Principles of Helicopter Flight Private Pilot Syllabus

A Flight & Ground Training Course for Private Pilot Helicopter Certification

14 CFR Part 141 and CFR Part 61 Rotorcraft/Helicopter Private Pilot Certification Course

STAR-PPHS

Star Helicopters LLC
3670 W 120th Street
Hawthorne, CA 90250

Principles of Helicopter Flight Private Pilot Syllabus

Written by Keith Harter

Printed in USA

Star Helicopters, LLC

3670 W 120th Street
Hawthorne, CA 90250

Telephone: 310.355.1959

Internet: www.Star-Helicopters.com
Email: info@Star-Helicopters.com

PART NUMBER: STAR-PPHS

Log of Revisions

Revision Number	Revision Date	Description of Changes	Initials
Initial	May 1, 2012	Original Issue	
001	June 1, 2013	Complete revision change to 001 due to the number of changes made. Removed Safety Practices and Procedures from this manual and made it standalone. Added Part 61 Private Pilot Add-on certificate training to the Private Pilot Syllabus. Added Private Pilot Helicopter Part 141 & Part 61 FAR Requirements Updated Private Pilot Minimum Course Hours Part 141 & Part 61 Added Ground Stages Overview Added Flight Stages Overview Added English Language Proficiency Endorsement Added Ground Lesson content to Stage 1/6 Added Flight content to Stage 1/8 Added Flight content to Stage 1/10 Rearranged Stage 1, 2 & 3 Courses as follows. Moved Stage 1/Module 11 to Stage 3/Module 1 Moved Stage 1/Module 12 to Stage 1/Module 11 Moved Stage 1/Module 13 to Stage 3/Module 2 Moved Stage 2/Module 1 to Stage 1/ Module 12 Moved Stage 2/Module 5 to Stage 1/ Module 13 Moved Stage 2/Module 2 to Stage 2/ Module 1 Moved Stage 2/Module 3 to Stage 2/ Module 2 Moved Stage 2/Module 4 to Stage 2/ Module 3 Moved Stage 2/Module 6 to Stage 2/ Module 4 Renamed Stage 2/Module 7 to Stage 2/Module 5 Moved Stage 3/Module 2 to Stage 3/ Module 4 Moved Stage 3/Module 3 to Stage 3/Module 5 Moved Stage 3/Module 1 to Stage 3/Module 3 Added Retesting after a failed practical exam endorsement Rearranged Stage 1, 2 & 3 as follows. Moved Stage 1/Module 11 to Stage 3/ Module 1 Moved Stage 1/Module 12 to Stage 1/ Module11 Moved Stage 1/Module 13 to Stage 3/ Module 2 Moved Stage 3/Module 2 to Stage 3/ Module 4 Moved Stage 3/Module 1 to Stage 1/ Module 12 Moved Stage 2/Module 5 to Stage 1/ Module 13 Moved Stage 2/Module 2 to Stage 2/ Module 1	

List of Effective Pages

Page	Valid Date	Revision
IC	June 1,2013	001
LR-1	June 1,2013	001
LEP-1	June 1,2013	001
LEP-2	June 1,2013	001
LEP-3	June 1,2013	001
I	June 1,2013	001
II	June 1,2013	001
III	June 1,2013	001
IV	June 1,2013	001
V	June 1,2013	001
VI	June 1,2013	001
VII	June 1,2013	001
VIII	June 1,2013	001
IX	June 1,2013	001
X	June 1,2013	001
XI	June 1,2013	001
XII	June 1,2013	001
XIII	June 1,2013	001
XIV	June 1,2013	001
XV	June 1,2013	001
XVI	June 1,2013	001
XVII	June 1,2013	001
XVIII	June 1,2013	001
XIX	June 1,2013	001
XX	June 1,2013	001
XXI	June 1,2013	001
XXII	June 1,2013	001
1	June 1,2013	001
2	June 1,2013	001
3	June 1,2013	001
4	June 1,2013	001
5	June 1,2013	001
6	June 1,2013	001
7	June 1,2013	001
8	June 1,2013	001
9	June 1,2013	001
10	June 1,2013	001
11	June 1,2013	001
12	June 1,2013	001
13	June 1,2013	001
14	June 1,2013	001

Page	Valid Date	Revision
15	June 1,2013	001
16	June 1,2013	001
17	June 1,2013	001
18	June 1,2013	001
19	June 1,2013	001
20	June 1,2013	001
21	June 1,2013	001
22	June 1,2013	001
23	June 1,2013	001
24	June 1,2013	001
25	June 1,2013	001
26	June 1,2013	001
27	June 1,2013	001
28	June 1,2013	001
29	June 1,2013	001
30	June 1,2013	001
31	June 1,2013	001
32	June 1,2013	001
33	June 1,2013	001
34	June 1,2013	001
35	June 1,2013	001
36	June 1,2013	001
37	June 1,2013	001
38	June 1,2013	001
39	June 1,2013	001
40	June 1,2013	001
41	June 1,2013	001
42	June 1,2013	001
43	June 1,2013	001
44	June 1,2013	001
45	June 1,2013	001
46	June 1,2013	001
A-1	June 1,2013	001
A-2	June 1,2013	001
A-3	June 1,2013	001
A-4	June 1,2013	001
A-5	June 1,2013	001
A-6	June 1,2013	001
A-7	June 1,2013	001
A-8	June 1,2013	001
A-9	June 1,2013	001

List of Effective Pages

Page	Valid Date	Revision
A-10	June 1,2013	001
A-11	June 1,2013	001
A-12	June 1,2013	001
A-13	June 1,2013	001
A-14	June 1,2013	001
A-15	June 1,2013	001
A-16	June 1,2013	001
A-17	June 1,2013	001
A-18	June 1,2013	001
A-19	June 1,2013	001
A-20	June 1,2013	001
A-21	June 1,2013	001
A-22	June 1,2013	001
A-23	June 1,2013	001
A-24	June 1,2013	001
A-25	June 1,2013	001
A-26	June 1,2013	001
A-27	June 1,2013	001
A-28	June 1,2013	001
A-29	June 1,2013	001
A-30	June 1,2013	001
A-31	June 1,2013	001
A-32	June 1,2013	001
A-33	June 1,2013	001
A-34	June 1,2013	001
A-35	June 1,2013	001
A-36	June 1,2013	001
A-37	June 1,2013	001
A-38	June 1,2013	001
A-39	June 1,2013	001
A-40	June 1,2013	001
A-41	June 1,2013	001
A-42	June 1,2013	001
A-43	June 1,2013	001
A-44	June 1,2013	001
A-45	June 1,2013	001
A-46	June 1,2013	001
A-47	June 1,2013	001
A-48	June 1,2013	001
A-49	June 1,2013	001
A-50	June 1,2013	001
A-51	June 1,2013	001
A-52	June 1,2013	001

Page	Valid Date	Revision
A-53	June 1,2013	001
A-54	June 1,2013	001
A-55	June 1,2013	001
A-56	June 1,2013	001
A-55	June 1,2013	001
A-56	June 1,2013	001
B-1	June 1,2013	001
B-2	June 1,2013	001
B-3	June 1,2013	001
B-4	June 1,2013	001
B-5	June 1,2013	001
B-6	June 1,2013	001
B-7	June 1,2013	001
B-8	June 1,2013	001
B-9	June 1,2013	001
B-10	June 1,2013	001
B-11	June 1,2013	001
B-12	June 1,2013	001
ICB	June 1,2013	001

List of Effective Pages

Page	Valid Date	Revision

Page	Valid Date	Revision

Contents

About this Syllabus

This syllabus ***Principles of Helicopter Flight Private Pilot Syllabus*** is used for the ground and flight training Private Pilot Certification Course. This syllabus uses ***Principles of Helicopter Flight*** for the ground training program. The review following each chapter should be finished with the assigned reading. Certain ground lessons are supplemented with reading assignments from ***Pilot's Handbook of Aeronautical Knowledge, Helicopter Flying Handbook and Helicopter Maneuvers Manual, FAR/AIM, Robinson Pilot Operating Handbook and other materials listed on the Training Materials list***. Each book contains an index that will help pinpoint the material for the subject you are working on. The ***Dauntless FAA Private Pilot Knowledge Test Prep*** software is recommended to enhance the program. Use of the Test Prep will ensure that the student is completely prepared for the **FAA Knowledge Exam** upon completion of the course. Instructors using this syllabus must ensure current Practical Test Standards are upheld.

Course Objective:

The objective of this syllabus is for the student to gain the necessary aeronautical skill, knowledge and experience to meet the requirements of a Private Pilot certificate with a Rotorcraft Category and a Helicopter class rating.

Prerequisites:

The student must be able to read, speak and understand the English language, meet the physical standards for a third class medical certificate, and possess a valid student pilot certificate. Student must be 16 years old to solo, and 17 years old to gain certification.

Private Pilot Certification Course:

The Private License is made up of 2 requirements: Aeronautical Skill and Aeronautical Knowledge. This syllabus is written to satisfy 14 CFR Appendix B of Part 141 requirements. With the addition of 5 hours of flight, this syllabus will be equally effective for 14 CFR Part 61 programs. The syllabus is in four stages, containing modules. Each stage must be completed within 90 days. Each module contains both a flight and ground lesson. This presents an integrated flight training process and will promote easier learning and a more efficient flight training program. Ideally, the ground lesson will be completed prior to the flight. Each flight lesson must include a pre- and post-flight briefing.

Testing Procedures:

Each module contains a reading assignment associated with the ground training program. The review questions following each chapter will test the students understanding of the material covered throughout the ground lesson, and must be answered prior to moving on to the next module. There are quizzes in many of the modules and they should be completed prior to that ground lesson and they should be reconciled to 100%. A stage exam is included with each stage, testing the student on both the ground and flight training material covered throughout the stage. This exam must be passed with a minimum score of 80%, and reconciled to 100%, in order to proceed to the next stage. There is also a Pre-Solo exam that must be reconciled to 100% prior to the student doing any solo flights. ***It is essential that the objective of each module be accomplished before moving on to the next module.***

Note to Instructors: Answers to the Quizzes and Stage Exams are available from the Chief Instructor.

Minimum Requirements:

The time necessary for the syllabus to qualify for 141 operations includes meeting 35 hours of both ground and flight instruction (40 hours flight training for Part 61 programs). This is a minimum time — the national average for completion of the Private certificate is 73 flight hours. Many factors play into the finishing flight time: frequency of flying, cooperative weather, helicopter and instructor scheduling, and lapses in the flight training process. It is recommended the student fly at least twice a week. This type of schedule produces the most efficient training, and cuts down on review time. If there is a lapse in between flights, it may be necessary to review maneuvers: In this case review flights should be scheduled to make sure flight skills are mastered before moving on. (This will allow the student to continue following the syllabus, which is necessary for a 141 program.) The student should feel comfortable performing each task in all previous modules before progressing to the next stage. If the student exceeds more than 2 hours of the minimum 141 recommended time allotted per module, the chief flight instructor must be informed. The times listed for each stage are the recommended minimum times and may be changed at the discretion of the instructor, (example if a student flies a 1.2 for a lesson that lists 1.3 and the student meets the stage requirements the lesson may be marked as completed and the missing .1 may be picked up in a future stage). These deviations shall not disturb the course continuity or objective. In addition, these deviations should be noted in the student's flight training record.

Completion Standards:

The student will demonstrate through quizzes, exams, oral test and practical tests and school records that he/she has the necessary aeronautical skill and experience to obtain a private pilot certificate with a rotorcraft category and helicopter class rating.

Flight Training Device

Instruction in a pilot ground trainer that meets the requirements for Part 141.41(c), a portion of Instruction in a pilot ground trainer that meets the requirements of Part 141.41(c) may be credited towards the total flight training hour requirements. When a ground training device is used, the ideal sequence is to learn in the ground training device and practice in the helicopter.

Private Pilot Helicopter
FAR Requirements Part 141 & Part 61

Flight Training Course

The flight training is divided into four sequential stages. To provide a degree of flexibility for adapting to individual student needs and the training environment, the sequence may be altered within the individual stages at the discretion of the flight instructor. The times listed for each stage are the recommended minimum times and may be changed at the discretion of the instructor, (example if a student flies a 1.2 for a lesson that lists 1.3 and the student meets the stage requirements the lesson may be marked as completed and the missing .1 may be picked up in a future stage). These deviations shall not disturb the course continuity or objective. In addition, these deviations should be noted in the student's flight training record.

