FLIGHT TRAINING GUIDE
CHAPTER 3

PRIVATE PILOT FLIGHT TRAINING SYLLABUS

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FLIGHT TRAINING SYLLABUS

PRIVATE PILOT RATING: ROTORCRAFT-HELICOPTER

FLIGHT TRAINING COURSE OBJECTIVES

The student will obtain the aeronautical skill and experience necessary to meet the requirements of a U.S. private pilot certificate with a rotorcraft category rating and a helicopter class rating in an R22, R44 or R66 as appropriate.

FLIGHT TRAINING COURSE COMPLETION STANDARDS

Completion standards will be equivalent to the FAA Private Pilot Practical Test Standards (PTS).

SYLLABUS ARRANGEMENT

The flight training will be accomplished in three stages. Hours shown in each lesson and stage of training are based on the average rate of student learning and are offered as a guide to the instructor. Times used on individual lessons and stages may be adjusted to meet individual student needs. Above average students may require less time to meet lesson, stage, or course completion standards, but must meet at least the minimum times specified below.

COURSE COMPLETION TIMES

AVERAGE COURSE TIME

Type	Total	Night	Cross-Country
Dual	40.0 hours	3.0 hours	7.0 hours
Solo	10.0 hours	0.0 hours	5.0 hours
Total:	50.0 hours	3.0 hours	12.0 hours

MINIMUM COURSE TIME – 14 CFR § PART 61

Type	Total	Night	Cross-Country
Dual	20.0 hours	3.0 hours	3.0 hours
Solo	10.0 hours	0.0 hours	3.0 hours
Total:	40.0 hours	3.0 hours	6.0 hours

FLIGHT TRAINING SYLLABUS (cont'd)

STAGE 1

DUAL: 20.0 hours
SOLO: 0.5 hour

STAGE 1 OBJECTIVES

During this stage the student will obtain the foundation for all future helicopter training. They will become familiar with the Robinson helicopter and will gain proficiency in all procedures and maneuvers necessary for their first supervised solo flight.

STAGE 1 COMPLETION STANDARDS

At the completion of this stage the student will satisfactorily pass the Stage 1 Flight Check and the pre solo written test, thereby demonstrating the knowledge and ability to safely conduct solo flights in the local area.

LESSON 1: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

The student will be introduced to the Robinson helicopter and the importance of a proper preflight inspection. They will gain an understanding of safety precautions to be followed preparing for flight and will be introduced to basic flight maneuvers.

LESSON CONTENT

Introduction

1. Preflight Preparation Procedures
   a. Required documents
   b. Aircraft logbooks
   c. Use of checklists
   d. Preflight inspection
   e. Helicopter servicing
   f. Fuel system and fuel type
   g. Equipment checks
   h. Ground safety procedures
   i. Cockpit management
   j. Emergency equipment and survival gear
2. SFAR 73 Awareness Training
   a. Energy management
   b. Low RPM Decay and Rotor Stall
   c. Low G Hazards and Mast Bumping
3. Flight Demonstration
   a. Engine starting and rotor engagement
   b. Engine and systems check
   c. Before takeoff check
   d. Hovering
   e. Normal takeoff from a hover
   f. Normal approach to a hover
   g. Engine shutdown
   h. After landing and securing
4. Student Practice
   a. Straight and level flight
   b. Shallow (10 degree) and medium (20 degree) bank, turns in both directions
   c. Climbs and descents
   d. Flight at various airspeeds

COMPLETION STANDARDS

At the completion of this lesson the student, with instructor assistance, will be able to conduct a preflight inspection, use checklists, and start the engine. They will gain an understanding of the use of the flight controls and display an understanding of ground safety. Required SFAR 73 Awareness Training will be completed.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 2: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

The student will review the procedures/maneuvers in Lesson 1 to gain proficiency in the use of the flight controls and be introduced to additional material.

LESSON CONTENT

Review

1. Preflight inspection / cockpit management
2. Engine Starting
3. Engine and systems checks
4. Before takeoff check
5. Straight and level flight – student practice
6. Shallow and medium bank turns in both directions – student practice
7. Climbs and descents – student practice
8. Flight at various airspeeds
9. Engine shutdown
10. Ground safety procedures
11. Emergency equipment and survival gear

Introduction

1. Climbing turns
2. Descending turns
3. Radio communications
4. Hovering
5. Collision avoidance procedures
6. Wind drift correction
7. Wake turbulence and wind shear avoidance
8. Low-G recognition and avoidance— ***Discussion Only***
9. Airport/heliport markings
10. Airport/heliport operations

COMPLETION STANDARDS

The student will be able to conduct the preflight inspection accurately with instructor assistance and will display increased understanding and proficiency in the use of the flight controls to control aircraft attitude.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 3: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will continue to gain proficiency in basic flight maneuvers and will be further introduced to the airport environment.

LESSON CONTENT

Review

1. Preflight inspection
2. Engine starting
3. Engine and systems preflight check
4. Straight and level flight
5. Shallow and medium bank turns – both directions
6. Climbs and descents with and without turns
7. Radio communications
8. Hovering
9. Collision avoidance procedures
10. Wake turbulence and wind shear avoidance
11. Low-G Recognition and Avoidance— ***Discussion Only***
12. Airport/heliport markings
13. Airport/heliport operations
14. Engine shutdown

Introduction

1. Normal/crosswind takeoff from a hover
2. Normal/crosswind approach to a hover
3. Airport traffic patterns, including entry and departure procedures

COMPLETION STANDARDS

The student will have a basic understanding of the airport environment with regard to helicopter operations, and will be able to perform the preflight inspection, engine starting, engine and systems preflight checks, and engine shutdown, unassisted. They will display increased proficiency in coordinated helicopter control, and will maintain altitude within 300 feet during turns and airspeed changes.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 4: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

This lesson will review flight maneuvers previously introduced and emphasize how crosswinds affect these maneuvers.

