

Private Pilot Training Packet

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Students must bring this document to every lesson. Instructors will use it to ensure consistent, high-quality instruction and standardize the training process at Pilot Rise.

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The Course

Description

This document serves as the primary guide for both students and instructors throughout Private Pilot training. Students should become thoroughly familiar with its contents.

Training Philosophy

Pilot Rise was founded with the mission to elevate flight training standards. We aim to provide the highest quality flight training in North Texas. We adhere to 14 core training philosophies, each supported by FAA guidelines, studies, and research. These principles are integral to the instruction provided by all Pilot Rise instructors and will be instilled throughout your training.

1. Safety First: Risk Mitigation and Backup Plans

Safety is our top priority. Risks must be mitigated to an acceptable level. If they cannot be, lessons will be altered or rescheduled. We also emphasize the importance of always having a backup plan—whether it's navigating around weather, engine issues, or planning for emergencies. Always have a way out!

2. Adaptability

If a flight cannot proceed as planned, instructors and students should explore alternative lesson options before canceling, ensuring risks are mitigated to a safe level.

3. Training for Real-World Flying

We prepare students for real-world scenarios, not just checkrides. Lessons include exposure to challenging conditions such as strong crosswinds, light rain, turbulence, and instrument flight to ensure students are ready for the realities of flying.

4. Challenging Yet Supportive Training

Training should be challenging but supportive, pushing students to grow without being overwhelming. We believe it's better to face challenges during training than to encounter them unprepared in real life.

5. Real-World Integration

Incorporate real-world flying scenarios, such as cross-country flights, into lessons. This makes training more engaging, reduces risk in high-traffic areas, exposes students to diverse experiences, and helps them log hours efficiently.

6. Meaningful Repetition

Repetition is key to building memory and proficiency. Students should engage in active recall, study regularly, and practice frequently to reinforce skills and knowledge.

7. Recency of Experience

Regular flying ensures consistent progress and reduces regression. Flights in challenging conditions, such as crosswind demos—even as early as lessons 1—are often better than canceling and going a week or more without flying, provided safety is maintained.

8. Law of Primacy: Teach It Right the First Time

The Law of Primacy states that what is learned first creates a strong and lasting impression. Pilot Rise ensures students are taught correctly from the start, emphasizing standardized instruction and using this document and FAA resources to prevent unlearning and relearning later.

9. Breaking the Game of Telephone

We counter the spread of misinformation and bad habits by staying updated on industry standards and best practices. Instructors rely on FAA documents and this packet to provide accurate, consistent training.

10. Clear Standards and Direction

Students are given clear goals and standards, both through this document and the ACS. Progress is meticulously documented to ensure transparency and seamless transitions between instructors if needed.

11. Understanding the “Why”

Students retain more when they understand the reasons behind their actions. Instructors focus on explaining the "why" behind each lesson to build deeper understanding and retention.

12. Let Students Make Mistakes Safely

Mistakes are valuable learning opportunities. Instructors allow students to make errors within a safe environment, ready to step in when necessary to ensure safety and learning.

13. Efficient Training to Save Costs

Training is structured to reduce overall costs. Flying longer lessons maximizes learning per flight and minimizes pre and post-flight billing. This approach can save students up to \$1,500 during training. However, if a student becomes fatigued, the flight should end early to maintain effective learning.

14. Master the Basics First

Before mastering landings and maneuvers, students must first master the basics. At Pilot Rise, we emphasize the four fundamentals of flight, including proper rudder and mixture usage, ensuring they are thoroughly covered early in training.

Objective

To develop skilled, knowledgeable, and safety-focused pilots who meet the requirements for a Private Pilot Certificate and are prepared for real-world flying.

Study Practices

Consistent and effective studying is essential for success in flight training. Many students may not know how to study efficiently. Review this article for helpful strategies:

<https://pilotrise.com/pilot-rise/study-strategies/>



The Pilot Rise Way

We don't train to the minimum—we train for excellence.

Our program goes beyond FAA standards to build confident, skilled, and safe pilots.

1. Enhanced Night Training (7–10 hrs)

- a. Stalls, slow flight, steep turns, unusual attitudes
- b. Extra night landings

2. Simulated Emergencies & Failures

- a. Power-off 180s
- b. Engine-out landings (day & night) at real airports
- c. Many additional emergencies (landing light at night, flap failure, brake failure, trim failure, trim stall, impossible turn demo, etc)
- d. Preflight with simulated defect (e.g., tap with “crack” written on it)

3. Scenario-Based Skill Building

- a. Airport-to-airport & mission integration
- b. Max demonstrated crosswinds
- c. Class B experience, flight following, and flight plan use
- d. BATD emergencies (unsafe to practice in flight)
- e. Pilotage without GPS

4. If Possible

- a. Grass field landing
- b. Instrument approach
- c. Actual IMC exposure
- d. 5kt Tailwind Landing Demo
- e. Observation flights (backseating)

Training Materials Checklist

☐ **Online Ground School** - <https://pilotrise.groundschool.com>

This is the Pilot Rise-endorsed ground school. You may use any of your choice. Sign up for Gold Seal as soon as possible. Complete Sections 1 and 2 as soon as possible. Take notes and make flashcards.

