well as trainee
- Review ACS Safety of Flight appendix
- Use preflight briefing to discuss risk factors – both those specific to the maneuver, and those arising from multitasking & distraction.



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Challenge #1

- Errors from our students become our threats...which we then have to manage to prevent them from becoming our errors.
- Instructor ACS will focus on how to teach risk management to our students, while maintaining our own skills in managing risk while instructing.

Challenge #1

Managing risk (and staying alive!) while giving flight instruction



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Challenge #2

Transferring knowledge, skills, and critical thinking ability



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Challenge #2

Transferring knowledge, skills, and critical thinking ability



- Use the Airman Certification Standards
- Encourage development & use of personal minimums
- Appropriate use of scenario-based training
- Use collaborative critique

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Challenge #2

Transferring knowledge, skills, and critical thinking ability

Aeronautical knowledge

Aeronautical decision-making and special emphasis

PTS-based flight proficiency

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Task	Task A. Steep Turns
References	FAA-H-8083-2, FAA-H-8083-3; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with steep turns.

Knowledge	The applicant demonstrates understanding of:
PA.V.A.K1	Purpose of steep turns.
PA.V.A.K2	Aerodynamics associated with steep turns, to include:
PA.V.A.K2a	a. Coordinated and uncoordinated flight
PA.V.A.K2b	b. Overbanking tendencies
PA.V.A.K2c	c. Maneuvering speed, including impact of weight changes
PA.V.A.K2d	d. Accelerated stalls
PA.V.A.K2e	e. Rate and radius of turn
PA.V.A.K3	Altitude control at various airspeeds.

Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.V.A.R1	Failure to divide attention between airplane control and orientation.
PA.V.A.R2	Collision hazards, to include aircraft, terrain, obstacles and wires.
PA.V.A.R3	Low altitude maneuvering /stall /spin.
PA.V.A.R4	Distractions, loss of situational awareness, and/or improper Task management.
PA.V.A.R5	Failure to maintain coordinated flight.

Skills	The applicant demonstrates the ability to:
PA.V.A.S1	Clear the area.
PA.V.A.S2	Establish the manufacturer's recommended airspeed or, if not stated, a safe airspeed not to exceed V_A .
PA.V.A.S3	Roll into a coordinated 360° steep turn with approximately a 45° bank.
PA.V.A.S4	Perform the Task in the opposite direction
PA.V.A.S5	Maintain the entry altitude ± 100 feet, airspeed ± 10 knots, bank and $\pm 5^\circ$; and roll out on the entry heading, $\pm 10^\circ$.

Know

Consider

Do

Challenge #2

Transferring knowledge, skills, and critical thinking ability



- Personal minimums are the human factors equivalent of the fuel reserve requirement.
- They provide a safety reserve between
 - Pilot skills & aircraft performance *required* for any given flight, and
 - Pilot skills and aircraft performance *available* through training, experience, currency, and proficiency.



Challenge #2

Transferring knowledge, skills, and critical thinking ability

- **Scenario-Based Training**

- Training system that uses structured scripts of real world experiences to meet flight training objectives in an operational environment.
- Pilots develop the skills and habits to consider all aspects of the flight as it develops and make realistic response to unexpected events and developments.



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- Develop relevant scenarios
 - Include in-flight decision-making opportunities, such as weather changes or mechanical issues
- Organize maneuvers logically
- Develop objectives & completion standards
- Include use of technology
- Record pilot's decisions & actions for post-flight discussion
- During the flight, allow the pilot to make decisions and see the results of those decisions

Challenge #2

Transferring knowledge, skills, and critical thinking ability

- Traditional “Grading”

- Instructor talks
- Trainee listens

- Collaborative Critique

- Trainee talks first
- Instructor listens, corrects as needed



Replay – Reconstruct – Reflect – Redirect

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Challenge #2

Transferring knowledge, skills, and critical thinking ability

- Collaborative Critique

- Trainee talks first
- Instructor listens, corrects as needed



Trainee develops skills and habits for self awareness, self assessment, and judgment

Instructor gains insights into trainee's judgment

Replay – Reconstruct – Reflect – Redirect

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Challenge #3

Determining when the fledgling is ready to leave the nest.



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Challenge #3

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- Collaborative Critique
 - Trainee talks first
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Replay – Reconstruct – Reflect – Redirect

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Challenge #3

Determining when the fledgling is ready to leave the nest.



Knowledge & Risk Management:

- Use questions before, during, and after the flight to assess pilot judgment. For instance:
 - How will you navigate to the destination?
 - What information / equipment do you need?
 - What hazards must you consider?
 - How will you mitigate identified risks?

Skill:

- Does the trainee consistently meet performance standards in ACS?

Challenge #3

Deciding when a fledgling is ready to leave the nest



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