

Ground Operations



Preflight Inspection

Procedures Overview

Preflight Inspection.....provides an overall explanation of the maneuver

Step-By-Step Procedures

High-Wing Airplane.....explores the stages of a preflight inspection for a high-wing airplane in eight ballflags (divided into submenus) and five skill enhancements

Step-By-Step Procedures

Low-Wing Airplane.....explores the stages of a preflight inspection for a low-wing airplane in eight ballflags (divided into submenus) and five skill enhancements

Practical Test Standards

Preflight Inspection.....lists the Private Pilot PTS requirements for the maneuver

Discovery

Beech 1900 Walkaround.....introduces preflight procedures for a more advanced airplane

Activity

Problems in Preflight.....Choose the appropriate remedy for the preflight problem.

Activity

Do the Walkaround.....Select the unsafe condition found during the preflight.



Engine Starting

Procedures Overview

Engine Starting.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Engine Starting.....explores the stages of engine starting in four ballflags and three skill enhancements

Practical Test Standards

Engine Starting.....lists the Private Pilot PTS requirements for the maneuver

Human Element

Hand Propping.....warns against the dangers of hand propping an airplane

Discovery

Gossamer Albatross.....explores the flight of a human-powered aircraft across the English Channel

Activity

Starting Engine Checklist.....Complete the Engine Starting Checklist.



Taxiing

Procedures Overview

Taxiing.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Basic Taxi Techniques.....explores the stages of basic taxiing in three ballflags, two skill enhancements, and two radio calls

Step-By-Step Procedures

Taxiing in Headwinds.....explores the stages of taxiing in headwinds in five ballflags

Step-By-Step Procedures

Taxiing in Tailwinds.....explores the stages of taxiing in tailwinds in four ballflags

Practical Test Standards

Taxiing.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Taxiing on the Slippery Stuff.....discusses proper techniques for taxiing on water, snow, and ice

Human Element

Negative Transfer of Learning.....explains how driving experience can interfere with learning how to taxi

Discovery

Water Taxi.....describes how seaplanes taxi

Activity

Controlling the Controls.....Select the appropriate control position for the wind direction.

Activity

Can You Get There From Here?.....Follow the progressive taxi instructions to the departure runway at an airport.



Before Takeoff Check

Procedures Overview

Before Takeoff Check.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Before Takeoff Check.....explores the stages of a before takeoff check in six ballflags and one skill enhancement

Practical Test Standards

Before Takeoff Check.....lists the Private Pilot PTS requirements for the maneuver

Human Element

Crew Checklist Procedures.....discusses crew resource management techniques and the use of checklists in the cockpit of a B-747

Discovery

Apollo Mission.....follows the before takeoff check for an Apollo launch

Activity

Instrument and Systems Check.....Select the correct instrument indications during the before takeoff check.



Postflight Procedures

Procedures Overview

Postflight Procedures.....provides an overall explanation of the maneuver

Step-By-Step Procedures

After Landing.....explores the stages of after landing procedures in two ballflags and two radio calls

Step-By-Step Procedures

Parking and Securing.....explores the stages of parking and securing the airplane in three ballflags and one skill enhancement

Practical Test Standards

After Landing.....lists the Private Pilot PTS requirements for the maneuver

Practical Test Standards

Parking and Securing.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Hand Signals.....demonstrates the use of hand signals by ground personnel

Human Element

Workload Management.....discusses how managing workload in the cockpit is not finished until the airplane is secure

Activity

Postflight Checklist.....Complete the after landing and securing airplane procedures.

Basic Maneuvers



Straight-And-Level Flight

Procedures Overview

Straight-And-Level Flight.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Straight-And-Level Flight.....explores the stages of straight-and-level flight in three ballflags and one skill enhancement

Practical Test Standards

Straight-And-Level Flight.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

12.5 Seconds.....discusses the time it takes to see and avoid another aircraft

Safety Factors

Positive Exchange of Flight Controls.....explains how the student and instructor safely exchange control of the airplane

Human Element

Visual Scanning.....examines how the characteristics of the eye affect the ability to scan

Discovery

SR-71.....introduces supersonic flight and high-speed aircraft performance

Activity

Straight-And-Level Flight.....Pull the handle on the slot machine to answer questions about straight-and-level flight.



Climbs

Procedures Overview

Climbs.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Climbs.....explores the stages of a climb in four ballflags and one skill enhancement

Practical Test Standards

Climbs.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Leaning the Mixture.....emphasizes the necessity of leaning the mixture at high altitudes

Human Element

Hypoxia.....explains the effects of hypoxia on the human body

Discovery

Space Shuttle Launch.....explores the climb rates of the Space Shuttle during a launch

Activity

Leveloff.....Select the proper instrument indications for leveling off from a climb.



