



Lesson 1: Introduction to Flight

Lesson Objectives

Familiarize student with the privileges, obligations and responsibilities of a private pilot. Introduce student to the airplane and preflight and postflight procedures, use of checklists and safety precautions. Familiarize student with the effect and use of flight controls, practice area and local airport.

Discussion/Review

- | | |
|---|---|
| <input type="checkbox"/> Completion of TSA required endorsement | <input type="checkbox"/> Fitness/health for flight (I'M SAFE) |
| <input type="checkbox"/> Positive exchange of flight controls | <input type="checkbox"/> Ground safety |
| <input type="checkbox"/> Training and course requirements | <input type="checkbox"/> Airplane servicing |
| <input type="checkbox"/> Required aircraft documents | <input type="checkbox"/> Weather briefing basics |

Introduce

- | | |
|--|---|
| <input type="checkbox"/> Preflight procedures | <input type="checkbox"/> Use of trim |
| <input type="checkbox"/> Normal takeoff and climb | <input type="checkbox"/> Ground operations / communications |
| <input type="checkbox"/> Use of checklists | <input type="checkbox"/> Shallow / medium banked turns in both directions |
| <input type="checkbox"/> Climbs and climbing turns | <input type="checkbox"/> Engine starting and runup |
| <input type="checkbox"/> Airplane systems and operations | <input type="checkbox"/> Normal approach and landing |
| <input type="checkbox"/> Level off | <input type="checkbox"/> Taxiing |
| <input type="checkbox"/> Equipment checks | <input type="checkbox"/> Postflight procedures |
| <input type="checkbox"/> Straight and level flight | <input type="checkbox"/> Pre-takeoff checklist |
| <input type="checkbox"/> Location of emergency equipment | |

Completion Standards

The student will display a basic understanding of aircraft systems, use of checklists, and both pre- and post-flight procedures. The student will be familiar with the control systems and how they are used to maneuver the airplane on the ground and in the air.

Lesson Complete _____

PRNFC Instructor Signature	Date
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Homework

Prior to Lesson 2, Four Fundamentals of Flight:

- | | |
|---|--|
| <input type="checkbox"/> Pilot's Handbook of Aeronautical Knowledge | <input type="checkbox"/> AIM |
| <ul style="list-style-type: none"> • Principles of Flight (Ch. 3) | <ul style="list-style-type: none"> • Sections 5-5-8; 8-1-6; 8-1-8 |
| <input type="checkbox"/> Airplane Flying Handbook | <input type="checkbox"/> FAR |
| <ul style="list-style-type: none"> • Ground Operations (Ch. 2) • Basic Flight Maneuvers (Ch. 3) | <ul style="list-style-type: none"> • Sections 61.3; 61.23; 61.51(i); 61.57 subpart E; sections 91.203; 91.9 |



Lesson 2: Four Fundamentals of Flight

Lesson Objectives

The student will develop skills and gain proficiency in performing the four basic flight maneuvers (straight-and-level, turns, climbs and descents). Introduce student to radio communication procedures and ground reference maneuvers.

Discussion/Review

- | | |
|-----------------------------|--|
| _____ Preflight activities | _____ Flight instruments and their purpose |
| _____ Ground operations | _____ Collision avoidance precautions |
| _____ Ground communications | _____ Training area and minimum altitudes |
| _____ Weather factors | |

Introduce

- | | |
|---|--|
| _____ Cockpit management | _____ Turns to headings |
| _____ Radio communications procedures | _____ Descents and descending turns |
| _____ Airport / runway markings / lighting | <ul style="list-style-type: none"> • Cruise descent • Traffic pattern descent • Power-off glide |
| _____ Traffic pattern entry and departure procedures | _____ Level off from climbs and descents |
| _____ Straight and level flight | _____ Torque effects |
| _____ Climbs and climbing turns | _____ Normal approach and landings |
| <ul style="list-style-type: none"> • Cruise • Best rate of climb (Vy) • Best angle of climb (Vx) | |

Completion Standards

The student will have knowledge of aircraft systems and the necessity of checking their operation before flight. The student will be familiar with the control systems and how they are used to maneuver the airplane on the ground and in the air. The student will be able to perform takeoffs with instructor assistance.

Lesson Complete _____

PRNFC Instructor Signature	Date
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Homework Assignment

Prior to Lesson 3, Basic Instrument Maneuvers:

- | | |
|--|--|
| _____ Pilot's Handbook of Aeronautical Knowledge | _____ Airplane Flying Handbook |
| <ul style="list-style-type: none"> • Principles of Flight (Ch. 3) • Aerodynamics of Flight (Ch. 4) | <ul style="list-style-type: none"> • Integrated Flight Instruction (Ch. 3, pg. 3) |



Lesson 3: Basic Instrument Maneuvers

Lesson Objectives

Improve student's proficiency in the four fundamentals of flight and introduce student to basic instrument maneuvers.