☐ **Purchase Equipment**

- ☐ **iPad Mini:** Charts & Apps | Get a kneeboard for iPad use during flight.
- ☐ **Headset:** \$\$\$: Bose A20 & Zulu 3 / \$\$: David Clark / \$: Rugged Air RA200
- ☐ **E6B:** For written exams. Recommend electronic E6B; mechanical for budget option.
- ☐ **Flight Bag:** Any bag works; Sporty.com offers flight bags.
- ☐ **Headlamp (RED LIGHT):** For night flying, get a headlight with a red light option.
- ☐ **Flashlight**
- ☐ **Sectional Chart**
- ☐ **Plotter**
- ☐ **Kneeboard (Optional)**
- ☐ **Handheld Radio (Optional)**

☐ **Install Apps**

- ☐ **ForeFlight:** Charts, flight logs, flight planning, weather, weight & balance, etc.
- ☐ **MyFlightBook.com (and app):** Electronic logbook. Free!
- ☐ **Brainscape.com or Quizlet.com:** Flashcards. Make your own!
- ☐ **FAR / AIM:** Federal Aviation Regulations & Aeronautical Information Manual
- ☐ **Nav Trainer (or similar):** Practice and learn how to use VORs
- ☐ **E6B (Optional):** For inflight computations on your iPad

☐ **Books & Documents (electronic or ForeFlight or physical)**

- ☐ **Private Pilot Oral Exam Guide by Michael D. Hayes:** Paperback Preferred
- ☐ **Pilot's Handbook of Aeronautical Knowledge by FAA:** Found on ForeFlight
- ☐ **ACS Private Pilot Airplane by FAA:** Found on ForeFlight
- ☐ **Airplane Flying Handbook by FAA:** Found on ForeFlight
- ☐ **Aviation Weather Handbook by FAA:** Found on Foreflight
- ☐ **VFR Chart Legend by FAA:** Found on ForeFlight
- ☐ **Aircraft Documents:** Provided by Pilot Rise on FlightCircle

Pilot Rise Resources

Scan the QR code or visit the link below to view resources. The resources page tells you which resources MUST be reviewed for each phase of training as well as optional ones. This only lists Pilot Rise resources and not standard FAA documents mentioned throughout.

<https://pilotrise.com/private-pilot-resources/>



Private Pilot Requirements

Refer to § 61.109 for complete and detailed requirements.

- ☐ Total Time: 40 hours

- ☐ Dual Instruction Time: 20 hours
 - ☐ 3 hours of cross-country flight
 - ☐ 3 hours of night flight
 - ☐ 10 takeoff and landings at night
 - ☐ 100 nm night cross-country
 - ☐ 3 hours of instrument flight training
 - ☐ 3 hours within 2 months of checkride

- ☐ Solo Time: 10 hours
 - ☐ 5 hours of solo cross-country
 - ☐ One 150nm solo cross-country flight with full-stop landings at three points, including a segment over 50nm between takeoff and landing.

Modules

Effective Lessons

Lessons are incredibly flexible with general guidance. Instructors will adjust lessons as needed for each student. Here are several lesson techniques we utilize throughout training.

1. Specific Teaching Techniques

Instructors will follow the guidance outlined in this document for each skill and knowledge area to ensure consistent, high-quality instruction at Pilot Rise.

2. Cross Country / Other Airport Integration

Starting as early as Lesson 2, instructors will incorporate cross-country flights into training. This exposes students to diverse airport environments, radio communications, and navigation skills early on, making lessons both practical and adventurous. Destinations may not always be 50nm away but will include nearby airports such as Bridgeport, Mineral Wells, Alliance, and Fort Worth Meacham.

3. Flight Following

Most flights will use ATC flight following services, especially when flying more than 25nm from Hicks. This provides students with valuable radio communication practice while enhancing safety and situational awareness.

4. Student Radios

From Lesson 2 onward, students will make most radio calls. It's normal to stumble over words at first—this is part of the learning process. Early practice builds confidence and proficiency in communication.

5. Weather Exposure

Before solo, students should experience a variety of weather conditions, including maximum demonstrated crosswind, gusty winds, moderate turbulence, and tailwind landings. Additionally, students should be exposed to conditions such as IMC, instrument approaches, light rain, cold-weather starts, and high-density altitude. All will be conducted safely to build competence and confidence.

6. BATD Integration

The BATD is used for up to 2.5 loggable hours, ideal for emergency procedures and instrument practice.

7. Towered Airports

Instructors will utilize nearby Alliance and Meacham to expose students to towered airport operations and controlled airspace.

8. Emergency Procedures

Students must learn and practice a wide range of emergency procedures to ensure preparedness. At Pilot Rise, we cover additional scenarios listed in the Emergency Procedures section. All procedures must be taught before solo.

9. Grass Field Landings

Some instructors and aircraft are approved for grass strips. We aim to expose students to real soft-field landings at least once during training.

10. Observation Flights

Students may observe C172 flight lessons for free. All students are highly encouraged to do so.

Module Schedule

This module schedule is general guidance and may be altered as needed. The contents of each module are mostly up to the instructor's discretion based on the student's training checklist. This is the minimum number of lessons, some modules may require multiple lessons to gain proficiency. The ground portion of modules is largely as-needed since it depends on how much the student has studied.

