The National FAA Safety Team Presents

Topic of the Month – June

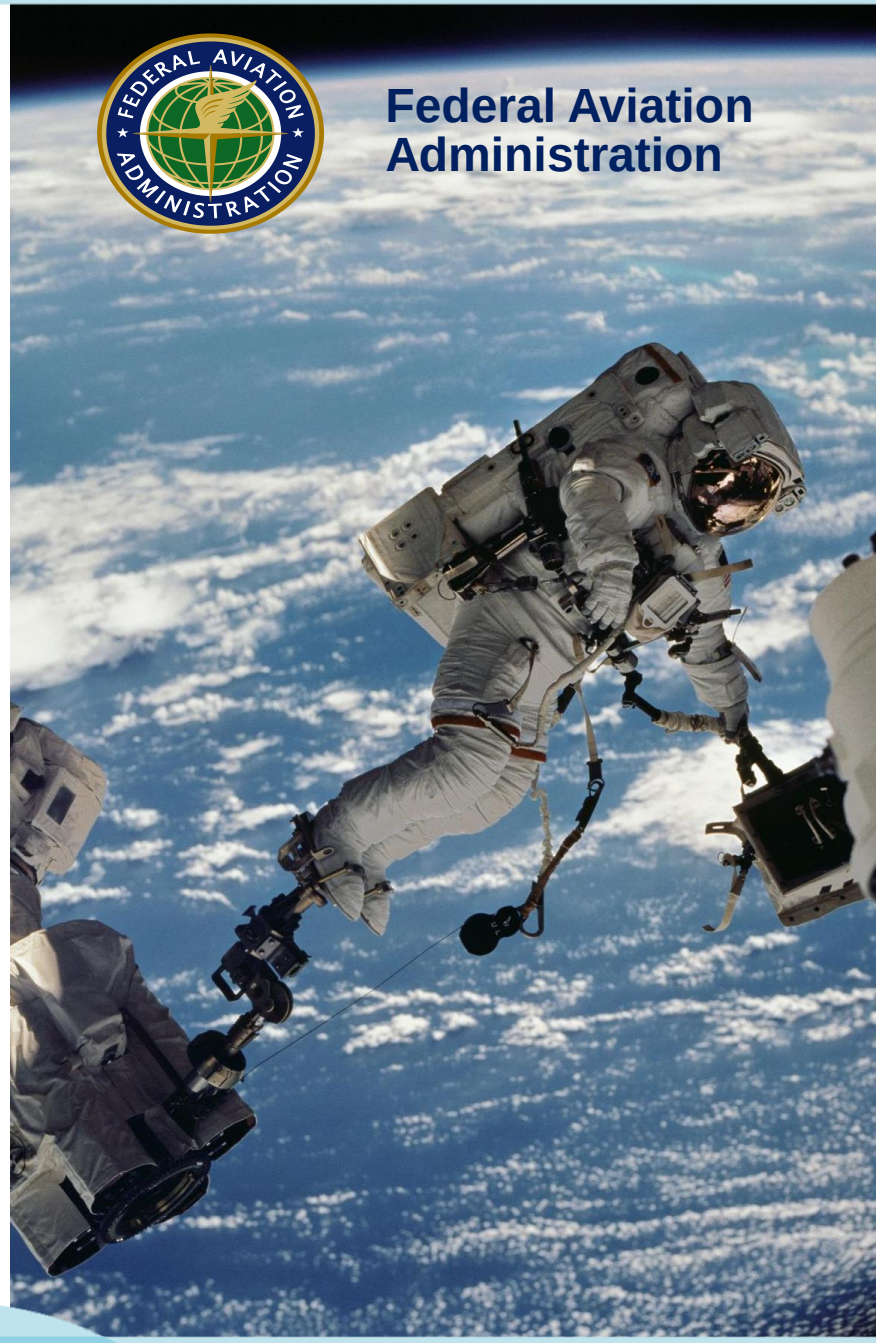
After Market Safety Equipment

Presented to: WAFC and Friends

By: Stephen Bateman, CFI

Date: June 13th, 2022

Produced by AFS-850
The FAA Safety Team (FAASTeam)



Welcome

- **Steve Bateman, CFI, AOPA Director of Flying Clubs**
  - Safety and Maintenance Officer, Westminster Aerobats Flying Club
  - FAASTeam lead representative, Baltimore FSDO

- **Our monthly in-and-out safety meeting using the FAASTeam Topic of the Month**