Discussion/Review

- _____ Collision-avoidance procedures
- _____ Flight instruments and their purpose

Introduce

- | | |
|--|---|
| _____ Taxiing in a crosswind | _____ Straight, constant airspeed descent |
| _____ Attitude instrument flying | _____ Slow flight |
| _____ Straight-and-level flight | _____ Turns to a heading |
| _____ Straight, constant airspeed climbs | |

Completion Standards

The student will be able to perform takeoffs with instructor assistance. Preflight activities are accurately conducted and the student displays an increased understanding and proficiency in coordinated airplane control. The student should be familiar with the control usage necessary to maintain an altitude within 250 feet during airspeed changes. The student understands the basic instrument maneuvers.

Lesson Complete _____
PRNFC Instructor Signature _____ Date

Homework Assignment

Prior to Lesson 4, Slow Flight and Stalls:

- _____ **Pilot's Handbook of Aeronautical Knowledge**
 - Aircraft Structure (Ch. 2)
 - Aerodynamics of Flight (Ch. 3)
 - Stalls (Ch. 4-22, 4-32)
 - Airspeed (Ch. 8-2)
- _____ **Airplane Flying Handbook**
 - Slow Flight, Stalls and Spins (Ch. 4)



Lesson 4: Slow Flight and Stalls

Lesson Objectives

The student will review airspeed control maneuvers, demonstrate increased proficiency in performing slow flight, and be introduced to stalls from various flight conditions to increase understanding of airplane control during normal and critical flight conditions.

Discussion/Review

_____ Fundamentals of slow flight and stalls

_____ Spin awareness

Introduce

_____ Flights at various airspeeds from cruise to slow flight

_____ Maneuvering during slow flight emphasizing correct use of rudder to negate increased adverse yaw at slow airspeeds

_____ Power-off stalls recognition and recovery

_____ Power-on stalls recognition and recovery

_____ Descents with and without using high and low drag configuration

Completion Standards

Student demonstrates correct communications and traffic pattern procedures. Proficient in preflight inspection, engine start-up, taxi, pre-takeoff check, and postflight procedures without instructor assistance. Displays understanding of slow flight, indications of approaching stall, proper recovery procedures, and conditions necessary for a spin to occur. Altitude, heading, and airspeed at or near ACS standards.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 5, Emergency Procedures:

_____ **Airplane Flying Handbook**

- Emergency Procedures (Ch. 16)

_____ **Aeronautical Information Manual**

- Emergency Procedures (Ch. 6)

_____ **Pilot's Operating Handbook**

- Review emergency procedures and checklists

Stage 1: Pre-Solo



Lesson 5: Emergency Procedures

Lesson Objectives

The student will practice the maneuvers from the previous lesson to gain additional proficiency and demonstrate the ability to recognize and recover from imminent and full stalls. The student will also gain an understanding of emergency operations and an increased understanding of slow flight and stall recognition and recovery.

Discussion/Review

- | | |
|--|---|
| _____ Types of possible emergencies | _____ Human factors and symptoms |
| _____ Emergency procedures (checklists) | _____ Emergency equipment and survival gear |
| _____ Use of all available resources in an emergency situation | |

Introduce

- | | |
|--|--|
| _____ Emergency approach and landing | _____ Recovery from bouncing and ballooning during landing |
| _____ Emergency descents | _____ Balked landings (go-arounds) |
| _____ Systems and equipment malfunctions | |
| _____ Engine failure in different segments of flight and aircraft configurations | |

Completion Standards

The student displays increased proficiency with control of airplane and performs unassisted takeoffs. The student is familiar with the procedures used during emergency approach and landing situations. The student also demonstrates appropriate procedures for stall set-up and recovery and improved performance with regard to maneuvering at critically slow airspeed. The student performs landings with minimal instructor assistance.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 6, Steep Turns / Ground Reference Maneuvers:

- _____ **Airplane Flying Handbook**
- Ground Reference Maneuvers (Ch. 6)
 - Performance Maneuvers (Ch. 9-1)



Lesson 6: Steep Turns/Ground Reference Maneuvers

Lesson Objectives

The student will gain proficiency in ground reference maneuvers, steep turns and full stalls. Maneuvering at critically slow airspeeds is introduced by instrument reference.

