



Federal Aviation
Administration

The National FAA Safety Team Presents

Topic of the Month February 2023 Transition Training

Presented to: WAFC and Friends
By: Stephen Bateman, CFI
Date: Monday February 13th, 2023

Produced by:
The National FAA Safety Team (FAASTeam)



Welcome

- **Steve Bateman, CFI, AOPA Director of Flying Clubs**
- **Safety Officer at the Westminster Aerobats Flying Club**
- **FAASTeam Lead Rep and WINGSPRO**

- **WINGS Credit: Yes!**

- **Probably no time for questions, but please**

steve.bateman@aopa.org



So...

- **No recording...but even better...**
- **You can get the slides of this presentation for your own use!**
 - This and earlier ToM presentations are available...
 - Sign up tonight!
 - Next edition 2/19/2023

The screenshot shows the AOPA Flying Club Connector Newsletter page. At the top, there is a navigation menu with links for 'AOPA Credit Card', 'Donate', 'AOPA Foundation', 'Ambassadors', and 'Scholarships'. Below this, there are tabs for 'FLYING CLUBS', 'RUSTY PILOTS', 'FLIGHT TRAINING', and 'HIGH PERFORMANCE'. The main heading is 'FLYING CLUB CONNECTOR NEWSLETTER'. Below the heading, there is a paragraph: 'Your source for the latest news on flying clubs all over the country. AOPA's research has shown us that flying club leaders are hungry to learn more about the practical experiences of other clubs. So, we have created this monthly e-newsletter.' A blue 'SUBSCRIBE' button is circled in black. Below this, there is a section titled 'ARTICLES BY TOPIC' with several buttons: 'NEWS FROM HQ', 'QUESTION OF THE MONTH', 'CLUB SPOTLIGHT', 'AIRCRAFT SPOTLIGHT', 'SAFETY', and 'EVENT SPOTLIGHT'. The 'SAFETY' button is circled in black. At the bottom, there is a section titled 'CLUB CONNECTOR ARTICLES' with a 'NARROW RESULTS' dropdown menu.

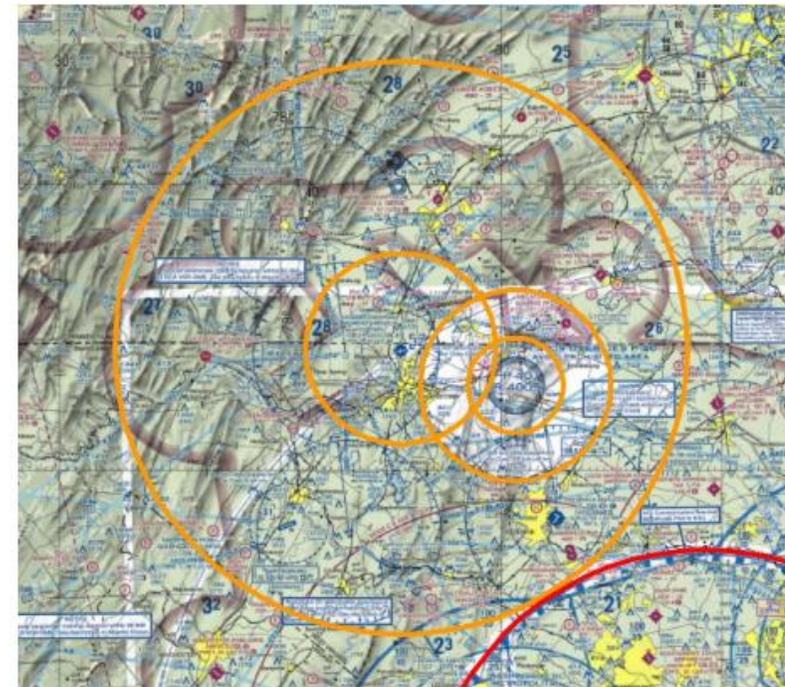




VIP TFR OVER HAGERSTOWN/THURMONT, MD
BEGINNING SATURDAY, FEBRUARY 4, 2023



Check NOTAMS!



Click the image above to interact with the TFR in iFlightPlanner for AOPA



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Temporary Flight Restrictions: Can You Fly Through a TFR?

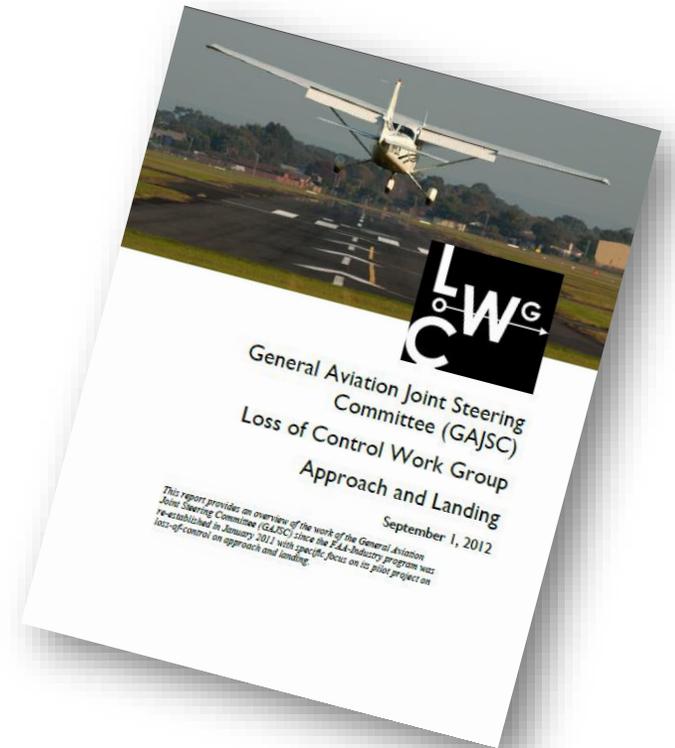


- <https://www.pilotmall.com/blogs/news/temporary-flight-restrictions-can-you-fly-through-a-tfr>



Overview

- Loss of Control Accidents involving transitioning
- Transition Training Types
- Tips and Tricks
- **Or:**
- **Jumping into a new-to-you aircraft without training will very likely kill you**