STAGE 1 - Pre-Solo

Module 1.1:

Ground	Flight - Dual	Homework
• Initial paperwork • Intro to ground procedures • Preflight • 8710 (time permitting)	• Normal procedures • Use of controls • Radio basics • Four fundamentals • Rudder usage • Mixture control • Other basics	• Sign up for Gold Seal • Gold Seal Section 1 • Review this document • Review preflight slide show • Get medical

Module 1.2:

Ground	Flight - Dual	Homework
• Review previous • As needed • 8710 if not yet complete	• Review previous • Airport operations / markings • Taxi • Flight at various speeds • Fundamentals • Basic instrument flight • Slow flight • Steep turns • Collision avoidance • Traffic pattern • Takeoff and landings intro	• Gold Seal Section 2 • Review Part 91 Regs Document

Module 1.3:

Ground	Flight - Dual	Homework
- Review previous - As needed	- Review as needed - Slow flight - Stalls (including turning) - Wake turbulence - Emergency descent - Emergency approach & landing - Distractions - Pilotage - Ground reference maneuvers - Traffic pattern work	- Gold Seal - Part 61 Regs Document - Sectional Chart & Legend

Module 1.4:

Ground	Flight - Dual	Homework
As needed	- Review as needed - Slips - Traffic pattern work - Emergency procedures - Power-off 180	- Gold Seal half Section 4 - GS Section 5: "Weight & Balance" - GS Section 5: "Performance Charts" - Study operating manual - Complete aircraft section of this document

Module 1.5:

Ground	BATD - Dual	Homework
- Takeoff & Landing Data - Weight & Balance - As needed	- Instrument flight - VOR usage - Many emergency procedures	- Airspace - Aircraft operating manual - Complete Gold Seal Videos

Module 1.6:

Ground	Flight - Dual	Homework
- Pre-Solo Exam - Review as needed	Review everything needed prior to solo	- Practice Weight & Balance and performance calculations. - Review regulations and other training materials.

Module 1.7 - PRE-SOLO STAGE CHECK:

Ground	Flight - Dual	Homework
Conducted by approved check instructor.	Conducted by approved check instructor.	As needed.

Module 1.8 - FIRST SOLO:

Ground	Flight - Dual & Solo	Homework
Review as needed	Dual: - Review as needed. - Takeoff and landings - Power-off 180 Solo: 3 takeoff and landings to full stop	- Cross country planning - Written test prep

STAGE 2 - Cross Country

Module 2.1:

Ground	Flight - Dual & Solo	Homework
- Review as needed - Short field Takeoff and Landings - Soft Field Takeoff and Landings	Dual: - Review as needed. - Short field - Soft field Solo: - Traffic pattern work.	Written test prep

Module 2.2 - Multiple Solo Flights as Needed:

Flight - Solo	Homework
- Practice area - Slow Flight & Stalls & Steep Turns - Emergency procedures - Ground reference maneuvers - Performance takeoff and landings	Written test prep

Module 2.3:

Ground	Flight - Dual Cross Country	Homework
- Nav Log - ICAO Flight Plan - Cockpit Management - Power Settings - Lost Procedures Review - Estimates of Ground Speed & ETA - Fuel Burn - VOR Usage - Performance data review - Filing Flight Plan - Weather Information - Fuel Requirements	- Pilotage - Dead reckoning - VOR Tracking & Interception - VOR Cross Check - GPS Usage (if installed) - Lost Procedures - Instrument Flight (with stalls, vectors, and emergency descent) - Review as needed	Schedule & Take Written Test

Module 2.4:

Ground	Flight - Dual Night	Homework
• Aeromedical Factors • Preflight • Required Equipment	• Review as needed • Night takeoff and landings	• Practice cross-country planning

Module 2.5:

Ground	Flight - Dual Cross Country	Homework
• Review as needed.	• Let the student do most of the work • Emergency enroute • Review as needed	• Practice cross-country planning

Module 2.6:

Ground	Flight - Dual Cross Country 100nm Night	Homework
• Review as needed.	• Let the student do most of the work • Flight in Class B Airspace • Emergency enroute • Pilot Controlled Lighting • Review as needed	• Practice cross-country planning • Study Oral Checkride Guide

Module 2.7:

Ground	Flight - Solo Cross Country	Homework
• Review planning and required endorsements	• +50nm Cross Country • Pilotage • Dead reckoning • Use of VORs • Estimates & ETA • Flight Following • Opening & Closing Flight Plan • Full stop at destination	• Study Oral Checkride Guide

Module 2.8:

Ground	Flight - Solo 150nm Cross Country	Homework
• Review planning and required endorsements	• +150nm Cross Country • +50nm between two airports • Pilotage • Dead reckoning • Use of VORs • Estimates & ETA • Flight Following • Opening & Closing Flight Plan (Only 1 flight plan) • Full stop at each airport	• Study Oral Checkride Guide

STAGE 3 - Checkride Prep

Module 3.1:

Ground	Flight - Solo 150nm Cross Country	Homework
• Document review ○ Pilot Documents ○ Logbook Review ○ Aircraft Documents ○ Aircraft MX Logbooks ○ ADs ○ Flight Planning • Practice Oral	• Review as needed.	• Study Oral Checkride Guide

Module 3.2 - Multiple Solo Flights as Needed:

Flight - Solo	Homework
• Practice unsatisfactory areas	• Oral Checkride Prep

Module 3.3 - STAGE CHECK:

A stage check will be conducted by a Pilot Rise check instructor, using the checkride checklist, ACS, and oral study guide to evaluate all areas of the student's training.

