



Federal Aviation
Administration

Instructional Accidents

Challenge and Opportunity

Presented to: NTSB Seminar

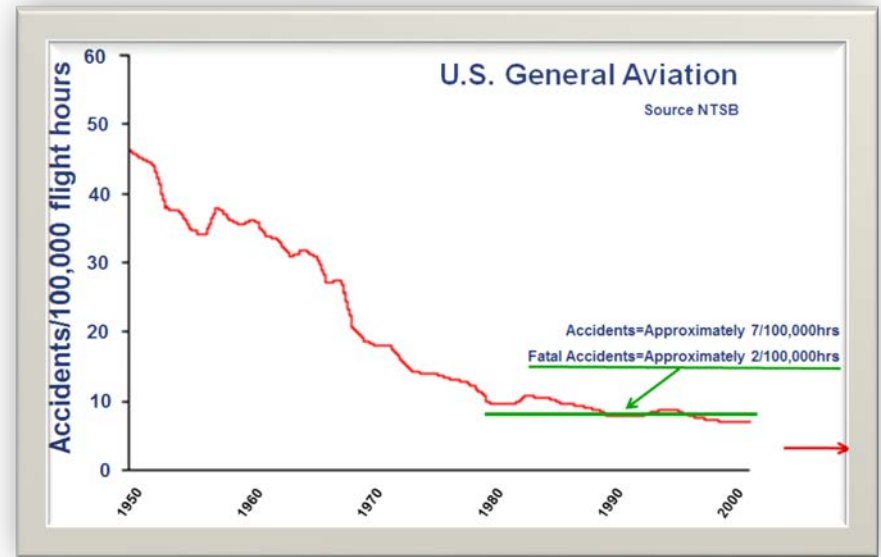
By: Jim Viola

Date: July 2015

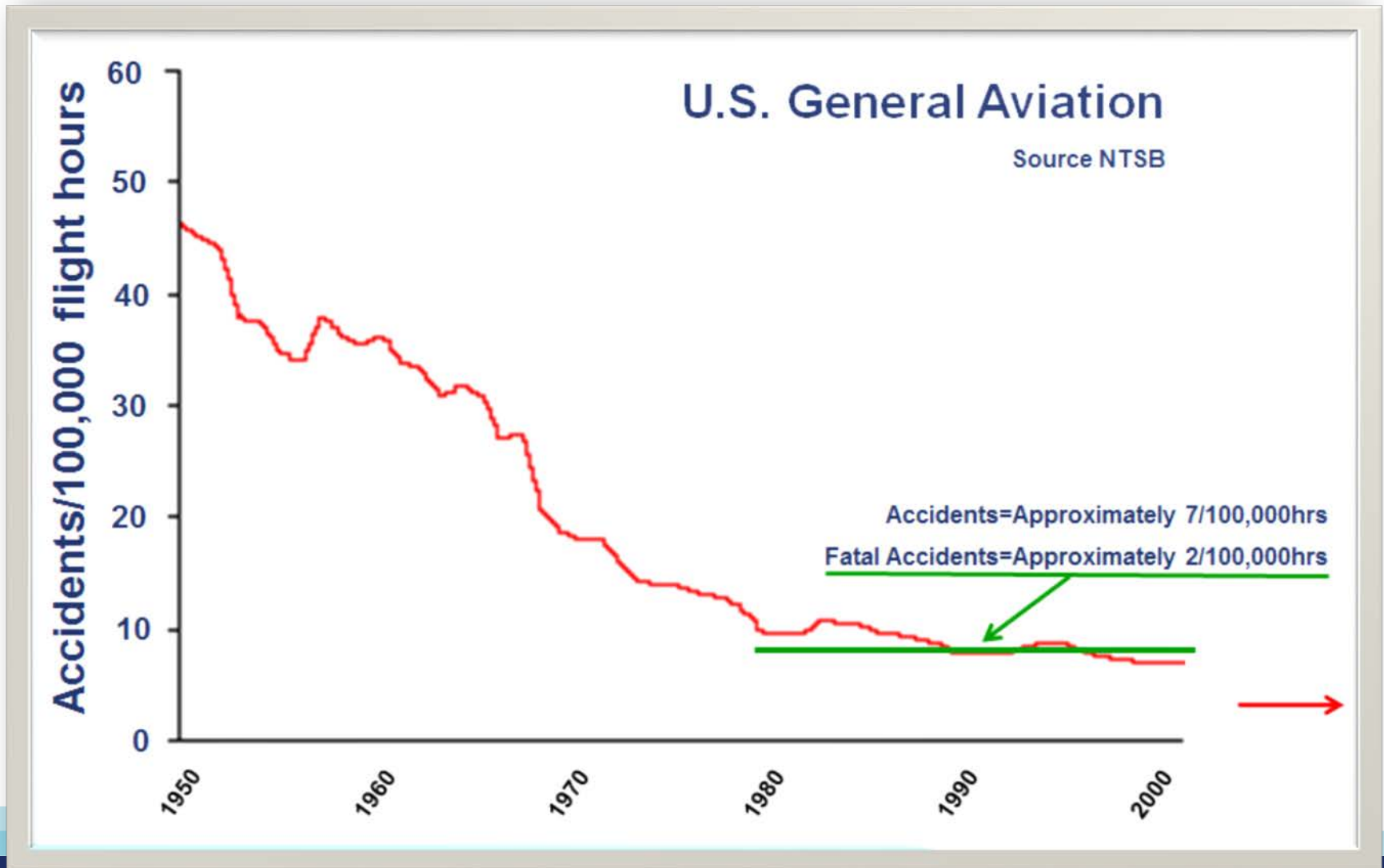


A system in equilibrium

- **All we've done has brought us here.**
 - Continue to maintain position
 - Innovate to improve



A system in equilibrium



Technology will help

- **Not so much in primary instruction**
 - More so in Advanced Instruction
- **Exception: Angle of Attack Indicators**
 - GAJSC* Safety Enhancement

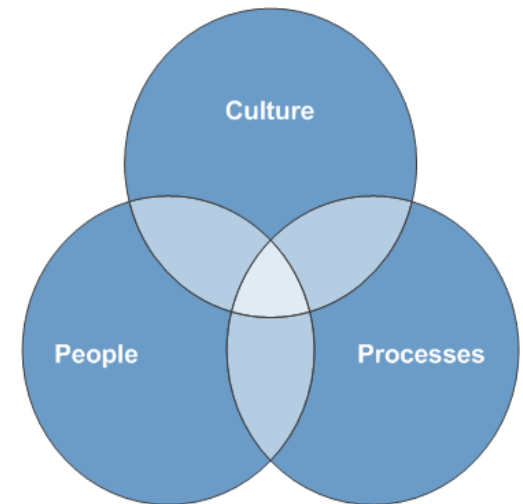


* General Aviation Joint Steering Committee



The Culture Change Challenge

- **Improved ADM (Aeronautical Decision Making)**