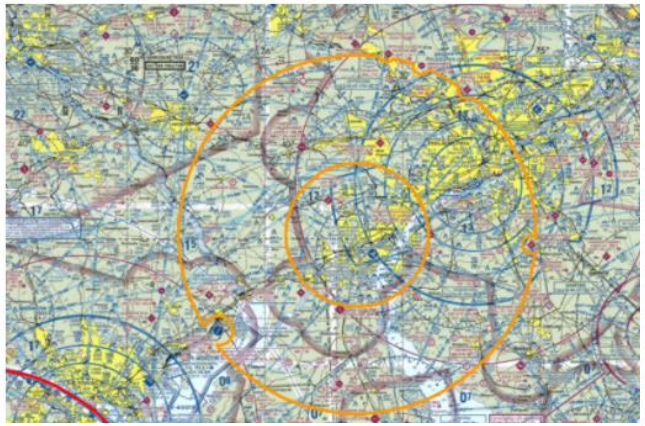
- **Sponsor Acknowledgment – WAFC, AOPA, FAASTeam, Baltimore FSDO**

- **WINGS Credit: Yes…but give me a day…**

- **Probably no time for questions, but send email:**
  steve.bateman@aopa.org

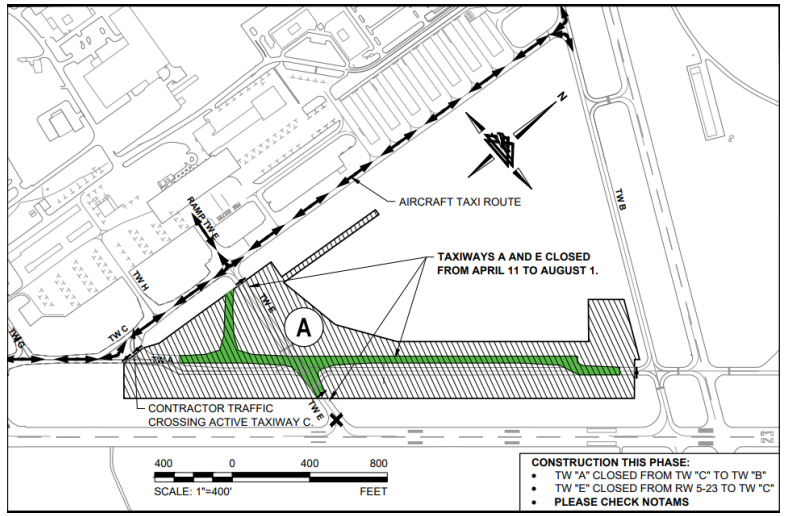
Check NOTAMS!

VIP TFR OVER WILIMINGTON, DE BEGINNI
TODAY SATURDAY, MARCH 6, 2021



VIP TFR OVER HAGERSTOWN/THURMONT, MD
BEGINNING FRIDAY, APRIL 2, 2021
(((CHANGE IN DEPARTURE TIME)))

Heads-up: Taxiway A work at Frederick for the next 2 months.



Overview

- **Available safety equipment**
- **Restraint systems**
  - Quick egress tips
- **Other tech goodies…**

The future is here

- **Electrically propelled aircraft**
- **Space tourism**
- **Drone delivery**
- **Autonomous aircraft passenger operations**

- **All of this brings innovation and…**
- **Improved safety technology**
- **In the meantime…**

Save 60 %!

Multi-point restraint systems

Multi-point anti-submarine restraint systems

- **Submarining** is an undesired phenomenon during a frontal crash scenario and is dependent on design features of the seat pan and seatbelt system. The lack of adequate **anti-submarining** features at any seating position with three-point restraint can cause abdominal solid and hollow organ injuries.