LESSON CONTENT

Review

1. Hovering
2. Normal/crosswind takeoff from a hover
3. Normal/crosswind approach to a hover
4. Traffic pattern procedures

Introduction

1. Vertical takeoff to a hover
2. Landing from a hover
3. Ground reference maneuvers
4. Sideward, forward, and rearward hovering
5. Hovering turns
6. Hover taxi

COMPLETION STANDARDS

The student will increase proficiency in attitude control during takeoffs and approaches and will understand how crosswind components affect these maneuvers.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 5: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

The student will practice basic maneuvers, concentrating on hovering.

LESSON CONTENT

Review

1. Vertical takeoff to a hover
2. Hovering—sideward, forward, rearward and turns
3. Normal/crosswind takeoff from a hover
4. Normal/crosswind approach to a hover
5. Landing from a hover
6. Ground reference maneuvers
7. Hover taxi

COMPLETION STANDARDS

The student will show increased proficiency during takeoffs, traffic pattern operations, approaches and hovering.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 6: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

The student will continue to practice basic maneuvers.

LESSON CONTENT

Review

1. Vertical takeoff to a hover
2. Hovering—sideward, forward, rearward and turns
3. Normal/crosswind takeoff from a hover
4. Normal/crosswind approach to a hover
5. Hover taxi

COMPLETION STANDARDS

The student will show increased proficiency during takeoffs, traffic pattern operations, approaches and hovering.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 7: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

The student will continue to practice pre-solo maneuvers and will be introduced to maximum performance takeoffs and steep approaches.

LESSON CONTENT

Review

1. Vertical takeoff to a hover
2. Hovering
3. Normal takeoff from a hover
4. Normal approach to a hover
5. Landing from a hover

Introduction

1. Maximum performance takeoff and climb
2. Steep approach
3. Steep Turns—30 degree bank angle
4. Air Taxi

COMPLETION STANDARDS

The student will demonstrate proper radio communications and traffic pattern procedures. Takeoffs will be performed unassisted, but approaches will be performed with instructor assistance. During straight and level flight and turns, altitude will be maintained within 250 feet, airspeed within 20 kts, and heading within 25 degrees. During climbs and descents the level off will be accomplished within 250 feet of the assigned altitude, airspeed will be maintained within 20 kts, and heading within 25 degrees.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 8: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

This lesson will concentrate on takeoffs, approaches, and hovering maneuvers to build proficiency. The student will be introduced to the circumstances and procedures for a go-around.

LESSON CONTENT

Review

1. Normal takeoffs and approaches
2. Maximum performance takeoffs and climbs
3. Steep approaches
4. Hovering—sideward, rearward, forward and turns
5. Steep turns—30 degree bank angle
6. Air Taxi

Introduction

1. Go Arounds

COMPLETION STANDARDS

The student will demonstrate an increased proficiency while hovering; and will also gain an increased understanding of maximum performance takeoffs and steep approaches.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 9: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will concentrate on areas of weakness.

LESSON CONTENT

Review

1. Areas of student weakness

COMPLETION STANDARDS

The student will demonstrate an increased proficiency in areas of weakness.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 10: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

The student will practice weak areas and will be introduced to autorotations and rapid decelerations.

LESSON CONTENT

Review

1. Areas of student weakness

Introduction

1. Straight in autorotations with power recovery
2. Rapid decelerations—quick stops

COMPLETION STANDARDS

The student will demonstrate an increased proficiency in areas of weakness. They will gain an understanding of autorotations, the power recovery and further develop control coordination with the introduction of quick stops.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 11: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will review pre-solo maneuvers and will be introduced to systems and equipment malfunctions, RPM control without the use of the governor and Vortex Ring State.

LESSON CONTENT

Review

1. Pre-solo maneuvers as necessary
2. Straight in autorotations with power recovery
3. Rapid decelerations—quick stops

Introduction

1. Emergency procedures and equipment malfunctions
   a. Pilot's Operating Handbook
   b. Alternator or generator failure
   c. Electrical fire or smoke in the cockpit
   d. Tachometer failure
   e. Caution lights
   f. Warning lights
   g. RHC safety notices
2. Vortex Ring State—Vuichard/ Traditional Recovery
3. RPM control without the use of the governor (R22/R44)

COMPLETION STANDARDS

At the completion of this lesson the student will show increased proficiency in all pre-solo maneuvers. During straight and level flight and turns, altitude will be maintained within 200 feet, airspeed within 15 kts, and heading within 20 degrees. During climbs and descents the level off will be accomplished within 200 feet of the assigned altitude, airspeed will be maintained within 15 kts, and heading within 20 degrees. They will gain an understanding of the conditions that result in Vortex Ring State and systems and equipment malfunctions. During governor off operations, RPM will be maintained within 4%.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 12: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will continue to practice autorotations and be introduced to hovering autorotations. R22 and R44 students will be introduced to the recognition and recovery from low rotor RPM.