- **Managing expectations**
 - Student, Instructor, Employer
 - Actions speak louder than words
- **SRM (Safety Risk Management)**
 - Risk-based decision making
 - Risk analysis and mitigation
 - SMS for flight schools & small operators
 - SMS for individuals



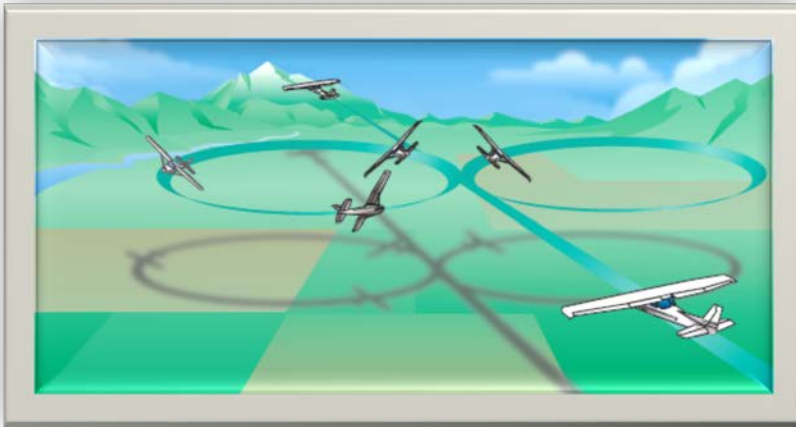
Airman Certification Standards (ACS)

- **Knowledge, skill, & risk management alignment**
 - Infusing training and testing with SRM concepts and processes.
 - Relevant knowledge
 - Assessed in Knowledge Tests
 - Applied in Practical Tests
 - Safety Risk Management (SRM)
 - Assessed & applied throughout



Airman Certification Standards (ACS)

- No new maneuvers
 - Same maneuvers
 - Same performance standards
 - SRM elements added