Descents

Procedures Overview

Descents.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Approach to Landing Descent.....explores the stages of an approach to landing descent in four ballflags

Step-By-Step Procedures

Cruise Descent.....explores the stages of a cruise descent in four ballflags and one skill enhancement

Step-By-Step Procedures

Power-Off Glide.....explores the stages of a power-off glide in four ballflags

Practical Test Standards

Descents.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Carburetor Ice.....discusses the causes and prevention of carburetor ice

Human Element

Pressure Change.....examines how pressure changes affect your ears during a descent

Activity

Descent Control.....Complete the statements about descents.



Turns

Procedures Overview

Turns.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Level Turns.....explores the stages of a level turn in three ballflags and two skill enhancements

Step-By-Step Procedures

Climbing Turns.....explores the stages of a climbing turn in four ballflags

Step-By-Step Procedures

Descending Turns.....explores the stages of a descending turn in three ballflags and one skill enhancement

Practical Test Standards

Turns.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Blind Spots.....describes common blind spots encountered when operating high- and low-wing airplanes

Human Element

G-Forces.....discusses the load factors encountered in turns

Discovery

Wing Warping.....examines how the Wright Flyer performed turns

Activity

Call the Turn.....Race against the clock to answer questions about turns.

Activity

Blind Spot.....Identify the blind spots for high- and low-wing airplanes.

Airport Operations



Normal Takeoff and Climb

Procedures Overview

Normal Takeoff and Climb.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Normal Takeoff and Climb.....explores the stages of a normal takeoff and climb in seven ballflags, two skill enhancements, and two radio calls

Practical Test Standards

Normal Takeoff and Climb.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Aborted Takeoff.....discusses when and how to abort a takeoff

Safety Factors

Engine Failure After Takeoff.....describes the proper procedures for safely managing an engine failure after takeoff

Human Element

Use of Checklists.....follows the chain of events that led to an accident during takeoff

Discovery

Takeoffs Without Runways.....explores airplanes that can take off without using runways

Activity

Performing the Takeoff.....Indicate whether statements about takeoffs are true or false.

Activity

Takeoff Procedures.....Select the correct actions to be performed during a takeoff.



Crosswind Takeoff and Climb

Procedures Overview

Crosswind Takeoff and Climb.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Crosswind Takeoff and Climb.....explores the stages of a crosswind takeoff and climb in seven ballflags, three skill enhancements, and two radio calls

Practical Test Standards

Crosswind Takeoff and Climb.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Ground Loops.....describes how wind can contribute to loss of directional control on the runway

Human Element

Personal Crosswind Limitations.....emphasizes the importance of establishing a personal limit for operating in crosswinds

Activity

Control Position.....Select the correct yoke position for the wind direction.

Activity

Crosswind Climbout.....Identify the airplanes that are using the correct crab techniques.



Traffic Patterns

Procedures Overview

Traffic Patterns.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Controlled Airports.....explores the stages of a traffic pattern at a controlled airport in four ballflags, three skill enhancements, and four radio calls

Step-By-Step Procedures

Uncontrolled Airports.....explores the stages of a traffic pattern at an uncontrolled airport in eight ballflags, six skill enhancements, and five radio calls

Practical Test Standards

Traffic Patterns.....lists the Private Pilot PTS requirements for the maneuver.

Safety Factors

Collision Avoidance.....includes procedures that can be used to reduce the risk of a mid-air collision around an airport

Safety Factors

Runway Incursion Avoidance.....examines the methods that can be used to prevent runway incursions

Safety Factors

Wake Turbulence.....explains how wake turbulence is generated and how to avoid it

Safety Factors

Wind Shear.....defines wind shear and discusses its causes

Human Element

Communication.....emphasizes the need for pilots to broadcast their intentions at uncontrolled airports

Human Element

Workload Management.....outlines how to plan a descent to pattern altitude when approaching an airport

Human Element

Situational Awareness.....describes the factors that may affect a pilot's ability to maintain situational awareness in the traffic pattern

Discovery

Space Shuttle.....follows the space shuttle orbiter during its approach and landing at Kennedy Space Center

Activity

Traffic Pattern Legs.....Identify each leg of the traffic pattern.

Activity

Traffic Pattern Entry.....Select the airplane in the proper traffic pattern entry position based on a tower controller's instructions.