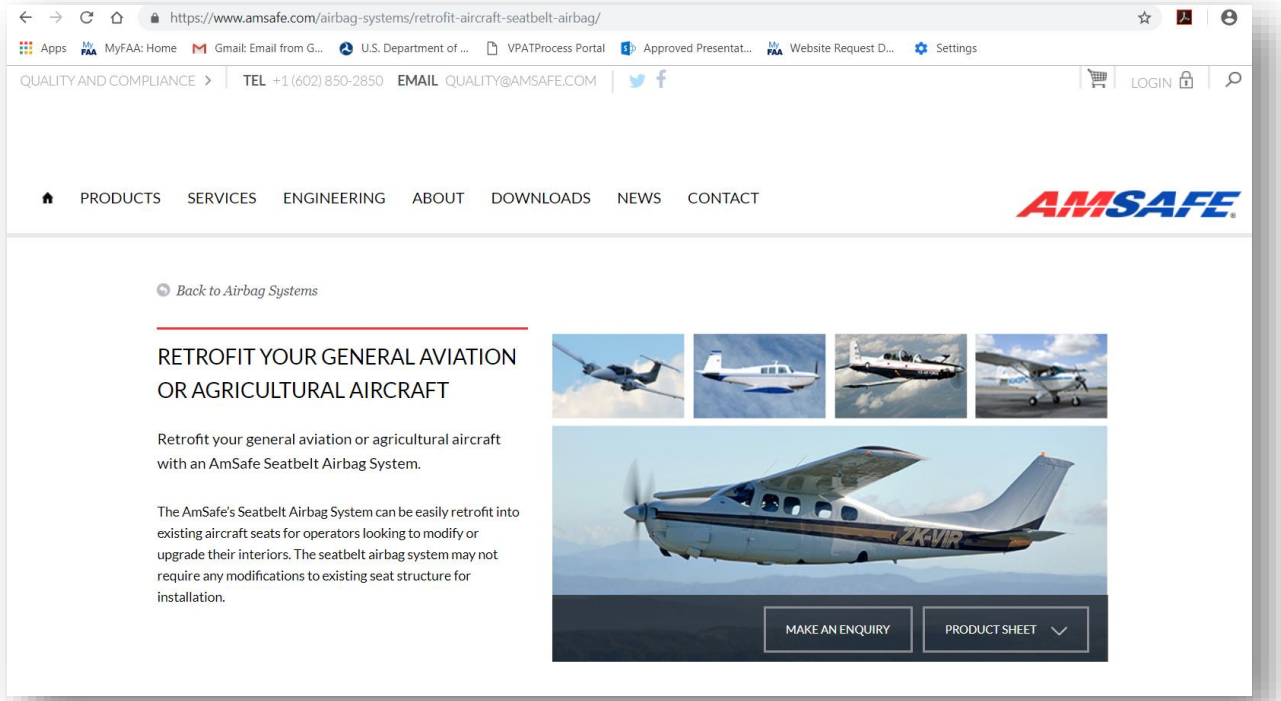
Airbag seat belts

Airframe & Powerplant

Continental IO-550-N 310 HP Engine

Cirrus Airframe Parachute System® (CAPS®)

Airbag Seatbelts (Front Seats)



Question:

Which way do airline seat belts unbuckle?