V. Performance Maneuvers

Task	A. Steep Turns	
Reference	FAA-H-8083-2, FAA-H-8083-3; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with steep turns.	
Knowledge	The applicant demonstrates understanding of:	
	1. Coordinated flight.	PA.V.A.K1
	2. Attitude control at various airspeeds.	PA.V.A.K2
	3. Maneuvering speed, including changes in weight.	PA.V.A.K3
	4. Controlling rate and radius of turn.	PA.V.A.K4
	5. Accelerated stalls.	PA.V.A.K5
	6. Overbanking tendencies.	PA.V.A.K6
	7. Use of trim in a turn.	PA.V.A.K7
	8. Aerodynamics associated with steep turns.	PA.V.A.K8
Skills	9. Aerobatic requirements and limitations.	
	The applicant demonstrates the ability to:	
	1. Establish the manufacturer's recommended airspeed or if one is not stated, a safe airspeed not to exceed V_A .	PA.V.A.S1
	2. Rolls into a coordinated 360° steep turn with at least a 45° bank, followed immediately by a 360° steep turn in the opposite direction.	PA.V.A.S2
	3. Perform the task in the opposite direction, as specified by the evaluator.	PA.V.A.S3
4. Maintain the entry altitude, ± 100 feet, airspeed, ± 10 knots, bank, and $\pm 5^\circ$; and roll out on the entry heading, $\pm 10^\circ$.	PA.V.A.S4	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Dividing attention between airplane control and orientation.	PA.V.A.R1
	2. Task management.	PA.V.A.R2
	3. Energy management.	PA.V.A.R3
	4. Stall/spin awareness.	PA.V.A.R4
	5. Situational awareness.	PA.V.A.R5
6. Rate and radius of turn with confined area operations.	PA.V.A.R6	



Airman Certification Standards (ACS)

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	6. Overbanking tendencies.	PA.V.A.K6
	7. Use of trim in a turn.	PA.V.A.K7
	8. Aerodynamics associated with steep turns.	PA.V.A.K8
9. Aerobatic requirements and limitations.	PA.V.A.K9	
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	1. Establish the manufacturer's recommended airspeed or if one is not stated, a safe airspeed not to exceed V_A .	PA.V.A.S1
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Airman Certification Standards (ACS)

Private Pilot – Airplane Airman Certification Standards
 Airplane—Single Engine, Multi Engine Land and Sea Areas of Operation

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	3. Energy management.	PA.V.A.R3
	4. Stall/spin awareness.	PA.V.A.R4
	5. Situational awareness.	PA.V.A.R5
6. Collision avoidance to include clearing the area.	PA.V.A.R6	

- ACS also includes unique codes for each element of knowledge, skill, and risk management.

PA = Private Pilot Airplane (*defines applicable ACS*)

V = Performance Maneuvers (*defines Area of Operation*)

A = Steep Turns (*defines Task*)

K5 = Accelerated Stalls (*defines element*)



Airman Certification Standards (ACS)

- **What's in it for me?**

- Relevancy

- Emphasis on GPS Navigation processes & procedures
 - Not the number of satellites in the GPS constellation
- SRM in all tasks

- Recency

- Up to date standards for 21st century flight
 - GPS, ADS-B, Nextgen

- Alignment

- Knowledge and Practical Tests

- Clarity

- Unambiguous, coordinated path from training to certification



Airman Certification Standards (ACS)

- **Spreading the word**
 - FAASTeam CFI Forum
 - FAASTeam Notices
 - Briefings

[http://www.faa.gov/training_testing/testing/media/private
_airplane_acs.pdf](http://www.faa.gov/training_testing/testing/media/private_airplane_acs.pdf)



Helicopter Training

- **Enhanced qualification standards**
 - Initial CFI
- **IFR Capabilities & Instrument proficiency**
- **Autorotation training**
- **Low-level flight**
 - CFIT, wire strikes



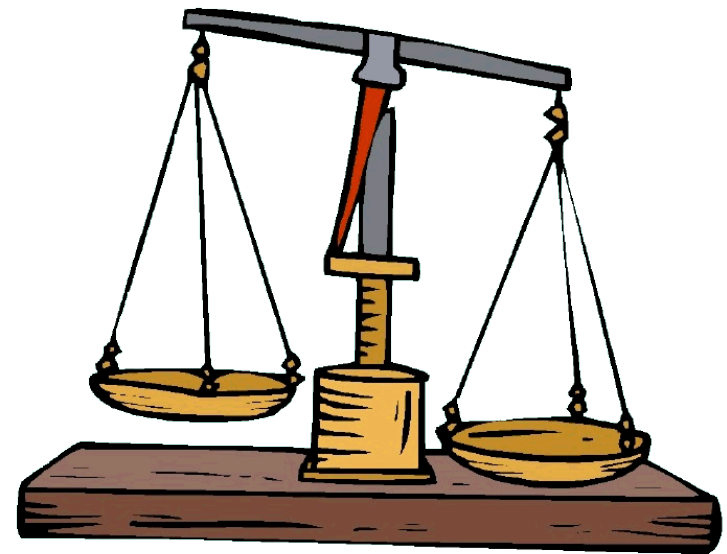
3 Questions

- **What are the hazards associated with my flight?**
- **How might those hazards impact my Success?**
- **How can I manage the risk?**