PRIVATE-H 141 FAR Requirements

Initial Private Pilot Certificate

- 30 hours dual, including:
  - 3 hours of cross country training in a helicopter.
  - 3 hours of night training in a helicopter that includes:
    - One cross-country flight in a helicopter of at least 50 nautical miles total distance.
    - 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
  - 3 hours in a helicopter in preparation for the practical test within 60 days preceding the date of the test.
- 5 hours of solo flight training in a helicopter, including at least:
  - 3 hours cross-country time.
    - One solo cross-country flight off 100 nautical miles total distance, with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 25 nautical miles between the takeoff and landing locations, and 3 takeoffs and 3 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

PRIVATE-H 61 FAR Requirements

Initial Private Pilot Certificate

- 30 hours dual, including:
  - 3 hours of cross country training in a helicopter.
  - 3 hours of night training in a helicopter that includes:
    - One cross-country flight in a helicopter of at least 50 nautical miles total distance.
    - 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
  - 3 hours in a helicopter in preparation for the practical test within 2 calendar months preceding the date of the test.
- 10 hours of solo flight training in a helicopter, including at least:
  - 3 hours cross-country time.
    - One solo cross-country flight off 100 nautical miles total distance, with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 25 nautical miles between the takeoff and landing locations, and 3 takeoffs and 3 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

Add-on Private Pilot Certificate

- 20 hours dual, including:
  - 3 hours of cross country training in a helicopter.
  - 3 hours of night training in a helicopter that includes:
    - One cross-country flight in a helicopter of at least 50 nautical miles total distance.
    - 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
  - 3 hours in a helicopter in preparation for the practical test within 2 calendar months preceding the date of the test.
- 10 hours of solo flight training in a helicopter, including at least:
  - 3 hours cross-country time.
    - One solo cross-country flight off 100 nautical miles total distance, with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 25 nautical miles between the takeoff and landing locations, and 3 takeoffs and 3 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

Ground Training Course

The ground training is divided into four stages. To provide a degree of flexibility for adapting to individual student needs and the training environment, the sequence may be altered within the individual stages at the discretion of the flight instructor. These deviations shall not disturb the course continuity or objective. In addition, these deviations should be noted in the student's flight training record.

PRIVATE-H 141 FAR Requirements

- 35 hours of total time ground training

PRIVATE-H 61 FAR Requirements

- No hour requirements for Part 61 initial or Add-on

All ground and quizzes are to be completed prior to each flight. Homework listed at the end of each flight will be completed prior to moving from one module to the next. Quizzes and Exams will be graded by the instructor, corrected to 100%, and the score recorded in the Student Flight Record and Ground Completion Record and put into the student file.

Private Pilot Minimum Course Hours

For Part 141 Compliance

These course hours are for student/instructor guidance only. They are the minimum time schedule which will ensure the minimum flight and ground training compliance with 14 CFR Appendix B of Part 141.

Note: Ground instruction should include classroom discussion, and pre-flight and post-flight briefings.

Page	Stage/Module	Dual Flight	Solo Flight	Dual Cross-Country	Solo Cross-Country	Dual Night	Ground Instruction
	Stage 1						
3	1	1.0					1.5
4	2	1.2					1.5
5	3	1.2					2.0
6	4	1.2					1.5
7	5	1.2					1.5
8	6	1.2					1.5
9	7	1.2					1.5
10	8	1.2					1.5
11	9	1.2					1.5
12	10	1.4					1.5
13	11	1.5				1.5	1.5
14	12	1.5		1.5		1.5	2.5
15	13	2.5		2.5			2.5
16	14 Stage Check	1.5					1.0
	Stage 2						
23	1	1.0	0.5				1.0
24	2	0.5	1.0				
25	3		1.0				
26	4		2.5		2.5		
27	5 Stage Check	1.0					1.0
	Stage 3						
29	1	1.0					1.5
30	2	1.5					1.5
31	3	1.0					1.0
32	4	1.0					2.0
33	5 Stage Check	1.0					1.0
	Stage 4						
37	1	1.0					1.0
38	2	1.0					1.0
39	3 End of Course Check	1.0					1.0
TOTALS	23 + 4 Stage Checks	30	5	4	2.5	3	35

Private Pilot Minimum Course Hours

For Part 61Compliance

These course hours are for student/instructor guidance only. They are a the minimum time schedule which will ensure the minimum flight and ground training compliance with 14 CFR Part 61.

Note: Ground instruction should include classroom discussion, and pre-flight and post-flight briefings.

Page	Stage/Module	Dual Flight (Initial)	Dual Flight (Add-On)	Solo Flight	Dual Cross-Country	Solo Cross-Country	Dual Night	Ground Instruction
	Stage 1							
3	1	1.0	1.0					1.5
4	2	1.2	1.2					1.5
5	3	1.2	1.2					2.0
6	4	1.2	1.2					1.5
7	5	1.2	1.2					1.5
8	6	1.2	1.2					1.5
9	7	1.2	1.2					1.5
10	8	1.2	1.2					1.5
11	9	1.2	1.2					1.5
12	10	1.4	1.4					1.5
13	11	1.5	1.5				1.5	1.5
14	12	1.5	1.5		1.5		1.5	2.5
15	13	2.5	2.5		2.5			2.5
16	14 Stage Check	1.5	1.5					1.0
	Stage 2							
23	1	1.0	1.0	0.5				1.0
24	2	0.5	0.5	1.0				
25	3			3.5				
26	4			5.0		5.0		
27	5 Stage Check	1.0	1.0					1.0
	Stage 3							
29	1	1.0						1.5
30	2	1.5						1.5
31	3	1.0						1.0
32	4	1.0						2.0
33	5 Stage Check	1.0						1.0
	Stage 4							
37	1	1.0	1.0					1.0
38	2	1.0	1.0					1.0
39	3 End of Course Check	1.0	1.0					1.0
TOTALS	23 + 4 Stage Checks	30	24.5	10	4	5	3	35

Ground Stages Overview

Ground Stage I – Introduction to Helicopter Flying

23.0 Hours

Objective:
The objective of Stage 1 is for the student to become proficient in, and have an understanding of the Fundamentals of Helicopter Flying, Aerodynamics, Systems, Maneuvers, Emergency Procedures, Flight Physiology, Charts, Airspace and Airports.

Completion Standards:
Stage 1 is complete when the student is ready and endorsed for solo flight. Student shall score at least 80% on the Stage 1 Exam, and all deficient areas shall be reconciled to 100%. Student shall have third-class medical and student pilot certificate upon completion of this stage.

Ground Stage 2 – Cross Country and Solo Flight

2.0 Hours

Objective:
Ground stage 2 covers the Student Solo Policies, the Student Pre-Solo Test and Cross Country Solo.

Completion Standards:
Stage 2 is complete when the student has met all of their Solo and Cross Country requirements. Student shall score at least 80% on the Stage 2 Exam, and all deficient areas shall be reconciled to 100%.

Ground Stage 3 – Advanced Maneuvers

Stage 3 is not required for Part 61 Students who are getting a Private Pilot Add-on Certificate, but it is recommended if they do not have a solid understand of the material presented.
7.0 Hours

Objective:
Ground stage 3 the student continues on building their aviation skills.

Completion Standards:
Stage 3 is complete when the student has met all of their Solo and Cross Country requirements. Student shall score at least 80% on the Stage 3 Exam, and all deficient areas shall be reconciled to 100%.

Ground Stage 4 – Preparation for Checkride

Initial = 3.0 Hours

Objective:
Ground Stage 4 is set up to find the weaknesses in the students ground as determined by the instructor and strengthen them in preparation for the Private Pilot Checkride.

Completion Standards:
Stage 4 is complete when the student achieves the objective of each lesson, and can list or describe the correct process or reference for accomplishing elements, exercises and activities. Student shall score at least 80% on the Stage 4 Exam, and all deficient areas shall be reconciled to 100%. Students must take and pass the FAA Private Knowledge Exam – Rotorcraft. At the completion of this stage, student is signed off to take the Private Pilot checkride.

Flight Stages Overview

Flight Stage I – Introduction to Helicopter Flying

19.0 Hours (19hrs dual, 4hrs Dual X-Country, 3hrs Dual Night)

Objective:
The objective of Stage 1 is for the student to become proficient in, and have an understanding of the Fundamentals of Helicopter Flying, Maneuvers, Emergency Procedures, Airport operations, cross country and night flying.

Completion Standards:
Stage 1 is complete when the student has achieved the objective of each lesson and is ready and endorsed for solo flight. Student shall have third-class medical and student pilot certificate upon completion of this stage. Student must take and pass the Pre-Solo exam before their first solo.

Flight Stage 2 – Cross Country and Solo Flight

Part 141 – 7.5 Hours (2.5hrs Dual, 5hrs Solo, 2.5hrs Solo X-Country)
Part 61 – 12.5 Hours (2.5hrs Dual, 10hrs Solo, 5hrs Solo X-Country)

Objective:
Flight stage 2 covers the solo and cross country flying requirements. Student must take and pass the Pre-Solo exam before their first solo.

Completion Standards:
Stage 2 is complete when the student has met all of their Solo and Cross Country requirements, and achieves the objective of each lesson. Student should be flying at or near the Private Pilot PTS standards.

Flight Stage 3 – Advanced Maneuvers

Stage 3 is not required for Part 61 Students who are getting a Private Pilot Add-on Certificate, it is recommended if they are not at private pilot PTS standards.
5.5 Hours Dual

Objective:
Stage 3 the student will continue to in increase their helicopter flying skills.

Completion Standards:
Stage 3 is complete when the student is able to perform the maneuvers at or close to Private PTS standards.

Flight Stage 4 – Preparation for Checkride

3.0 Hours Dual

Objective:
Stage 4 will train the student to fly consistently to private pilot PTS standards.

Completion Standards:
Stage 4 is complete when the student has demonstrated all of the flight maneuvers to the PTS private pilot standards on the stage 4 flight check and the student meets all of the requirements for a private pilot and is prepared for the FAA Private Pilot checkride.

Sample Stage/Module Lesson

Stage 1/Module 1

Minimum 141 & 61 Requirements: Dual
1.0 hour flight
1.5 hours ground instruction

Ground Training

Objective:
For the student to be introduced to the Private Pilot Certification program, and learn the flight school requirements, procedures, regulations, and grading criteria. Student shall also become familiar with the atmosphere and the forces acting on a helicopter.

Content:
____ Review of course and objectives
____ School requirements, procedures, regulations
____ Grading criteria, expectations of student
____ Review objective of Stage 1
____ Weight & Balance Calculation
  ____ Calculate maximum fuel with instructor for each helicopter flown during training
____ Atmosphere
  ____ Atmospheric pressure
  ____ Air temperature
  ____ Combined effects
  ____ Moisture content
  ____ Standard atmosphere
  ____ Pressure altitude
  ____ Density altitude

The forces acting on a helicopter
____ Lift
  ____ Definitions
  ____ Lift formula
  ____ Dynamic energy
  ____ Center of pressure, Aerodynamic center
____ Drag
  ____ Drag formula
  ____ Parasite drag, Profile drag, Form drag
  ____ Skin friction
  ____ Induced drag/methods to reduce
  ____ Tip vortices
  ____ Total drag curve
____ Lift/Drag ratio
  ____ Best L/D ratio, Factors influencing L/D ratio

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading and when the student along with the instructor has performed a weight and balance calculation on each helicopter to be flown and the student completes the ***Stage 1/Module 1 Quiz on Aerodynamics***, Appendix A Page A-3 of this book.

Assignments:
Principles of Helicopter Flight, Chapters 2 – 5, ***Helicopter Flying Handbook***, Chapters 2,4,6 and 8, ***Pilot Operating Handbook (POH)***, Section 4, ***Stage 1/Module 1 Quiz on Aerodynamics***, Appendix A Page A-3 of this book.

Flight Training

Objective:
For the student to be introduced to and become familiar with preflight inspections, checklist operations, starting and taxi procedures and the function and use of the helicopter controls.

Content:
____ Preflight inspection and aircraft documents (certificates and documents, aircraft logbooks, helicopter servicing, aircraft manual)
____ Introduction to PTS and special emphasis areas
____ SFAR 73 training if applicable (see page 17)
____ Positive exchange of flight controls
____ Familiarization with helicopter
____ Starting the engine and rotor engagement
____ Checklists/system checks
____ Normal takeoff
____ Hovering
____ Hover taxi
____ Normal departure and climb
____ Effects of controls
____ Attitude and power changes — power, attitude and speed change
____ Normal approach to landing
____ Post flight procedures

Completion Standards:
This module is complete when the student can conduct the preflight with minimum assistance, properly use all checklists, start the helicopter, and operate the controls.