To prepare, reference the ACS to see all items that will be tested and the standards.

Know the Aircraft

Fill out this form for each aircraft you fly. Information is found in the operating handbook for that aircraft.

Make:		Category (normal, utility, aerobatic):	
Model:		Tail Number:	

Systems & Limitations

Engine Type: _____	Attitude Indicator Powered by: _____
Fuel Injected or Carbureted: _____	Heading Indicator Powered by: _____
Oil Type: _____	Turn Coordinator Powered by: _____
Propeller Type: _____	ADS-B in? _____
Fuel System: _____	ADS-B out? _____
Fuel Type: _____	VORs Installed? _____
Fuel Tank Count: _____	Min Oil: _____
Average Fuel Burn: _____	Max Oil: _____
Total Gallons: _____	Nose Tire PSI: _____
Total Usable Fuel: _____	Main Tires PSI: _____
Gear System: _____	Brake Fluid Color: _____
Flap Type: _____	Service Ceiling: _____
Oxygen System: _____	Max Takeoff Weight: _____
Electrical System Voltage: _____	Normal Takeoff Flaps: _____
Alternator or Generator: _____	Normal Landing Flaps: _____
Flight Controls Cable or Pushrod: _____	Short Field Takeoff Flaps: _____
Suction Gage Range (if installed): _____	Short Field Landing Flaps: _____
Max Magneto Drop: _____	Soft Field Takeoff Flaps: _____
Max Magneto Drop Difference: _____	Soft Field Landing Flaps: _____
Min RPM for Takeoff (reject if below this): _____	Max demonstrated crosswind? _____
Load factor limits flaps up: _____	Is the max demonstrated crosswind a limitation? ____
Load factor limits flaps down: _____	Steep Turns Max Entry Speed: _____
Max nosewheel turning angle: _____	

V Speeds

V Speed	Speed (_____)	Description
V_A		Maneuvering Speed (max for abrupt control movements)
V_X		Best angle of climb (Best climb over distance)
V_Y		Best rate of climb (Best climb over time)
Glide		Best glide speed in case of engine failure.
Cruise Climb		Ideal speed for engine cooling and cruising to your climb altitude.
V_{S0}		Stall Speed in Landing Configuration (Flaps full, gear down)
V_{S1}		Stall Speed in Specific Configuration (Normally flaps 0, gear up)
V_{FE}		Max Flap Extended Speed
V_{NO}		Maximum Structural Cruising Speed
V_{NE}		Never Exceed Speed
V_R		Rotate Speed
V_{LE}		Landing Gear Extended Speed (Retractable only)
V_{LO}		Landing Gear Operating Speed (Retractable only)
V_{APP}		Approach Speed