Risk Management

- **A matter of Balance**



Balance Sheet

Liabilities	Assets
Factors and circumstances that decrease safety and increase mishap risk	Capabilities, equipment, and resources that increase safety and decrease mishap risk



Balance Sheet

Liabilities	Assets
Factors and circumstances that decrease safety and increase mishap risk	Capabilities, equipment, and resources that increase safety and decrease mishap risk
Weather less than 5,000 ft. ceiling and 5 miles visibility	



Balance Sheet

Liabilities	Assets
Factors and circumstances that decrease safety and increase mishap risk	Capabilities, equipment, and resources that increase safety and decrease mishap risk
Weather less than 5,000 ft. ceiling and 5 miles visibility	Instrument rating, flat terrain, daylight



Balance Sheet

Liabilities	Assets
Factors and circumstances that decrease safety and increase mishap risk	Capabilities, equipment, and resources that increase safety and decrease mishap risk
Weather less than 5,000 ft. ceiling and 5 miles visibility	Instrument rating, flat terrain, daylight
Wind greater than 15 knots Cross wind greater than 30 degrees	



Balance Sheet

Liabilities	Assets
Factors and circumstances that decrease safety and increase mishap risk	Capabilities, equipment, and resources that increase safety and decrease mishap risk
Weather less than 5,000 ft. ceiling and 5 miles visibility	Instrument rating, flat terrain, daylight
Wind greater than 15 knots Cross wind greater than 30 degrees	Recent cross wind experience



Balance Sheet

Liabilities	Assets
Factors and circumstances that decrease safety and increase mishap risk	Capabilities, equipment, and resources that increase safety and decrease mishap risk
Weather less than 5,000 ft. ceiling and 5 miles visibility	Instrument rating, flat terrain, daylight
Wind greater than 15 knots Cross wind greater than 30 degrees	Recent cross wind experience
Night	