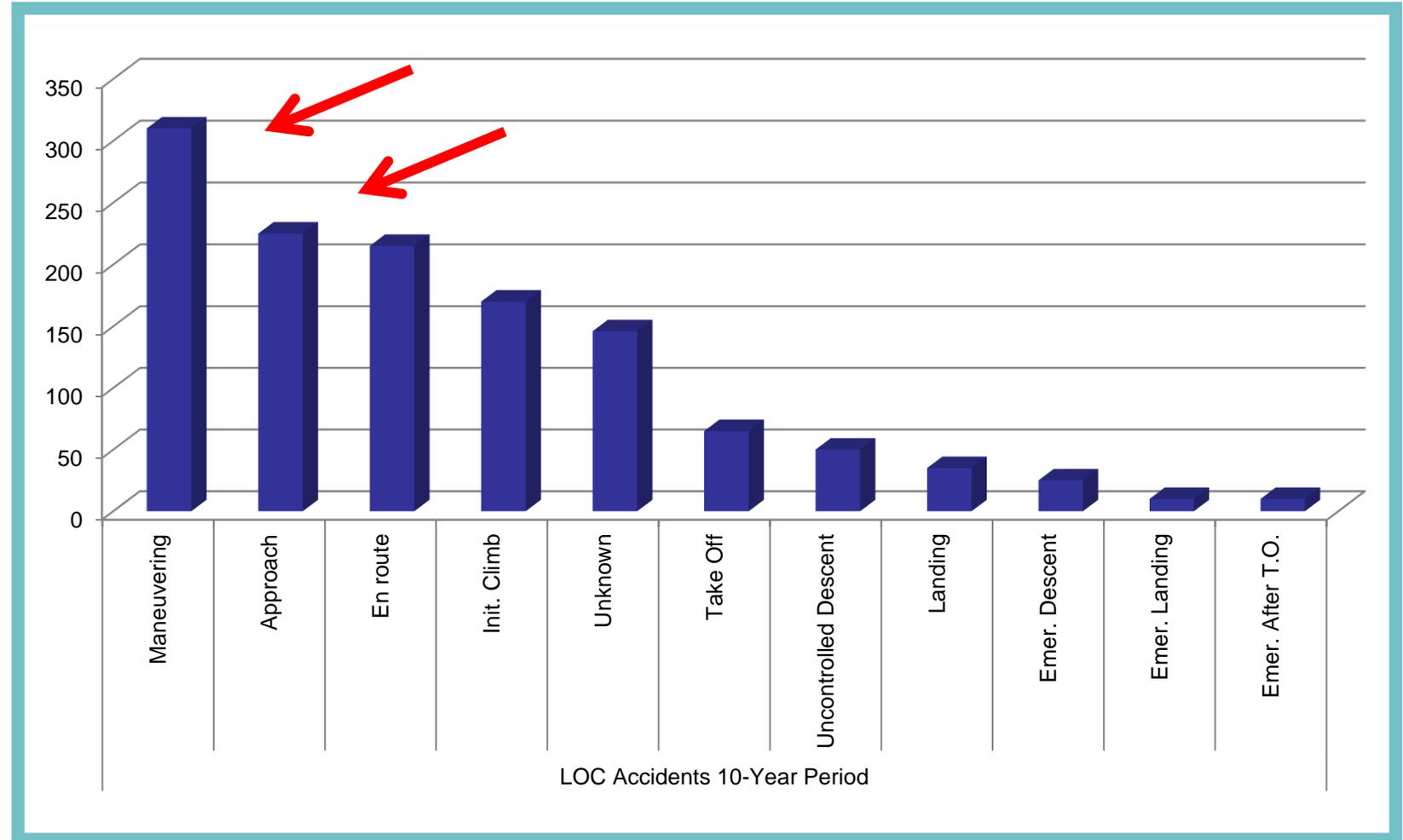


*GAJSC – General Aviation Joint Safety Committee



Fatal LOC Accidents – 10 Years

- **First 50-hours in a new-to-you aircraft is the danger zone**
- **This resets on every new-to-you flight**



LOC Workgroup Findings

- Lack of single pilot CRM skills
- Un-stabilized approaches
- Inappropriate go-around procedures
- Flight after extended periods of not flying
- Over reliance on automation
- Lack of aeronautical decision-making skills
- Flight after use of drugs

There's more...? Why, yes...

- **Insufficient transition training**



Hazardous Attitude, a-Plenty!

- **Insufficient transition training...**
- **What is it about some aviators who think they can just jump into a different aircraft and survive?**



<https://heavenboundaviation.com>



Know Thy Aircraft

The call comes in...

- **1:40 pm, June 21, 2013**
 - Waterford, MI (KPTK)
- **Cessna 172M**
 - Pilot, 3 passengers killed



• <https://www.youtube.com/watch?v=eYqS-j3pUHY&list=PLCC59953860B62145&index=16&t=41s>



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The Crash Scene

- Departed Runway 09L at taxiway M
- Climbs to ~ 100' AGL
- Radio call – “Overweight, returning”
- Controller – “Clear to land 09R or in the grass”
- Witnesses hear engine sputtering and see aircraft “wallowing”
- Left wing drops
- Hits the ground left wing first just northeast of departure end 09L
- Fire erupts within 5 seconds



Photo



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The Pilot

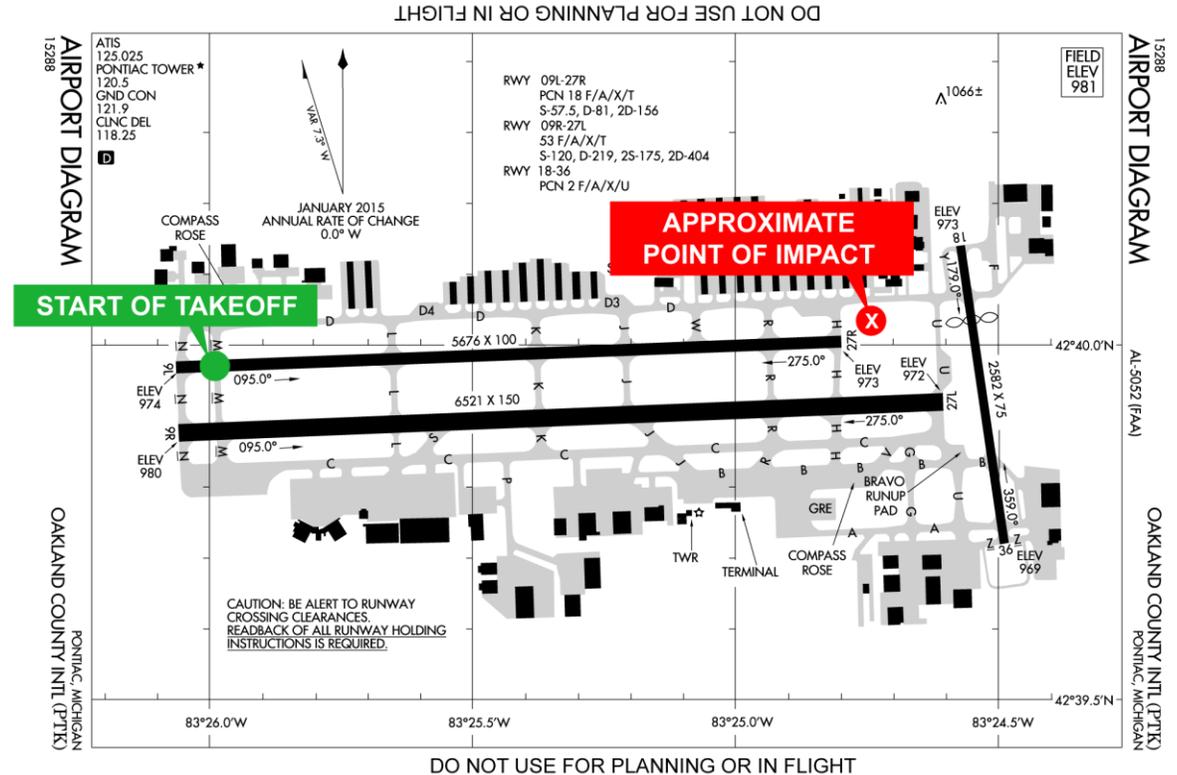
- 19-year-old pilot received his Private Pilot certificate 2 months prior
- Trained exclusively in a Cirrus SR-20 at Western Michigan University
- Reported 52.3 hours logged at his check ride, logbook wasn't recovered
- Had “some time” in a Cessna 172
- Witness reported texting with him regarding weight & balance, carb heat, suggested he acquire a PoH and familiarize himself with it

I. UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION – FEDERAL AVIATION ADMINISTRATION							III. CERTIFICATE NO.
ii. TEMPORARY AIRMAN CERTIFICATE							PENDING
THIS CERTIFIES THAT		IV. HAROLD JAMES DOE V. 4545 COLT PLACE SOUTH SAN FRANCISCO, CA 91754					
DATE OF BIRTH	HEIGHT	WEIGHT	HAIR	EYES	SEX	NATIONALITY	VI.
01-08-59	72 IN.	195	BLACK	BROWN	M	USA	
IX. has been found to be properly qualified and is hereby authorized in accordance with the conditions of issuance on the reverse of this certificate to exercise the privileges of							
PRIVATE PILOT							
RATING AND LIMITATIONS							
XII. AIRPLANE SINGLE-ENGINE LAND							
XIII.							
THIS IS <input checked="" type="checkbox"/> AN ORIGINAL ISSUANCE <input type="checkbox"/> A REISSUANCE OF THIS GRADE OF CERTIFICATE					DATE OF SUPERSEDED AIRMAN CERTIFICATE		
BY DIRECTION OF THE ADMINISTRATOR							EXAMINER'S DESIGNATION NO. OR INSPECTOR'S REG. NO.
X. DATE OF ISSUANCE	X. SIGNATURE OF EXAMINER OR INSPECTOR					001234567	
9/14/05	John L. Hightower JOHN L. HIGHTOWER NM03					DATE DESIGNATION EXPIRES --	



The Flight

- Local, VFR flight with family and friends
- Initially cleared to taxi to Runway 27R, amended to Runway 09L
- Cleared for takeoff at 1:38:41
- Calls tower at 1:40:41 – “We’re a little overweight, we’re gonna have to come back and land on this.”
- ATC – “...Two Six Quebec uh, can bring it back to niner right, then you can just bring it back for niner right, a right turn or on the grass is fine.”