Activity

Wake Turbulence.....Choose the airplane that is using the proper wake turbulence avoidance procedures.

Activity

Descent Profile.....Determine the distance from an airport at which the descent to traffic pattern altitude should begin.



Normal Approach and Landing

Procedures Overview

Normal Approach and Landing.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Approach and Landing.....explores the stages of a normal approach and landing in ten ballflags, five skill enhancements, and five radio calls

Step-By-Step Procedures

Forward Slip.....explores the stages of a forward slip in three ballflags and one skill enhancement

Step-By-Step Procedures

Go-Around.....explores the stages of a go-around in five ballflags, two skill enhancements, and two radio calls

Practical Test Standards

Approach and Landing.....lists the Private Pilot PTS requirements for the maneuver

Practical Test Standards

Forward Slip.....lists the Private Pilot PTS requirements for the maneuver

Practical Test Standards

Go-Around.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Bird Strikes.....explains how to avoid and report bird strikes

Safety Factors

Hydroplaning.....discusses hydroplaning and the precautions that can be taken to avoid it

Human Element

Landing Accident Statistics.....examines the phases of flight during which most accidents occur

Human Element

Landing Illusions.....describes visual illusions that can occur during approach and landing

Discovery

Memorable Landings.....presents several pilot accounts of memorable landings

Activity

The Key Position.....Select the appropriate actions to be taken when an airplane is too high or low at the key position.

Activity

Common Landing Errors.....Collect a winning hand of cards that specifies causes and corrective actions for common landing errors.

Activity

Forward Slip.....Choose the proper yoke and rudder positions for slip configurations.



Crosswind Approach and Landing

Procedures Overview

Crosswind Approach and Landing.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Crosswind Approach and Landing.....explores the stages of a crosswind approach and landing in seven ballflags, two skill enhancements, and four radio calls

Practical Test Standards

Crosswind Approach and Landing.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Gust Factor.....introduces precautions that can be taken when landing in turbulent and gusty conditions

Discovery

Boeing B-52 Landing Gear.....describes a castering gear system that helps the B-52 land in crosswind conditions

Activity

Traffic Pattern Positions.....Match the airplane wind correction configuration to the corresponding position in the traffic pattern.

Activity

Control Positions.....Select the airplane control inputs that would allow a safe landing based on the wind direction.

Emergency Landing Procedures



Emergency Descents

Procedures Overview

Emergency Descents.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Emergency Descents.....explores the stages of an emergency descent in four ballflags and one skill enhancement

Practical Test Standards

Emergency Descents.....lists the Private Pilot PTS requirements for the maneuver

Human Element

Cockpit Coordination.....describes how the crew of a B-737 managed their workload during an explosive decompression

Activity

Emergency Actions.....Reveal the emergency situation and decide if an emergency descent should be performed.



Emergency Approach and Landing

Procedures Overview

Emergency Approach and Landing.....provides an overall explanation of the maneuver

Step-By-Step Procedures

Emergency Approach and Landing.....explores the stages of an emergency approach and landing in seven ballflags, three skill enhancements, and one radio call

Practical Test Standards

Emergency Approach and Landing.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Survival After the Landing.....discusses how planning ahead can improve the outcome of an emergency situation

Safety Factors

The Precautionary Landing.....covers situations when a precautionary landing is appropriate

Human Element

Landing Decisions.....includes pilot accounts of how in-flight problems were managed

Activity

Do the Right Thing.....Indicate actions that should be accomplished during an emergency approach and landing.

Flight Maneuvers



Slow Flight

Procedures Overview

Slow Flight.....provides an overall explanation of the maneuver

Procedures Overview

Clearing Turns.....explains the correct procedure for clearing the area prior to beginning the maneuver

Step-By-Step Procedures

Slow Flight.....explores the stages of slow flight in four ballflags and one skill enhancement

Practical Test Standards

Slow Flight.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Flying Backwards.....examines the effects of the weather when performing slow flight

Discovery

Lift Reserve Indicator.....introduces equipment that aids pilots in determining an approaching stall

Activity

Slow Flight Squares.....Decide whether to agree or disagree with statements about slow flight.



Power-Off Stalls

Procedures Overview

Power-Off Stalls.....provides an overall explanation of the maneuver

Procedures Overview

Clearing Turns.....explains the correct procedure for clearing the area prior to beginning the maneuver

Step-By-Step Procedures

Power-Off Stalls.....explores the stages of a power-off stall in four ballflags and one skill enhancement

Practical Test Standards

Power-Off Stalls.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Lower Stall Speeds.....describes airplane modifications that can lower stall speeds

Human Element

AOA Indicators.....includes a discussion on equipment that provides angle of attack information

Discovery

Canards.....discusses canard designs of the past and present

Activity

Stall Recovery.....Collect a winning hand of cards that describes the correct power-off stall recovery procedure.