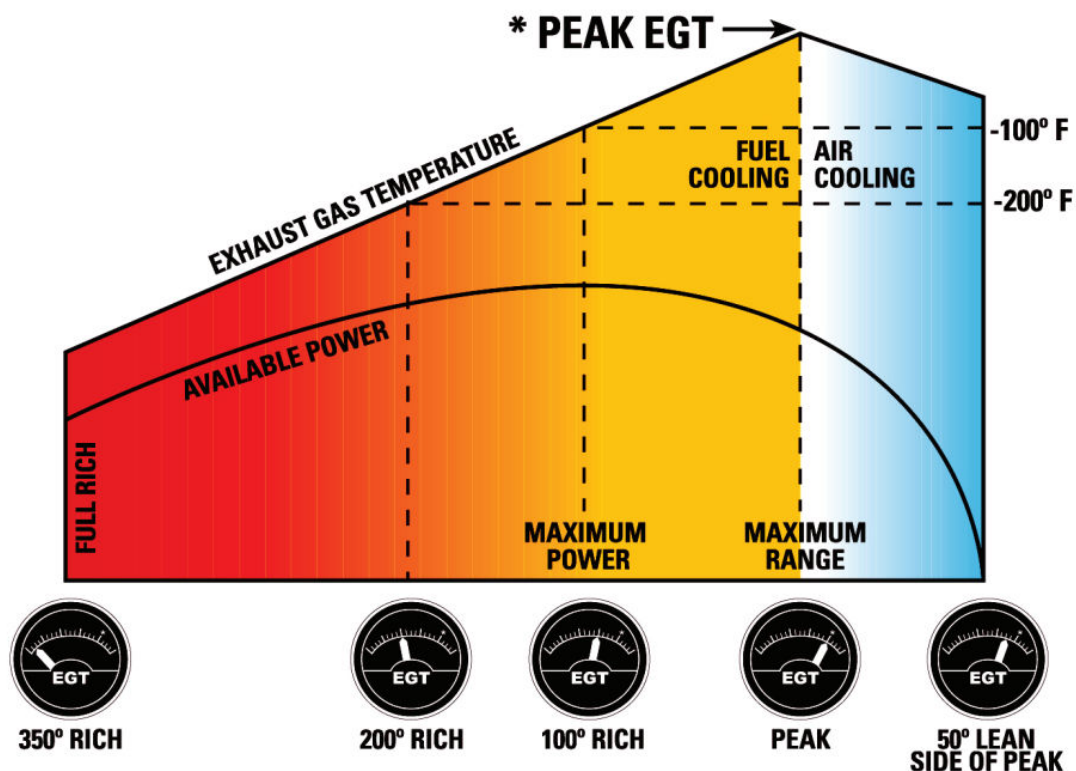
Often Missed Training

This section addresses common issues, misconceptions, and safety-critical topics. A large number of pilots don't know or were never taught these things. Instructors will reference this information during instruction to ensure they are not missed during your training. These items will be on the pre-solo written exam.

Mixture Control

There is a persistent issue in aviation with new pilots. Many do not know how to operate the mixture control. Many treat it as an on/off switch for fuel. If it could be used that way, the manufacturers would have made it an on/off switch. Instead, it is a cable ranging from lean cut-off to full rich. The mixture controls how much fuel is mixed with air.

Review the Mixture Control slide show in the References. Your instructor will go over this in detail with you.



Holding Out is Flying for Hire

As a Private Pilot, you cannot hold out or advertise flying services of any kind. This includes offering flights in exchange for anything of value, even if pro-rata cost sharing is involved. In 2024, a pilot publicly advertised flights for a pro-rata share on Facebook, which violated FAA regulations. As a result, their certificate was suspended, they received a violation, and they will likely not be hired by any airline in the future.

Weather Information

For more detailed weather information, review the FAA Aviation Weather Handbook. Here we address common misconceptions or confusion areas for weather.

Turbulence & Wind

Strong wind doesn't always mean turbulence. An airplane in steady wind feels no more effect than we feel Earth's rotation. A 30-knot wind aloft, by itself, can be a smooth flight. Turbulence arises from specific causes, outlined below:

1. **Convective Turbulence:** Rising warm air often with cumulus clouds and thunderstorms
2. **Mechanical Turbulence:** Airflow is disrupted by terrain like mountains or buildings. Common at low altitudes.
3. **Clear Air Turbulence:** Wind shear near jet streams. Caused by the Coriolis Effect.
4. **Mountain Wave Turbulence:** Oscillating air currents downwind of mountains.
5. **Wake Turbulence:** Wake from another aircraft like waves created when a large boat passes by.
6. **Thermal Turbulence:** Uneven heating of the Earth's surface leads to rising warm air (thermals).
7. **Wind Shear Turbulence:** Sudden CHANGES in wind speed or direction over a short distance.

Low-Level Windshear Mitigation

LLWS, a sudden change in wind speed or direction near the surface, is extremely dangerous if not mitigated. To reduce risk, use a higher approach speed and delay the flare until just above the runway. This increases your safety margin if airspeed drops but will require more runway. For takeoff, use a long runway, climb at V_y , and be ready to pitch for airspeed in case of a sudden loss of airspeed. For detailed mechanics, refer to the FAA Aviation Weather Handbook.

Safe Distance from Thunderstorms

Many aviators mistakenly believe the FAA advises maintaining a 20-nautical-mile distance from all storms. While this is generally a good practice, it is not entirely accurate. The FAA Aviation Weather Handbook (22.8.2) outlines 31 specific items for thunderstorm avoidance. Among these, the commonly cited guidance states: "Avoid by at least 20 miles any thunderstorm identified as severe or producing an intense, heavy, or extreme radar echo." This guidance applies specifically to navigating storms using onboard weather radar. For less severe storms, there is no specific distance recommendation. The 20-mile rule primarily aims to avoid hazards such as hail and potential wind shear. It's important to review the FAA's full guidance on thunderstorms rather than focusing on one commonly mentioned piece.

Rain is Not Dangerous on Its Own

Rain itself is not a significant threat to aircraft. Risks arise from reduced visibility, thunderstorms, turbulence, wind shear, or icing. Light to moderate rain is typically safe if other hazards are absent. Always assess the full weather picture when determining flight safety.

Convective SIGMETs

Convective SIGMETs should always be reviewed during preflight planning, but their presence does not prohibit flying, nor does their absence guarantee storm-free conditions. Treat them as a starting point for further investigation, such as reviewing radar, cloud forecasts, surface analysis, METARs, and TAFs. If a convective SIGMET covers your airport or route, plan to avoid the affected area unless thorough weather planning ensures you can remain clear of all storms and always have an exit strategy.

Cross-Country Flight Planning

Students must manually complete a navlog to demonstrate understanding, essential for spotting errors in computer-generated logs. At Pilot Rise, EFBs may be used during flights, but GPS is disabled to prevent reliance. Proficiency in pilotage is critical to be a safe pilot.

Systems

Magneto Dangers on the Ground

Magnetos can silently fail in a powered-on state, which is safer for in-flight reliability but dangerous on the ground. This failure allows the engine to start simply by turning the propeller. Always exercise extreme caution around propellers. Further training on propeller safety will be provided.