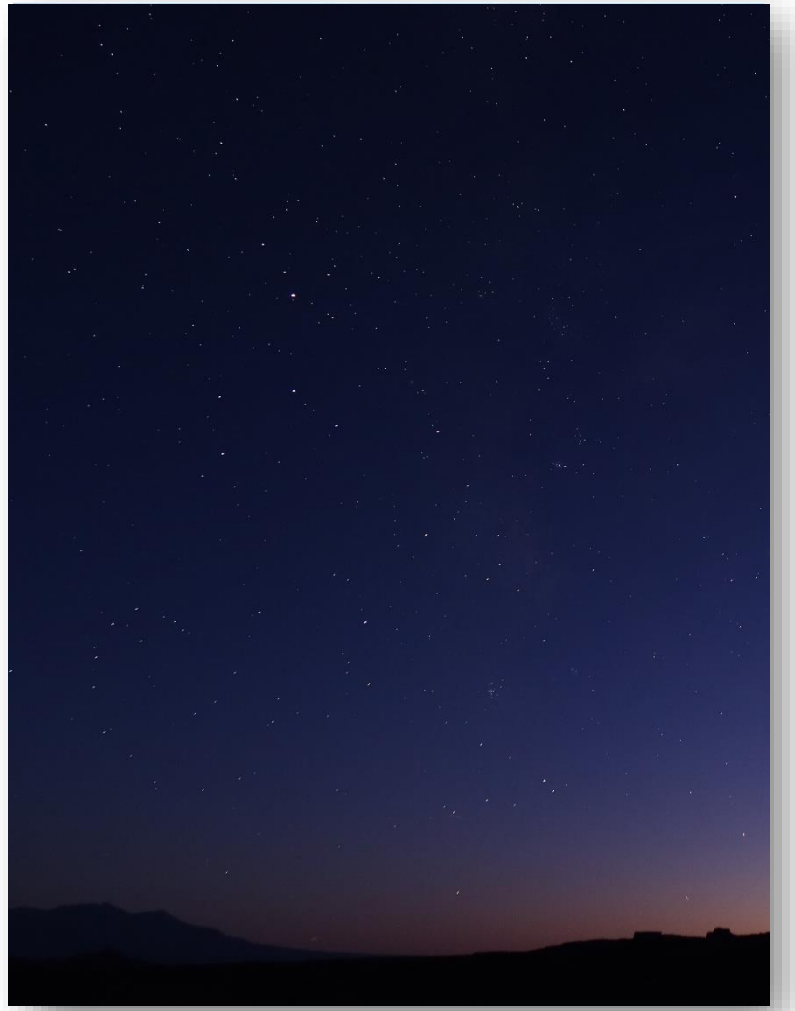
Left to Right or Right to Left

Answer:

There is no standard. It could be either way.

Question:

Why is it important to know which way my seatbelt unbuckles?



Answer:

You may have to exit the aircraft quickly during a high-stress event -----

and you may have to do it in the dark.

Exercise:

- **Sit in your usual seat in the plane**
- **Buckle up**
- **Close your eyes – keep them closed**
- **Get out…**
  - Unbuckle
  - Open the door
  - Exit
- **Wear a parachute?**
  - Do it again without also unbuckling your para…!

Buckle Placement:

Flight Data Monitoring

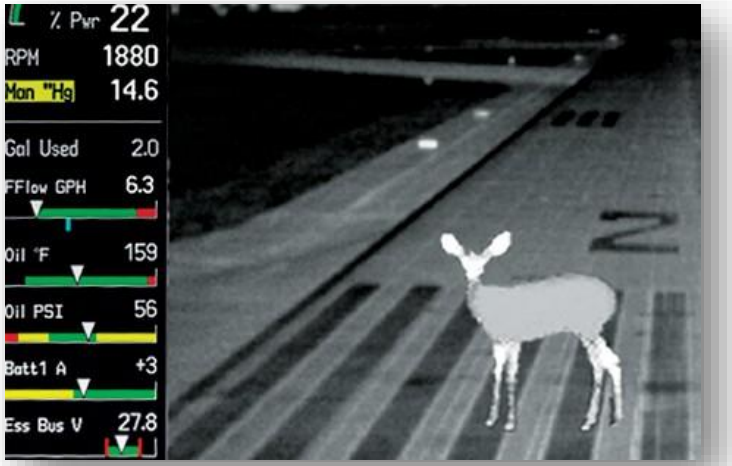
- Cockpit Voice Recorder (CVR)
- Flight Data Recorder (FDR)