Discussion/Review

_____ Fundamentals of ground reference maneuvers

Introduce

_____ Steep turns (IR)

_____ Maneuvering at critically slow airspeeds (IR)

_____ Rectangular courses

_____ Power-off stalls (full)

_____ S-turns across a road

_____ Power-on stalls (full)

_____ Turns around a point

_____ Wake turbulence avoidance

Completion Standards

The student displays proper entry procedures and understands how to maintain a specific ground track during performing of ground reference maneuvers. Demonstrates increased proficiency in emergency procedures. Altitude, airspeed and heading within ACS standards during straight and level flight.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 7, Slips/Crosswind Landings and Takeoffs:

_____ **Airplane Flying Handbook**

- Crosswind Takeoff (Ch. 5, p.5)
- Crosswind Approach and Landing (Ch. 8)

_____ **Review previously assigned reading material**



Stage 1: Pre-Solo

Lesson 7: Slips/Crosswind Landings & Takeoffs

Lesson Objectives

This lesson is a review of previous lessons in order for the student to gain proficiency in basic flight maneuvers and increase the student's comfort level with the airplane in various segments of flight. Additionally, crosswind takeoffs and landings are introduced so the student may begin to learn these procedures during varying wind conditions.

Discussion/Review

- | | |
|---|--|
| _____ Pilot-in-command (PIC) responsibility and authority | _____ Power-on stall |
| _____ Elements of basic instrument maneuvers | _____ Steep turns |
| _____ Normal and crosswind takeoffs and landings | _____ Emergency approach and landings |
| _____ Traffic pattern operations | _____ Ground reference maneuvers |
| _____ Radio phraseology | _____ Recovery from faulty approaches and landings |
| _____ Maneuvering during slow flight | _____ Go-arounds from a rejected landing, go-arounds from final approach and from the landing flare in various configurations, including turns |
| _____ Power-off stall | _____ Wake turbulence avoidance |

Introduce

- | | |
|---------------------------------------|--|
| _____ Forward slip to a landing | _____ ATC light signals |
| _____ Sideslip to a landing | _____ Forced landing procedures initiated at take-off, during initial climb, cruise, descents, and in the landing pattern. |
| _____ Crosswind takeoff and climb | |
| _____ Crosswind approach and landings | |

Completion Standards

The student will initiate a timely recovery from full stalls in takeoff and landing configurations; determine wind direction and make appropriate corrections in the traffic pattern; demonstrate an understanding of how the slip is used to perform crosswind landings; and make sound judgments as to the necessity for a go-around.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 8, Traffic Pattern Review:

- | | |
|------------------------------------|---------------------------------------|
| _____ AIM | _____ Airplane Flying Handbook |
| • Airport Operations (Section 4.3) | • Airport Traffic Patterns (Ch. 7) |



Lesson 8: Traffic Pattern Review

Lesson Objectives

This lesson is a review of material from previous lessons, with the goal to perfect traffic pattern operations and practice takeoffs and landings.

Discussion/Review

_____ Traffic pattern operations

_____ Radio phraseology

Introduce

_____ Traffic pattern engine-out procedures

_____ Controlled / uncontrolled field operations

Completion Standards

The student performs takeoffs and landings without assistance from instructor. Enters traffic pattern properly and maintains proper ground track, adjusting for traffic and wind. Shows awareness of surrounding traffic.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 9, Maneuvers Review:

_____ **Airplane Flying Handbook**

- Takeoffs and Departure Climbs (Ch. 5)
- Approaches and Landings (Ch. 8)

_____ **Review Pilot's Operating Handbook**



Lesson 9: Maneuvers Review

Lesson Objectives

During the lesson the student will practice the review maneuvers to gain proficiency.

Discussion/Review

- | | |
|--|---|
| _____ Weather information | _____ Sideslips to a landing |
| _____ Performance / limitations | _____ Crosswind takeoff and climb |
| _____ Aeromedical factors | _____ Crosswind approach and landings |
| _____ Go-arounds from a rejected landing | _____ Forced landing procedures initiated at take-off, during initial climb, cruise, descents, and in the landing pattern |
| _____ Forward slips to landings | |

Introduce (demo only)

- | | |
|---------------------------|---------------------------|
| _____ Accelerated stall | _____ Elevator trim stall |
| _____ Cross-control stall | _____ Secondary stall |

Completion Standards

The student will be able to fly the above maneuvers to the proficiency level prescribed by the ACS with instructor critique and suggested methods to overcome deficiencies.

Lesson Complete _____

PRNFC Instructor Signature Date

Homework Assignment

Prior to Lesson 10, Instrument Flight Maneuvers:

- _____ **Instrument Flying Handbook**
- Chapter 5
- _____ **Pilot's Handbook of Aeronautical Knowledge**
- Chapter 6 (discussion of inclinometers)



Lesson 10: Instrument Flight Maneuvers

Lesson Objectives

During this lesson, the student will practice instrument flight maneuvers, and takeoffs and landings in preparation for solo flight.