LESSON CONTENT

Review

1. Straight in autorotation
2. Takeoffs and approaches
3. Rapid decelerations—quick stops
4. RPM control without the use of the governor (R22/R44)

Introduction

1. Recognition and recovery from low rotor RPM (R22/R44)
   a. During cruise flight
   b. On takeoff
   c. At a hover
2. Hovering autorotation

COMPLETION STANDARDS

During straight in autorotation, the student will demonstrate proper entry techniques, maintain airspeed between 55 and 75 kts and rotor rpm in the green. R22/R44 students will gain an understanding of the effects of low rotor RPM, its recognition and proper recovery techniques.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 13: 1.5 Hours Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

This lesson will be a review of important pre-solo maneuvers.

LESSON CONTENT

Review

1. Takeoffs and approaches
2. Hovering—sideward, rearward, forward and turns
3. Straight in autorotation
4. Hovering autorotation
5. Rapid decelerations—quick stops
6. Recognition and recovery from low rotor RPM
7. Vortex Ring State—Vuichard/Traditional Recovery
8. RPM control without the use of the governor (R22/R44)

COMPLETION STANDARDS

The student will demonstrate increased proficiency in all pre-solo maneuvers. During governor off operations, RPM will be maintained within 3%.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 14: 1.5 Hours Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will be introduced to 180° autorotation and the effects of turns during autorotative descents. For the pre-solo stage this will serve as "enhanced autorotation training" in accordance with SFAR 73.

LESSON CONTENT

Review

1. Pre-solo maneuvers as necessary

Introduction

1. 180° autorotation with power recovery
2. Simulated engine failure—Forced landing

COMPLETION STANDARDS

The student will gain an understanding of the importance of attitude and RPM control during 180° autorotation. During forced landings the student will understand the need to immediately lower the collective to prevent a low rotor RPM situation and techniques for controlling RPM during autorotative descents.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 15: 1.5 Hours Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will continue practicing pre-solo maneuvers, concentrating on takeoffs, approaches and autorotations.

LESSON CONTENT

Review

1. Normal takeoffs and approaches
2. Maximum performance takeoffs and climbs
3. Steep approaches
4. 180° autorotation with power recovery
5. Simulated engine failure—Forced landing

COMPLETION STANDARDS

1. During takeoffs, student will be able to maintain proper attitude control and heading.
2. During approaches, proper approach angles will be maintained with only minor corrections and rate of closure will not be excessive.
3. Entry into autorotation will be smooth, exercising proper attitude, trim, and RPM control. The flare and power recovery will be performed at prescribed altitudes.
4. During forced landings the student will lower the collective so as to prevent the RPM from decaying below 90%.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 16: 1.5 Hours Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

This lesson is a review of all pre-solo maneuvers in preparation for the student's first supervised solo. The student will also experience flight with hydraulics off in the R44 or R66 (no approaches or landing).

LESSON CONTENT

Oral Discussion

1. ATC/Traffic pattern procedures
2. Emergency procedures and equipment malfunctions

Review

1. Preflight inspection
2. Engine starting
3. Engine and systems preflight check
4. Vertical takeoff to a hover
5. Hovering—sideward, rearward, forward and turns
6. Radio communications
7. Normal takeoff from a hover
8. Traffic pattern procedures/collision avoidance precautions
9. Autorotative descents with power recovery
10. Hovering autorotation
11. Simulated engine failure—Forced landing
12. Normal approach to a hover
13. Recognition and recovery from low RPM (R22/R44)
14. RPM control without the use of the governor (R22/R44)
15. Landing from a hover

Introduction—R44 or R66

1. Hydraulic off flight
   a. Straight and level
   b. Turns
   c. No approaches or landings

COMPLETION STANDARDS

The student will demonstrate the knowledge and proficiency to safely solo the helicopter. R44 or R66 students will experience hydraulic off flight.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 17: STAGE 1 FLIGHT CHECK

1.0 Hour Dual
1.0 Hour Pre/Post Flight Discussion

OBJECTIVES

During this stage check the Chief Flight Instructor or a designated instructor will evaluate the student's proficiency on the listed Stage 1 maneuvers and procedures to determine if the student is ready to solo the helicopter and be advanced to Stage 2.

LESSON CONTENT

Review

1. Preflight inspection
2. Engine starting
3. Engine and systems preflight check
4. Vertical takeoff to a hover
5. Hovering—sideward, rearward, forward and turns
6. Radio communications
7. Normal takeoffs from a hover
8. Traffic pattern procedures/collision avoidance precautions
9. Autorotative descents with power recovery
10. Hovering autorotation
11. Simulated engine failure—Forced landing
12. Recognition and recovery from low RPM (R22/R44)
13. Rapid decelerations—quick stops
14. Normal approach to a hover
15. RPM control without the use of the governor (R22/R44)
16. Engine shutdown

Oral Examination

1. Pilot's Operating Handbook
   a. Airworthiness requirements
   b. Limitations
   c. Normal procedures
   d. Emergency procedures
2. RHC Safety Notices
3. Airspace rules and airport procedures
4. Low-G Recognition, Avoidance, and Recovery

COMPLETION STANDARDS

This lesson and Stage 1 will be complete when the student displays skill and understanding while performing the maneuvers necessary to safely conduct solo flights in the local training area. They will maintain altitude within 150 feet, airspeed within 15 kts, and heading within 15°. During governor off operations, RPM will be maintained within 2%. The student will also demonstrate sufficient knowledge of emergency operations, the Pilot's Operating Handbook, RHC Safety Notices and must satisfactorily pass the pre-solo written test with a minimum score of 70%.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 18:

1.0 Hour Dual
0.5 Hour Solo
1.0 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the instructor will review all Stage 1 and pre-solo requirements to check the student's readiness for solo flight. During the second portion of this lesson, the student will conduct their first supervised solo flight.