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The Aircraft

- Accident aircraft is a Cessna 172M 150hp Lycoming O-320-E2D
- Max gross weight – 2300 lbs
 - As loaded 2,298.5 lbs (w/approx. 24 gals of 100LL, 3 pax)
- 40 degrees of flaps electrically operated
 - Hold flap switch until indicator reads desired amount (0-40 deg)
- Pilot trained in a Cirrus SR-20
 - Uses a flap switch with detents at 0%, 50%, 100% flaps
- Witness reported seeing full flaps on takeoff



Not Actual Aircraft



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Not Actual Aircraft



Probable Cause

“The pilot’s failure to retract the wing flaps before attempting to take off, due to his **lack of familiarity with the airplane make and model**, which prevented the airplane from maintaining adequate altitude for takeoff.”



Final Analysis

- **Pilot was unfamiliar with the airplane**
- **May not have used his checklists properly**
- **May have been some external pressure to give a nice flight to his family**
- **May have thought that it looked “normal” based on his experience with the SR-20**
- **Did not recognize the misconfiguration**
- **Did not have a good plan for aborting takeoff**



Lessons Learned

- **If you're flying a new-to-you airplane, spend time with the POH ahead of your flight**
- **Calculate your performance across a range of conditions and especially for your first flights**
- **Brief expected performance and be ready to abort**
- **Just because you can fill all the seats doesn't mean you should**
- **CFIs – carefully expose your students to loaded aircraft operations before their check rides**



Name some transitions occurring in aviation...

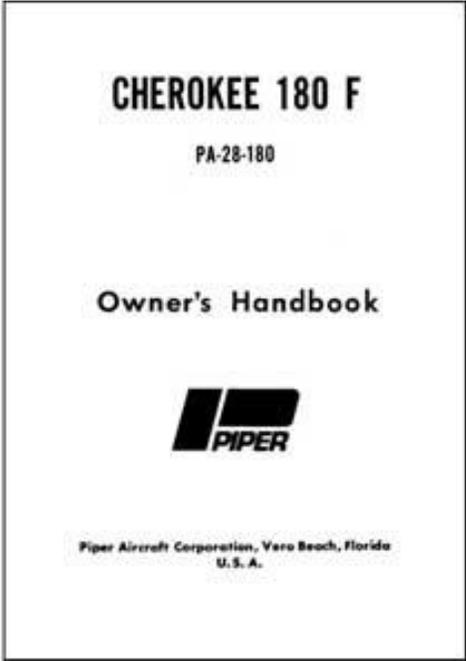
- Small to bigger
- Big to smaller
- Single to multi
- Conventional to new-fangled tricycle gear
- Piston to jet
- Different avionics
- Different systems
- Left to right seat (and back...CFIs...)
- Solo from rear seat
- Simple to complex
- Anything to high performance
- Anything to technically advanced
- Day to night
- Cold to hot
- Flatland to mountains
- Anything to ultralight



Flight *and* Ground Training



How different can it be?

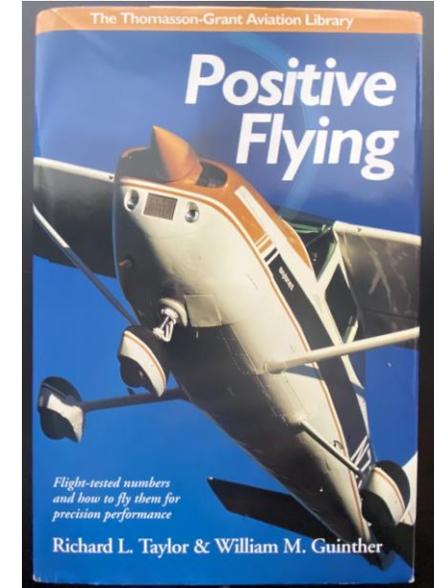
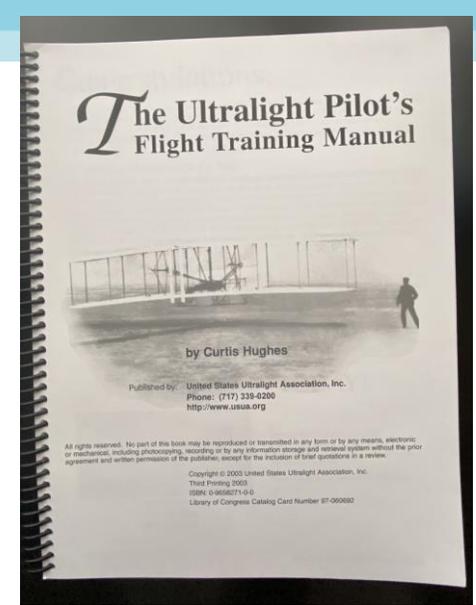
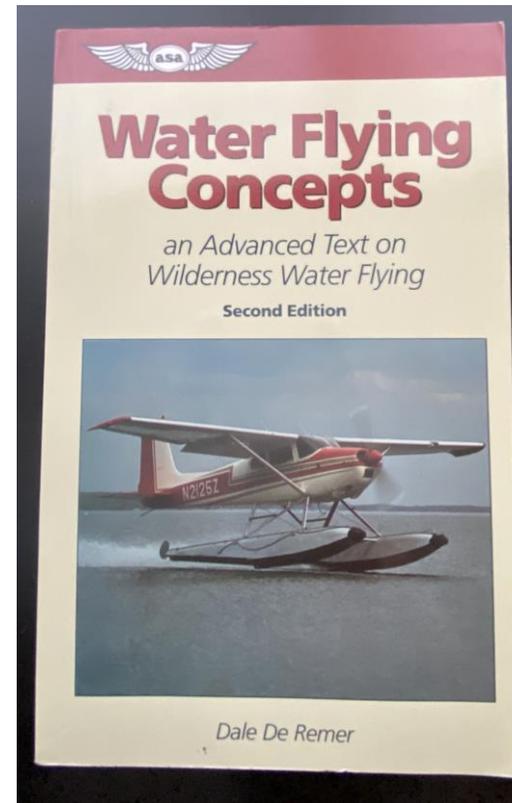
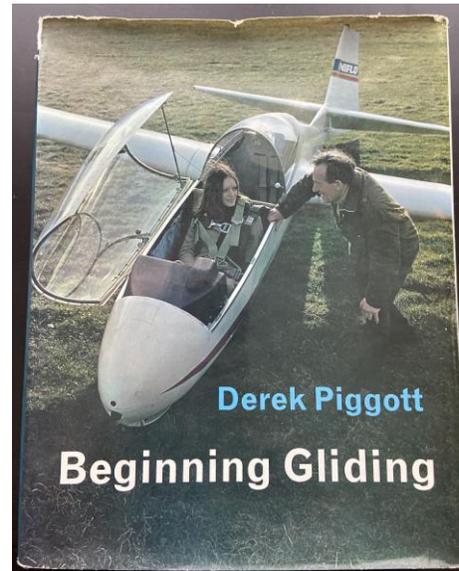
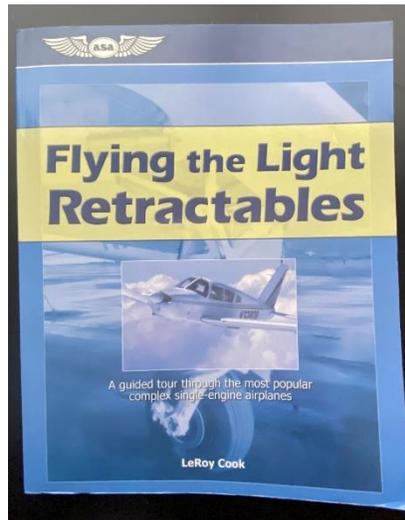
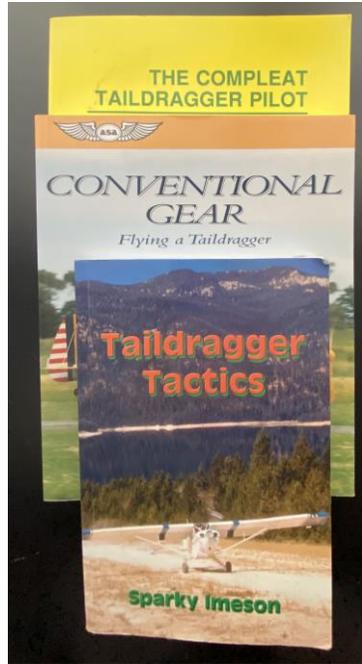


Read the book

- ***The aircrafts'* operating handbook, incl. supplements**
- **Avionics manuals**
- **Emergency procedures**
- **Performance charts**
- **Speeds for safe operation**
- **Weight & balance**
- **Systems**
- **Mission planning**



Read the PoH...but go beyond..