Discussion/Review

- | | |
|--|--|
| _____ Straight-and-level flight (VR-IR) | _____ Go-around from a rejected landing |
| _____ Steep turns (VR-IR) | _____ Forward slips to landing |
| _____ Straight, constant airspeed descents (VR-IR) | _____ Sideslips to a landing |
| _____ Climbing and descending turns | _____ Emergency approach and landing |
| _____ Turns to headings (IR) | _____ ATC light signals |
| _____ Unusual attitude recovery (IR) | _____ Forced landing procedures initiated at takeoff,
during initial climb, cruise, descents, and in the
landing pattern |
| _____ Crosswind takeoff and climb | |
| _____ Crosswind approach and landing | |

Completion Standards

The student demonstrates increased skill in instrument scan and interpretation during instrument flight. Conducts takeoffs, landings, and go-arounds without the instructor's assistance. Demonstrates readiness for solo flight in the traffic pattern. Indicates thorough understanding of local airport and airspace rules, as well as systems and equipment malfunctions. Demonstrates mature PIC decision-making ability.

Lesson Complete _____

PRNFC Instructor Signature Date

Homework Assignment

Prior to Lesson 11, Pre-Solo Preparation:

- _____ **Federal Aviation Regulations**
- Review 14 CFR 61.87 – Solo requirements for student pilots
- _____ Review airport/facilities directory data on airport at which solo will occur
- _____ Practice getting weather briefings and evaluating suitability of conditions



Lesson 11: Pre-Solo Preparation

Lesson Objectives

The instructor will evaluate the student's progress to determine readiness for solo flight, present the presolo quiz and correct any faulty performance areas.

Discussion/Review

- | | |
|---|--|
| <input type="checkbox"/> Operation of systems | <input type="checkbox"/> Spin awareness |
| <input type="checkbox"/> Preflight inspection | <input type="checkbox"/> Steep turns |
| <input type="checkbox"/> Engine starting | <input type="checkbox"/> Ground reference maneuvers |
| <input type="checkbox"/> Radio communications | <input type="checkbox"/> Systems and equipment malfunctions |
| <input type="checkbox"/> Normal and crosswind taxiing | <input type="checkbox"/> Emergency procedures |
| <input type="checkbox"/> Pre-takeoff check | <input type="checkbox"/> Traffic patterns |
| <input type="checkbox"/> Normal and crosswind takeoff | <input type="checkbox"/> Forward slips to landing |
| <input type="checkbox"/> Power-off stalls (full) | <input type="checkbox"/> Go-arounds from rejected landings |
| <input type="checkbox"/> Power-on stalls (full) | <input type="checkbox"/> Normal and crosswind approach and landing |
| <input type="checkbox"/> Maneuvering at critically slow airspeeds | <input type="checkbox"/> PIC responsibility and authority |
| <input type="checkbox"/> Climbing and descending turns | <input type="checkbox"/> Flight by reference to instruments |
| <input type="checkbox"/> Straight-and-level flight | <input type="checkbox"/> Forced landing procedures |
| <input type="checkbox"/> Turns to headings | |

Completion Standards

The student demonstrates readiness for solo flight in the traffic pattern. Indicates good understanding of local airport and airspace rules, and systems and equipment malfunctions. Demonstrates mature PIC decision-making authority as well as competence and proficiency levels for the relevant maneuvers prescribed in the ACS.

Lesson Complete _____
 PRNFC Instructor Signature _____ Date _____

Homework Assignment

Prior to Lesson 12, First Solo:

- Read Federal Aviation Regulations on solo requirements for student pilots, § 61.87
- Review the airport/facilities directory data on airport where solo will occur
- Review operating limitations in the POH



Lesson 12: First Solo

Lesson Objectives

Prior to this flight, the instructor will have administered the presolo written exam. During the dual portion of the lesson, the instructor will review takeoff and landing procedures to check the student’s readiness for solo flight; in the second portion of the lesson, the student will conduct the first solo flight in the local traffic pattern.

Discussion/Review

- | | |
|--|---|
| <input type="checkbox"/> Student questions | <input type="checkbox"/> Airport operations |
| <input type="checkbox"/> Endorse logbook and student pilot certificate | <input type="checkbox"/> Radio communications |
| <input type="checkbox"/> Engine starting | <input type="checkbox"/> Taxi |
| <input type="checkbox"/> Radio communications | <input type="checkbox"/> Pre-takeoff check |
| <input type="checkbox"/> Normal and/or crosswind taxi | <input type="checkbox"/> Normal takeoffs and climbs |
| <input type="checkbox"/> Pre-takeoff check | <input type="checkbox"/> Traffic pattern operations |
| <input type="checkbox"/> Normal takeoffs | <input type="checkbox"/> Normal approaches and landings |
| <input type="checkbox"/> Traffic pattern operations | <input type="checkbox"/> Emergency procedures |
| <input type="checkbox"/> Go-around from a rejected landing | <input type="checkbox"/> Supervised solo |
| <input type="checkbox"/> Normal landings | <input type="checkbox"/> Postflight procedures |
| <input type="checkbox"/> Preflight preparations and procedures | |

Completion Standards

The student successfully accomplishes a supervised solo as directed by the instructor. At no time was the safety of the flight in question.