Flight Data Monitoring for GA

Flight Data

Flight Data + Visual

Enhanced Vision

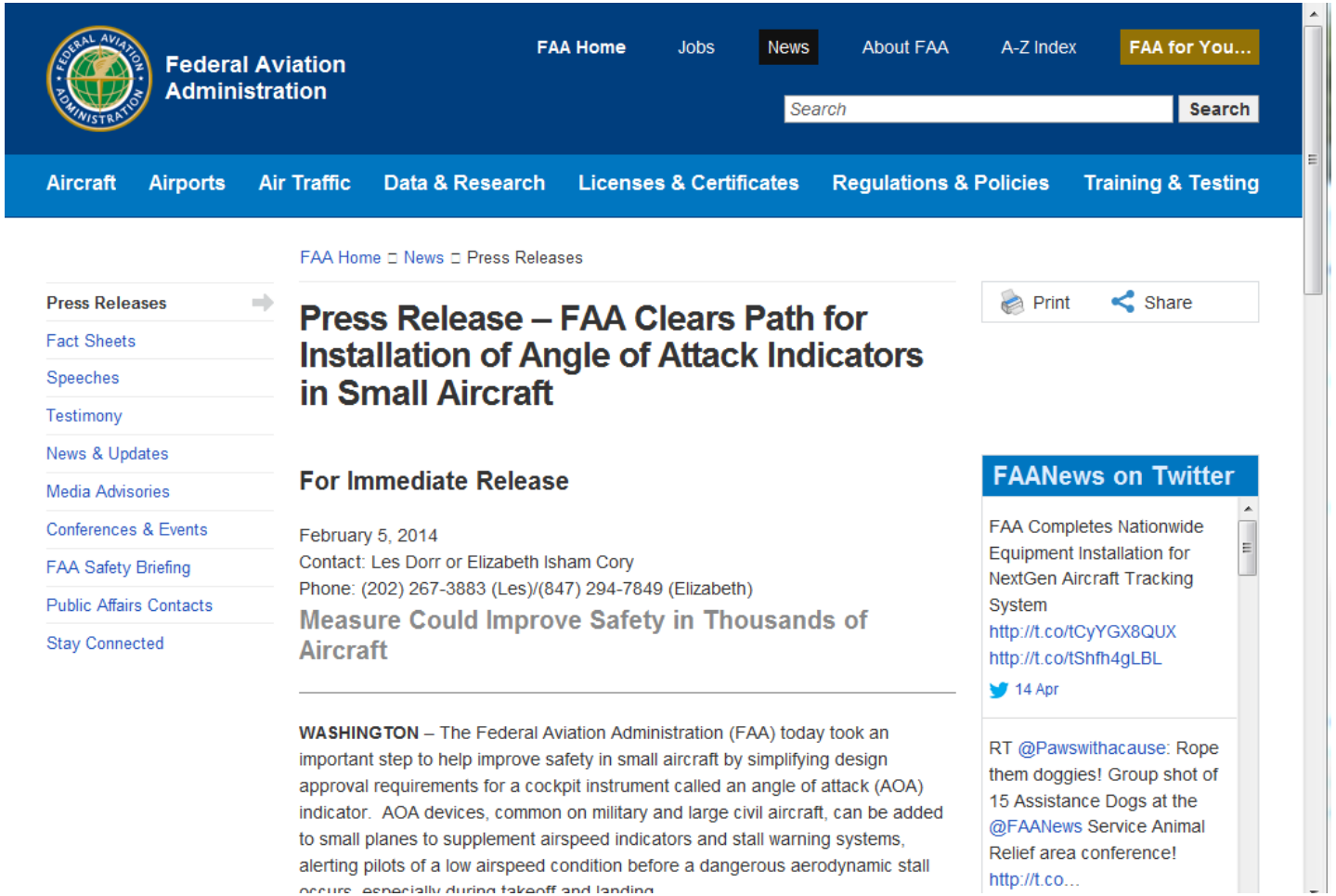


Synthetic Vision

Angle of Attack Indicators

AOA For GA

Streamlined Certification Process



- http://www.faa.gov/news/press_releases/news_story.cfm?newsid=15714

Electronic Ignition for aircraft

- **Fewer Mechanical Parts**
  - More reliable than magnetos
- **Reduced maintenance expense**
- **Increased fuel efficiency**

- **Requires (separate) electrical power source**

And the list goes on …….

Flight Management Systems

Autopilots

Survival Gear

Engine Analyzers

Ballistic Parachutes

Think before you add…

- **STC or PMA?**
- **W&B considerations**
- **C177-RG oxygen story…**

- **See Mike Busch's (EAA) webinar "Is it legal to install?"**
  - May 2020

  What if you want to install something in your certified aircraft—e.g., an automotive seat heater—but the thing you want to install isn't STC's, PMA'd, TSO'd, or otherwise FAA-approved? Is it legal to do that? Do you need a field approval?

References:

- Supplemental Checklists for Aftermarket Safety Equipment in 57 Seconds
  - Adding to the basic checklist

FAASTeam
Safer Skies Through Education

FAA Aviation Safety

Aftermarket Safety Equipment

The installation and use of aftermarket safety equipment like shoulder harnesses, engine monitoring equipment, enhanced and synthetic vision systems, and angle of attack indicators, can significantly reduce the likelihood or severity of some general aviation (GA) accidents.

Fasten Your Seatbelt

Many GA aircraft are limited to single-belt restraint systems, but adding shoulder belts can give you the best chance of sustaining minimal or no injury in many accident scenarios. Some of these systems also integrate inertia reels and rotary buckles with quick-disconnect release mechanisms. It's fairly common to have this kind of equipment installed via a Supplemental Type Certificate (STC) for many older GA aircraft with single-belt restraints.

Airbag seatbelts are another safety-enhancing option worthy of consideration. Several aircraft manufacturers now provide them as standard equipment, and there's a growing aftermarket installation business for airbag seatbelts. These systems are designed to deploy once a certain amount of consistent longitudinal deceleration is detected and to protect occupants from striking the glare shield, instrument panel, and control yoke.