It's not just going up...



•PERFORMANCE &
HANDLING



•AVIONICS &
INSTRUMENTS



•WEATHER
CAPABILITIES AND
ALTITUDES



•AIRPORT/AIRSTRIP
OPERATIONS



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Aircraft – It can be down...



Everything



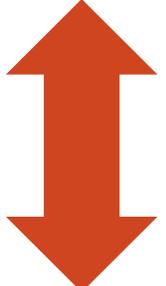
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Name some differences...

- **V-speeds**
- **Performance tables**
- **Systems**
 - Flaps
 - Gear
 - Control locations
 - Nav and radio equipment
- **Operations**
 - TO and LND speeds
 - TO and LND flaps

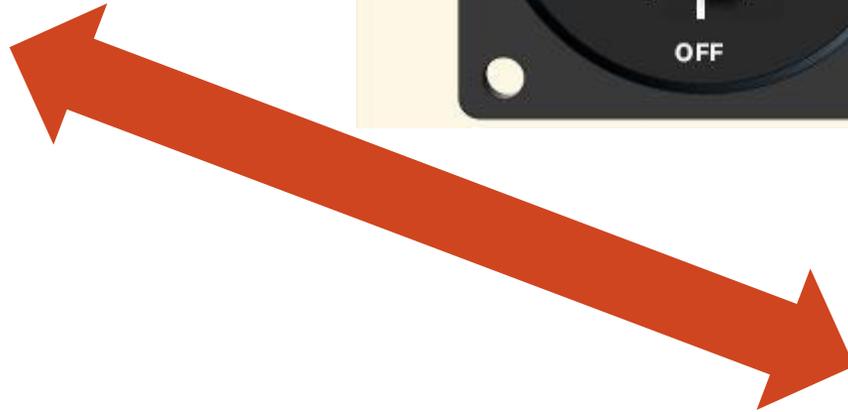
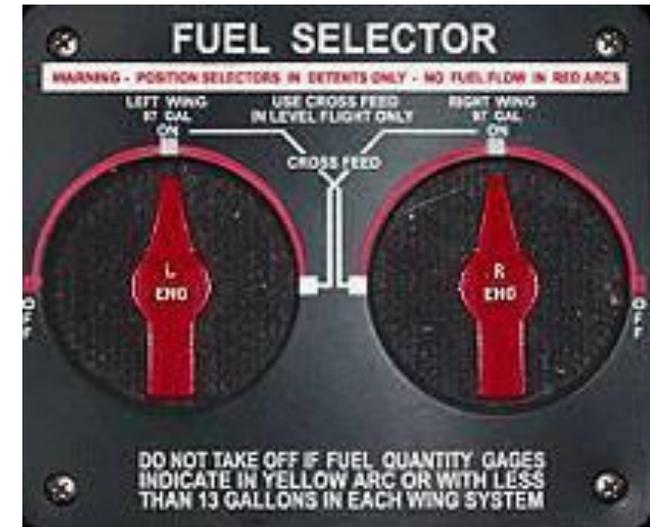


Systems – It's not just the Aircraft

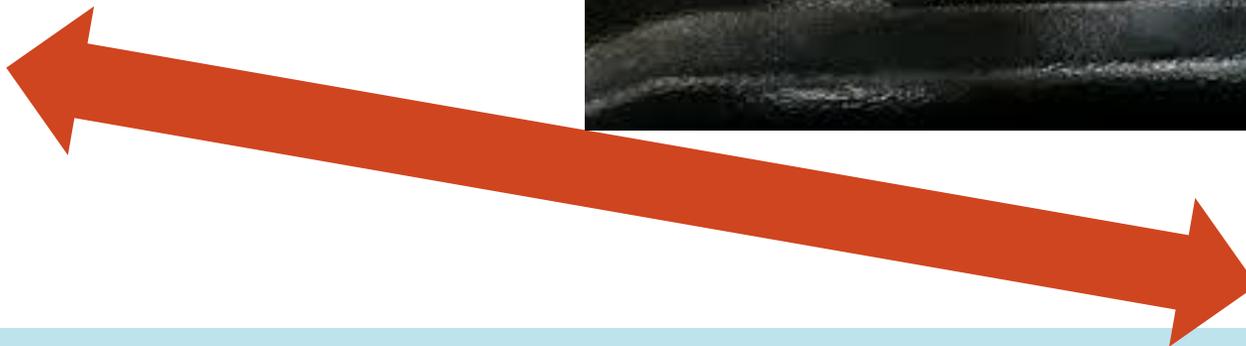


- What's it doing now?
- How do I get back to...?

Systems – Different can be confusing



Systems – Different can be confusing



How do you transition to a Spitfire?



•Lots of TV



rd time



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Operational environment



Legal vs Safe



Fatal Accidents

- **Standard aircraft** **2.0 / 100,000 Hrs.**
- **Amateur built aircraft** **4.2 / 100,000 Hrs.**

- **First 50 hours of flight in experimental/amateur-built aircraft are particularly hazardous**
 - Transition Training is a **MUST!**

- **Private pilots or higher are more than twice as likely to crash LSAs, than LSA pilots**



Required Training

- **Get the right instructor**
- **Train where you will fly**
- **Develop Personal Performance Figures and Minimums**
- **Fly at mission weights**



Find an Instructor

- **Experienced, current and proficient in make & model**
- **Interview**
 - Current owners
 - Aircraft type clubs <https://bit.ly/37qLNIM>
 - Pilot organizations
 - AOPA <http://aopa.org/>
 - EAA <http://eaa.org/>
 - Simulation training providers
 - Several CFIs
- **Use a syllabus**
- **Budget**
 - Time and Money



Find an Instructor

- **Interview several candidates**
 - Discuss your mission (s)
 - Your experience and capabilities
 - The aircraft you've flown
 - What you expect to get out of transition training.
 - Assess CFI experience
 - Overall
 - Match teaching style to your leaning style
 - In your aircraft and operations



E-AB & LSA



LSA Categories

- **Light Sport Aircraft (S-LSA)**
 - Reference: 14 CFR Part 21.190
 - Ready To Fly From Manufacturer
 - Uses: Personal, Flight Training...
- **Experimental-Light Sport Aircraft (E-LSA)**
 - Reference: 14 CFR Part 21.191(i)
 - Kit-built Light Sport Aircraft
 - Can change from S-LSA To E-LSA
 - Uses: Personal, Flight Training...but...
 - LODA required...?



Training in Experimental Aircraft

- **Wait...didn't I hear about a new rule from the FAA starting that all training in special category aircraft now requires a Letter of Deviation Authority?**
- **How can I easily and safely do transition training with this rule in place?**



Training in Experimental Aircraft

- **Remember the 2022 FAA Ruling...?**
 - All flight instruction counts as “compensated”
 - All special airworthiness category aircraft require a LODA to receive and give instruction
- **Big stink from everyone in GA**
- **Literally, an Act of Congress to overrule it**

- **See February 2023 *Club Connector* newsletter Question of the Month:**

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 61 and 141

[Docket No.: FAA–2021–0592]

Notification of Policy for Flight Training in Certain Aircraft

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Notification of policy.