Assignments:
Helicopters Maneuvers Manual, Pages 2,6,10 and 28

Stage 1/**Module 1 – Ground**	Stage 1/**Module 1 - Flight**
Date of Completion: _____	Date of Completion: _____
CFI Signature: _____	CFI Signature: _____
Ground Time:	Time Flown:

Star Helicopters, LLC
Revision No: Initial
Date: May 1, 2012

Page 3

PART 141 & 61 Training Course
Principles of Helicopter Flight Syllabus
Private Pilot - STAR-PPHS

Ground and Flight Training Module - STAR-PPHS (Sample)

Ground Tracking Procedure:

Ground Record Keeping – Using the Students Master Copy of **Student Flight Record & Ground Completion Record (STAR-SFGRH)** (This is the one stored in the students file), it is recommended that you complete the Students Copy of the Training records when updating the Students Master Copy. Every ground lesson should include ground time to update the training records.

Using the **Students Principles of Helicopter Syllabus (STAR-PHFS-P)**, at the completion of each ground training session, the instructor will check off the completed contents and sign each module as they are completed.

Using the **Students Master Copy of the Student Flight Record & Ground Completion Record (STAR-SFGRH)**, at the completion of each ground training module the instructor along with the student will sign the completed module.

RETURN THE STUDENT MASTER COPIES TO THE STUDENTS FILE WHEN COMPLETED – THEY ARE NOT TO LEAVE STAR HELICOPTERS

STAR HELICOPTERS

Helicopter Ground Completion Records

Air Agency Certificate Number 45R5118L

Stage 1:

Completion Date	Ground Time	Ground Lesson	Score	Instructor Initial	Student Initial
		Module 1			
		Module 2			
		Module 3			
		Module 4			
		Module 5			
		Module 6 - Stage Check Exam CFI & CFII			
		Module 7			
		Module 8			
		Module 9 - Stage Check Exam Instrument			
		Module 10			
		Module 11 - Stage Check Exam Commercial			
		Module 12			
		Module 13			
		Module 14 - Stage Check Exam Private			

Stage 2:

Completion Date	Ground Time	Ground Lesson	Score	Instructor Initial	Student Initial
		Module 1			
		Module 2 - Pre-Solo Exam Private			
		Module 3			
		Module 4			
		Module 5 Stage Check Exam Private			
		Module 6			
		Module 7 - Stage Check Exam Instrument			
		Module 8			
		Module 9 - Stage Check Exam Check CFI			
		Module 10			
		Module 11			
		Module 12 - Stage Check Exam CFI			
		Module 13			
		Module 14			
		Module 15			
		Module 16 - Stage Check Exam Commercial			

Stage 3:

Completion Date	Ground Time	Ground Lesson	Score	Instructor Initial	Student Initial
		Module 1 - EOC Exam CFII			
		Module 2 - Stage End Instrument			
		Module 3 - Stage Check Exam Commercial			
		Module 4 -			
		Module 5 - Stage Check Exam Private			
		Module 6			
		Module 7			
		Module 8			
		Module 9			
		Module 10			
		Module 11 - EOC Exam CFI			

Stage 4:

Completion Date	Ground Time	Ground Lesson	Score	Instructor Initial	Student Initial
		Module 1			
		Module 2			
		Module 3 - EOC Exam Private			
		Module 4			
		Module 5 - EOC Exam Commercial			
		Module 6			
		Module 7			
		Module 8 - EOC Exam Instrument			

FAA Written (Photo Copy to Student file - Do not loose original will be needed for Check Ride):

Date Taken:	Written Exam Name:	Score	Instructor Initial	Student Initial

3670 W 120th Street, Hawthorne, Ca 90250
PHONE 310-355-1959 • 86-TO-FLY-STAR • FAX 310-355-1964
www.Star-Helicopters.com

Revision Date 06/01/2012

Ground Completion Records (STAR-SFGRH) (Sample)

Flight Tracking Procedure:

Flight Record Keeping – Using the Students Master Copy of **Student Flight Record & Ground Completion Record (STAR-SFGRH)** (This is the one stored in the students file), it is recommended that you complete the Students Copy of the Training records when updating the Students Master Copy. Every ground lesson should include ground time to update the training records. ***Every flight should include .2 of ground time for pre & post flight discussions & to update the training records.***

Using the **Students Principles of Helicopter Syllabus (STAR-PHFS-P)**, at the completion of each flight training session, the instructor will check off the completed contents and sign each module as they are completed.

Using the **Students Master Copy of the Student Flight Record & Ground Completion Record (STAR-SFGRH)**, at the completion of each flight the instructor and student will mark off and evaluate each maneuver completed during the flight training session. Once the Module has been completed the instructor along with the student will sign the completed module record.

RETURN THE STUDENT MASTER COPIES TO THE STUDENTS FILE WHEN COMPLETED – THEY ARE NOT TO LEAVE STAR HELICOPTERS

STAR HELICOPTERS

Helicopter Flight Completion Records

Air Agency Certificate Number 4SRS118L

Pilots Name: _____ **Student Number:** First Initial, Last Name

Part 61 ☐ Private ☐ Private - Add-On ☐ Commercial ☐ Instrument ☐ CFI ☐ CFI - Add-On ☐ CFII ☐ CFII - Add-On

Part 141 ☐ Private ☐ Commercial ☐ Instrument ☐ CFI ☐ CFI - Add-On ☐ CFII ☐ CFII - Add-On

Stage 1:

Completion Date	Flight Time	Flight Lesson	Performance S/U	Instructor Initial	Student Initial
		Module 1			
		Module 2			
		Module 3			
		Module 4			
		Module 5			
		Module 6			
		Module 7			
		Module 8			
		Module 9 - Stage Check Instrument			
		Module 10			
		Module 11 - Stage Check Commercial			
		Module 12			
		Module 13			
		Module 14 - Stage Check Private			

Stage 2:

Completion Date	Flight Time	Flight Lesson	Performance	Instructor Initial	Student Initial
		Module 1 - Pre Solo Exam			
		Module 2			
		Module 3			
		Module 4			
		Module 5 - Stage Check Private			
		Module 6			
		Module 7 - Stage Check Instrument			
		Module 8			
		Module 9 - Stage Check CFI			
		Module 10			
		Module 11			
		Module 12 - Stage Check CFII			
		Module 13			
		Module 14			
		Module 15			
		Module 16 - Stage Check Commercial			

Stage 3:

Completion Date	Flight Time	Flight Lesson	Performance	Instructor Initial	Student Initial
		Module 1 - EOC - CFI			
		Module 2 - Stage Check Instrument			
		Module 3 - Stage Check Commercial			
		Module 4			
		Module 5 - Stage Check Private			
		Module 6			
		Module 7			
		Module 8			
		Module 9			
		Module 10			
		Module 11 - EOC - CFI			

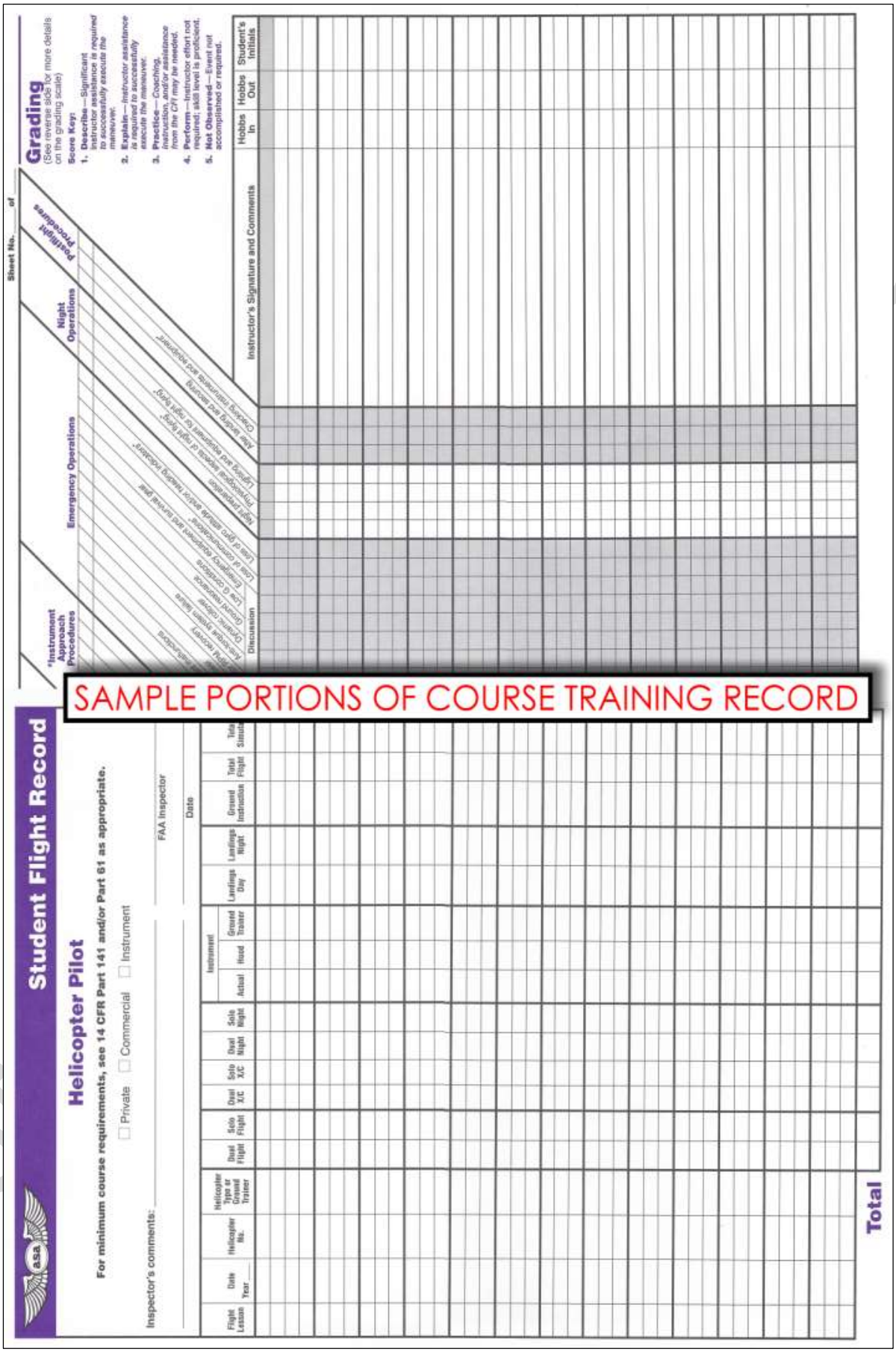
Stage 4:

Completion Date	Flight Time	Flight Lesson	Performance	Instructor Initial	Student Initial
		Module 1			
		Module 2			
		Module 3 - EOC - Private			
		Module 4			
		Module 5 - EOC - Commercial			
		Module 6			
		Module 7			
		Module 8 - EOC - Instrument			

STAR-SFGRH

3670 W 120th Street, Hawthorne, Ca 90250
PHONE 310-355-1959 • 88-TO-FLY-STAR • FAX 310-355-1964
www.Star-Helicopters.com

Student Flight Record (STAR-SFGRH) (Sample)



Student Flight Record

Helicopter Pilot

For minimum course requirements, see 14 CFR Part 141 and/or Part 61 as appropriate.

☐ Private ☐ Commercial ☐ Instrument

Inspector's comments: ______________________

FAA Inspector

Date

Flight Lesson	Date Year ___	Helicopter No.	Helicopter Type or Ground Trainer	Dual Flight	Solo Flight	Dual X/C	Solo X/C	Dual Night	Solo Night	Instrument			Landings Day	Landings Night	Ground Instruction	Total Flight	Tota Simula
										Actual	Hood	Ground Trainer					
Total																	

SAMPLE PORTIONS OF COURSE TRAINING RECORD

Sheet No. ____ of ____

*Instrument Approach Procedures

Emergency Operations

Night Operations

Postflight Procedures

- malfunctions
- RPM recovery
- Anti-torque system failure
- Dynamic rollover
- Ground resonance
- Low G conditions
- Emergency equipment and survival gear
- Loss of communications*
- Loss of gyro attitude and/or heading indicators*
- Night preparation
- Physiological aspects of night flying*
- Lighting and equipment for night flying*
- After landing and securing
- Checking instruments and equipment*

Discussion	Instructor's Signature and Comments	Hobbs In	Hobbs Out	Student's Initials

Grading

(See reverse side for more details on the grading scale)

Score Key:

1. **Describe**—Significant instructor assistance *is required to successfully execute the maneuver.*
2. **Explain**—*Instructor assistance is required to successfully execute the maneuver.*
3. **Practice**—*Coaching, instruction, and/or assistance from the CFI may be needed.*
4. **Perform**—Instructor effort not required; skill level is proficient.
5. **Not Observed**—Event not accomplished or required.