LESSON CONTENT

Pre-Solo Written Test

1. FAR Parts 61 and 91 as appropriate
2. R22, R44, or R66 limitations and flight characteristics
3. Airspace rules and airport procedures
4. Low-G Recognition, Avoidance, and Recovery
5. Low RPM Recognition and Recovery (R22/R44)

Review

1. Normal/crosswind takeoffs and approaches
2. Hovering maneuvers
3. Radio communications
4. Straight in autorotations
5. Emergency procedures and equipment malfunctions

First Supervised Solo Flight

1. Vertical takeoffs to a hover
2. Hovering
3. Landings from a hover
4. Three normal takeoffs, traffic patterns, and normal approaches

COMPLETION STANDARDS

The dual portion of this lesson will be complete when the instructor has reviewed the student logbook to ensure all flight time and maneuver requirements have been met and has made the appropriate FAR Part 61 endorsements; and has reviewed with the student all incorrect answers to the pre-solo written test. The student will demonstrate the ability to safely solo the helicopter while adhering to established traffic pattern procedures.

The solo portion of the lesson will be complete when the student has completed the first supervised solo flight.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

NOTES

STAGE 2

DUAL: 9.0 hours/1.5 Night

SOLO: 4.5 hours

STAGE 2 OBJECTIVES

The student will continue to be instructed in advanced maneuvers in preparation for the introduction of off-airport operations. They will also increase their confidence and refine their piloting skills during solo practice.

STAGE 2 COMPLETION STANDARDS

This stage will be complete when the student satisfactorily passes the Stage 2 flight check, thereby demonstrating the knowledge and proficiency to safely perform advanced maneuvers and off-airport operations.

Note – At no time during the student's solo lessons should they be allowed to practice any of the following maneuvers:

1. Autorotative descents of any kind
2. Hovering autorotation
3. Simulated engine failure—Forced landing
4. Vortex Ring State Recovery
5. Recovery from low RPM (R22/R44)
6. Governor failure (R22/R44)
7. Running landings
8. Slope landings/takeoffs
9. Hydraulic off flight—(R44/R66)
10. Maneuvers added by the instructor on a case by case basis

LESSON 19:

0.5 Hour Dual
0.5 Hour Solo
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During the dual portion of this lesson, the instructor will review takeoff, traffic pattern, and approach procedures to check the student's readiness for the second supervised solo flight and introduce slope operations. During the solo portion of the lesson the student will conduct their second supervised solo flight.

LESSON CONTENT

Review

1. Normal takeoff from a hover
2. Traffic pattern procedures
3. Hovering
4. Normal approach to a hover

Introduction

1. Slope landings
2. Slope takeoffs

Second Supervised Solo Flight

1. Vertical takeoffs to a hover
2. Hovering
3. Landings from a hover
4. Three normal takeoffs, traffic patterns, and normal approaches

COMPLETION STANDARDS

The student will gain confidence in their ability to safely solo the helicopter. The student will gain an understanding of proper techniques to slope landings/takeoffs.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 20:

0.5 Hours Dual
0.5 Hour Solo
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will review pre-solo maneuvers in preparation for their third supervised solo flight.

LESSON CONTENT

Review

1. Maximum performance takeoffs
2. Steep approaches
3. Hovering autorotation
4. Autorotative descents with power recovery
5. Recognition and recovery from low rotor RPM
6. Slope takeoffs and landings

Third Supervised Solo Flight

1. Vertical takeoffs to a hover
2. Hovering
3. Landings from a hover
4. Normal takeoffs, traffic patterns, and normal approaches

COMPLETION STANDARDS

The student will increase their proficiency in advanced maneuvers and gain additional confidence in their ability to safely solo the helicopter.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 21: 1.0 Hour Solo
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will practice the listed maneuvers to increase their proficiency and confidence in solo flight.

LESSON CONTENT

Practice

1. Maximum performance takeoff and climb
2. Steep approach
3. Normal takeoff from a hover
4. Normal approach to a hover
5. Hovering—sideward, rearward, forward and turns

COMPLETION STANDARDS

This lesson will be complete when the student has practiced the assigned maneuvers.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 22: 1.5 Hours Dual
1.0 Hour Pre/Post Flight Discussion

OBJECTIVES

This lesson will introduce the student to off-airport operations in confined areas, and will stress the importance of performance planning and off-airport operating procedures. The student will gain an understanding of hazards associated with off-airport operations and review those previously covered.

LESSON CONTENT

Oral Discussion

1. Weight and balance calculations and considerations
2. Performance planning
   a. Limit manifold pressure or torque/ MGT—maximum power available
   b. Hover performance—IGE, OGE
   c. Never exceed speed

Review

1. Vortex Ring State—Vuichard/ Traditional Recovery
2. Power failure at altitude—Forced landing

Introduction

1. Confined area and pinnacle operations
   a. High reconnaissance
   b. Low reconnaissance
   c. Confined area & pinnacle approach and departure
2. Hazardous conditions
   a. Obstructions—natural and man-made
   b. Landing surface conditions
   c. Dynamic rollover—slope operations

COMPLETION STANDARDS

This lesson will be complete when the student demonstrates the ability to plan and execute a high and low reconnaissance. They will be able to select suitable landing areas and demonstrate good judgment in their traffic pattern procedures.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 23: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will be introduced to shallow approaches, to a running landing, and situations that may require a running landing.