SUMMARY: This notification provides clarification on flight training for compensation in certain aircraft that hold special airworthiness certificates

CONGRESS.GOV Advanced Searches | Browse Legislation

Legislation Examples: hr5, sres9, "health care" MORE OPTIONS

Home > Legislation > 117th Congress > H.R.7776 Citation

H.R.7776 - James M. Inhofe National Defense Authorization Act for Fiscal Year 2023
117th Congress (2021-2022)

LAW Hide Overview

Sponsor: [Rep. DeFazio, Peter A. \[D-OR-4\]](#) (Introduced 05/16/2022)

Committees: House - Transportation and Infrastructure

Committee Meetings: [05/18/22 10:00AM](#)

Committee Reports: [H.Rept. 117-347](#)

Committee Prints: [H.Prt. 117-70](#)

Latest Action: 12/23/2022 Became [Public Law No. 117-263](#). (All Actions)

Roll Call Votes: There have been [6 roll call votes](#)

Tracker: Introduced > Passed House > Passed Senate > Resolving Differences > To President > Became Law



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Training in Experimental Aircraft

- Feb 8th 2023:
- Notification of Policy for Implementation of the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 for Flight Training, Checking, and Testing in Experimental Aircraft

– <https://www.federalregister.gov/documents/2023/02/08/2023-02600/notification-of-policy-for-implementation-of-the-james-m-inhofe-national-defense-authorization-act>

Flight instructors, registered owners, lessors, or lessees of an experimental aircraft shall not be required to obtain a letter of deviation authority (LODA) to allow, conduct, or receive flight training, checking, and testing in experimental aircraft, if:

(1) The flight instructor is not providing both the training and the aircraft;

(2) No person advertises or broadly offers the aircraft as available for flight training, checking, or testing; and

(3) No person receives compensation for the use of the aircraft for a specific flight during which flight training, checking, or testing was received, other than expenses for owning, operating, and maintaining the aircraft.



Ultralights

- Simple and easy...right?
- Just climb in and off we go...
- If I can fly a Cirrus, I can fly this spit-and-string thing...



6/29/15

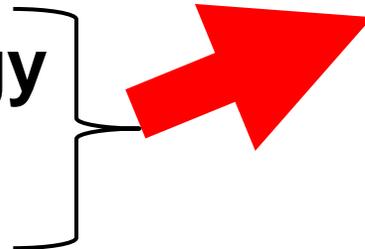
AC 90-109A - Transition to Unfamiliar Aircraft

AC 90-109A
Appendix 4

APPENDIX 4. LOW-INERTIA AND/OR HIGH-DRAG

1. **DEFINITION.** Airplanes which rapidly lose energy (airspeed and/or altitude) when there is a loss or reduction of power.
2. **DISCUSSION.**
 - a. **Example Accident from the National Transportation Safety Board (NTSB) Records.**
 - (1) **Accident.** It was the first flight of a newly completed homebuilt airplane. The 600-hour private pilot had no previous time-in-type. On his first landing, he misjudged the amount of power required during the landing flare and the airplane struck the runway nose-first. The nose gear collapsed.
 - (2) **Probable Cause.** The pilot misjudged the power required during the landing flare, which resulted in a hard landing on the nose wheel. A factor associated with the accident was the pilot's lack of experience in the airplane.

- Open cockpit
- 2-stroke engine
- Low mass = low energy
- High drag



Resources

General Aviation
Joint Steering Committee
Safety Enhancement Topic

June 2015



FAA
Aviation Safety

Transition Training

The lack of transition training has been cited as a causal factor in many general aviation accidents. Although pilots think of transition training as necessary when stepping up to a high performance or complex airplane; or from single-engine to multi-engine; or from tricycle gear to tail wheel, it is also beneficial to pilots who are moving from traditional aircraft to amateur built or light sport flying machines. Whether a pilot is transitioning to a higher- or lower-performance aircraft, or even a different model, a sound transition training program should involve:

Structure

Transition training should be conducted in accordance with a written training syllabus. Think of the syllabus as a checklist for training. As with an aircraft checklist, the syllabus provides a logical, systematic, and comprehensive approach to ensuring that you cover all the basics. It is also helpful to review the applicable certification standards documents like the practical test standards (PTS), or airman certification standards (ACS) which are expected to replace PTS later in 2016. These documents list the flight proficiency standards appropriate for the certificate and/or rating that the transitioning pilot holds.

Specifics

Transition training is intended to teach the pilot what is different about the aircraft or its installed equipment (e.g., avionics). The syllabus should thus address basic characteristics of the aircraft's systems (e.g., fuel, electrical, control, hydraulic, avionics, environmental, etc.), but with emphasis on how characteristics of the new aircraft differ from those in aircraft the pilot has already flown. It should cover normal, abnormal, and

emergency procedures. The syllabus should also cover performance characteristics, including what to expect on takeoff and landing, climb, cruise, descent, and glide. Finally, it must address limitations, such as weight and balance, speeds, wind limits, etc.

Qualified Instructor

To get the greatest benefit from your transition training, you need to hire an instructor who is current, qualified, and thoroughly knowledgeable about the airplane and/or equipment you want to master. The instructor should conduct your training in accordance with a comprehensive training syllabus. While it is important to cover all the material, a good instructor will have the ability to change the arrangement of the subject matter and/or shift the emphasis to fit the qualifications of the transitioning pilot, the characteristics of the aircraft or equipment involved, the circumstances of the training environment, and the goals of the transitioning pilot.

Learn More

- Advisory Circular 90-109, Airmen Transition to Experimental or Unfamiliar Airplanes - <http://go.usa.gov/3XguP>
- Transitioning to Other Airplanes, AOPA Online Course - www.aopa.org/lms/courses/transitioning/
- FAA Safety Briefing, March/April 2014 Issue - http://1.usa.gov/FAA_ASB



U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: Transition to Unfamiliar Aircraft

Date: 6/29/15

AC No: 90-109A

Initiated by: AFS-800

Change:

1. PURPOSE. This advisory circular (AC) is intended to help plan the transition to any unfamiliar fixed-wing airplanes, including type-certificated (TC) and/or experimental airplanes. It provides information and guidance to owners and pilots of experimental, simple, complex, high-performance, and/or unfamiliar airplanes. It also provides information to flight instructors who teach in these airplanes. This information and guidance contains recommendations for training experience for pilots of experimental airplanes in a variety of groupings based on performance and handling characteristics. This AC does not address the testing of newly built experimental airplanes. The current edition of AC 90-89, Amateur-Built Aircraft and Ultralight Flight Testing Handbook, provides information on such testing. However, if a pilot is planning to participate in a flight test program in an unfamiliar and/or experimental airplane, this AC should be used to develop the skills and knowledge necessary to safely accomplish the test program utilizing the guidance found in AC 90-89.

2. CANCELLATION. AC 90-109, Airmen Transition to Experimental or Unfamiliar Airplanes, dated March 30, 2011, is canceled.