Student Flight Record (STAR-SFGRH) Flight Maneuvers (Sample)

STAR HELICOPTERS

Helicopter COURSE NAME Certification Course
Enrollment Certificate

This is to certify that

STUDENT NAME

is enrolled in the
Federal Aviation Administration approved

FAR Part 141 Rotorcraft/Helicopter
COURSE NAME Certification Course

Conducted by

Star Helicopters LLC

Air Agency Certificate Number 4SRS118L

_____ _____

Chief Instructor *Date of Enrollment*

SHFORM4 - Revision Date: 06/01/2013

Enrollment Certificate (Sample)

STAR HELICOPTERS

Helicopter COURSE NAME Certification Course
Graduation Certificate

This is to certify that

STUDENT NAME

Has successfully completed ## hours of cross-country training, all stages, tests and course requirements and has graduated from the Federal Aviation Administration approved

FAR Part 141 Rotorcraft/Helicopter
COURSE NAME Certification Course

Conducted by

Star Helicopters LLC

Air Agency Certificate Number 4SRS118L

_____ Chief Instructor

_____ Date of Enrollment

SHFORM6 - Revision Date: 06/01/2013

Graduation Certificate (Sample)

Training Course Materials

STAR HELICOPTERS

	Required Training Materials	PVT	COMM	INST	CFI	CFII
1	Principles of Helicopter Syllabus - Private (STAR-PPHS)	■				
2	Private Pilot Rotorcraft Practical Test Standards (ASA-8081-15A)	■				
3	Principles of Helicopter Flight (ASA-PHF-2)	■				
4	Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25A)	■				
5	Commercial Pilot Helicopter Syllabus (STAR-CPHS)		■			
6	Commercial Pilot and Flight Instructor Practical Test Standards (ASA-8081-16B)		■		■	
7	Instrument Rating Helicopter Syllabus (STAR-IRHS)			■		
8	Instrument Rating Practical Test Standards (ASA-8081-4E)			■		■
9	Flight Instructor Helicopter Syllabus (STAR-CFIHS)				■	
10	Flight Instructor Instrument Helicopter Syllabus(STAR-CFIIHS)					■
11	Star Helicopters Safety Procedures and Practice Manual (STAR-SPPM)	■	■	■	■	■
12	Student Flight & Ground Record (STAR-SFGR-H) = 2 Copies	■	■	■	■	■
13	Pilot Log Book (ASA-SP-30) or equivalent	■	■	■	■	■
14	Helicopter Flying Handbook (FAA-H-8083-21A)	■	■	■	■	■
15	FAR/AIM	■	■	■	■	■
16	Robinson Pilot's Operating Handbook □ R22 □ R44	■	■	■	■	■
17	Los Angeles TAC Chart (TLA)	■	■	■	■	■
18	Los Angeles Sectional Chart (SLA)	■	■	■	■	■
19	Helicopter Route Chart Los Angeles (HELLA)	■	■	■	■	■
20	Airport/Facility Directory Southwest U.S. (AFDSW)	■	■	■	■	■
21	Helicopter Maneuvers Manual (ASA-HELI-FM)	■	■		■	
22	Aviation Weather Handbook (AC 00-6A)	■	■	■	■	■
23	Aviation Weather Services (AC 00-45D)	■	■	■	■	■
24	Instrument Flying Handbook (ASA-8083-15A)		■	■	■	■
25	Aviation Instructors Handbook (FAA-H-8083-9A)				■	■
26	Approach Plates			■		■

	Recommended Training Materials					
27	Pre-Flight and Startup/Shutdown Checklist □ R22 □ R44	■	■	■	■	■
28	Flight Computer (E6B or CX-2 Pathfinder or equivalent)	■	■	■	■	■
29	Ultimate Rotating Plotter CP-RLX (or equivalent)	■	■	■	■	■
30	Kneeboard 9-G	■	■	■	■	■
31	Dauntless FAA Knowledge Test Preparation Software	■	■	■	■	■
32	Star Helicopters Private Practical Test Standards – Study Guide	■				
33	Star Helicopters Commercial Practical Test Standards – Study Guide		■			
34	Robinson R22/R44 Safety Awareness DVD (RHC P/N R7943-1)	■	■	■	■	■
35	Private Pilot Guided Flight Discovery	■	■	■	■	■
36	Oral Exam Guide	■	■	■	■	■

3670 W 120th Street, Hawthorne, CA 90250
PHONE 310-355-1959 • 88-TO-FLY-STAR • FAX 310-355-1964
www.Star-Helicopters.com

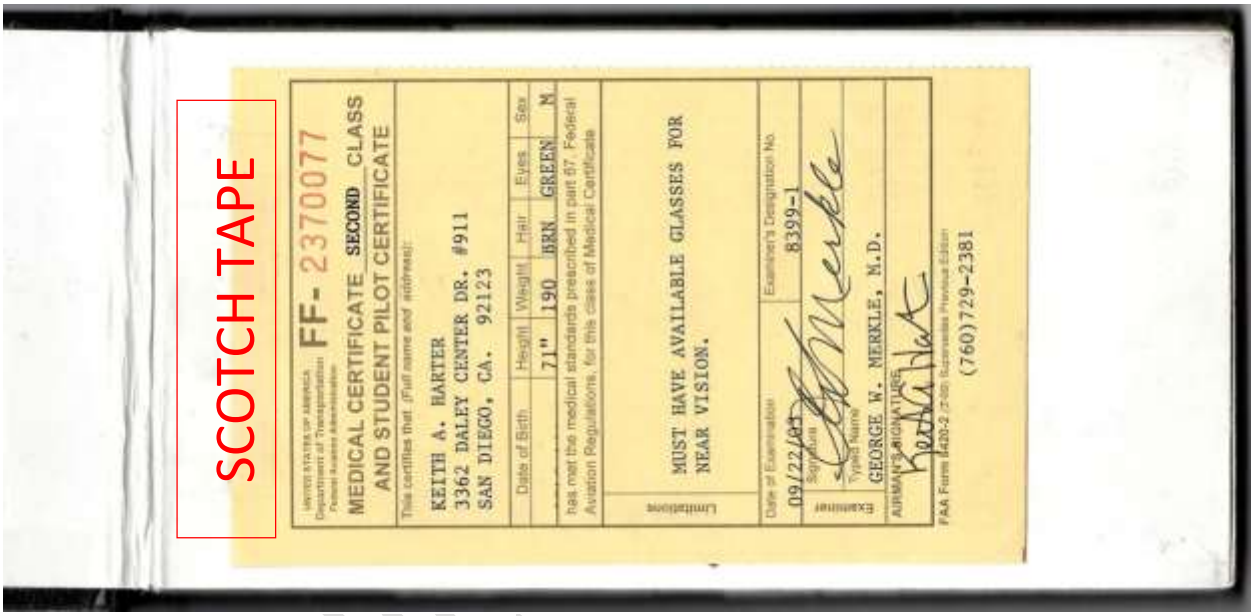
LOGBOOK ENDORSEMENTS

The proper use of endorsements

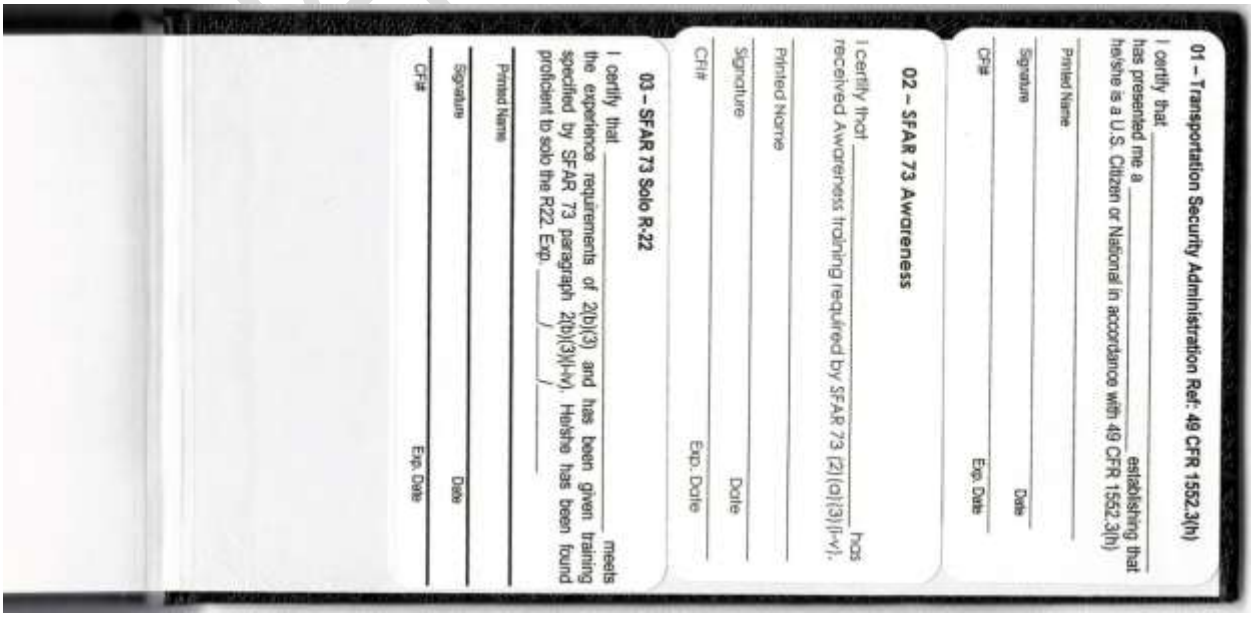
The following example should be used when adding endorsements to the student's logbook. Using this method will result in a neat and organized logbook and will allow you to quickly notice if any endorsements have been skipped.

All logbook entries should be made in black ink and they should be neat and legible. The first few entries should be made by the instructor. The student should be making the rest of the entries and the instructor should review the entry and then sign it.

The student should sign, total the hours on each page and carry forward the hours in their logbook as they complete each page.



Medical Certificate and Student Pilot Certificate - Open Logbook and tape the top of the medical certificate to the first page (Sample)



Endorsements - Starting on the last page (back cover) of the logbook, apply each endorsement as needed working towards the front of the logbook (Sample)

ENGLISH LANGUAGE PROFICIENCY

Flight Training Requirements

It is a FAR requirement that a student read, speak, write and understand the English language in order to obtain a certificate or rating.

Prior to conducting flight and ground training the instructor must insure that the student is proficient in the English language. Once the instructor has determined that the student meets the English proficiency requirements the following endorsement must be added to the students logbook.

00 – English Language Proficiency: 61.103(c), 61.123(b), 61.153(b) and AC 60-28

I certify that_____
reads, speaks, writes, and understands the English language.
In accordance with 61.103.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

00-English Language Proficiency (Sample)

TRANSPORTATION SECURITY ADMINISTRATION (TSA)

Flight Training Requirements

The following Information must be completed for students who wish to conduct flight training in an aircraft weighing less than 12,500 lbs.

Prior to any flight training you must complete the following to determine the student's eligibility to begin flight training.

Is the student a U.S. Citizens or National Seeking Flight Training? If "Yes" go to step "ONE", if "No" go to step "TWO"

STEP ONE - U.S. Citizen (or National)

The following Information is for U.S. citizens who wish to conduct flight training in an aircraft weighing less than 12,500 lbs. Applicability and Proof of citizenship/citizenship verification

Before a U.S. citizen can begin flight training toward an initial FAA pilot certificate, recreational, sport pilot, or private pilot certificate; instrument rating; or multiengine rating, a CFI must verify citizenship.