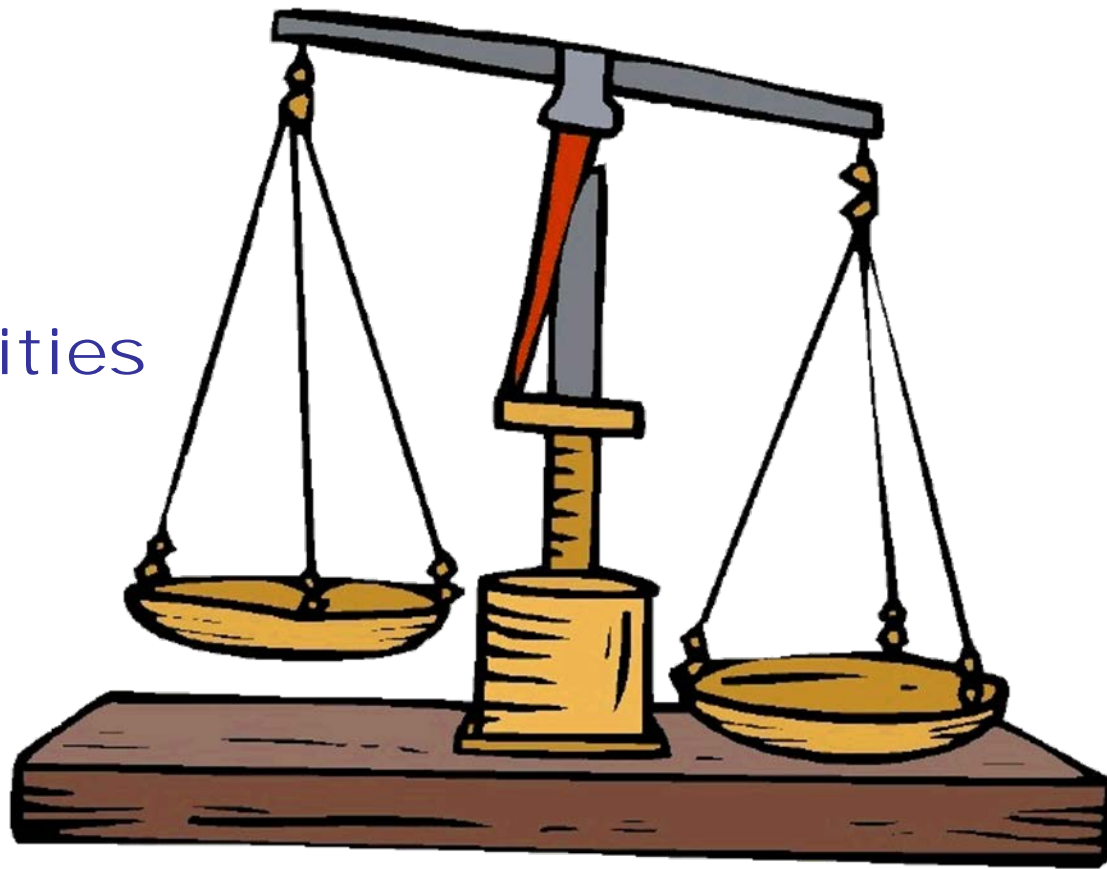
Balance Sheet

Liabilities	Assets
Factors and circumstances that decrease safety and increase mishap risk	Capabilities, equipment, and resources that increase safety and decrease mishap risk
Weather less than 5,000 ft. ceiling and 5 miles visibility	Instrument rating, flat terrain, daylight
Wind greater than 15 knots Cross wind greater than 30 degrees	Recent cross wind experience
Night	Instrument rating, flat terrain, weather better than 5,000 and 5



Flight Risk Assessment Tool

•Liabilities



•Assets



InFO



U.S. Department
of Transportation
**Federal Aviation
Administration**

InFO

Information for Operators

InFO 07015
DATE: 7/3/2007

Flight Standards Service
Washington, DC

http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info

An InFO contains valuable information for operators that should help them meet certain administrative, regulatory, or operational requirements with relatively low urgency or impact on safety.

Subject: Flight Risk Assessment Tool

Purpose: This InFO describes the proactive identification of possible hazards and the use of risk management tools to mitigate risks as aspects of a Safety Management System (SMS). These tools will provide ways for air operators to determine which flights have more risk and allow operators to intervene and reduce risk when possible. *Risk assessment tools are only part of an SMS and should not be considered the whole system.*





Federal Aviation Administration

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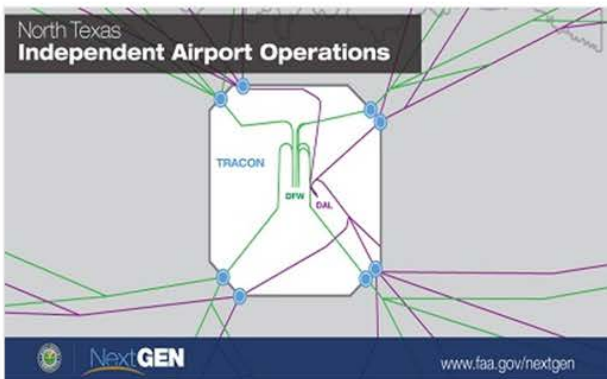
A-Z Index

FAA for You...

InFO 07015

Search

Aircraft Airports Air Traffic Data & Research Licenses & Certificates Regulations & Policies Training & Testing



North Texas NextGen Procedures Deliver Benefits

November 19 – NextGen project in North Texas to deliver more on-time flights, increase safety, reduce fuel consumption and pollution.

Look Up N-Numbers

N-number format

Check Airport Status and Delays

Airport Closures **0**

Ground Stoppages **0**

Ground Delays **1**

Arrival/Departure **1**

Regulations and Guidelines

- Advisory Circulars
- Airworthiness Directives (AD) – Current Only
- Federal Aviation Regulations (FAR)
- Forms

- Orders & Notices
- Recent Rulemaking Documents
- Temporary Flight Restrictions (TFR)





Search Results

InFO 07015 Search

Results 1 - 6 of about 6 for InFO 07015. Search took 0.36 seconds.



Subject: Flight Risk Assessment Tool Purpose: This InFO ... [PDF]
Page 1. InFO Information for Operators US Department InFO 07015 of
Transportation DATE: 7/3/2007 Federal Aviation Administration ... | 39k
www.faa.gov/.../airline_operators/airline_safety/info/all_infos/m...



All Information for Operators (InFOs)

... President Today Signed Age 65 Into Law, Affecting Pilots Under Part 121,
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Want an easier way to do it?