LESSON CONTENT

Review

1. Normal takeoff from a hover
2. Normal approach to a hover
3. Traffic pattern procedures
4. Autorotative descents with power recovery
5. Hovering autorotation
6. Recognition and recovery from low rotor RPM (R22/R44)

Introduction

1. Partial power failure
2. Shallow approach and running landing

COMPLETION STANDARDS

The student will gain an understanding of what conditions necessitate more advanced takeoffs and approaches. During autorotative descents the student will maintain airspeed between 60 and 75 KTS and rotor RPM within the green range. Directional control during simulated power failure at a hover will be within 10° and proper drift control will be exercised. The student will be able to recognize and recover from a low RPM situation prior to the RPM decaying below 90%. The student will gain an understanding of the conditions requiring a shallow approach and running landing.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 24: 1.0 Hours Solo
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will practice the maneuvers assigned by the instructor to increase proficiency and solo experience.

LESSON CONTENT

Practice

1. Maneuvers assigned by the flight instructor

COMPLETION STANDARDS

This lesson will be complete when the student has practiced the listed maneuvers.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 25: 1.5 Hours Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will review off-airport operations in confined areas and running landings.

LESSON CONTENT

Review

1. Maximum performance takeoff and climb
2. Steep approach
3. Confined area and pinnacle operations
4. Slope operations
5. Shallow approach and running landing

COMPLETION STANDARDS

The student will demonstrate proper attitude and power control during maximum performance takeoffs. Heading will be maintained within 15° during maximum performance takeoffs and a smooth transition to normal climb will be demonstrated. The student will maintain translational lift until ground contact during a shallow approach and running landing and demonstrate proper use of the cyclic during slope operations. During straight and level flight and turns, altitude will be maintained within 100 feet, airspeed within 10 KTS, and heading within 10°. The student will properly conduct the high/low reconnaissance when conducting confined area operations and select an approach angle that will ensure obstacle clearance.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 26: 1.5 Hours Dual Night
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

This lesson will familiarize the student with the special considerations and characteristics of helicopter flight at night.

LESSON CONTENT

Introduction

1. Preflight planning
   a. Night flight planning considerations
   b. Preflight inspection for night flight
   c. Night vision techniques
   d. Personal lighting devices
   e. Locating and identifying switches and circuit breakers
2. Night Flight
   a. Hovering
   b. Use of landing light and instrument light
   c. Normal takeoff from a hover
   d. Local area night orientation
   e. Traffic pattern operations
   f. Normal approach to a hover
   g. Airport lighting
   h. Straight in autorotation
   i. Hovering autorotation

COMPLETION STANDARDS

The student will become familiar with helicopter flight in the night environment, including airport/heliport lighting; aircraft lighting, locating and identifying switches, circuit breakers, etc.; and the types and uses of various personal lighting devices.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 27: 1.5 Hours Solo
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will practice the maneuvers assigned by the instructor to increase proficiency and solo experience.

LESSON CONTENT

Practice

1. Maneuvers assigned by the flight instructor

COMPLETION STANDARDS

This lesson will be complete when the student has practiced the listed maneuvers.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 28: 1.0 Hour Dual
1.0 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will review Stage 2 maneuvers in preparation for the Stage 2 flight check.

LESSON CONTENT

Review

1. Confined area and pinnacle operations
2. Maximum performance takeoff and climb
3. Steep approach
4. Anti-torque failure—oral discussion
5. Shallow approach and running landings
6. Autorotative descents
7. Slope operations
8. Rapid deceleration—quick stops
9. Recovery from low rotor RPM
10. Partial power failure
11. Hovering autorotation
12. Systems and equipment malfunctions—oral discussion
13. Simulated engine failure—forced landing
14. Maneuvers selected by the instructor

COMPLETION STANDARDS

At the completion of this lesson, the student will have demonstrated increased proficiency in all advanced maneuvers. They will demonstrate early recognition and immediate recovery from all hazardous flight conditions and a good understanding of off-airport operations, emergencies, and systems and equipment malfunctions.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 29: STAGE 2 FLIGHT CHECK

1.5 Hours Dual
1.5 Hours Pre/Post Flight Discussion

OBJECTIVES

During this lesson, the Chief Flight Instructor or a designated instructor will determine that the student meets the knowledge, proficiency, and performance standards required in performing advanced maneuvers and off-airport operations.

LESSON CONTENT

Oral Examination

1. Weight and balance computation
2. Performance planning
3. Hazardous conditions
   a. Adverse winds and turbulence
   b. Vortex Ring State
   c. Dynamic rollover

Review

1. Confined area and pinnacle operations
2. Shallow approach/running landing
3. Slope operations
4. Autorotative descents
5. Rapid deceleration—quick stops
6. Recovery from low RPM (R22/R44)
7. Hovering autorotation
8. Simulated engine failure—forced landing
9. Maneuvers selected by the instructor

COMPLETION STANDARDS

1. During takeoffs and climbs, the student will demonstrate proper attitude and heading control.
2. During approaches, proper sight picture, rate of closure, and ground track will be demonstrated.
3. While conducting slope operations the student will demonstrate proper use of the cyclic and collective.
4. During autorotative descents rotor RPM will be maintained in the green arc. Airspeed will be maintained between 60 to 70 KTS, and the power recovery will be executed smoothly and properly.
5. While executing a hovering autorotation, the student will maintain heading with 10° and proper drift control will be exercised.
6. The student will demonstrate knowledge and understanding of systems and equipment malfunctions.
7. The student will be able to recognize and recover from low RPM prior to 90%.
8. The student will exercise proper planning and good judgment with conducting off-airport operations.