1. Determine applicability. The requirements for determining citizenship status for any student, whether U.S. or alien, applies only to flight training towards an initial FAA pilot certificate, including a recreational pilot, sport pilot, or private pilot certificate; instrument rating; or multiengine rating.
2. Proof of citizenship. Student must show evidence of U.S. citizenship to instructor with one of the following:
   1. Valid, unexpired U.S. passport
   2. Original or government-issued birth certificate of the U.S., American Samoa, or Swains Island AND a government-issued picture ID
   3. Original certificate of birth abroad with raised seal (Form FS-545 or DS-1350) AND a government-issued picture ID
   4. Original certificate of U.S. citizenship with raised seal (Form N-560 or N-561) or a Certificate of Repatriation (Form N-581) AND government-issued pictured ID
   5. Original U.S. Naturalization Certificate with raised seal (Form N-550 or N-570) AND a government-issued picture ID
3. Logbook or record-keeping requirements. An instructor must do one of the following:
   1. Keep a copy of the documents used to provide proof of citizenship for five years
   2. Make an endorsement in the instructor's logbook or other record used by the instructor to record flight student endorsements AND the student's logbook with the following endorsement:

01 – Transportation Security Administration
U.S. Citizens (or National) Ref: 49 CFR 1552.3(h)

I certify that _____
has presented me a _____ establishing that
he/she is a U.S. Citizen or National in accordance with 49 CFR 1552.3(h)

_____
CFI Printed Name

_____
CFI Signature Date

_____
CFI# Exp. Date

01-Transportation Security Administration – U.S. Citizen (or National) (Sample)

4. Students who change flight schools and/or locations will be required to prove citizenship and receive a logbook endorsement. Recurring logbook endorsements are required when students change flight schools or instructors (if the instructor did not know the student when the student received the initial logbook endorsement).

STEP TWO - Aliens (Non-U.S. Citizens)

The following Information is for Aliens (Non-U.S. Citizens) who wish to conduct flight training in an aircraft weighing less than 12,500 lbs.

Before an Alien (Non-U.S. Citizen) can begin flight training toward an initial FAA pilot certificate, recreational, sport pilot, or private pilot certificate; instrument rating; or multiengine rating, The following TSA steps must be completed and final approval granted from TSA before flight training can begin. Step by Step instructions can be found at www.flightschoolcandidates.gov

A. **Verify that you have an appropriate visa.**
B. **Notify the flight school that you want to begin taking flight training.**
C. **Ensure that you have a valid email address.**
D. **Create a login account at TSA's AFSP website.**
E. **Apply for training on TSA's AFSP website**
F. **Wait for the flight school to acknowledge your training request.**
G. **Pay the nonrefundable $130 processing fee per instructions emailed to you.**
H. **Look for a "Preliminary Approval" email from TSA.**
I. **Submit fingerprints to TSA per the instructions emailed to you.**
J. **Wait for TSA to notify you and the flight school of its decision.**
K. **Once you have received TSA approval, START FLIGHT TRAINING!**

Once you have received permission to train, you have 180 days to begin training and 365 days to complete the approved training. Both of these time periods start from the day you receive approval. For example, if you begin flight training 30 days after you have been approved, you now have 335 days to finish. If you do not finish, a new training request must be submitted.

Have your photo taken by the flight school when you arrive for the first day of flight training.

1. Logbook or record-keeping requirements. An instructor must do one of the following:
   1. Keep a copy of the passport used to complete the TSA application for five years
   2. Make an endorsement in the instructor's logbook or other record used by the instructor to record flight student endorsements AND the student's logbook with the following endorsement:

01a – Transportation Security Administration
Aliens (Non-U.S. Citizens) Ref: 49 CFR 1552.3(h)

I certify that _____
has completed the TSA application for Flight Training and has received TSA Final Approval to begin flight training beginning on Date _____, Training must be completed within 365 days of the approval date.

_____
CFI Printed Name

_____
CFI Signature Date

_____
CFI# Exp. Date

01a-Transportation Security Administration – Aliens (Non-U.S. Citizens) (Sample)

SFAR 73 – Instruction in Robinson Helicopters

SFAR 73 requires that specific training requirements be met for pilots of R22 and R44 helicopters.

1. **Awareness Training.** Awareness training must be given by an endorsed instructor prior to manipulating the controls.

   The instruction must consist of:
   - Energy management
   - Mast bumping
   - Low rotor RPM (blade stall)
   - Low G hazards
   - Rotor RPM decay

   Instructor's note: Use the following endorsement when signing off students for awareness training:

02 – SFAR 73 Awareness Training

I certify that_____ has received Awareness training required by SFAR 73 (2)(a)(3)(i-v).

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

02-SFAR 73 Awareness Training (Sample)

2. Solo endorsement. Specific requirements must be met within 90 days prior to solo flight (for non-helicopter rated pilots). See SFAR 73 and the pre-solo endorsement for Robinson pilots on page 17.

Training must include:

- 20 hours dual in same model Robinson
- Enhanced training in autorotation procedures
- Engine rotor RPM control without the use of the governor
- Low rotor RPM recognition and recovery
- Effects of low G maneuvers and proper recovery procedures

Instructor's note: Use one of the following endorsements when signing off students to Solo:

03 – SFAR 73 Solo R-22

I certify that _____ meets the experience requirements of 2(b)(3) and has been given training specified by SFAR 73 paragraph 2(b)(3)(i-iv). He/she has been found proficient to solo the R22. Exp. _____/_____/_____

Printed Name

Signature Date

CFI# Exp. Date

04 – SFAR 73 Solo R-44

I certify that _____ meets the experience requirements of 2(b)(4) and has been given training specified by SFAR 73 paragraph 2(b)(4)(i-iv). He/she has been found proficient to solo the R44. Exp. _____/_____/_____

Printed Name

Signature Date

CFI# Exp. Date

03-SFAR 73 Solo R-22 or 04-SFAR 73 Solo R44 – (Use the appropriate endorsement)
(Sample)

I have been given a copy of the Star Helicopters LLC

Principles of Helicopter Flight Private Pilot Syllabus (STAR-PPHS)
and the
Safety Procedures and Practices Manual

I have read and understand and agree to comply with the instructions, procedures, terms and conditions set forth in the Star Helicopters LLC

Principles of Helicopter Flight Private Pilot Syllabus (STAR-PPHS)
and the
Safety Procedures and Practices Manual

_____

Student Signature

_____

Printed Name **Date**

Place signed copy in student folder

Principles of Helicopter Flight Syllabus Private Pilot

Flight & Ground Training Course

Stage 1
Introduction to Helicopter Flying

Objective

The objective of Stage 1 is for the student to become proficient in, and have an understanding of the following:

Ground Training

- Course objective
- School requirements, procedures and regulations
- Grading criteria
- Forces acting on a helicopter
- Stability and control
- Training helicopter (airframe, engine, systems, flight instruments)
- Basic flight maneuvers
- Flight information
- Basic weather theory
- Emergency and hazardous conditions
- Aeromedical factors
- Flight physiology
- Regulations

Flight Training

- Flight training process
- Training helicopter
- Preflight
- "Special Emphasis Areas" (per PTS)
- Taxiing
- Four basics of flight (straight and level, turns, climbs, descents)
- Hovering
- Autorotations
- Use of sectional
- Airspace
- Collision avoidance
- Emergencies
- Steep Turns
- Night Flying
- Cross Country Flying

Completion Standards:

Stage 1 is complete when the student is ready and endorsed for solo flight. Student shall score at least 80% on the Stage 1 Exam, and all deficient areas shall be reconciled to 100%. Student shall have third-class medical and student pilot certificate upon completion of this stage.

Stage 1/**Module 1**

Minimum 141 & 61 Requirements: Dual
1.0 hour flight
1.5 hours ground instruction

Ground Training

Objective:
For the student to be introduced to the Private Pilot Certification program, and learn the flight school requirements, procedures, regulations, and grading criteria. Student shall also become familiar with the atmosphere and the forces acting on a helicopter.

Content:
_____ Review of course and objectives
_____ School requirements, procedures, regulations
_____ Grading criteria, expectations of student
_____ Review objective of Stage 1
_____ Weight & Balance Calculation
- _____ Calculate maximum fuel with instructor for each helicopter flown during training

_____ Atmosphere
- _____ Atmospheric pressure
- _____ Air temperature
- _____ Combined effects
- _____ Moisture content
- _____ Standard atmosphere
- _____ Pressure altitude
- _____ Density altitude

The forces acting on a helicopter
_____ Lift
- _____ Definitions
- _____ Lift formula
- _____ Dynamic energy
- _____ Center of pressure, Aerodynamic center

_____ Drag
- _____ Drag formula
- _____ Parasite drag, Profile drag, Form drag
- _____ Skin friction
- _____ Induced drag/methods to reduce
- _____ Tip vortices
- _____ Total drag curve

_____ Lift/Drag ratio
- _____ Best L/D ratio, Factors influencing L/D ratio

Completion Standards:
This lesson is complete when the student has successfully completed all review questions following the assigned reading and when the student along with the instructor has performed a weight and balance calculation on each helicopter to be flown and the student completes the ***Stage 1/Module 1 Quiz on Aerodynamics***, Appendix A Page A-2 of this book.

Assignments:
Principles of Helicopter Flight, Chapters 2 – 5, ***Helicopter Flying Handbook***, Chapters 2,4,6 and 8, ***Pilot Operating Handbook (POH),*** Section 4, ***Stage 1/Module 1 Quiz on Aerodynamics***, Appendix A Page A-2 of this book.

Flight Training

Objective:
For the student to be introduced to and become familiar with preflight inspections, checklist operations, starting and taxi procedures and the function and use of the helicopter controls.

Content:
_____ Preflight inspection and aircraft documents (certificates and documents, aircraft logbooks, helicopter servicing, aircraft manual)
_____ Introduction to PTS and special emphasis areas
_____ SFAR 73 training if applicable (see page 17)
_____ Positive exchange of flight controls
_____ Familiarization with helicopter
_____ Starting the engine and rotor engagement
_____ Checklists/system checks
_____ Normal takeoff
_____ Hovering
_____ Hover taxi
_____ Normal departure and climb
_____ Effects of controls
_____ Attitude and power changes — power, attitude and speed change
_____ Normal approach to landing
_____ Post flight procedures

Completion Standards:
This module is complete when the student can conduct the preflight with minimum assistance, properly use all checklists, start the helicopter, and operate the controls.

Assignments:
Helicopters Maneuvers Manual, Pages 2,6,10 and 28

Stage 1/**Module 1 – Ground**	Stage 1/**Module 1 - Flight**
Date of Completion: _____	Date of Completion: _____
CFI Signature: _____	CFI Signature: _____
Ground Time:	Time Flown:

Stage 1/**Module 14**
Stage Check

Minimum 141 & 61 Requirements: Dual Cross Country
2.5 hour flight (Day – XC)
2.5 hour ground instruction

Flight Training

Lesson Time: Dual 1.5 hour flight, or whatever is necessary to meet objective
1.0 hour ground instruction, or whatever is necessary to meet objective

Objective: For the chief instructor, assistant chief instructor or the designated check instructor to review the student's progress is satisfactory, training can progress to stage 2 and solo operations.

Content:

_____ Obtaining weather
_____ Preflight inspection and aircraft documents
_____ Cockpit management
_____ Radio communication and ATC light signals
_____ Pre-takeoff checks
_____ Surface taxi
_____ Hover taxi
_____ Air taxi
_____ Normal and crosswind takeoffs and landings
_____ Straight and level flight; turns in both directions
_____ Straight-in autorotation with power recovery
_____ Climbs and climbing turns
_____ Airport traffic patterns
_____ Power failure
_____ Settling with power
_____ Low rotor rpm recovery
_____ Rapid decelerations
_____ Partial power failure
_____ Collision avoidance, wake turbulence
_____ Equipment malfunctions
_____ Go-arounds
_____ Postflight

Completion Standards::
This module is complete when the student can conduct the flight tasks competently enough to leave the pattern. Altitude should be within 150 feet, heading 15 degrees and airspeed 15 knots throughout maneuvering. During hover, altitude should be within 5 feet and ground track kept within 5 feet. Autorotation maneuvers should be stopped within 150 feet of a specified point.

Stage 1/**Module 14 Stage - Exam and Stage Check**
Date of Completion: _____
Chief Instructor Signature: _____
Time Flown: _____
Ground Time: _____
Stage Exam Score: _____
Stage Check Successful:

Stage 2
Solo Practice and Solo Cross-Country Flight

Objective
The objective of Stage 2 is for the student to gain knowledge and experience in the following:

The Pre-Solo test must be taken, corrected to 100% and a copy placed in their student file before the student's first solo.

Ground Training
- Flight planning
- Radio navigation: VOR, ADF, radar, transponder, DME, RNAV
- Enroute navigation
- Flight Computer

Flight Training
- Pre-cross-country maneuvers (per 14 CFR §61.93)
- Cross-country flight planning
- The required solo and solo cross-country time

Completion Standards:
Stage 2 is complete when the student has met all of their Solo and Cross Country requirements. Achieves the objective of each lesson, and can list or describe the correct process or reference for accomplishing elements, exercises and activities. Student shall score at least 80% on the Stage 2 Exam, and all deficient areas shall be reconciled to 100%.