Magneto Dangers in the Air

Magneto failures don't always cause a complete loss of power. A common failure, like a distributor gear malfunction, can fire spark plugs randomly, causing pre-ignition, backfires, detonation, and severe roughness—potentially destroying the engine. Pilots often mistake this for engine failure, shut it down, and land off-field. Instead, turn off the faulty magneto, and the engine will return to normal. Don't let this catch you off guard.

Flap Cable

The Cessna 172 and 150 use a single motor and cable to operate both flaps, making asynchronous flap failure highly unlikely. If the cable snaps, both flaps will retract to 0 due to airflow, causing a sudden loss of lift.

In the rare case of one flap jamming, ailerons alone may not suffice. Use rudder input, and consider opening the door on the side of the jammed flap to provide additional yaw force for control.

You can Retract Flaps if Needed

The idea that flaps should never be retracted during a power loss on approach is a dangerous misconception. Retracting flaps increases glide distance, potentially helping you reach the runway instead of landing off-field. However, retracting flaps requires immediate pitching down to maintain airspeed, causing a rapid altitude loss.

WARNING: Retracting flaps too low or without pitching for airspeed can result in a stall, worsening the situation. This decision is situational and relies on sound aeronautical decision-making. It is not a black-and-white rule—carefully evaluate the circumstances.

Engine Fire on Ground

Avoid pumping the throttle in carbureted engines. Each throttle movement activates the accelerator pump, spraying fuel into the carburetor. During starting, this fuel can drain into the carb box, and any backfire or ignition source may cause a fire—a fairly common occurrence.

If an engine fire occurs, follow the checklist immediately. Memorize the initial steps, as most procedures call for attempting to start the engine and running it briefly. This allows intake airflow to extinguish the fire and prevent it from spreading. Act quickly and decisively.

Carburetor Icing

Carburetor icing can occur at any temperature and is more likely at higher or moderate RPM settings due to the venturi effect. Many pilots are unaware of the double RPM drop associated with carb ice.

When applying carb heat:

1. Expect an initial RPM drop as warm, less dense air enters the engine.
2. A second drop may occur as the ice melts and water enters the engine (water doesn't burn).
3. After this, RPM will gradually increase as the ice clears.

This process can take several minutes. Misunderstanding this has led to emergencies declared by three pilots—don't let it happen to you.

Fuel Planning

In an emergency, ATC will ask for fuel and souls onboard. Be prepared to provide this information. Students should always run a timer on their phone or watch to track fuel usage, ensuring they are aware of the approximate fuel remaining at any time.

Towbar Safety

Never leave a towbar attached to an aircraft you are not actively towing. Prop strikes from forgotten towbars are the most common and expensive aviation incidents. At Pilot Rise, we mitigate this by keeping the towbar pin attached to the aircraft key ring.

Preflight Assessment

Thorough preflight inspections are critical, as maintenance cannot detect issues that arise between scheduled checks—it's the pilot's responsibility. At Pilot Rise, we've had three cases where proper preflight inspections prevented accidents.

To address common gaps in understanding, we've created a detailed preflight presentation. Refer to the References section of this document to access the slideshow.

Additionally, instructors will occasionally place a sticker on the plane somewhere to see if you find it during your preflight. Don't ever get complacent with preflighting!

See and Avoid

Pilots must prioritize looking outside for traffic, spending 90% of their time scanning visually rather than focusing on instruments. To reinforce this habit, instructors may cover instruments to minimize distractions.

Passenger Briefing

Passenger briefings are mandatory and a common reason for checkride failures. Don't risk failing your checkride—and losing \$1,000—because you forgot to explain seat belts or door operations to the DPE.

Engine Starting

After starting, immediately reduce RPM to idle and check oil pressure to ensure circulation begins. Avoid exceeding idle until the oil warms up and is fully circulating:

- Winter: Allow 5–7 minutes for oil to warm (or oil temp > 100°F)
- Summer: Allow 3–5 minutes for oil to warm (or oil temp > 100°F)

Neglecting this can cause excessive engine wear or critical damage. Always prioritize proper warm-up procedures.

Engine-Out Planning

- Keep the pattern tight enough to glide to the runway in case of engine failure. Always have a way out.
- If a tight pattern isn't possible, identify a potential field near the pattern.
- On final, aim further down the runway (e.g., two lines past the numbers at Hicks) to ensure you reach the pavement in case of engine failure.
- Enroute, always have a backup plan: identify fields, airports, or grass strips nearby for emergencies.

Crosswind Landing

Landing in strong crosswinds is challenging, like patting your head, rubbing your stomach, and saying the alphabet backward—but with practice, it becomes second nature.

Your instructor will teach you crabbing, slipping, and landing on one wheel. To perfect these skills, instructors often take students to Alliance Airport, where the 11,000-foot runway allows plenty of space to practice staying on the centerline while keeping the aircraft aligned with the runway.

A unique teaching technique we use involves the student controlling only the yoke while the instructor manages rudder and throttle, and then switching roles. This accelerates understanding far more effectively than traditional methods.

Rudder Use During Rolls

At Pilot Rise, instructors will teach proper rudder use during rolls. While many pilots think turns are made solely with ailerons, staying coordinated requires proportional rudder input. This counters adverse yaw, which occurs because the downward aileron increases drag on the rising wing. Proper rudder use ensures smooth and coordinated turns.