LESSON 29: STAGE 2 FLIGHT CHECK (cont'd)

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

NOTES

STAGE 3

DUAL: 11.0 Hours/7.0 Cross-country/1.5 Night Cross-country

SOLO: 5.0 Hours Cross-country

STAGE 3 OBJECTIVES

The student will be instructed in maneuvers and procedures necessary for a cross-country flight. They will learn operations within the ATC environment and develop the skills necessary for solo flights to unfamiliar airports. Additionally, the student will receive instruction and increase their proficiency in all private pilot operations in preparation for the Stage 3 Flight Check.

STAGE 3 COMPLETION STANDARDS

This Stage will be complete when the student satisfactorily passes the Stage 3 Flight Check, demonstrating the knowledge and proficiency outlined in the current FAA Rotorcraft-Helicopter Practical Test/Airman Certification Standards for Private Pilot.

LESSON 30: 1.5 Hours Dual X-C
1.0 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will be introduced to helicopter cross-country planning and procedures. The flight will consist of at least two legs and will be conducted using pilotage and dead reckoning.

LESSON CONTENT

Introduction

1. Preflight planning
   a. Aeronautical Information Manual
   b. Sectional and Terminal area charts
   c. Course selection
   d. Procurement/analysis of weather reports and forecasts
   e. Aircraft performance—best range airspeed, fuel endurance, ground speed
   f. Cross-country flight log
   g. Fuel requirements
2. Cross-Country Flight
   a. Navigation
      i) Pilotage
      ii) Dead reckoning—with magnetic compass
   b. Estimating visibility in flight
   c. Recognition and avoidance of hazardous terrain
3. Airport Operations
   a. Navigation
   b. Opening and closing flight plan
   c. Airport traffic control procedures
      i) ATIS
      ii) Control tower/CTAF
4. Emergency Procedures
   a. Complete or partial power loss—forced landing
   b. System and equipment malfunctions—precautionary landing
   c. Collision avoidance and wake turbulence precautions, wind shear avoidance

COMPLETION STANDARDS

At the completion of this lesson, the student will be able to plan a VFR cross-country flight. They will be prepared for VFR navigation and have the knowledge to deal with some cross-country emergencies.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 31: 2.0 Hours Dual X-C
1.0 Hour Pre/Post Flight Discussion

OBJECTIVES

This lesson will expand the student's understanding of cross-country operations and emergency procedures in preparation for their first solo cross-country flight. The flight will consist of three legs using pilotage, dead reckoning and radio navigation.

LESSON CONTENT

Review

1. Preflight planning
   a. Weather briefing
   b. Course selection
   c. Cross-country flight log
   d. VFR flight plan
2. Cross-Country flight operations
   a. Opening and closing flight plan
   b. Pilotage and Dead Reckoning
3. Air traffic control procedures
4. Emergency Procedures
   a. Complete or partial power loss
   b. System and equipment malfunction

Introduction

1. Radio Navigation (VOR/GPS) and Radar Services
2. Adverse weather—estimating critical weather in flight
3. Diversion to alternate
   a. As a preventative measure
   b. Airport selection
   c. Estimating time en route
4. Lost procedures
   a. Heading selection
      i) Proceeding to last known position
      ii) Proceeding to nearest prominent land mark
   b. Altitude selection
      i) Climb VFR as appropriate
      ii) Best altitude for communications
      iii) Best altitude for chart interpretation
   c. Obtaining assistance
      i) ATC facility—frequencies and services
      ii) FSS facility—frequencies and services
      iii) Transponder operation
      iv) Navaids—communications and navigation
   d. Emergency landing
      i) Deteriorating weather
      ii) Low fuel
      iii) Area selection
5. Lost Communications
   a. Transponder operation
   b. Airport operations—ATC light signals

LESSON 31: (cont'd)

COMPLETION STANDARDS

This lesson will be complete when the student demonstrates the ability to perform a cross-country flight using pilotage, dead reckoning and radio navigation. Upon completion the student should be ready for their first solo cross-country flight and will understand and be capable of executing the procedures used to divert to an alternate airport as appropriate to their first solo cross-country. The student will also select the best course of action when given a lost situation.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 32: 1.5 Hours Dual Night X-C
1.0 Hour Pre/Post Flight Discussion

OBJECTIVES

This lesson will familiarize the student with night cross-country procedures. The flight will be over 50 NM total distance and will emphasize pilotage in the night environment.

LESSON CONTENT

Review

1. Preflight planning
   a. Weather briefing
   b. Course selection
   c. Altitude selection
2. Cross-Country flight
   a. Pilotage
   b. Radio navigation (VOR/GPS)

Introduction

1. Night flying considerations
   a. Chart interpretation
   b. Minimum altitude
   c. Cockpit lighting
   d. Airport lighting
2. Night emergency procedures

COMPLETION STANDARDS

Upon completion of this lesson, the student will show an increased understanding of preflight planning, especially with regard to night cross-country operations. The student should act promptly to simulated emergencies, exhibiting good judgment.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 33: 1.0 Hour Solo X-C
1.0 Hour Pre/Post Flight Discussion

OBJECTIVES

This lesson will be the student's first solo cross-country flight. The instructor will select a relatively easy course and review all preflight planning and make appropriate endorsements.