- **Introducing the FAASTeam FRAT**
 - Easy to use
 - Basic flight risk assessment
 - For General Aviation Pilots

FAAST FRAT



Pilot	Yes?	Risk Value	Total Risk Value					
Less than 50 Hours in Aircraft or Avionics Type	<input type="checkbox"/>	0	0	Pilot	Time in Type	Low	Moderate	High
Less than 15 hours in last 90 Days	<input type="checkbox"/>	0		VFR	<100	5 to 15	15 to 20	>20
Flight will occur after work	<input type="checkbox"/>	0		VFR	>100	15 to 20	20 to 25	>25
Less than 8 hours sleep in 24 hours prior to flight	<input type="checkbox"/>	0		IFR	<100	20 to 25	25 to 30	>30
Dual Instruction Received in last 90 days	<input type="checkbox"/>	0		IFR	>100	25 to 30	30 to 35	>35
WINGS Phase Completion in last 6 months	<input type="checkbox"/>	0						
Instrument Rating, current and proficient	<input type="checkbox"/>	0						
Flight Conditions								
Twilight or Night	<input type="checkbox"/>	0						
Surface wind greater than 15 Knots	<input type="checkbox"/>	0						
Cross wind greater than 7 Knots	<input type="checkbox"/>	0						
Mountainous Terrain	<input type="checkbox"/>	0						
Airport								
Non-towered Airport or tower closed at ETD or ETA	<input type="checkbox"/>	0						
Runway length less than 3,000 feet	<input type="checkbox"/>	0						
Wet or soft field Runway	<input type="checkbox"/>	0						
Obstacles on approach and/or departure	<input type="checkbox"/>	0						
VFR Flight Plan								
Ceiling less than 3,000 feet AGL	<input type="checkbox"/>	0						
Visibility less than 5 SM	<input type="checkbox"/>	0						
No Weather Reporting at destination	<input type="checkbox"/>	0						
Flight Plan filed and activated	<input type="checkbox"/>	0						
ATC Flight Following used	<input type="checkbox"/>	0						
IFR Flight Plan - Instrument Rated Pilots Only								
Ceiling less than 1,000 feet AGL	<input type="checkbox"/>	0						
Visibility less than 3 SM	<input type="checkbox"/>	0						
No Weather Reporting at destination	<input type="checkbox"/>	0						
Best available Approach- Instrument Rated Pilots only								
Precision Approach	<input type="checkbox"/>	0						
Non precision Approach	<input type="checkbox"/>	0						
No Instrument Approach	<input type="checkbox"/>	0						


20 Statements - VFR

22 Statements - IFR

FAAST FRAT



FAAST FRAT

Pilot	Yes?	Risk Value	Total Risk Value			Risk Matrix Chart		
Less than 50 Hours in Aircraft or Avionics Type	<input type="checkbox"/>	0	15 	Pilot	Time in Type	Low	Moderate	High
Less than 15 hours in last 90 Days	<input checked="" type="checkbox"/>	3		VFR	<100	5 to 15	15 to 20	>20
Flight will occur after work	<input type="checkbox"/>	0		VFR	>100	15 to 20	20 to 25	>25
Less than 8 hours sleep in 24 hours prior to flight	<input type="checkbox"/>	0		IFR	<100	20 to 25	25 to 30	>30
Dual Instruction Received in last 90 days	<input type="checkbox"/>	0		IFR	>100	25 to 30	30 to 35	>35
WINGS Phase Completion in last 6 months	<input checked="" type="checkbox"/>	-3						
Instrument Rating, current and proficient	<input type="checkbox"/>	0						
Flight Conditions								
Twilight or Night	<input type="checkbox"/>	0						
Surface wind greater than 15 Knots	<input checked="" type="checkbox"/>	4						
Cross wind greater than 7 Knots	<input type="checkbox"/>	0						
Mountainous Terrain	<input type="checkbox"/>	0						
Airport								
Non-towered Airport or tower closed at ETD or ETA	<input checked="" type="checkbox"/>	5						
Runway length less than 3,000 feet	<input type="checkbox"/>	0						
Wet or soft field Runway	<input type="checkbox"/>	0						
Obstacles on approach and/or departure	<input type="checkbox"/>	0						
VFR Flight Plan								
Ceiling less than 3,000 feet AGL	<input checked="" type="checkbox"/>	2						
Visibility less than 5 SM	<input type="checkbox"/>	0						
No Weather Reporting at destination	<input checked="" type="checkbox"/>	4						
Flight Plan filed and activated	<input type="checkbox"/>	0						
ATC Flight Following used	<input type="checkbox"/>	0						