Stage 2
Required Solo Endorsements

Some or all of the following endorsements will be required prior to any solo flights. Please make sure you are using the correct endorsements prior to each solo flight, depending on the type of solo being conducted and the aircraft being flown. Make sure you are using the following weather minimums on each endorsement. **DO NOT USE ENDORSMENT 09-Repeated Cross Country Route** without permission from Chief Flight Instructor.

Weather Minimums

- **Solo Flights:** The weather minimums for solo flights will be as shown in the following chart.

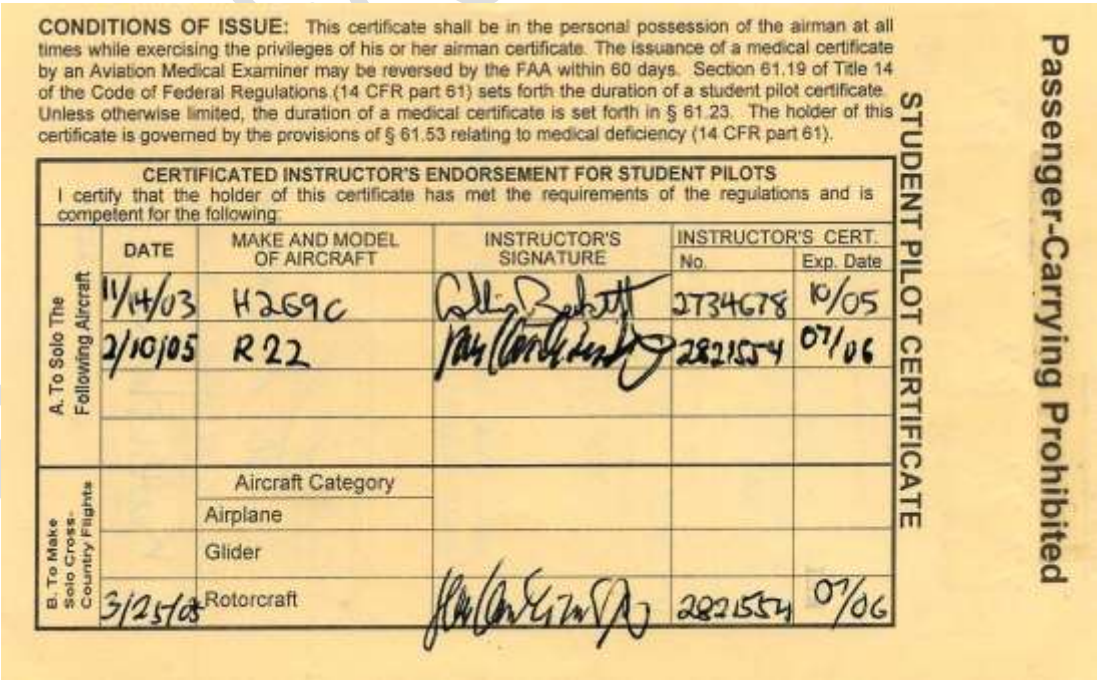
First Solo

	Ceiling	Visibility	Wind
Hovering	1000 feet	3 miles	10 knots or less, No Gusts
Traffic Pattern	1000 feet	3 miles	10 knots or less, No Gusts

Solo Advanced

	Ceiling	Visibility	Wind
Traffic Pattern	1000 feet	3 miles	10 knots or less, No Gusts
Local Flight	1000 feet	3 miles	10 knots or less, No Gusts
Airport to Airport	1500 feet	5 miles	10 knots or less, No Gusts
Cross Country	1500 feet	5 miles	10 knots or less, No Gusts

Cross Country Solo weather must be forecast to be VFR at time of departure and two (2) hours after the estimated time of arrival at final destination.



CONDITIONS OF ISSUE: This certificate shall be in the personal possession of the airman at all times while exercising the privileges of his or her airman certificate. The issuance of a medical certificate by an Aviation Medical Examiner may be reversed by the FAA within 60 days. Section 61.19 of Title 14 of the Code of Federal Regulations (14 CFR part 61) sets forth the duration of a student pilot certificate. Unless otherwise limited, the duration of a medical certificate is set forth in § 61.23. The holder of this certificate is governed by the provisions of § 61.53 relating to medical deficiency (14 CFR part 61).

STUDENT PILOT CERTIFICATE

Passenger-Carrying Prohibited

CERTIFICATED INSTRUCTOR'S ENDORSEMENT FOR STUDENT PILOTS

I certify that the holder of this certificate has met the requirements of the regulations and is competent for the following:

	DATE	MAKE AND MODEL OF AIRCRAFT	INSTRUCTOR'S SIGNATURE	INSTRUCTOR'S CERT. No.	Exp. Date
A. To Solo The Following Aircraft	11/14/03	H269C	[illegible]	2734678	10/05
	2/10/05	R22	[illegible]	2821554	07/06
B. To Make Solo Cross-Country Flights		Aircraft Category			
		Airplane			
		Glider			
	3/25/03	Rotorcraft	[illegible]	2821554	07/06

Student Pilot Certificate – Must endorse for initial Solo and for initial Cross Country solo (Sample)
A solo log book entry is required every 90 days. ***A Private Add-on student will not have a Student Pilot Certificate.***

03 – SFAR 73 Solo R-22

I certify that _____ meets the experience requirements of 2(b)(3) and has been given training specified by SFAR 73 paragraph 2(b)(3)(i-iv). He/she has been found proficient to solo the R22. Exp. _____/_____/_____

Printed Name

Signature Date

CFI# Exp. Date

04 – SFAR 73 Solo R-44

I certify that _____ meets the experience requirements of 2(b)(4) and has been given training specified by SFAR 73 paragraph 2(b)(4)(i-iv). He/she has been found proficient to solo the R44. Exp. _____/_____/_____

Printed Name

Signature Date

CFI# Exp. Date

03-SFAR 73 Solo R-22 or 04-SFAR 73 Solo R44 – Use the appropriate endorsement (Sample)

05 - Solo Flight ***(Expires 90 days from date below)***

I have given _____ the flight instruction required by FAR 61.87 (c). He/she has demonstrated proficiency in the applicable maneuvers and procedures listed in FAR 61.87 (f) and is competent to make safe solo flights in a _____. Limitations are as follows: _____

Printed Name

Signature Date

CFI# Exp. Date

05-Solo Flight – Valid for 90 days, must re-endorse after 90 days (Sample)

06 – Solo at another airport within 25 nm

I certify that _____ has received the required training of 61.93 (b)(1). I have determined that he/she is proficient to practice solo takeoffs and landings at _____. The takeoffs and landings at _____ are subject to the following conditions:_____

Printed Name

Signature Date

CFI# Exp. Date

06 – Solo at another airport within 25 nm (Sample)

07 – Initial Solo Cross Country

I certify that _____ has received the required solo cross-country training. I find he/she has met the applicable requirements of 61.93 and is proficient to make solo cross-country flights in a _____.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

07-Initial Solo Cross Country – Use for initial Solo Cross Country Flight (Sample)

08 – Cross Country Route

I have reviewed the cross country planning of _____. I find the planning and preparation to be correct to make the solo flight from _____ to _____ via _____ with landing at _____ in a _____ on ____/____/_____. Limitations: _____.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

08-Cross Country Route – Use for all additional Solo Cross Country Flights (Sample)

09 - Repeated Cross Country Route

I certify that _____ has received the required training in both directions between and at both_____/_____. I have determined that he/she is proficient of 61.93 (b)(2) to conduct repeated solo cross-country flights over that route, subject to the following limitations: _____

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

09-Repeated Cross Country Route – DO NOT USE THIS ENDORSMENT without permission from Chief Flight Instructor (Sample)

Student Solo Policy

The following Solo Cautions and Policies must be observed at all times during all Solo Flights. All solo flights are supervised, CFI to remain at heli pad for all Hover and Traffic pattern solo's and CFI to remain at Star Helicopters during Airport to Airport and Cross Country solo's.

Hover Solos are only permitted at TOA North Pad and LGB Pads 1 thru 4.

Traffic Pattern Solos are only permitted at TOA North Pad and LGB Pads 1 thru 4.

Cross Country Solos are only permitted at HHR, AJO and F70

HOVER AND TRAFFIC PATTERN SOLOS ARE NOT PERMITED AT HHR

Solo Cautions & Policies

- Pre-Solo test must be taken, corrected to 100% and a copy placed in the student file.
- Passengers will not be carried on any student pilot solo flights.
- The student must complete a weight and balance calculation prior to each solo flight and must determine that the aircraft is within CG during all phases of flight.
- The student must check all performance charts to insure that the aircraft is within the performance limitations for all phase of flight (OGE Hover, IGE Hover, Manifold Pressure Limitation, Airspeed limitations).
- Solo Night flights will not be allowed. All solo flights must be back at Star Helicopters, LLC no later than one hour prior to official sunset.
- Solo flights are not allowed at Torrance during Robinson Safety Course week.
- DUAL CONTROLS MUST BE REMOVED for all Cross Country and Airport to Airport solo's.
- Check Weather & file flight plan before each cross country flight with FAA. CFI to review and initial.
- Day VFR, Wind < 10 knots 0 gusts, forecasted for 2 hours beyond arrival time back at HHR.
- No Emergency Procedure training is allowed (Auto's, Quickstops, Running Landings, Settling with Power, Slopes, Hover Auto's, Governor Off Training, Low Rotor RPM Training, etc.).
- No off airport landings are allowed except for emergencies.
- No LAX Transitions.
- No taking pictures during flight, keep your camera under your seat.
- No cell phone calls during flight, keep your cell phone under your seat.
- Watch for traffic!
- Maintain enough altitude from obstacles at all times. Stay at least 500 feet AGL.
- Return or land at a safe area if weather is bad. Do not continue the flight.
- Perform a preflight check before all engine startup's.
- Never release right hand from cyclic in solo.
- Watch for tower on North Arrival/North Departure to/from TOA and Tower West of FUL.
- Stay clear of Disney TFR.
- No solo at TOA when RHC is having the safety course.
- Traffic pattern at TOA is allowed only at North pad.
- No landing at pads 5 or 6 at LGB on solo flights. No solo at LGB if runway active is other than 30.
- Do not remove left door.
- Non-Cross Country solo practice is limited to a maximum of 2 hours per day, unless permission is given by the Chief Flight Instructor.

I Understand and agree to all of the above Solo Policies during all solo flights.

_____
Student Signature

_____
Printed Name

_____
Date

I have reviewed the above policies with the student. They understand the Solo and they are prepared to make their required solo flights.

_____
CFI Signature

_____
Printed Name

_____
Date

Student Solo/Rental Insurance Agreement

The student must complete and sign the Star Helicopters Solo/Rental Insurance Agreement forms and pay for their solo Insurance prior to any solo flights.

Solo Insurance Agreement Signed on: _____ _____
Date CFI Signature

Solo Insurance Paid for on: _____ _____
Date CFI Signature

Pre-Solo Written Test

The Pre-Solo written test must be taken, corrected to 100% and a copy placed in the Student file before they do any solo flights.

Stage 2/**Module 1**

Minimum 141 & 61 Requirements: Dual
1.0 hours flight
Solo
0.5 hours flight (Hovering)
1.0 hours ground instruction

Ground Training

Objective: To conduct a pre-solo briefing and complete, grade and review the pre-solo exam.

Content:
_____ Solo limitations
_____ Star Helicopter Solo Policy & Procedures
_____ Pre-solo exam
_____ Instructor endorsement

The following maneuvers are not allowed to practice during Solo flights.
_____ Autorotation's
_____ Hover auto's
_____ Simulated forced landing
_____ Simulated engine failures
_____ Settling with power
_____ Low rotor RPM recovery
_____ Low G maneuvers
_____ Quick stops
_____ Slopes
_____ Off airport maneuvers
_____ Governor Off
_____ Running Landing/Takeoffs

Completion Standards:
This lesson is complete when the student has passed the ***Stage 2/Module 1 Pre-Solo Exam***, Appendix A Page A-33 of this book with a minimum score of 80%, and reconciled to 100% and Student has watched the Robinson Safety Awareness Video.

Assignments:
Watch the ***Robinson Safety Awareness Course*** video, ***Stage 2/Module 1 Pre-Solo Exam***, Appendix A Page A-33 of this book with a minimum score of 80%, and reconciled to 100%.