AmSafe's Seatbelt Airbag System (SOARS) is an example of an aftermarket lapbelt airbag restraint system, which is designed to mitigate head and torso injury in aircraft crash conditions. *Photo courtesy AmSafe, Inc.*

Content disclaimer: Products and services mentioned in this article, and/or external, non-FAA links within, do not constitute official endorsement on behalf of the FAA.

It's also a good idea to be familiar with your seat belt system, especially if you install something new, as the latches could open left to right, or right to left. It may not seem like a big deal, but during an emergency, your ability to release a seat belt and exit the aircraft may be compromised by darkness, smoke, or injury. You may also find that some buckles are difficult or impossible to open under load. Using one hand on or under the seat can help take the strain off the buckle before releasing the latch.

Recording in Progress

Additional safety features suitable for GA airplanes are flight data monitoring and recording systems.

Continued on Next Page

FAAST Federal Aviation Administration SAFETY TEAM

www.FAASafety.gov

AFS-850 20-06

Download All Fact Sheets at bit.ly/GAFactSheets

Why *WINGS*?

- **Proficient Pilots are:**
  - Confident
  - Capable
  - Safe
- ***WINGS*** will keep you on top of your game

Proficiency Training Works

- **Increases confidence**
- **Increases comfort**
- **Expands horizons**
- **Keeps us safe**

Earning any WINGS phase qualifies for a Flight Review!