FAAST FRAT

Pilot	Time in Type	Low	Moderate	High
VFR	<100 →	5 to 15	15 to 20	>20
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IFR	<100	20 to 25	25 to 30	>30
IFR	>100 →	25 to 30	30 to 35	>35



FAAST FRAT

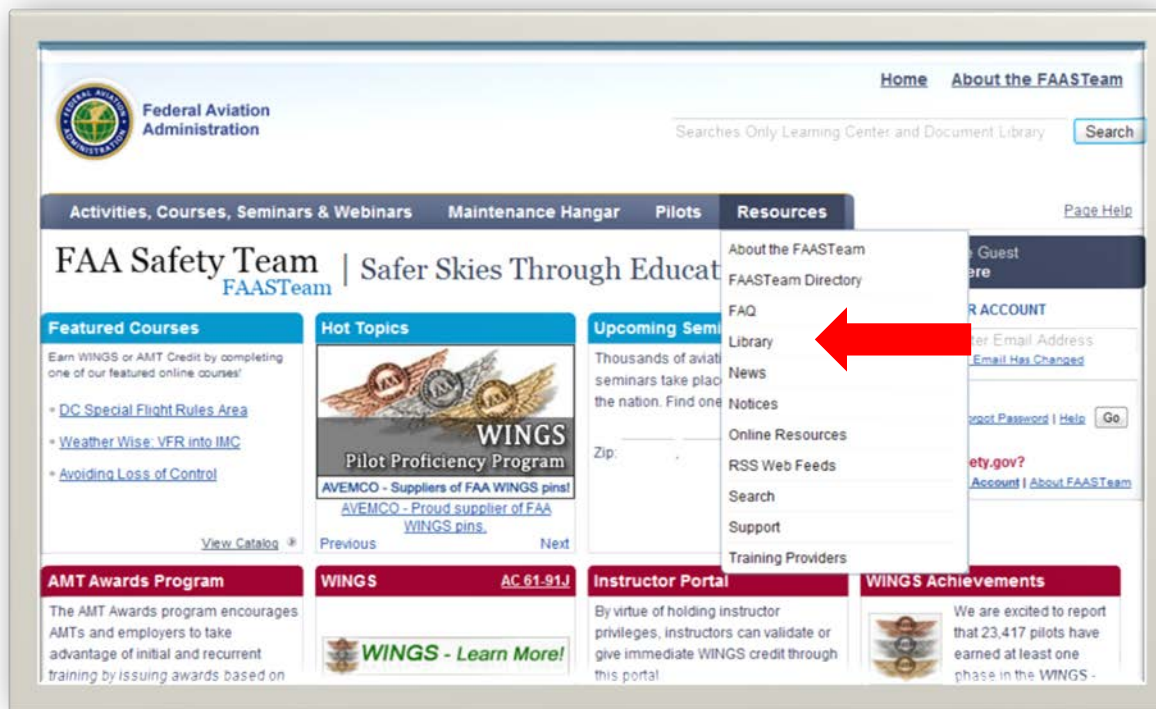
- Can't cover all possible flight hazards
- Does address common GA accident causal factors
- Safety Risk Management - 101

Pilot	Time in Type	Low	Moderate	High
VFR	<100	5 to 15	15 to 20	>20
VFR	>100	15 to 20	20 to 25	>25
IFR	<100	20 to 25	25 to 30	>30
IFR	>100	25 to 30	30 to 35	>35