Lesson Complete _____
 PRNFC Instructor Signature Date

Homework Assignment

- Review previously assigned reading material



Lesson 12a: Repeat Initial Solo

Lesson Objectives

First solo is complete. Perform an additional supervised solo flight for confidence building and practice.

Discussion/Review

- Student questions
- Endorse logbook and student pilot certificate
- Engine starting
- Radio communications
- Normal and/or crosswind taxi
- Pre-takeoff check
- Normal takeoffs
- Traffic pattern operations
- Go-around from a rejected landing
- Normal landings
- Preflight preparations and procedures
- Airport operations
- Radio communications
- Taxi
- Pre-takeoff check
- Normal takeoffs and climbs
- Traffic pattern operations
- Normal approaches and landings
- Emergency procedures
- Supervised solo
- Postflight procedures

Completion Standards

The student successfully accomplishes a supervised solo as directed by the instructor. At no time was the safety of the flight in question.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

- Review previously assigned reading material



Lesson 13: Review

Lesson Objectives

The instructor evaluates the student’s solo abilities to determine if the student can safely depart the traffic pattern, conduct solo flights in the practice area and exercise the privileges associated with solo operation of the aircraft, and return to the airport and land without instructor assistance.

Review- Dual

- | | |
|---|---|
| _____ Confirm students’ awareness of local practice area boundaries | _____ Maneuvering during slow flight |
| _____ Random V speeds and systems operation | _____ Collision avoidance precautions |
| _____ Human factors checklist | _____ Stall / spin awareness and recovery |
| _____ Basic aerodynamics | _____ Go-arounds |
| _____ Airspace and use of charts | _____ En route emergency procedures |
| _____ Description of maneuvers | _____ Emergency approach and landing |
| _____ Student pilot limitations and privileges | _____ S-turns |
| _____ Airport procedures | _____ Forward slip to a landing |
| _____ Performance criteria | _____ Radio communications |
| _____ Runway incursion avoidance | _____ Radio and systems failure |
| _____ Wake turbulence avoidance | _____ Flight by reference to instruments |

Review – Solo

- | | |
|--|---|
| _____ Radio communications | _____ Traffic pattern |
| _____ Power-off stalls and recovery | _____ Normal and crosswind approach and landing |
| _____ Normal and crosswind takeoff and climb | _____ Postflight procedures |

Completion Standards

This lesson and Stage One are complete when the student can competently perform preflight duties and all other procedures necessary for the safe conduct of solo flights in the local practice area. Demonstrates the ability to depart airport, find local practice area, and return to the airport without the instructor’s assistance. At the discretion of the instructor, any remedial training may be given to correct for poor techniques in executing any of the above maneuvers, navigation and communication techniques.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 14, Performance Takeoffs and Landings:

- | | |
|---|--|
| _____ Airplane Flying Handbook | _____ Review the Pilot’s Operating Handbook procedures for short- and soft-field operations |
| <ul style="list-style-type: none"> • Review Takeoff and Departure Climbs (Ch. 5) and Approaches and Landings (Ch. 8) | |



Lesson 14: Performance Takeoff and Landings

Lesson Objectives

The student will learn to obtain the maximum takeoff and landing performance from the training aircraft. The student will be introduced to varying runway conditions and develop skill during takeoff and landing.

Review – Dual

- _____ Performance computation
- _____ Elements related to performance takeoffs and landings
- _____ Rectangular courses
- _____ Turns around a point
- _____ S-turns across a road
- _____ Maneuvering at critically slow airspeeds
- _____ Flight at slow airspeeds with realistic distractions
- _____ Recognition of the danger of low level stall

Introduce

- _____ Short-field takeoff and climb
- _____ Soft-field takeoff and climb
- _____ Short-field approach and landing
- _____ Soft-field approach and landing

Completion Standards

The student is able to explain what runway conditions necessitate the use of soft-field and short-field takeoff and landing techniques and demonstrates the correct procedure to be used under these conditions, although proficiency will not be at the private pilot level. At no time will successful outcome of each task be in doubt.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 15, Solo Practice:

- _____ **Aeronautical Information Manual**
 - Research in AIM any flight operations questions that arose during solo
- _____ Review **Pilot's Operating Handbook**
- _____ Review **Pilot's Handbook of Aeronautical Knowledge**
 - Airspace (Ch. 14)



Lesson 15: Solo Practice

Lesson Objectives

Increase student proficiency with solo takeoffs and landings.