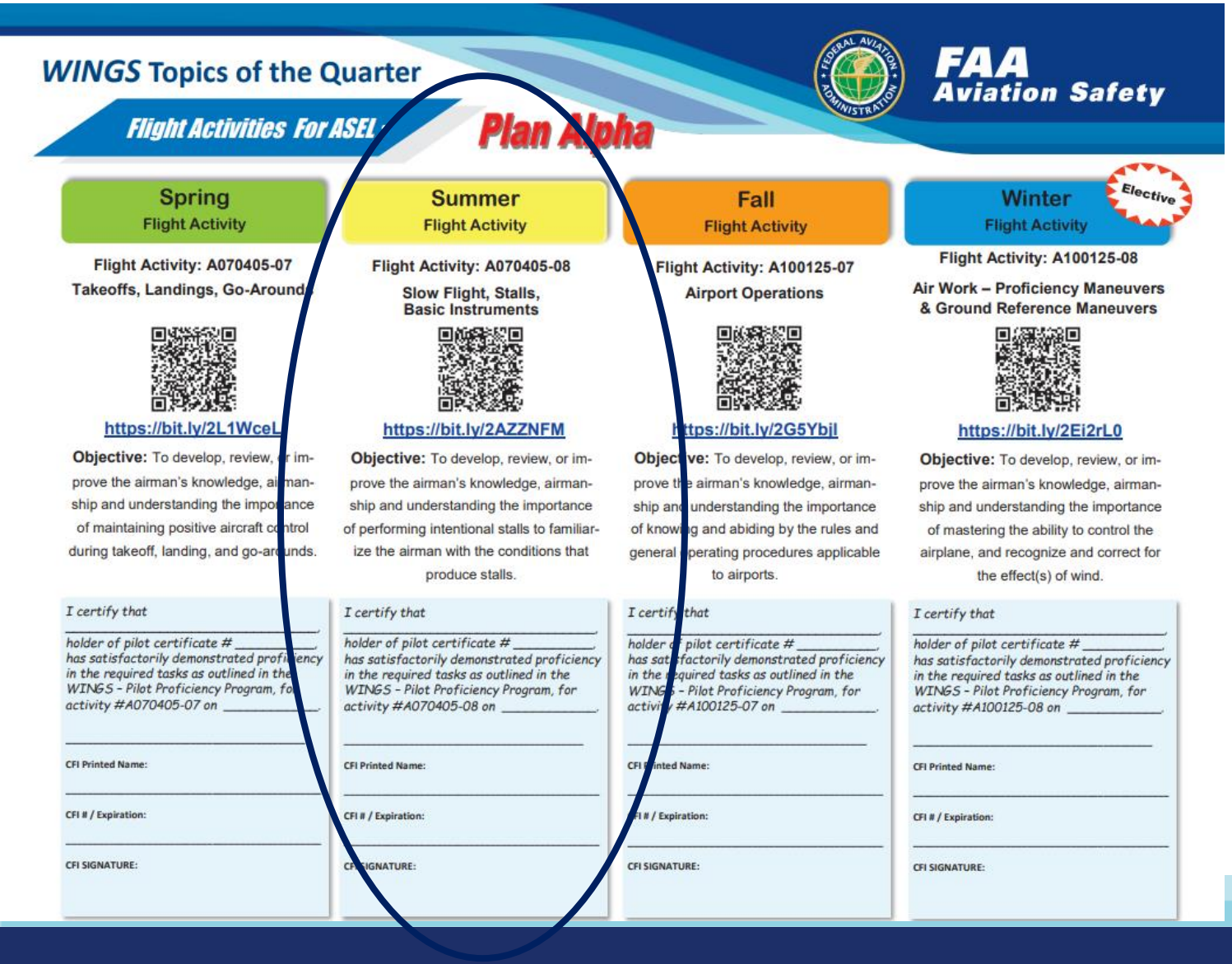
WINGS Topic of the Quarter

- **Easiest way to work with *WINGS***
- **Three knowledge activities and three flight activities chosen for you**
- **Do one per quarter – gets you a phase of *WINGS* with all the rewards**

- **CFIs: Give WINGS credit after every instructional flight**

- **NEW for 2022! Two ToQ plans to choose from: Alpha and Bravo**

WINGS Topic of the Quarter – Alpha Flights



- **Easy to do these rewarding light activities**
  - With your CFI
  - At least 3 times a year!
  - Go on…do the bonus 4th!

Summer Training (Flights)

Summer
Flight Activity

Flight Activity: A070405-08

Slow Flight, Stalls, Basic Instruments

https://bit.ly/2AZZNFM

Objective: To develop, review, or improve the airman's knowledge, airmanship and understanding the importance of performing intentional stalls to familiarize the airman with the conditions that produce stalls.

I certify that
_____,
holder of pilot certificate # _____,
has satisfactorily demonstrated proficiency in the required tasks as outlined in the WINGS – Pilot Proficiency Program, for activity #A070405-08 on _____.

_____
CFI Printed Name:

_____
CFI # / Expiration:

_____
CFI SIGNATURE:

Federal Aviation Administration

Activities, Courses, Seminars &

Activities | Courses | Seminars & Webinars | Topic

Accredited Activity Infor

Name: ASEL-Slow Flight
friendly)
Credits:
1 Credit for B
Activity Number: A070405-08
Syllabus: S-BF2-W1.00-0801
Slow Flight, Stalls,
Request Credit

Name: ASEL – Slow Flight, Stalls, Basic

– (Pvt, Comm'l, ATP)

Activity Number: A070405-08

Credits: 1 Credit for Basic Flight Topic 2

Revision: June 2019

Syllabus: S-BF1-W1.00-080124-02-01

1. BACKGROUND – Loss of control, particul
Aviation fatal accidents. This and other ***WINC***
airmanship, proficiency, flight discipline and ri

In this WINGS Flight Activity the airman a
recommended procedures for the safe op

Slow Flight and Stalls. It is essential that
its aerodynamic buffet or stall-warning, ar
airplane feels and looks. It is important to
develop proficiency in stall recognition and recovery

WINGS Flight Activity # A070405-08 Worksheet
ASEL – Slow Flight, Stalls, Basic Instruments

DATE:				
LOCATION:				
AIRMAN:	**AIRMAN CERTIFICATE #:**	**AIRMAN EMAIL:**	**TYPE AIRCRAFT/SIMULATOR USED**	**BLOCK TIME**
CFI:	**CFI CERTIFICATE #:**	**CFI EMAIL:**	***WINGS* Flight Activity Completed:** ☐ **YES** ☐ **NO**	

NOTE: The Flight Instructor will ensure the airman possesses the knowledge, ability to manage risks, and skills consistent in the performance of flight maneuvers specifically listed in the Areas of Operation for Takeoffs, Landings and Go-Arounds; Emergency Operations, and Night Operations (as applicable) to the ACS completion standards. While this ***WINGS*** Flight Activity targets specifically the Takeoff, Landing, and Go-Around Area of Operation, Airmen should satisfactorily demonstrate all pertinent parts of the ACS in their Preflight, Flight, and Post Flight activities consistent with their certificate or rating. For ***WINGS*** credit, the airman will satisfactorily demonstrate the maneuvers and procedures listed in bold text below, using both outside visual references and cross checked with the flight instruments, for the privileges of the certificate or rating being exercised in order to act as Pilot-in-Command (PIC).