Flight Training

Objective: Prior to this module the student will have passed the pre-solo written test. The intent of this module is for the student to conduct a supervised hover solo flight.

Hover solo flights are permitted at TOA or LGB.

Content:
Dual flight
_____ Obtaining weather(Go/no go)
_____ Verify the requirements of SFAR 73 2(b)(3) have been met (if applicable)
_____ Preflight
Solo Flight
_____ Vertical takeoff to a hover
_____ Stationary hover
_____ Hover turns
_____ Hover taxi
_____ Vertical landing from a hover

Completion Standards:
This module is complete when the student is signed off for solo work and the student has successfully completed their first hover solo flight. Traffic pattern operations are now permitted at the instructor's recommendation.

Assignments:
Helicopters Maneuvers Manual, Pages 12, 13, 16, 17 and 22, 23

Stage 2/**Module 1 - Ground**	Stage 2/**Module 1 - Flight**
Date of Completion: _____	Date of Completion: _____
CFI Signature: _____	CFI Signature: _____
Ground Time:	Time Flown:

Stage 2/**Module 3**

Minimum 141 Requirements: Solo
1.0 hours flight (Airport)
Minimum 61 Requirements: Solo
3.5 hours flight (Airport)
0.0 hours ground instruction

Flight Training

Objective: In this module the student will continue practicing instructor assigned maneuvers in addition to an Airport to Airport solo. The flight tasks listed represent options for the instructor to choose from in assigning the maneuvers. These may vary depending upon weather, student proficiency or other factors.

The solo flights maybe broken down into several different solo flights.

Airport to Airport solo flights are permitted to TOA or LGB.

Content:
The following maneuvers are not allowed to practice during Solo flights.
_____ Autorotation's
_____ Hover auto's
_____ Simulated forced landing
_____ Simulated engine failures
_____ Settling with power
_____ Low rotor RPM recovery
_____ Low G maneuvers
_____ Quick stops
_____ Slopes
_____ Off airport maneuvers
_____ Governor Off
_____ Running Landing/Takeoffs

Content:
_____ Vertical takeoff to a hover
_____ Stationary hover
_____ Hover turns
_____ Hover taxi
_____ Sideways Hovering
_____ The Box Pattern
_____ Nose Around a point
_____ Turning about the rotor mast axis
_____ Surface taxi
_____ Hover taxi
_____ Air taxi
_____ Normal and crosswind takeoffs and landings
_____ Traffic Patterns operations
_____ Climbs and normal approaches
_____ Go-arounds
_____ Vertical landing from a hover

Completion Standards::
This module is complete when the student has successfully completed the solo flight. Solo operations away from the traffic pattern are now permitted at the instructor's recommendation.

Stage 2/**Module 3**
Date of Completion: _____
CFI Signature: _____
Time Flown:

Stage 2/**Module 5**
Stage Check

Minimum 141 & 61 Requirements: Stage Check
1 .0 hour flight
1.0 hour ground

Flight Training

Lesson Time: Dual 1.0 hour flight, or whatever is necessary to meet objective
1.0 hour ground instruction, or whatever is necessary to meet objective

Objective: For the chief instructor, assistant chief instructor or the designated check instructor to review the student's ability to adequately prepare for and fly cross-country. The evaluation should include the student's ability to properly divert to an alternate as well as handle in-flight emergencies.

Content:

_____ Cross-country planning
- _____ Publications
- _____ Performance
- _____ Weather information and analysis
- _____ Plotting course/use of charts
- _____ Flight log
- _____ Filing flight plan
- _____ Flight computer
- _____ Weight and balance

_____ Preflight
_____ Cockpit management
_____ Aeronautical decision making
_____ Cross-country flight
- _____ Departure
- _____ Flight log use
- _____ Navigation
- _____ Radio communications
- _____ Postflight

_____ Emergencies including lost communication
_____ Diversion procedures
_____ Lost procedures
_____ Collision avoidance
_____ Postflight

Completion Standards:
This module is complete when the student has Private Pilot proficiency at cross-country operations. Flight must be within 200 feet, 15 degrees, and 10 knots at all times. Flight must be within 5 minutes of ETA and 3 NM of route throughout.

Stage 2/**Module 5 - Exam and Stage Check**
Date of Completion: _____
Chief Instructor Signature: _____
Time Flown: _____
Ground Time: _____
Stage Exam Score: _____
Stage Check Successful:

Stage 3
Advanced Maneuvers

Stage 3 is not required for Part 61 Students who are getting a Private Pilot Add-on Certificate.

Objective
In this stage the student begins building on the foundation of basic skills. Stage 3 flight training focuses on advanced maneuvers with some review of primary maneuvers as necessary.

Ground Training
- Flying for range and endurance
- Stability
- Weather reports and forecasts
- Regulations

Flight Training
- Maximum performance takeoffs and landing
- Advanced technique takeoffs and landings
- Emergency conditions

Completion Standards:
Stage 3 is complete when the student achieves the objective of each lesson and can list or describe the correct process or reference for accomplishing elements, exercises and activities. Students shall score at least 80% on the Stage 3 exam with all deficient areas reconciled to 100%.

Stage 3/**Module 1**

Minimum 141 & 61 Requirements: Dual
1.0 hour flight
1.5 hours ground instruction

Ground Training

Objective: To introduce the student to the Federal Aviation Regulations with emphasis on how the regulations are organized and how to find information. The instructor should also identify which parts are required for Private Pilot Rotorcraft knowledge.

Content:
_____ FAR publication
_____ 14 CFR Part 1
_____ 14 CFR Part 61
_____ 14 CFR Part 91

Completion Standards:
This lesson is complete when the student completes the ***Stage 3/Module 1 Quiz on Regulations***, Appendix A Page A-43 of this book.

Assignments:
FAR *14 CFR*, Parts 1, 61 and 91, ***Pilot Operating Handbook (POH),*** Section 3, ***Stage 3/Module 1 Quiz on Regulations***, Appendix A Page A-43 of this book.

Flight Training

Objective: This lesson will focus on systems emergencies and equipment malfunctions. The student will also continue practicing previously learned emergency operations in preparation for solo flight.

Content:
_____ Obtaining weather(Go/no go)
_____ Preflight
_____ Vertical takeoffs and landings
_____ Normal takeoff and climb
_____ Normal approach
_____ Straight-in autorotation with power recovery
_____ Power failure at a hover
_____ Partial power failure
_____ Systems emergencies
- _____ Engine/oil and fuel
- _____ Power train failure
- _____ Hydraulic, if applicable
- _____ Electrical
- _____ Carburetor or induction icing
- _____ Smoke and/or fire
- _____ Pitot static/vacuum and associated flight instruments, if applicable
- _____ Abnormal vibrations
- _____ Warning lights

_____ Other emergencies specific to the training helicopter
_____ Postflight

Completion Standards:
This module is complete when the student performs the correct emergency procedures for the items listed, exhibits basic troubleshooting knowledge and executes recovery actions as needed. Flight must be maintained within 200 feet, 15 degrees and 15 knots. Autorotation airspeed should be within 10 knots.

Assignments:
Helicopters Maneuvers Manual, Page 84

Stage 3/**Module 1 - Ground**	Stage 3/**Module 1 - Flight**
Date of Completion: _____	Date of Completion: _____
CFI Signature: _____	CFI Signature: _____
Ground Time:	Time Flown:

Stage 3/**Module 5**
Stage Check

Minimum 141 & 61 Requirements: Stage Check
1 .0 hour flight
1.0 hour ground

Flight Training

Lesson Time: Dual 1.0 hour flight, or whatever is necessary to meet objective
1.0 hour ground instruction, or whatever is necessary to meet objective

Objective: For the chief instructor, assistant chief instructor or the designated check instructor to review the student's progress. If student performance is satisfactory, training can progress to Stage 3 for cross-country training.

Content:

_____ Preflight
_____ Maximum performance takeoff and climb
_____ Slope operations
_____ Confined area operations
_____ Pinnacle/platform operations
_____ Collision avoidance
_____ Rolling takeoff (wheels)
_____ Running takeoff
_____ Steep approach
_____ 180 degree autorotation
_____ Shallow approach and running/roll-on landing
_____ Rapid deceleration
_____ Emergencies
- _____ Retreating blade stall
- _____ Dynamic rollover
- _____ Ground resonance
- _____ Low G conditions
- _____ Low rotor rpm and blade stall

_____ Go-around
_____ Postflight

Completion Standards::
This module is complete when the student performs the maneuvers using proper procedures. Straight and level maneuvering altitude should be kept within 150 feet, heading 10 degrees and airspeed 10 knots. During hover, altitude should be kept within 5 feet and ground track kept within 5 feet. The student should have a complete understanding of the listed emergency tasks and their recovery procedures.

Stage 3/**Module 5 - Exam and Stage Check**
Date of Completion: _____
Chief Instructor Signature: _____
Time Flown: _____
Ground Time: _____
Stage Exam Score:

Stage 4
Preparation for Checkride

Objective: The objective of Stage 4 is for the student to gain knowledge and experience in the following:

Ground Training

- Aeronautical decision making
- Mountain flying
- Helicopter icing
- Private Practical Test Standards (PTS)
- Prep for checkride (oral)
- Take and pass the FAA Knowledge Exam

Flight Training

- The experience and knowledge required by the Private License
- Review all Private Rotorcraft maneuvers, performed according to PTS
- Sign-off for the Private Checkride

Completion Standards::
Stage 4 is complete when the student achieves the objective of each lesson, and can list or describe the correct process or reference for accomplishing elements, exercises and activities. Student shall score at least 80% on the Stage 4 Exam, and all deficient areas shall be reconciled to 100%. Students must take and pass the FAA Private Knowledge Exam — Rotorcraft. At the completion of this stage, student is signed off to take the Private Pilot checkride.

Stage 4
Required Written Exam and Checkride Endorsements

The following endorsements will be required prior the students checkride.

10 – PRIVATE PILOT–AERONAUTICAL KNOWLEDGE: 61.35(a)(1) and 61.105(b)

I certify that I have given _____ [First name, MI, Last name] the ground training required by 61.105(b) and that he/she is prepared for the required knowledge test.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

10-Private Pilot – Aeronautical Knowledge – Use for written exam (Sample)

11 – PRIVATE PILOT PREREQUISITES FOR A PRACTICAL TEST: 61.39(a)(6)

I have given _____ [First name, MI, Last name] flight training in preparation for a _____ [type of practical test] practical test within the preceding 60 days or 2 calendar months and find him/her prepared for the required practical test and to have demonstrated satisfactory knowledge of the subject areas in which the applicant was show to be deficient by his/her airman knowledge test.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

11-Private Pilot Prerequisites for a Practical Test (Sample)

11a – PRIVATE PILOT RETESTING AFTER A FAILURE OF A PRACTICAL TEST: 61.49(a)

I have given _____[First name, MI, Last name] the necessary training required by FAR 61.49(a) for retesting after a failure and find him/her proficient to pass the Private Pilot Practical Test.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

11a-Private Pilot Retesting after a failure of a practical test
To be used for a checkride retest (Sample)

12 – PRIVATE PILOT – FLIGHT PROFICIENCY: 61.107(b)

I certify that I have given _____ [First name, MI, Last name] the ground and flight training required by 61.107(b) [(1) through (8) as appropriate] and find him/her proficient to perform each area of operation safely as a private pilot, and that he/she is prepared for the required practical test.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

12-Private Pilot Flight Proficiency (Sample)

13 - PIC R22

I certify that _____ [First name, MI, Last name] has been given training specified by SFAR 73 paragraph2(b)(1)(ii)(a-d) for the Robinson R22 aircraft and is proficient to act as pilot in command.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

14 - PIC R44

I certify that _____ [First name, MI, Last name] has been given training specified by SFAR 73 paragraph 2 (b)(2)(ii)(a-d) for the Robinson R44 aircraft and is proficient to act as pilot in command.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

13- PIC R22 or 14-PIC R44 – Use the appropriate endorsement (Sample)

Stage 4/**Module 3**
End of Course Check

Minimum 141 & 61 Requirements: Dual
1.0 hour flight or whatever is necessary to meet objective
1.0 hour ground instruction or whatever is necessary to meet objective

Objective: For the chief flight instructor, assistant chief instructor or the designated check instructor to review the applicant's readiness for the practical test. If the student shows weakness in some areas, additional instruction will be assigned as needed.