Review

- | | |
|---|---|
| _____ Traffic pattern procedures | _____ Soft-field takeoffs and landings |
| _____ Radio communications | _____ After landing procedures |
| _____ Taxiing | _____ Parking and securing |
| _____ Pre-takeoff check | _____ Normal and/or crosswind takeoffs and climbs |
| _____ Traffic patterns | _____ Maneuvering at critically slow airspeeds |
| _____ Power-off stalls | _____ S-turns across a road |
| _____ Power on stalls | _____ Steep turns |
| _____ S-turns across a road | _____ Turns around a point |
| _____ Turns around a point | _____ Rectangular course |
| _____ Short-field takeoffs and landings | _____ Normal / crosswind approach and landing |

Completion Standards

The student is able to explain what runway conditions necessitate the use of soft-field and short-field takeoff and landing techniques and demonstrates the correct procedure to be used under these conditions, although proficiency will not be at the private pilot level. At no time will successful outcome of each task be in doubt.

Lesson Complete _____
 PRNFC Instructor Signature _____ Date _____

Homework Assignment

Prior to Lesson 16, Navigation:

- _____ **Pilot's Handbook of Aeronautical Knowledge**
- Navigation (Ch. 15)



Lesson 16: Navigation

Lesson Objectives

The student is introduced to the training aircraft's navigation system and VFR navigation procedures to determine position and track a specified course.

Discussion/Review

- _____ Use of VOR systems to include identification and tracking VOR signals
- _____ Navigation by pilotage
- _____ Use of aeronautical charts

Introduce

- _____ VOR orientation and tracking
- _____ GPS orientation and tracking (if applicable)
- _____ Lost procedures using aircraft navigation systems

Completion Standards

The student displays an understanding of the use of aircraft navigation systems, and is proficient in their use including performing VOR position cross-checks.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 17, Introduction to Cross-Country Flight:

- _____ **Pilot's Operating Handbook**
 - Study cruise performance and fuel consumption calculations as given in the performance charts
- _____ **Aeronautical Information Manual**
 - Review airspace in Chapter 3



Lesson 17: Intro to Dual Cross-Country Flight

Lesson Objectives

The student is introduced to the procedures and the techniques to be used during the cross-country flight, including flight planning, pilotage and dead reckoning, navigation systems, diversion to an alternate airport and lost procedures.

Review/Introduce

Cross-Country Flight Planning

- _____ Sectional charts
- _____ Adverse weather conditions
- _____ Airport Facility Directory
- _____ Route selection
- _____ Obtaining weather information
- _____ Determining performance and limitations
- _____ Navigational aids
- _____ FAA flight plan (format, opening & closing)
- _____ NOTAMS (D, FDC)
- _____ Weight and balance computation
- _____ Cockpit management
- _____ Aeromedical factors
- _____ Estimates of groundspeed / ETA / fuel consumption

Cross-County Flight

- _____ Departure
- _____ Opening flight plan
- _____ Course interception
- _____ Pilotage, use of magnetic compass
- _____ Dead reckoning
- _____ Obtaining in-flight weather information
- _____ VOR navigation
- _____ ADF navigation (if applicable)
- _____ Power settings and fuel mixture control
- _____ Diversion to an alternate airport
- _____ Position fix by radio aids
- _____ Flight on Federal airways



- _____ Use of approach and departure control
- _____ Operations at unfamiliar airports
- _____ Controlled and uncontrolled airports

Incorporating Nav Instruments

- _____ Crosscheck pilotage/ded reckoning with VOR radials

Safety Procedures / Emergency Operations

- _____ System and equipment malfunction
- _____ Emergency approach and landing
- _____ Recognition of critical weather
- _____ Estimating in-flight visibility
- _____ Lost procedures
- _____ Collision avoidance precautions
- _____ Emergency

Completion Standards

The student demonstrates the skill to control the aircraft during a cross-country flight, is able to perform cross-country flight planning, making necessary corrections to ensure proper course, computing groundspeed, ETA and fuel consumption. Displays ability to navigate by means of pilotage and dead reckoning and by any other navigational systems. Understands how to perform lost procedures and a diversion to an alternate airport. Arrives at ETA within three minutes (recalculating groundspeed based on changed winds).

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 18, Introduction to Night Flight:

_____ **Federal Aviation Regulations**

- Review 14 CFR 61.109 (night flying requirements for private pilots)

_____ **Airplane Flying Handbook**

- Night Operations (Ch. 10)



Lesson 18: Intro to Night Flight

Lesson Objectives

The student is introduced to the operational aspects of night flight. Special emphasis is placed on the student learning the additional planning and flight considerations necessary when operating in the night environment.