Principal ACS Areas of Operations for this *WINGS* Flight Activity (Bold Items Required):

AREA OF OPERATION	GRADE FM	GRADE SRM	AREA OF OPERATION	GRADE FM	GRADE SRM
I. PREFLIGHT PREPARATION			**VIII. BASIC INSTRUMENT MANEUVERS**		
II. PREFLIGHT PROCEDURES			• **STRAIGHT-AND-LEVEL FLIGHT**		
			• **CONSTANT AIRSPEED CLIMBS**		
III. AIRPORT AND SEAPLANE BASE OPERATIONS			• **CONSTANT AIRSPEED DESCENTS**		
			• **TURNS TO HEADINGS**		
IV. TAKEOFFS, LANDINGS, AND GO-AROUNDS			• **RECOVERY FROM UNUSUAL FLIGHT ATTITUDES**		
			• **RADIO COMMUNICATIONS, NAVIGATION SYSTEMS/FACILITIES, AND RADAR SERVICES**		
V. PERFORMANCE AND GROUND REFERENCE					
			IX. EMERGENCY OPERATIONS		
VI. NAVIGATION					
			X. MULTIENGINE OPERATIONS		
VII. SLOW FLIGHT AND STALLS					
			XI. NIGHT OPERATIONS (AS APPLICABLE)		
1. **MANEUVERING DURING SLOW FLIGHT**			1. NIGHT PREPARATION		
2. **POWER-OFF STALLS**					
3. **POWER-ON STALLS**			XII. POSTFLIGHT PROCEDURES		
4. **SPIN AWARENESS**					
5. **MANEUVERING DURING SLOW FLIGHT**					

COMMENTS: (Use back for additional notes)

Need help with *WINGS*?

Talk with your local *WINGSPro*

WINGS for Flying Clubs

- **Work with your (and other) flying clubs to promote *WINGS***
- **Include all *WINGS* transcripts with insurance renewal**
- **My club *saved 27%* over previous year's premium…**
- **Info on AOPA Flying Clubs Radio and *Club Connector* newsletter**
- **We provide links to these ToM presentations in the *Club Connector* safety article**
  - Search for AOPA Club Connector and sign-up

•Homework

- **Look carefully at your seat belts and ask a few questions…**
- **Do some research on:**
  - **Synthetic vision**
  - **Angle of attack indicators**
  - **Engine and flight data monitors**
  - **Predictive maintenance**

- **Don’t just “wing it”, fly with a CFI doing *WINGS* activities**

Next Month's ToM:

The National FAA Safety Team Presents

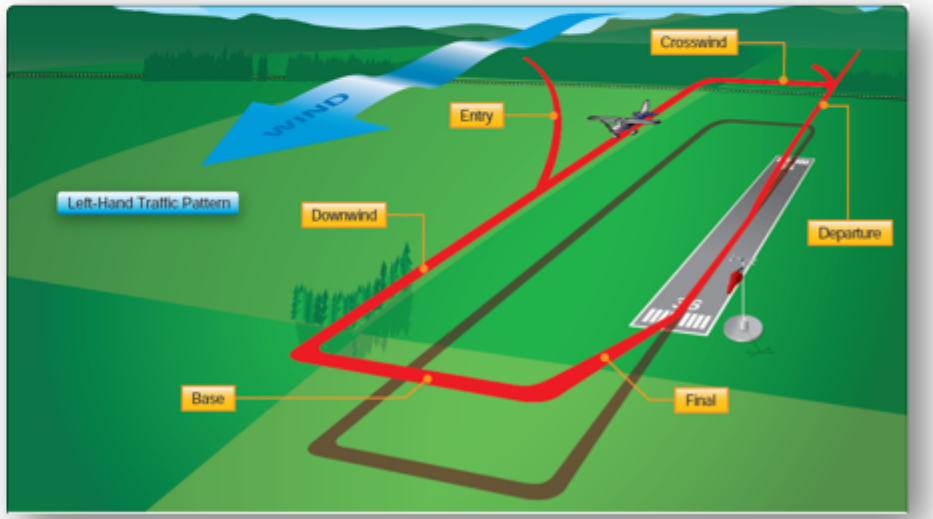
Federal Aviation Administration

Topic of the Month – July

Takeoffs & Landings

Presented to:	WAFC and Friends
By:	Stephen Bateman, CFI
Date:	July 11th, 2022

Produced by AFS-850
The FAA Safety Team (FAASTeam)



Thank you for attending!

You are vital members of our GA safety community!