FAAST FRAT

- Navigate to FAASafety.gov
- Click on Resources then click on Library



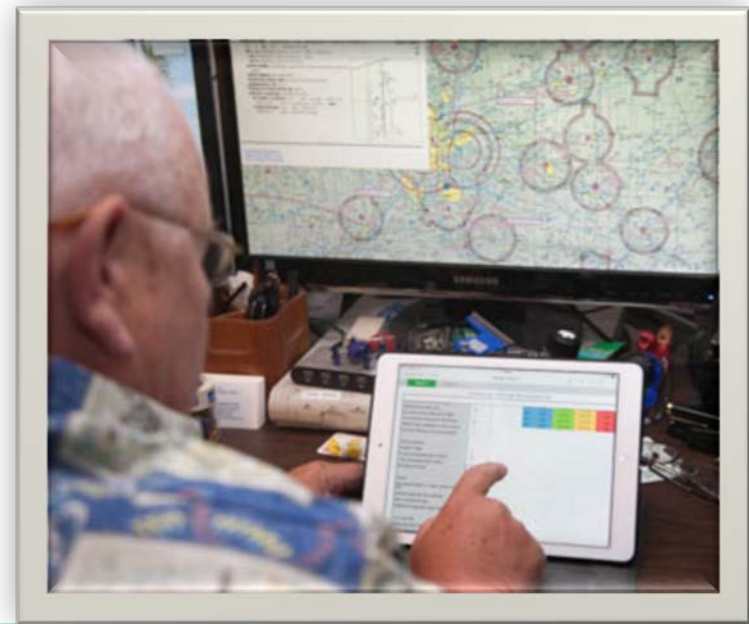
FAAST FRAT

- **Click on Flight Risk Assessment Tool**
- **Click on FAAST FRAT**
- **Download appropriate FRAT for your computer.**

FAAST FRAT for Windows

FAAST FRAT for MAC

Introducing ***FAAST FRAT***



Continuing Education



Professional & Military Aviation



General Aviation



WINGS – Pilot Proficiency Program

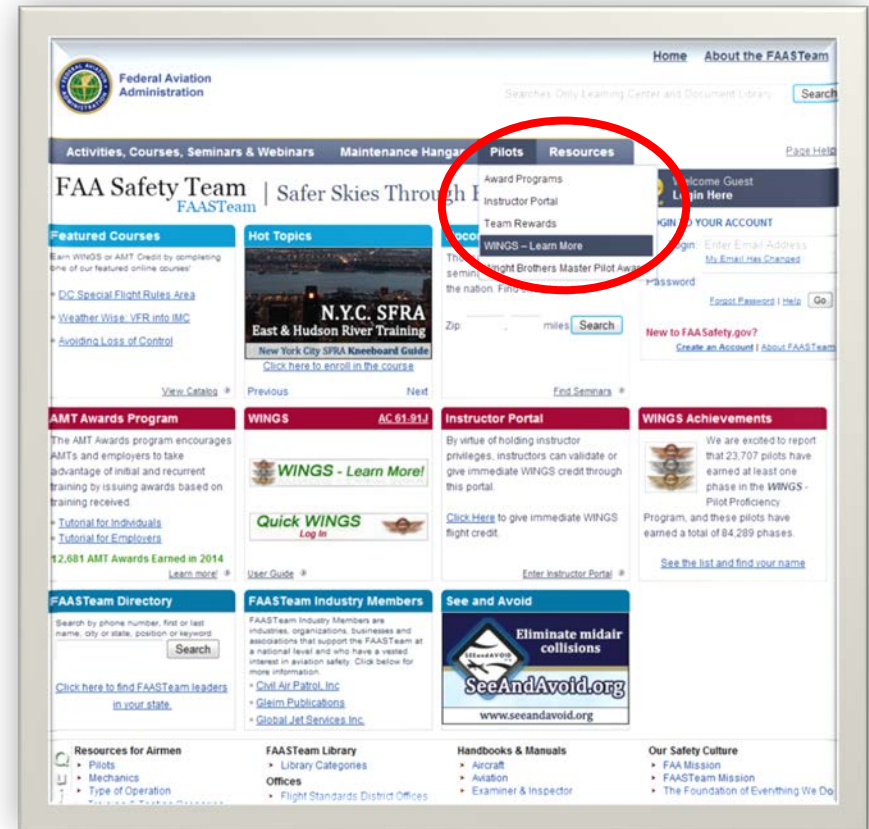
Knowledge & Flight activities

On line & In-person

All aircraft types

All certificate levels

Continuing education logbook



WINGS – Pilot Proficiency Program

- **Hundreds of activities, courses, and seminars**
 - <http://faasafety.gov>



WINGS – Pilot Proficiency Program

3-year study

712 fatal accidents

4 WINGS pilots .56%

1 current WINGS pilot .14%

WINGS works!



•WINGS – Pilot Proficiency Program

- One more thing
- Renew through WINGS



The Keystone

- **Profound safety influence**
- **Safety Culture**
 - For now, and the future



Homework

- **Download & study Private Pilot ACS**
 - Incorporate in curriculum & adjust lesson plans
 - Prepared for the Practical Test
 - Better prepared to address SRM
- **Use the *FAAST FRAT***
- **Become a WINGS Instructor**
 - Walk the Talk



Questions?





Federal Aviation
Administration

Instructional Accidents

Challenge and Opportunity

Presented to: NTSB Seminar
By: Jim Viola
Date: July 11, 2015