Diversion

You are not locked into your first diversion choice. If the initial airport proves unsuitable, you can divert again to a better option. Always reassess and adapt as needed for safety.

Stalls

Many accidents occur because of a base-to-final stall spin. To prepare you for this, instructors your instructor will teach you stall recoveries for

- Approach to landing stalls
- Departure stalls
- Stalls at 30° bank
- Trim Stalls
- Recovery from the first indication
- Recovery from fully developed stalls
- Recovery without using throttle
- Retracting flaps during recovery - the effects
- Secondary stalls
- Slightly uncoordinated stalls
- Spin Awareness (may demo an initial spin entry in spin-approved aircraft)

Instrument Flight

In 2023, 48% of weather-related accidents were due to VMC into IMC. Out of these accidents, 100% were fatal. Because of this, we put special emphasis on instrument flying. Students are also highly encouraged to use the BATD to practice basic instrument flying.

Your instructor will teach and expose you to the following while in simulated instrument or actual conditions:

- Turns, climbs, descents, straight and level
- Turns to a heading
- Constant rate turns
- Tracking a course
- Unusual attitudes
- Stall recovery (only in simulated instrument)
- Emergency descent and landing (only in simulated instrument)
- VFR into IMC scenarios throughout training

Emergency Procedures

The following emergency procedures shall be taught and practiced. Some of these may just be discussions. Some of these may only be done in the BATD. The BATD is best suited for dangerous emergency procedure practice.

1. Emergency Descent
2. Electrical Failure
3. Vacuum Failure
4. Pitot-Static Malfunction
5. Flap Malfunction
6. Brake Malfunction
7. Complete Loss of Braking on Landing
8. Popped Tire
9. Landing Light Failure
10. Runway Lights Inop
11. Inoperative Trim
12. Door Opening in Flight
13. Engine Issues
 - a. Partial Power Loss
 - b. Engine Roughness
 - c. Engine Failure During Takeoff
 - d. Partial Power Loss During Takeoff
 - e. Engine Failure After Takeoff (in BATD)
 - f. Engine Failure in Flight
 - g. Engine Failure on Final (in BATD)
 - h. Power-Off 180
 - i. Fouled Spark Plugs
 - j. Magneto Issue
 - k. Oil Issue
14. Fires
 - a. Engine Fire during Start
 - b. Engine Fire in Flight
 - c. Electrical Fire
 - d. Cabin Fire
 - e. Cabin Fire due to Lithium Ion Runaway
 - f. Wing Fire
 - g. Smoke in Cabin
15. VMC into IMC
16. Icing encounter (in BATD)
17. Forced Landing

- a. Water Ditching
 - b. Off Field Landing
- 18. Windshear & Microburst (in BATD)
- 19. Hypoxia
- 20. Bird Strike
- 21. Volcanic Ash
- 22. Clogged Fuel Vent
- 23. Carbon Monoxide in Cabin
- 24. Lost Communications
- 25. Trapped by Weather (cross-country scenario)
- 26. Emergency Equipment & Survival Gear

Pre-Solo Requirements Checklist

- ☐ Knowledge & Study
 - ☐ Gold Seal Ground School (All except cross country or checkride prep)
 - ☐ Private Pilot Training Packet
 - ☐ Preflight Presentation

- ☐ Pilot Rise Requirements - Skills & Knowledge Required to Solo (From fly.pilotrise.com)
 - [SOLO]: required prior to solo. Proficient is required unless specified otherwise.
 - [XC]: required prior to solo cross country.
 - [BATD]: part could or should be taught with BATD.
 - [GS]: Gold Seal completion certificate may suffice for evaluation.
- ☐ **General & Other [SOLO]**
- ☐ **Regulations**
 - ☐ Part 61 [SOLO Marginal]
 - ☐ Part 91 [SOLO Marginal]
 - ☐ NTSB Part 830 [SOLO Taught]
- ☐ **Preflight Preparation**
 - ☐ Certification & Document Requirements [SOLO]
 - ☐ Logbooks [SOLO]
 - ☐ Proficiency & Currency [SOLO]
 - ☐ Privileges and Limitations [SOLO Marginal]
 - ☐ Medical Certificates [SOLO Marginal]
- ☐ **Airworthiness Requirements**
 - ☐ Required Documents [SOLO]
 - ☐ Required Inspections [SOLO Marginal] [GS]
 - ☐ Owner/Operator & PIC Responsibilities [SOLO]
 - ☐ Pilot Preventive Maintenance [SOLO Taught]
 - ☐ Required Equipment [SOLO Marginal]
 - ☐ INOP Equipment [SOLO Marginal]
 - ☐ Airworthiness Directives [SOLO Taught] [GS]
- ☐ **Weather Information**
 - ☐ Sources of Weather [SOLO Marginal] [XC]
 - ☐ Understanding Weather Reports [SOLO Marginal] [XC]
 - ☐ Weather in Cockpit (ADS-B) [XC Marginal]
 - ☐ Decision Making [SOLO Marginal] [XC]
- ☐ **Cross Country Flight Planning**
 - ☐ Route Planning [XC]
 - ☐ Use of EFB [SOLO]