3. BACKGROUND.

a. Transitioning between Aircraft. The Federal Aviation Administration (FAA) has recognized a need to devote resources to preventing accidents occurring because of inadequate training when transitioning between aircraft types. Specifically, accidents resulting from loss of aircraft control or situational awareness frequently result from pilot unpreparedness for challenges presented by the aircraft. Pilots transitioning to unfamiliar aircraft require specific training in the new aircraft's systems and operating characteristics to include normal, abnormal, and emergency procedures.

b. Experimental Airplanes. The experimental airplane community is an important part of the civil aviation industry in the United States; some of aviation's greatest technological achievements were developed by amateur airplane builders. The amateur builder community is foundational to General Aviation (GA) in the United States. Historically, experimental airplane flight operations represent a small percentage of flight hours, but a significant percentage of GA accidents.

c. High-Performance and Complex Airplanes. Many contemporary and legacy GA aircraft have features such as retractable landing gear, turbocharging, pressurization, sophisticated avionics, autopilots, and turbine powerplants, all of which add operational

Read all this AC!



www.FAASafety.gov

Produced by FAA Safety Briefing | Download at 1.usa.gov/SPANS



Administration

Resources

Home > Training & Safety > Online Learning > Online Courses > Transitioning to Other Airplanes

TRAINING & SAFETY

AOPA Flight Training Advantage

Flight Training Magazine

Technique

Knowledge

Advanced Training

Career

Students

Fun

Air Safety Institute

Online Learning

Accident Case Studies

AOPA Webinars

ASI Safety Tips

Early Analysis

Pilot Short Stories

TRANSITIONING TO OTHER AIRPLANES

Online Course



TAKE THE COURSE

Course Feedback: Send us your thoughts

Are you contemplating or perhaps ready to experience the thrill of transitioning to another airplane or new avionics? There's a lot more to transition training than getting a quick check out. Even if you're a highly experience pilot, transitioning to new equipment can present new challenges and risks. This course offers straightforward, important advice about what to expect when making the jump from a familiar airplane or avionics setup to something new.

scroll to more content



Transitioning to Other Airplanes

Same Sky, Different Wings

There's more to transition training than getting a quick check out. Even if you're a highly experienced pilot, transitioning to new equipment can present unexpected challenges and risks.

Earn a certificate of completion after viewing the entire course and pass quiz with 80% or greater.

Enable sound for the best experience.



Introduction



Ground & Flight Training



Quiz



What to Expect



Maintaining Proficiency



Certificate



Types of Transitioning



Conclusion

<https://www.youtube.com/watch?v=yCINQ8jwgg8&list=PLCC59953860B62145&index=13&t=109s>



Federal Aviation Administration

ASI Online Course

CHAPTER
3 OF 7: TYPES OF TRANSITIONING

PAGE
1 OF 1: TRACK SELECTION

Track Selection

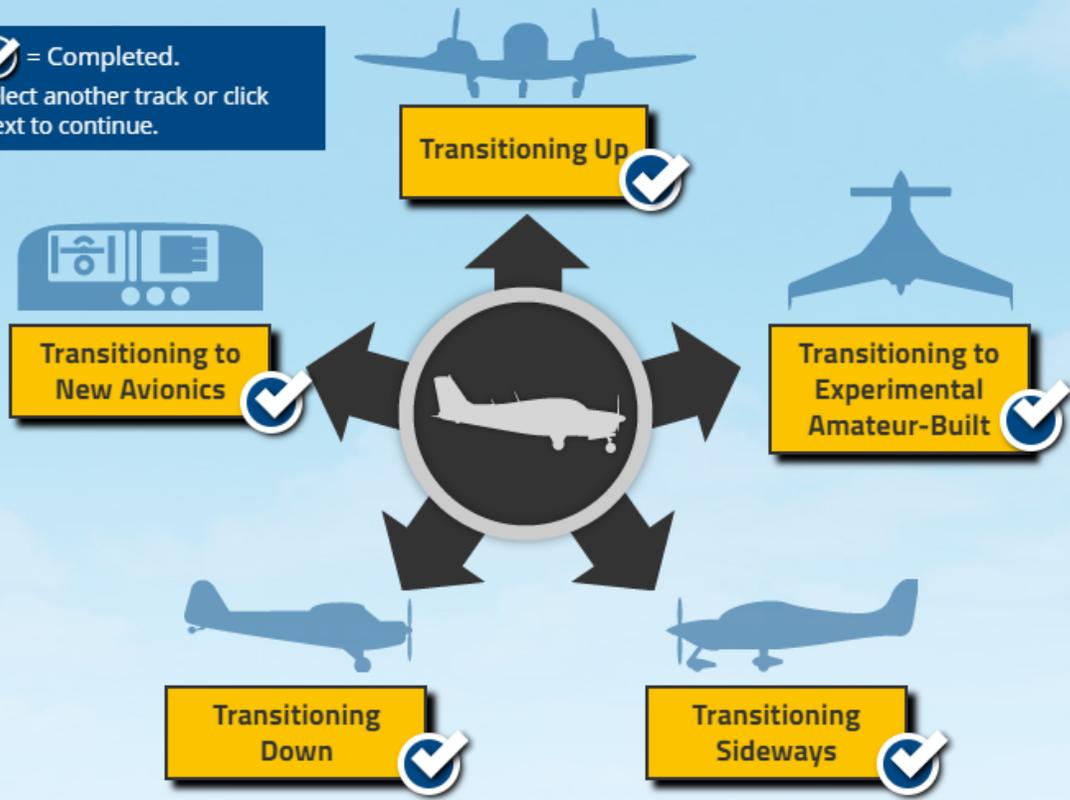
Although it may be tempting to invest more training on what we perceive as moving “up” in the airplane taxonomy, accident data shows that there’s as much risk moving “down” or “sideways.”

In this course we’ll study five basic types of airplane transitions you can accomplish that do not require an FAA checkride.

Select the type of transition you’re most interested in learning about. Only one track is required to earn a completion certificate, but you may take as many tracks as you like.

 **TIP**

 = Completed.
Select another track or click Next to continue.



Transitioning Up

Transitioning to New Avionics

Transitioning to Experimental Amateur-Built

Transitioning Down

Transitioning Sideways

 **FAQ**  **SHARE**  **BACK**  **NEXT** 



Resources

ASI Accident Case Studies

<https://www.youtube.com/playlist?list=PLCC59953860B62145>



Accident Case Studies

Air Safety Institute

26 videos 1,663,414 views Last updated on Jul 11, 2022

≡+ ↻ ⋮

▶ Play all ⌘ Shuffle

Each Accident Case Study examines a general aviation accident in detail with the intent to learn from the mistakes of others—and make better decisions as a result. The accident recreations use ATC audio and Microsoft Flight Simulator scenes and include careful scene analysis and safety tips.

Search

- 9  **Accident Case Study: Single Point Failure**
Air Safety Institute • 1M views • 5 years ago
- 10  **Accident Case Study: Unintended Consequences**
Air Safety Institute • 1.1M views • 6 years ago
- 11  **Transitioning to Other Airplanes: Misplaced Priorities**
Air Safety Institute • 257K views • 6 years ago
- 12  **Transitioning to Other Airplanes: Tempting Fate**
Air Safety Institute • 141K views • 6 years ago
- 13  **Transitioning to Other Airplanes: Errors of Interpretation**
Air Safety Institute • 150K views • 6 years ago
- 14  **Transitioning to Other Airplanes: A Dangerous Detail**
Air Safety Institute • 163K views • 6 years ago
- 15  **Transitioning to Other Airplanes: A Simple Mistake**
Air Safety Institute • 347K views • 6 years ago
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Airplane Flying Handbook

Airplane Flying Handbook (FAA-H-8083-3C)
Chapter 12: Transition to Complex Airplanes

Intro
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Airplane Flying Handbook (FAA-H-8083-3C)
Chapter 13: Transition to Multiengine Airplanes

Introductory
This chapter is a "small" multiengine aircraft. This chapter is a "small" multiengine aircraft. This chapter is a "small" multiengine aircraft.

Introduction
The turbopropeller-powered airplane aerodynamics are the same. The major difference is the handling of the airplane's powerplant. The turbopropeller-powered airplane also has the advantages normally not found on piston-powered airplanes.

General
Multiengine aircraft engine affects performance. After an engine failure, pilots should follow the handbook.

Terms and Definitions
Pilots of single-engine aircraft should have several terms reviewed.

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Airplane Flying Handbook (FAA-H-8083-3C)
Chapter 16: Transition to Jet-Powered Airplanes

Introduction
This chapter contains an overview of jet-powered aircraft, the differences a pilot may encounter, and the procedures for airplane-specific operations.