LESSON CONTENT

1. Preflight planning—Checked by instructor
   a. Sectional charts
   b. Altitude selection
   c. Course selection
   d. Checkpoint selection
   e. Distance measurements
   f. Computation of flight time, headings, and fuel requirements
   g. Weather briefing
   h. Aircraft performance
   i. Navigation log
   j. VFR flight plan
   k. Weight and balance
2. Cross-Country flight
   a. Departure
   b. Establishing desired course
   c. Opening flight plan and closing flight plan
   d. Pilotage and dead reckoning
   e. Proper radio communications
3. Airport operations
4. Instructor limitations

COMPLETION STANDARDS

The student will conduct the assigned cross-country flight. The instructor will determine how well the flight was conducted by oral examination and will check to be sure all required flight log entries have been made.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 34: 1.5 Hour Solo X-C
1.0 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will gain additional confidence and understanding of cross-country flight operations. This flight will consist of a longer course than the initial solo cross-country flight.

LESSON CONTENT

1. Preflight planning—Checked by instructor
   a. Sectional charts
   b. Altitude selection
   c. Course selection
   d. Checkpoint selection
   e. Distance measurements
   f. Computation of flight time, headings, and fuel requirements
   g. Weather briefing
   h. Aircraft performance
   i. Navigation log
   j. VFR flight plan
   k. Weight and balance
2. Cross-country flight
   a. Departure
   b. Establishing desired course
   c. Opening flight plan and closing flight plan
   d. Pilotage and dead reckoning
   e. VOR/GPS navigation
   f. Computing ground speed and ETA
   g. Proper radio communications
3. Airport operations

COMPLETION STANDARDS

The student will conduct the assigned cross-country flight. The instructor will determine how well the flight was conducted by oral examination and will check to be sure all required flight log entries have been made.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 35: 2.0 Hour Dual X-C
1.0 Hour Pre/Post Flight Discussion

OBJECTIVES

This lesson will be a longer cross-country flight with landings at three different airports. The student will be able to demonstrate a complete understanding of cross-country procedures.

LESSON CONTENT

Review

1. Preflight planning
   a. Weather
   b. Course
   c. Altitude
   d. Weight and balance
   e. VFR flight plan
2. Cross-country flight
   a. Pilotage, dead reckoning, radio navigation (VOR/GPS)
   b. Diversion to an alternate
   c. Lost procedures
   d. Emergency procedures

Introduction

1. Ground speed check—estimating time of arrival

COMPLETION STANDARDS

Upon completion of this lesson, the student will:

1. Demonstrate a thorough understanding of cross-country procedures;
2. Be able to verify the position of the helicopter within 3 NM at all times;
3. Arrive at checkpoints at ± 5 minutes of his estimate;
4. Maintain selected altitude ± 100 feet;
5. Maintain the desired airspeed ± 10 knots;
6. Maintain the desired heading ± 10°; and,
7. During radio navigation, locate their position relative to the radio facility and track along a given radial or bearing.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 36: 2.5 Hour Solo X-C
1.5 Hour Pre/Post Flight Discussion

OBJECTIVES

This solo cross-country flight will consist of at least 100 NM total distance with landings at a minimum of three airports, one unfamiliar to the student. One segment of the flight will be at least 25 NM straight line distance from takeoff to landing. If the student has not made any solo takeoffs, traffic patterns and landings at an airport with an operating control tower, such an airport should be selected for this flight and these three operations should be accomplished.

LESSON CONTENT

1. Preflight planning—Checked by instructor
   a. Sectional charts
   b. Altitude selection
   c. Course selection
   d. Checkpoint selection
   e. Distance measurements
   f. Computation of flight time, headings, and fuel requirements
   g. Weather briefing
   h. Aircraft performance
   i. Navigation log
   j. VFR flight plan
   k. Weight and balance
2. Cross-country flight
   a. Departure
   b. Establishing desired course
   c. Opening flight plan/closing flight plan
   d. Pilotage and dead reckoning
   e. VOR/GPS navigation
   f. Computing ground speed and ETA
   g. Proper radio communications
3. Airport operations

COMPLETION STANDARDS

The student will conduct the assigned cross-country flight. The instructor will determine how well the flight was conducted by oral examination and will check to be sure all required flight log entries have been made.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 37: 1.0 Hour Dual
0.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will review traffic pattern operations, advanced takeoff and landings, and emergency procedures in order to maintain proficiency. The student will gain an understanding of Hydraulic OFF approach and landing in the R44 or R66.

LESSON CONTENT

Review

1. Maximum performance takeoff and climb
2. Steep approach
3. Normal approach/takeoff
4. Shallow approach, running landing
5. Rapid deceleration—quick stops
6. Slope operations
7. Autorotative descents
8. Hovering autorotation
9. Partial power failure
10. Recovery from low rotor RPM (R22/R44)
11. Systems and equipment malfunction

Introduction

1. Hydraulic OFF approach and landing (R44/R66)
2. Governor Failure (R22/R44)

COMPLETION STANDARDS

At the completion of this lesson the student will have demonstrated increased proficiency in all advanced maneuvers. The student will have performed a Hydraulic OFF approach and landing (R44/R66).

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 38: 1.5 Hours Dual
1.0 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the student will review basic flight maneuvers and emergency operations in preparation for the Stage 3 and final flight check.