Discussion/Review

- | | |
|---|--|
| _____ Preparation techniques for night flying | _____ Cockpit management |
| _____ Flight planning considerations | _____ Taxiing |
| _____ Route selection | _____ Pre-takeoff checks |
| _____ Night scanning techniques and collision avoidance | _____ Normal takeoffs and landings |
| _____ Night flying regulations | _____ Traffic pattern |
| _____ Night VFR fuel requirements | _____ Go-arounds |
| _____ Visual illusions | _____ Recovery from unusual flight attitudes |
| _____ Night vision | _____ System and equipment malfunction |
| _____ Disorientation | _____ Maneuvering during slow flight |
| _____ Aircraft, airport and obstruction lighting | _____ Recovery from power off and on stalls |
| _____ Personal equipment and preparation | _____ VFR navigation |
| _____ Flight by reference to instruments | _____ Normal takeoffs and climbs |
| _____ Emergency procedures at night | _____ Normal approaches and landings |

Completion Standards

The student displays an understanding of the importance of attitude control. Demonstrates ability to return to airport using all available resources.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 19, Night Cross-Country:

- _____ **Pilot's Handbook of Aeronautical Knowledge**
- Review Chapters 9-17
- _____ Review **previously assigned reading material**



Lesson 19: Night Cross-Country

Lesson Objectives

The student is introduced to night cross-country procedures and the proper techniques to be used during flights out of the local training area and prepares the student for solo cross-country flight.

Discussion/Review

- | | |
|---|--------------------------------------|
| _____ Preflight and taxiing techniques | _____ Navigation log |
| _____ Sectional charts | _____ Weight and balance computation |
| _____ Use of flight publications | _____ Cockpit management |
| _____ Route selection and basic navigation procedures | _____ Night VFR fuel requirements |
| _____ Airspace rules | _____ Aeromedical factors |
| _____ Obtaining weather information | _____ Emergency operations |
| _____ Determine performance and limitations | _____ Lost procedures |

Completion Standards

The student demonstrates the skill to perform cross-country flights at night. This includes accurate and complete preflight planning, weather analysis, use of FAA publications and charts, adherence to the preplanned flight and the use of pilotage, dead reckoning, and radio navigation.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 20, Solo Cross-Country:

- _____ **Pilot's Handbook of Aeronautical Knowledge**
- Airport Operations (Ch. 13)
- _____ Practice obtaining weather briefings and making go/no-go decisions based on the information provided



Lesson 20: Cross-Country Stage Check – Chief CFI

Lesson Objectives

Demonstration of skills necessary to safely conduct a solo cross-country flight.

Discussion/Review

- | | |
|---|---|
| <input type="checkbox"/> Student conducts solo cross-country briefing with instructor | <input type="checkbox"/> ATC light signals |
| <input type="checkbox"/> Required documents and endorsements | <input type="checkbox"/> Aeronautical decision making |
| <input type="checkbox"/> Determining performance and weight and balance | <input type="checkbox"/> Cockpit management |
| <input type="checkbox"/> Basic VFR weather minimums | <input type="checkbox"/> Computing groundspeed, ETA and fuel requirements |
| <input type="checkbox"/> Airspace rules | <input type="checkbox"/> VOR interception and tracking |
| <input type="checkbox"/> En route communications | <input type="checkbox"/> Use of navigation log |
| <input type="checkbox"/> ATC services | <input type="checkbox"/> Filing, opening and closing FAA flight plan |
| <input type="checkbox"/> En route weather information | <input type="checkbox"/> VOR and ADF navigation |
| <input type="checkbox"/> Lost procedures | <input type="checkbox"/> Pilotage |
| <input type="checkbox"/> Emergency operations | <input type="checkbox"/> Dead reckoning |
| <input type="checkbox"/> Diversions (e.g., unfamiliar airports) | <input type="checkbox"/> Use of controlled and uncontrolled airports |

Completion Standards

Demonstrates cross-country proficiency by completing the flight as planned and without incident. Demonstrates positive aircraft control, maintains awareness of aircraft location at all times, and demonstrates execution of lost procedures.

Lesson Complete _____

PRNFC Chief Instructor Signature Date



Lesson 21: Solo Cross-Country

Lesson Objectives

Use of previously gained knowledge and skills to complete a solo cross-country flight.

Discussion/Review

_____ Student conducts solo cross-country briefing with instructor

_____ Required documents and endorsements

_____ Determining performance and weight and balance

_____ Basic VFR weather minimums

_____ Airspace rules

_____ En route communications

_____ ATC services

_____ En route weather information

_____ Lost procedures

_____ Emergency operations

_____ Diversions (e.g., unfamiliar airports)

_____ ATC light signals

_____ Aeronautical decision making

_____ Cockpit management

_____ Computing groundspeed, ETA and fuel requirements

_____ VOR interception and tracking

_____ Use of navigation log

_____ Filing, opening and closing FAA flight plan

_____ VOR and ADF navigation

_____ Pilotage

_____ Dead reckoning

_____ Use of controlled and uncontrolled airports

_____ At least one landing more than 50 n.m. from departure airport

Completion Standards

Demonstrates cross-country proficiency by completing the flight as planned and without incident in accordance with FAR 61.109(a)(5)(ii).