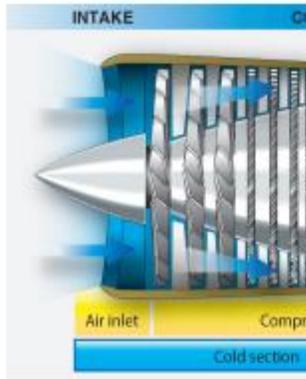
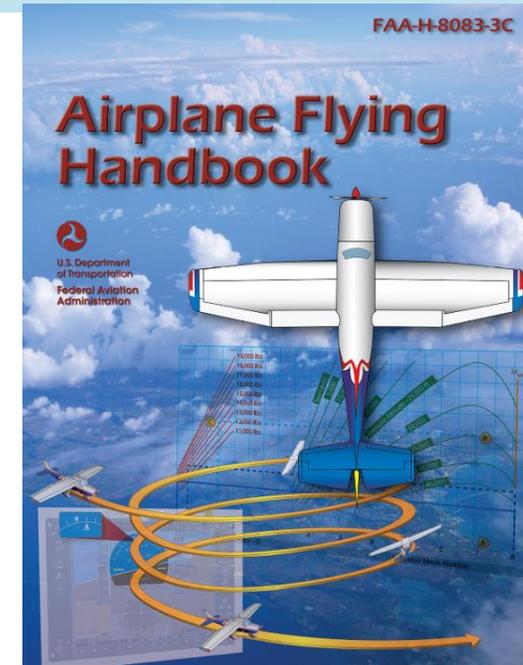
Ground Safety
Stepping out on the ramp in a jet engine is running. It is easy to get sucked into the intake to pull a person down.

Jet Engine Basics
A jet engine is a gas turbine engine. It passes through the intake and is visible from the front of the engine. The compressor section is normally rotated by the engine.

Airplane Flying Handbook (FAA-H-8083-3C)
Chapter 17: Transition to Light Sport Airplanes (LSA)

Introduction
The light-sport aircraft (LSA) concept broadens the access of flight to more people. LSA have been defined as a simple-to-operate, easy-to-fly aircraft; however, "simple-to-operate" and "easy-to-fly" do not negate the need for proper and effective training. This chapter introduces the light-sport category of airplanes and places emphasis on transition to a light-sport airplane.

Light-Sport Aircraft Background
Several groups were instrumental in the development and success of the LSA concept. These included the Federal Aviation Administration (FAA), Light Aircraft Manufacturers Association, American Society for Testing and Materials (ASTM) International, and countless individuals who promoted the concept since the early 1990s. In 2004, the FAA released a rule that created a light-sport classification for airplane, gyroplane, lighter-than-air, weight-shift-control, glider, and powered parachute.



To start a gas turbine engine, the compressor section is normally rotated by the engine.

Standardize...Info Sheet

V-Speeds and Other Details		Cessna C182T: N528MJ	
Cessna C182T: N528MJ		Fuel: 92-Galls total; 87 usable Oil: 8-Qrts Max, 6-Qrts Min	
Fuel Injected		Max TO Weight: 3100 lbs	
Pattern Speeds:			
V-Speed	IAS (Kts)	Emergency Speeds	IAS (Kts)
V _A @ 3100lbs	110	Pwr-Off Ldg - no flap	70
V _A @ 2600lbs	100	Pwr-Off Ldg - 30 flap	65
V _A @ 2100lbs	91	Max. Glide	70
V _{FE}	136/117/99	Glide Ratio:	8.7
V _{NE}	175	AGL (feet)	Miles
V _{LO} Gear up	NA	2000	3.3
V _{NO}	140	4000	6.6
V _R	55	5000	8.2
V _S	51	6000	9.9
V _{SO}	41	8000	13.2
V _X Flaps Up	62	10000	16.5
V _Y Flaps Up	82		
Normal Operations:		ASI Details:	
What:	IAS (Kts)	ARC	Kts
Max Crosswind Comp	15	White Arc:	41 - 100
Normal climb out	70-80	V _{SO}	41
Short Field TO		V _{FE}	100
Flaps 20 Retract @ 100'	60	Green Arc:	51 - 140
Climb - Flaps up:		V _{S1}	51
Best V _X @MSL	62	V _{NO}	140
Best V _X @10,000'	68	Yellow Arc:	140 - 175
Best V _Y @MSL	82	V _{NO}	140
Best V _Y @10,000'	77	Red Line	V _{NE} 175
Approach to land:			
Normal - Flaps 0	70-80		
Normal - Flaps 10			
Normal - Flaps 20			
Normal - Flaps 30	60-70		
Short Field - Flaps 30	60		
Stall Speed (Kts)		Flaps = V _{SO}	Clean = V _{S1}
Downwind	80	41	51
Mid-Field Downwind (*1.5)	62	80	80
Turning Base (*1.4)	58	77	70
Final (*1.3) = (V _{REF})	54	72	70
Over Numbers (*1.2)	50	67	65 - 70
		62	65
Landing Check -1:		Pattern:	
* Fuel Gauges - CHECK		Take-Off:	
* Fuel - ON		* Rotate @ 55	
* Throttle - AS NEEDED		* Climb out @ V _Y = 82	
* Lights- LANDING ON		* Level @ 80Kts - 2100 RPM	
* Magnetos - BOTH		* Downwind TPA @ 80	
* Masters - ON		* Downwind Checklist	
* Mixture - RICH			
Abeam Numbers:			
* Engine Gauges - GREEN		* Power 1500 RPM - 70Kts	
* Flaps - AS REQUIRED		* White Arc - Flaps 10	
* CLEARANCE/CTAF		* Base @ 70	
		* Flaps 20	
		* Final @ 65	
		* Flaps 30 (if needed)	
		* BFC-GUMPS	
		* X-Wind Control + Slip	
		* Touch down @ 41	
Landing Check - 2:		Go Around:	
B: Boost Pump - ON		* Full Power	
F: Feet and Flaps		* Pitch down for 55 Kts	
C: Cowl Flaps - Closed		* Flaps back ONE notch	
G: Gas - ON		* Pitch for 62 then 82Kts	
U: Undercarriage - down		* Flaps retract in increments	
M: Mags, Masters, Mixture			
P: Prop full high			
S: Secure - belts, doors, etc			

V-Speeds and Other Details		Piper PA-11: N474JT	
Piper PA-11: N474JT		Fuel: 34-Galls total; 30 Usable Oil: 4-Qrts Max, 3-Qrts Min	
Carburated + carb heat		Max TO Weight: XXX lbs	
Pattern Speeds:			
V-Speed	IAS (MPH)	Emergency Speeds	IAS (MPH)
V _A @ 1220 lbs	94	Pwr-Off Ldg	50
V _{NE}	122	Max. Glide	55
V _{NO}	74	Glide Ratio:	9
V _R	50	AGL (feet)	Miles
V _{NE}	122	2000	3.4
V _{SO}	38	4000	6.8
V _X	50	5000	8.5
V _Y	55	6000	10.2
		8000	13.6
		10000	17.0
Normal Operations:		ASI Details:	
What:	IAS (MPH)	ARC	MPH
Max Crosswind Comp	15	V _{SO}	34
Normal climb out	55-60	V _{NO}	74
Short Field TO	50	Red Line	V _{NE} 122
Best V _X @MSL	50		
Best V _Y @MSL	55		
Approach to land:			
Normal	55-60		
Short	50		
Landing Check - 1:		Pattern:	
* Fuel Gauges - CHECK		Take-Off:	
* Fuel - ON		* Rotate @ 50	
* Throttle - AS NEEDED		* Climb out @ V _Y = 55	
* Lights- LANDING ON		* Level @ 74 MPH - 2150 RPM	
* Magnetos - BOTH		* Carb heat: ON	
* Masters - ON		* DW: 2100RPM, 65 MPH	
* Mixture - RICH		* BFC-GUMPS	
* Carb Heat - ON		Abeam Numbers:	
* Engine Gauges - GREEN		* Power 1600 RPM - 60 MPH	
* Flaps - AS REQUIRED		Base and Final:	
* CLEARANCE/CTAF		* Base @ 60-65 MPH	
		* Final @ 55-60 MPH	
		* BFC-GUMPS	
		* X-Wind Control + Slip	
		* Touch down @ 40 MPH	
		NAIL THE TAIL	
		STICK INTO WIND	
Landing Check - 2:		Go Around:	
BFC-GUMPS		* Full Power, Heat OFF	
B: Boost Pump - ON		* Pitch down for 50 MPH	
F: Feet and Flaps		* Climb at 55 MPH	
C: Cowl Flaps - Closed			
G: Gas - ON			
U: Undercarriage - down			
M: Mags, Masters, Mixture			
P: Prop full high			
S: Secure - belts, doors, etc			