- ☐ Altitude Selection [XC]
- ☐ Calculations [XC]
- ☐ Filing ICAO Flight Plan [XC]
- ☐ NOTAMs [SOLO Marginal] [XC]
- ☐ Fuel Requirements [SOLO]
- ☐ Sectional Charts [SOLO Marginal] [XC]
- ☐ **Airspace [SOLO Marginal] [XC]**
- ☐ **Performance and Limitations [SOLO]**
- ☐ **Operation of Systems**
 - ☐ Primary Flight Controls [SOLO]
 - ☐ Secondary Flight Controls [SOLO]
 - ☐ Powerplant & Propeller [SOLO]
 - ☐ Landing Gear [SOLO Marginal]
 - ☐ Fuel System [SOLO]
 - ☐ Oil System [SOLO]
 - ☐ Hydraulic System [SOLO Marginal]
 - ☐ Electrical System [SOLO Marginal]
 - ☐ Avionics [SOLO Marginal]
 - ☐ Pitot-Static System [SOLO] [BATD]
 - ☐ Vacuum System [SOLO Marginal] [BATD]
 - ☐ Environmental System [SOLO]
 - ☐ Auto Pilot [SOLO Taught] (Applicable to aircraft)
- ☐ **Human Factors**
 - ☐ Symptoms, Recognition, Effects [SOLO] [GS]
 - ☐ Drugs & Alcohol [SOLO]
 - ☐ Hazardous Attitudes [SOLO]
 - ☐ Distractions & Confirmation Bias [SOLO]
 - ☐ Supplemental Oxygen [SOLO Taught]
- ☐ **On Ground [SOLO]**
- ☐ **Flight Basics [SOLO]**
- ☐ **Communications and Light Signals and Runway Lighting**
 - ☐ Uncontrolled Airports [SOLO]
 - ☐ Controlled Airports [SOLO Marginal]
 - ☐ ATC Enroute [XC]
 - ☐ FSS [XC]
 - ☐ Loss of Communications [XC]
- ☐ **Takeoff and Landings [SOLO] (All except performance landings. Soft field must be taught)**
- ☐ **Ground Reference Maneuvers**

- ☐ Traffic Patterns [SOLO]
- ☐ Turns Around a Point [SOLO Marginal]
- ☐ S-Turns [SOLO Marginal]
- ☐ Rectangular Course [SOLO Marginal]
- ☐ Ground Track / Follow Roads [SOLO Marginal]
- ☐ **Performance Maneuvers [SOLO Marginal]**
- ☐ **Stalls [SOLO Marginal] (Proficient for Spin Awareness)**
- ☐ **Instrument Flying [SOLO Marginal] (Interception & Tracking only marginal XC needed)**
- ☐ **Navigation**
 - ☐ Pilotage [SOLO]
 - ☐ Compass & Errors [XC]
 - ☐ Dead Reckoning [XC]
 - ☐ VOR Navigation [XC] [BATD]
 - ☐ GPS Navigation [XC]
 - ☐ Radar Services [XC]
 - ☐ Lost Procedures [SOLO]
 - ☐ Diversion [XC]
- ☐ **Emergency Procedures**
 - ☐ Engine Failure [SOLO] [BATD]
 - ☐ Engine Fire [SOLO] [BATD]
 - ☐ Emergency Descent [SOLO] [BATD]
 - ☐ Electrical Fire [SOLO]
 - ☐ Electrical Failure [SOLO]
 - ☐ Vacuum Failure [SOLO Marginal] [BATD]
 - ☐ Pitot-Static Failure [SOLO Marginal] [BATD]
 - ☐ Forced Landing [SOLO] [BATD]
 - ☐ Flap Failure [SOLO]
 - ☐ Brake Failure [SOLO] [BATD]
 - ☐ Trim Inoperative [SOLO Marginal]
 - ☐ Other Equipment Malfunctions [SOLO Taught]
 - ☐ Emergency Equipment & Survival Gear [SOLO Taught] [GS]
 - ☐ Power Off 180 [SOLO]
- ☐ **Post Flight**
 - ☐ Securing Aircraft [SOLO]
 - ☐ Post Flight Inspection [SOLO]
 - ☐ Documenting Discrepancies [SOLO]

☐ Pilot Rise Requirements - Tasks Completed (From fly.pilotrise.com)

☐ Prior to Solo

- ☐ MedXPress Form
- ☐ Medical Certificate
- ☐ 8710 Student Pilot
- ☐ Student Pilot Certificate
- ☐ Passed Pre-Solo Exam
- ☐ Solo Stage Check
- ☐ Demo: Trim Stall
- ☐ Gold Seal Completion Certificate

☐ Prior to Solo Cross Country

- ☐ Opened VFR Flight Plan

☐ Endorsements

- ☐ Aeronautical Knowledge §61.87(b)
- ☐ Flight Training §61.87(c)(1) & (2)
- ☐ Solo Flight First 90 Days §61.87(n)
- ☐ Each additional 90 days: Solo Flight 61.87(p)

Checkride Checklist: Refer to the resources page. All items tracked on fly.pilotrise.com must be satisfactory.