Additionally, during the postflight evaluation, the student will show an understanding of the procedures to be followed at unfamiliar airports. The instructor should review the completed navigation log during the postflight evaluation to determine whether it was completed and used correctly.

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Prior to Lesson 21, Practical Test Preparation:

_____ Review **Airman Certification Standards**

- Be sure that maneuvers will be practiced to tolerances equal to or exceeding the requirements, and to become familiar with the flight-testing process.



Lesson 22: Practical Test Preparation

Lesson Objectives

The instructor will evaluate and determine the student's proficiency level.

Discussion/Review

- | | |
|---|--|
| <input type="checkbox"/> Applicable performance criteria | <input type="checkbox"/> Maneuvering during slow flight |
| <input type="checkbox"/> Applicable rules | <input type="checkbox"/> Stalls and recovery |
| <input type="checkbox"/> Minimum equipment list | <input type="checkbox"/> Emergency procedures |
| <input type="checkbox"/> Cross-country flight planning | <input type="checkbox"/> Flight by reference to instruments |
| <input type="checkbox"/> Airplane logbook entries | <input type="checkbox"/> Pilot in command authority and responsibility |
| <input type="checkbox"/> Preflight inspection | <input type="checkbox"/> Collision avoidance precautions |
| <input type="checkbox"/> Cockpit resource management | <input type="checkbox"/> Traffic pattern operations |
| <input type="checkbox"/> Aeronautical decision making | <input type="checkbox"/> Short-field approach and landing |
| <input type="checkbox"/> Engine starting | <input type="checkbox"/> Soft-field approach and landing |
| <input type="checkbox"/> Radio communications | <input type="checkbox"/> Forward slip to landing |
| <input type="checkbox"/> Airport and runway markings and lighting | <input type="checkbox"/> Go-around |
| <input type="checkbox"/> Normal and crosswind taxiing | <input type="checkbox"/> Wake turbulence avoidance |
| <input type="checkbox"/> Pre-takeoff check | <input type="checkbox"/> Ground reference maneuvers |
| <input type="checkbox"/> Short-field takeoff and climb | <input type="checkbox"/> Emergency procedures |
| <input type="checkbox"/> Soft-field takeoff and climb | <input type="checkbox"/> Flight by reference to instruments |
| <input type="checkbox"/> Navigation procedures | <input type="checkbox"/> After-landing procedures |
| <input type="checkbox"/> Diversion procedures | <input type="checkbox"/> Post-flight procedures |
| <input type="checkbox"/> Steep turns | |

Completion Standards

Demonstrates mastery of designated maneuvers and knowledge items. Altitude, heading, and airspeed meet or exceed ACS standards. Any maneuvers that do not meet ACS standards should be reviewed with the student and assigned for solo practice

Lesson Complete _____

PRNFC Instructor Signature

Date

Homework Assignment

Federal Aviation Regulations

- Verify that aeronautical experience requirements in the federal aviation regulations have been, or will be, met for the desired pilot certificate at the end of the training program.



_____ **Pilot's Operating Handbook**

- Review operating speeds for your aircraft, systems information and emergency procedures in the Pilot's Operating handbook.



Lesson 23: Practical Test Preparation – Chief CFI

Lesson Objectives

The instructor will evaluate and determine the student’s proficiency level.

Discussion/Review

- | | |
|--|---|
| _____ Applicable performance criteria | _____ Maneuvering during slow flight |
| _____ Applicable rules | _____ Stalls and recovery |
| _____ Minimum equipment list | _____ Emergency procedures |
| _____ Cross-country flight planning | _____ Flight by reference to instruments |
| _____ Airplane logbook entries | _____ Pilot in command authority and responsibility |
| _____ Preflight inspection | _____ Collision avoidance precautions |
| _____ Cockpit resource management | _____ Traffic pattern operations |
| _____ Aeronautical decision making | _____ Short-field approach and landing |
| _____ Engine starting | _____ Soft-field approach and landing |
| _____ Radio communications | _____ Forward slip to landing |
| _____ Airport and runway markings and lighting | _____ Go-around |
| _____ Normal and crosswind taxiing | _____ Wake turbulence avoidance |
| _____ Pre-takeoff check | _____ Ground reference maneuvers |
| _____ Short-field takeoff and climb | _____ Emergency procedures |
| _____ Soft-field takeoff and climb | _____ Flight by reference to instruments |
| _____ Navigation procedures | _____ After-landing procedures |
| _____ Diversion procedures | _____ Post-flight procedures |
| _____ Steep turns | |

Completion Standards

Demonstrates mastery of designated maneuvers and knowledge items. Altitude, heading, and airspeed meet or exceed ACS standards.

Lesson Complete _____

PRNFC Chief Instructor Signature

Date