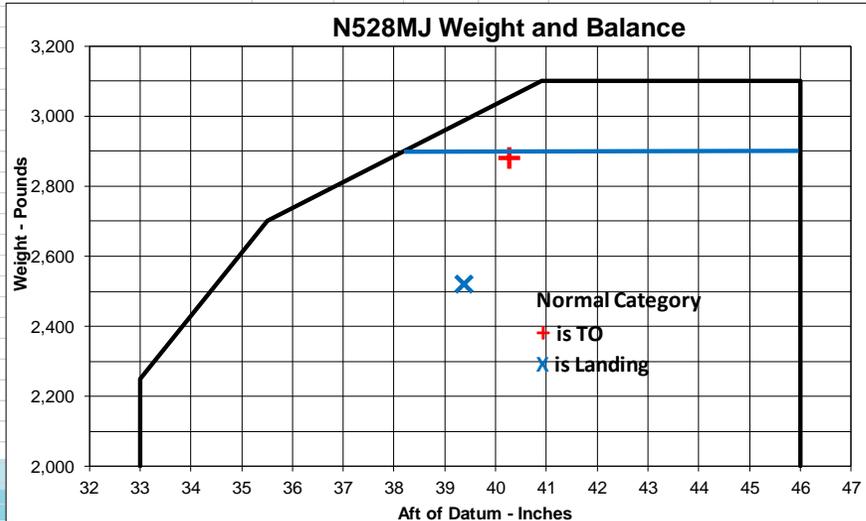
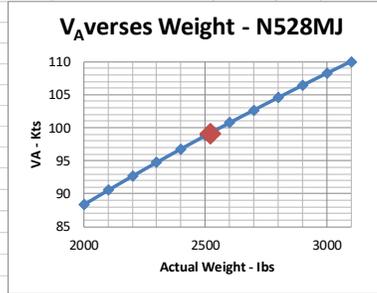


Federal Aviation Administration

Standardize...W&B Calculators

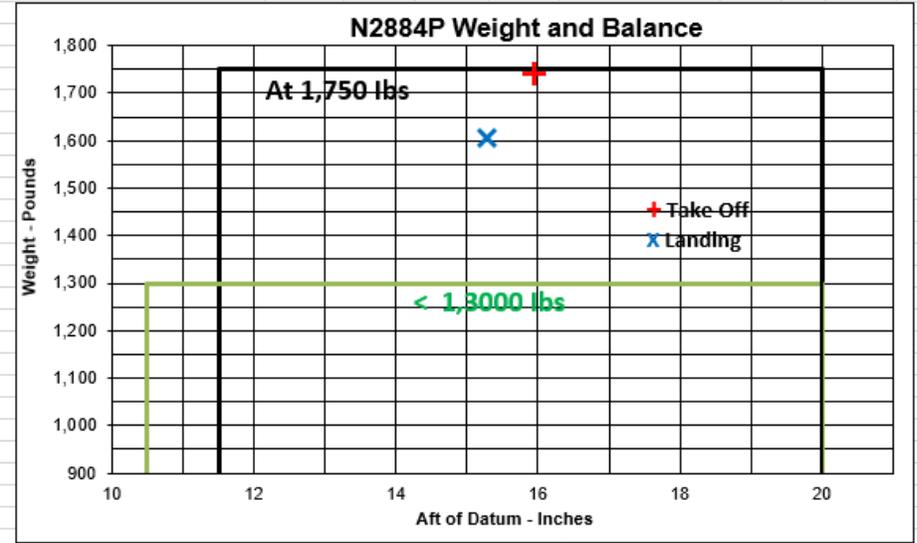
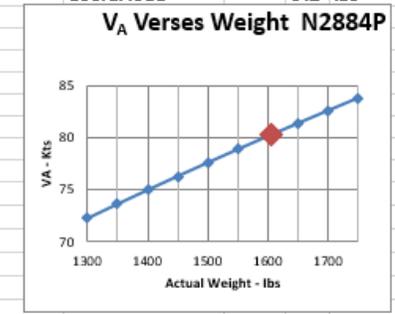
N528MJ Cessna 182T Weight And Balance Calculator

Enter data in light colored cells only			Info:		
Starting Fuel in Plane (87 Gall max.)	87		Max Ramp Weight	Normal	3110 lbs
Fuel Burn Per Hour(GPH)	15		Max Takeoff Weight	Normal	3100 lbs
Estimated hours for this flight	4		Max Landing Weight	Normal	2950 lbs
Fuel used for taxi and run-up (Gall)	1.5				
Ending Fuel in Plane (Gall)	25.5				
	Weight	Arm	Moment		
Basic Empty Weight	1977.62	37.66	74474.18		
Front Seats	320	37	11840.00		
Rear Seats (Incl. bags, equip)	50	74	3700.00		
Baggage Area A* (120 lbs max)	10	97	970.00		
Baggage Area B* (80 lbs max)	10	116	1160.00		
Baggage Area C* (80 lbs max)	0	129	0.00		
* Max combined A+B+C: 200lbs	20				
* Max combined B+C: 80lbs	10				
Fuel - Ramp (Pounds)	522	46.5	24273.00		
Ramp Weight	2889.62				
Takeoff Weight and CG	2880.62	40.27	115998.68		
Pounds under/over MTOW (Negative number is bad)	219.38				
Landing Weight and CG	2520.62	39.38	99258.68		
			V_A at LND Weight =	99	Kts



N2884P Piper PA-18 Weight And Balance Calculator

Enter data in light colored cells only			Info:		
Starting Fuel in Plane (34 Gall max.)	34		Max Gross Weight Normal	###	lbs
Fuel Burn Per Hour(GPH)	9		Useful load	612	lbs
Estimated hours for this flight	2.5				
Fuel used for taxi and run-up (Gall)	1				
Ending Fuel in Plane (Gall)	10.5				
	Weight	Arm	Moment		
Std Empty Weight	1127.25	12.02	#####		
Oil 6 Qrts	11.25	-36.00	-405		
Front Seats	200	11	2200		
Rear Seats (Incl. bags, equip)	200	37	7400		
Baggage Area (50 lbs max)	5	57	285		
Fuel - Ramp (Pounds)	204	24	4896		
Ramp Weight	1747.5				
Takeoff Weight and CG	1741.5	15.95	27782		
Pounds under/over MTOW (Negative number is bad)	8.50				
Landing Weight and CG	1606.5	15.28	24542		
			V_A at LNG Weight	80	Kts



Federal Aviation Administration

Key Points

- **Know your aircraft – don't make assumptions**
- **Find an experienced and qualified instructor (flight schools, type clubs, flying clubs)**
- **Stay proficient – “sign-offs” aren't enough**
- **Establish and maintain personal minimums**
- **Instructors – are you the one transitioning? Flight reviews in aircraft that are new to you?**
 - Know your limitations, aircraft, and tailor training to meet pilot's experience, proficiency, etc.
 - CFIs...Get some training! Participate in *WINGS*



Proficiency and Peace of Mind

- Fly regularly with your CFI
- “Revert to training” ...only works if...?
 - a) You've seen it before
 - b) You've done it recently
- **Practice, practice...**
 - Get in your head
 - ...and keep it there...
- Document in **WINGS**



Thank You For Attending!

**You are vital members of
our GA safety community!**



Next Month's TOM...

The National FAA Safety Team Presents

Topic of the Month – March Pilot Proficiency and *WINGS*

Presented to: WAFC and Friends
By: Stephen Bateman, CFI
Date: Monday March 13th, 2023

Produced by:
The National FAA Safety Team (FAASTeam)



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