LESSON CONTENT

Review

1. Normal takeoff from a hover
2. Normal approach to a hover
3. Maximum performance takeoff and climb
4. Steep approach
5. Governor failure (R22/R44)
6. Shallow approach/running landing
7. Rapid deceleration—quick stop
8. Slope operations
9. Autorotative descents with power recovery
10. Hovering autorotation
11. Vortex Ring State
12. Systems and equipment malfunctions
13. Partial power failure
14. Recovery from low rotor RPM (R22/R44)
15. Simulated engine failure—Forced landings
16. Hydraulic Off approach and landing (R44/R66)

COMPLETION STANDARDS

1. During takeoff and climbs the student will demonstrate proper altitude and heading control, correcting for crosswind as appropriate.
2. During approaches, proper angle, rate of closure, and ground track will be demonstrated, correcting for crosswind as appropriate and terminating within 3 feet of designated point.
3. During running landings the student will make a smooth transition from descent to surface contact at or slightly above effective translational lift, using less than hovering power, and beyond but within 50 feet of designated point.
4. During simulated hazardous flight conditions the student will demonstrate immediate recognition and recovery. Hydraulic OFF landings will touchdown skids level maintaining proper heading control—(R44/R66).
5. During simulated engine failure, the student will maintain rotor RPM within allowable limits immediately lowering the collective. They will establish an appropriate attitude maintaining airspeed as necessary. They will select a suitable landing area and maneuver so as to arrive at the selected area in trim, with acceptable RPM, airspeed and descent rate, and in position to make a safe autorotative landing.

LESSON 38: (cont'd)

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

LESSON 39: 1.5 Hours Dual
1.5 Hour Pre/Post Flight Discussion

OBJECTIVES

During this lesson the Stage 3 and Final Flight Check will be conducted by the Chief Flight Instructor or a designated instructor. The instructor will evaluate the student's readiness for the *Private Pilot—Helicopter* flight test.

LESSON CONTENT

Review

1. Oral examination
   a. Pilot's Operating Handbook
   b. Weight and balance computation
   c. Aircraft performance
   d. Cross-country flight planning
   e. Weather briefing
   f. Pertinent Aviation Regulations (14 CFR § 1, 61 and 91)
   g. Areas selected by the Chief Flight Instructor
2. Flight check
   a. Cross-country flight operations
   b. Normal and emergency maneuvers chosen by the Chief Flight Instructor

COMPLETION STANDARDS

The student will demonstrate the knowledge and proficiency that meets or exceeds the minimum standards as outlined in the current FAA Rotorcraft-Helicopter Practical Test/ Airman Certification Standards for Private Pilot.

INSTRUCTOR'S COMMENTS AND RECOMMENDATIONS:

NOTES

NOTES

NOTES

APPENDIX A
SCHOOL SAFETY PROCEDURES

1. Weather Minimums
   A. Dual Flights—At the discretion of the instructor.
   B. Solo Flights:
      i) Traffic Pattern—Ceiling 1,000 ft. AGL, visibility 3 mile
      ii) Cross-country—Ceiling 3,000 ft. AGL, visibility 5 miles
   C. Wind limitations—Each student will observe the following surface wind limitations as directed by his or her instructor:

NOT TO EXCEED	STUDENT INITIALS	INSTRUCTOR INITIALS
5 KTS	_____	_____
8 KTS	_____	_____
10 KTS	_____	_____
12 KTS	_____	_____
15 KTS	_____	_____

UNDER NO CIRCUMSTANCES ARE STUDENTS ALLOWED TO FLY SOLO IN WINDS IN EXCESS OF 15 KTS.

GUST SPREAD NOT TO EXCEED	STUDENT INITIALS	INSTRUCTOR INITIALS
5 KTS	_____	_____
8 KTS	_____	_____
10 KTS	_____	_____
12 KTS	_____	_____

2. All pilots shall avoid air taxiing over any surface which has any debris or litter which may be ingested into the main or tail rotors.
3. Smoking during preflight and refuelling is prohibited.
4. In the event of a precautionary landing notify _____ as soon as practical. The pilot in command is responsible for the aircraft until released by someone from _____.

5. Each pilot shall check squawk sheet prior to each flight. All discrepancies shall be recorded in the appropriate manner on the squawk sheet.
6. A fuel reserve of 30 minutes is required on all cross-country and solo flights.
7. Pilots will not fly at an altitude less than 500 ft above the highest obstacle unless necessary for takeoff and landings.
8. The following maneuvers will not be practiced without a flight instructor on board unless the instructor has completed #10 below:
   A. Autorotative descents of any kind
   B. Hovering autorotation
   C. Simulated engine failure – Forced landing
   D. Vortex Ring State Recovery
   E. Recovery from low RPM (R22/R44)
   F. Governor failure (R22/R44)
   G. Running landings
   H. Hydraulic off flight – (R44/R66)
   I. Slope Landings/takeoffs
9. A VFR flight plan must be filed for all solo cross-country flights. All day cross-country flights must terminate ½ hour prior to sunset.
10. The Following maneuvers must have instructors initials before pilot solo practice:

	STUDENT INITIALS	INSTRUCTOR INITIALS
A. Quick Stops	_____	_____
B. Running Landings	_____	_____
C. Confined Area Operations	_____	_____
D. Pinnacle Operations	_____	_____
E. Slope Landings/Takeoff	_____	_____
F. Off Airport Landings	_____	_____
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____

All students must read and understand these requirements.
They are for your safety.

Signature:_____ Date:_____