Power-On Stalls

Procedures Overview

Power-On Stalls.....provides an overall explanation of the maneuver

Procedures Overview

Clearing Turns.....explains the correct procedure for clearing the area prior to beginning the maneuver

Step-By-Step Procedures

Power-On Stalls.....explores the stages of a power-on stall in four ballflags and two skill enhancements

Practical Test Standards

Power-On Stalls.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Stall Prevention on Takeoff.....*illustrates the serious consequences of failing to properly prepare an airplane for flight*

Discovery

Coffin Corner.....*examines one of the problems that can be experienced by high-altitude, high-speed aircraft*

Activity

Keep Flying.....*Answer questions about power-on stalls to keep an airplane flying*



Demonstrated Stalls

Procedures Overview

Demonstrated Stalls.....*provides an overall explanation of the maneuver*

Procedures Overview

Clearing Turns.....*explains the correct procedure for clearing the area prior to beginning the maneuver*

Step-By-Step Procedures

Demonstrated Stalls.....*explores the stages of demonstrated stalls in five ballflags*

Practical Test Standards

Spin Awareness.....*lists the Private Pilot PTS requirements for the maneuver*

Safety Factors

Stall By Design.....*covers the stall characteristics of a variety of wing planform designs*

Discovery

Aerobatic Training.....*describes the benefits of basic aerobatic training*

Activity

Stall/Spin Bingo.....*Answer questions about stalls and spins to win a bingo game.*



Steep Turns

Procedures Overview

Steep Turns.....*provides an overall explanation of the maneuver*

Procedures Overview

Clearing Turns.....*explains the correct procedure for clearing the area prior to beginning the maneuver*

Step-By-Step Procedures

Steep Turns.....*explores the stages of a steep turn in four ballflags and one skill enhancement*

Practical Test Standards

Steep Turns.....*lists the Private Pilot PTS requirements for the maneuver*

Safety Factors

Load Factor.....*discusses limit load factor and the importance of performing steep turns at or below maneuvering speed*

Human Element

Extreme G-Forces.....*covers the effects of extreme G-forces on the human body*

Activity

Air Race.....*Answer questions about steep turns to win an air race.*

Ground Reference Maneuvers



Rectangular Course

Procedures Overview

Rectangular Course.....*provides an overall explanation of the maneuver*

Procedures Overview

Clearing Turns.....*explains the correct procedure for clearing the area prior to beginning the maneuver*

Step-By-Step Procedures

Rectangular Course.....*explores the stages of a rectangular course in six ballflags and three skill enhancements*

Practical Test Standards

Rectangular Course.....*lists the Private Pilot PTS requirements for the maneuver*

Human Element

Workload Management.....*illustrates the importance of being familiar with engine instrument indications*

Discovery

Square Loop.....*discusses an aerobatic maneuver that requires wind correction similar to the rectangular course*

Activity

Wind Correction.....*Indicate whether statements are true or false to complete a rectangular course.*



S-Turns

Procedures Overview

S-Turns.....provides an overall explanation of the maneuver

Procedures Overview

Clearing Turns.....explains the correct procedure for clearing the area prior to beginning the maneuver

Step-By-Step Procedures

S-Turns.....explores the stages of an S-turn in five ballflags and two skill enhancements

Practical Test Standards

S-Turns.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Engine Failure.....emphasizes the need to practice S-turns over a good emergency landing site

Discovery

Aerial Photography.....explains how the skills learned in S-turns can be applied to aerial photography

Activity

Bank Angle.....Indicate the correct bank angle for an airplane's position in an S-turn.



Turns Around a Point

Procedures Overview

Turns Around a Point.....provides an overall explanation of the maneuver

Procedures Overview

Clearing Turns.....explains the correct procedure for clearing the area prior to beginning the maneuver

Step-By-Step Procedures

Turns Around a Point.....explores the stages of turns around a point in four ballflags and two skill enhancements

Practical Test Standards

Turns Around a Point.....lists the Private Pilot PTS requirements for the maneuver

Safety Factors

Picture This.....emphasizes the importance of dividing your attention when flying at low altitudes

Discovery

Sky Diving.....explores the skills needed and methods used to sky dive

Activity

Bank Angle.....Correctly complete statements about turns around a point.