Assignments:
Review the *Helicopter Oral Exam Guide*
Stage 4 Exam
FAA Private Pilot Knowledge Exam

Content:
_____ Certificates and documents
_____ Aircraft logbooks
_____ ATC light gun signals
_____ Minimum equipment list
_____ Emergency equipment and survival gear
_____ Preflight
_____ Cross-country operations
_____ Engine starting and rotor engagement
_____ Runway incursions
_____ Normal and crosswind takeoffs
_____ Traffic patterns
_____ Hovering maneuvers
  _____ Forward, rearward, sideward hovering
  _____ Hovering turns
  _____ Surface taxi
  _____ Hover taxi
  _____ Air taxi
_____ Rapid deceleration
_____ Dynamic rollover
_____ Ground resonance
_____ Low G conditions
_____ Normal and crosswind approaches
_____ Steep approaches
_____ Maximum performance takeoff and climb
_____ Vertical takeoff and landing
_____ Straight-in autorotation with power recovery
_____ 180 degree autorotation
_____ Power failure at a hover
_____ Power failure at altitude
_____ Systems and equipment malfunctions
_____ Settling with power
_____ Low rotor rpm recovery
_____ Slope operations
_____ Confined area operations
_____ Pinnacle/platform operations
_____ Rolling takeoff (wheels)
_____ Running takeoff
_____ Shallow approach and running/roll-on landing
_____ Postflight

Completion Standards:
This module is complete when the student performs all maneuvers to practical test standards (preferable better) and both instructors agree that the student is ready for the practical test.

Stage 4/**Module 3 - Exam and EOC Stage Check**
Date of Completion: _____
Chief Instructor Signature: _____
Time Flown: _____
Ground Time: _____
Stage Exam Score: _____
Date of Completion:

Required Practical Exam Endorsements

The following endorsements will be required prior the students checkride.

11 – PRIVATE PILOT PREREQUISITES FOR A PRACTICAL TEST: 61.39(a)(6)

I have given _____ [First name, MI, Last name] flight training in preparation for a _____ [type of practical test] practical test within the preceding 60 days or 2 calendar months and find him/her prepared for the required practical test and to have demonstrated satisfactory knowledge of the subject areas in which the applicant was show to be deficient by his/her airman knowledge test.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

19-Commercial Pilot Prerequisites for a Practical Test (Sample)

19a – COMMERCIAL PILOT RETESTING AFTER A FAILURE OF A PRACTICAL TEST: 61.49(a)

I have given _____[First name, MI, Last name] the necessary training required by FAR 61.49(a) for retesting after a failure and find him/her proficient to pass the Private Pilot Practical Test.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

19a-Commercial Pilot Retesting after a failure of a practical test
To be used for a checkride retest (Sample)

Pre-Checkride Checklist

Confirm the following has been completed prior to students Checkride:

□ Graded pre-solo written exam

□ Current Student Pilot certificate

□ All Solo, airport to airport and cross-country endorsed

□ 90-day current solo endorsement (if necessary)

□ Student certificate endorsed by instructor

□ Logbook – Copy last page to Student file

□ IACRA 8710 Application form completely filled out - (Page 60)

□ Online IACRA 8710 Application completed – Printed Copy to Student file

□ Logbook and necessary supplies readily accessible (POH, PTS, Charts, AFD, FAR/AIM)

□ Aircraft logbooks

□ Cross Country Flight plan and materials necessary for planning a cross-country flight

□ FAA Knowledge Exam results (Original) – Copy to Student file

□ Identification with photo and signature

□ Instructor endorsements for checkride – Copy all endorsements to Student file

□ Graduation certificate

□ Examiner's fee

□ Current Medical

IACRA 8710 Application

Airman Certificate and/or Rating Application Form 8710

Fill out the below form completely and use it as a guide when completing the online IACRA 8710 Application at iacra.faa.gov/iacra .

If you need another blank 8710 form go to http://www.faa.gov/documentlibrary/media/form/faa8710-1.pdf

AIRMAN CERTIFICATE AND/OR RATING APPLICATION
INSTRUCTIONS FOR COMPLETING FAA FORM 8710-1

I. APPLICATION INFORMATION. *Check appropriate block(s).*

Block A. Name. Enter legal name. Use no more than one middle name for record purposes. Do not change the name on subsequent applications unless it is done in accordance with 14 CFR Section 61.25. If you do not have a middle name, enter "NMN". If you have a middle initial only, indicate "Initial only." If you are a Jr., or a II, or III, so indicate. If you have an FAA certificate, the name on the application should be the same as the name on the certificate unless you have had it changed in accordance with 14 CFR Section 61.25.

Block B. Social Security Number. Optional: See supplemental Information Privacy Act. Do not leave blank: Use only **US Social Security Number**. Enter either "SSN" or the words "Do not Use" or "None." SSN's are not shown on certificates.

Block C. Date of Birth. Check for accuracy. Enter eight digits; Use numeric characters, i.e., 07-09-1925 instead of July 9, 1925. Check to see that DOB is the same as it is on the medical certificate.

Block D. Place of Birth. If you were born in the USA, enter the city and state where you were born. If the city is unknown, enter the county and state. If you were born outside the USA, enter the name of the city and country where you were born.

Block E. Permanent Mailing Address. Enter residence number and street, P.O. Box or rural route number in the top part of the block above the line. The City, State, and ZIP code go in the bottom part of the block below the line. Check for accuracy. Make sure the numbers are not transposed. FAA policy requires that you use your permanent mailing address. **Justification must be provided on a separate sheet of paper signed and submitted with the application when a PO Box or rural route number is used in place of your permanent physical address. A map or directions must be provided if a physical address is unavailable.**

Block F. Citizenship. Check USA if applicable. If not, enter the country where you are a citizen.

Block G. Do you read, speak, write and understand the English language? Check yes or no.

Block H. Height. Enter your height in inches. Example: 5'8" would be entered as 68 in. No fractions, use whole inches only.

Block I. Weight. Enter your weight in pounds. No fractions, use whole pounds only.

Block J. Hair. Spell out the color of your hair. If bald, enter "Bald." Color should be listed as black, red, brown, blond, or gray. If you wear a wig or toupee, enter the color of your hair under the wig or toupee.

Block K. Eyes. Spell out the color of your eyes. The color should be listed as blue, brown, black, hazel, green, or gray.

Block L. Sex. Check male or female.

Block M. Do You Now Hold or Have You Ever Held An FAA Pilot Certificate? Check yes or no. (NOTE: A student pilot certificate is a "Pilot Certificate.")

Block N. Grade of Pilot Certificate. Enter the grade of pilot certificate (i.e., Student, Recreational, Private, Commercial, or ATP). Do NOT enter flight instructor certificate information.

Block O. Certificate Number. Enter the number as it appears on your pilot certificate.

Block P. Date Issued. Enter the date your pilot certificate was issued.

Block Q. Do You Now Hold A Medical Certificate? Check yes or no. If yes, complete Blocks R, S, and T.

Block R. Class of Certificate. Enter the class as shown on the medical certificate, i.e., 1st, 2nd, or 3rd class.

Block S. Date Issued. Enter the date your medical certificate was issued.

Block T. Name of Examiner. Enter the name as shown on medical certificate.

Block U. Narcotics, Drugs. Check appropriate block. Only check "Yes" if you have actually been convicted. If you have been charged with a violation which has not been adjudicated, check ."No".

Block V. Date of Final Conviction. If block "U" was checked "Yes" give the date of final conviction.

II. CERTIFICATE OR RATING APPLIED FOR ON BASIS OF:

Block A. Completion of Required Test.

1. AIRCRAFT TO BE USED. (If flight test required) – Enter the make and model of each aircraft used. If simulator or FTD, indicate.
2. TOTAL TIME IN THIS AIRCRAFT (Hrs.) – (a) Enter the total Flight Time in each make and model. (b) Pilot-In-Command Flight Time - In each make and model.

Block B. Military Competence Obtained In. Enter your branch of service, date rated as a military pilot, your rank, or grade and service number. In block 4a or 4b, enter the make and model of each military aircraft used to qualify (as appropriate).

Block C. Graduate of Approved Course.

1. NAME AND LOCATION OF TRAINING AGENCY/CENTER. As shown on the graduation certificate. Be sure the location is entered.
2. AGENCY SCHOOL/CENTER CERTIFICATION NUMBER. As shown on the graduation certificate. Indicate if 142 training center.
3. CURRICULUM FROM WHICH GRADUATED. As shown on the graduation certificate.
4. DATE. Date of graduation from indicated course. Approved course graduate must also complete Block "A" COMPLETION OF REQUIRED TEST.

Block D. Holder of Foreign License Issued By.

1. COUNTRY. Country which issued the license.
2. GRADE OF LICENSE. Grade of license issued, i.e., private, commercial, etc.
3. NUMBER. Number which appears on the license.
4. RATINGS. All ratings that appear on the license.

Block E. Completion of Air Carrier's Approved Training Program.

1. Name of Air Carrier.
2. Date program was completed.
3. Identify the Training Curriculum.

III. RECORD OF PILOT TIME. The minimum pilot experience required by the appropriate regulation must be entered. It is recommended, however, that ALL pilot time be entered. If decimal points are used, be sure they are legible. Night flying must be entered when required. You should fill in the blocks that apply and ignore the blocks that do not. Second In Command "SIC" time used may be entered in the appropriate blocks. Flight Simulator, Flight Training Device and PCATD time may be entered in the boxes provided. Total, Instruction received, and Instrument Time should be entered in the top, middle, or bottom of the boxes provided as appropriate.

IV. HAVE YOU FAILED A TEST FOR THIS CERTIFICATE OR RATING? Check appropriate block.

V. APPLICANT'S CERTIFICATION.

A. SIGNATURE. The way you normally sign your name.
B. DATE. The date you sign the application.

FAA Form 8710-1 (4-00) Supersedes Previous Edition — NSN: 0052-00-682-5007

IACRA Form 8710 – Instructions
(SAMPLE)

TYPE OR PRINT ALL ENTRIES IN INK

Form Approved OMB No: 2120-0021
09/30/2019

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Airman Certificate and/or Rating Application

I Application Information ☐ Student ☐ Recreational ☐ Private ☐ Commercial ☐ Airline Transport ☐ Instrument
☐ Additional Rating ☐ Airplane Single-Engine ☐ Airplane Multiengine ☐ Rotorcraft ☐ Balloon ☐ Airship ☐ Glider ☐ Powered-Lift
☐ Flight Instructor ____ Initial ____ Renewal ____ Reinstatement ☐ Additional Instructor Rating ☐ Ground Instructor
☐ Medical Flight Test ☐ Reexamination ☐ Reissuance of _____ certificate ☐ Other _____

A. Name (Last, First, Middle)	B. SSN (US Only)	C. Date of Birth Month Day Year	D. Place of Birth
E. Address	F. Citizenship ☐ USA ☐ Other _____ Specify	G. Do you read, speak, write, & understand the English language? ☐ Yes ☐ No	
City, State, Zip Code	H. Height	I. Weight	J. Hair	K. Eyes	L. Sex ☐ Male ☐ Female
M. Do you now hold, or have you ever held an FAA Pilot Certificate? ☐ Yes ☐ No	N. Grade Pilot Certificate	O. Certificate Number	P. Date Issued
Q. Do you hold a Medical Certificate? ☐ Yes ☐ No	R. Class of Certificate	S. Date Issued	T. Name of Examiner
U. Have you ever been convicted for violation of any Federal or State statutes relating to narcotic drugs, marijuana, or depressant or stimulant drugs or substances? ☐ Yes ☐ No			V. Date of Final Conviction

II. Certificate or Rating Applied For on Basis of:

☐ A. Completion of Required Test	1. Aircraft to be used (if flight test required)	2a. Total time in this aircraft / SIM / FTD hours	2b. Pilot in command hours
☐ B. Military Competence Obtained In	1. Service	2. Date Rated	3. Rank or Grade and Service Number
	4a. Flown 10 hours PIC in last 12 months in the following Military Aircraft.	4b. US Military PIC & Instrument check in last 12 months (List Aircraft)	
☐ C. Graduate of Approved Course	1. Name and Location of Training Agency or Training Center		1a. Certification Number
	2. Curriculum From Which Graduated		3. Date
☐ D. Holder of Foreign License Issued By	1. Country	2. Grade of License	3. Number
	4. Ratings		
☐ E. Completion of Air Carrier's Approved Training Program	1. Name of Air Carrier	2. Date	3. Which Curriculum ☐ Initial ☐ Upgrade ☐ Transition

III RECORD OF PILOT TIME (Do not write in the shaded areas.)

	Total	Instruction Received	Solo	Pilot in Command (PIC)	Cross Country Instruction Received	Cross Country Solo	Cross Country PIC	Instrument	Night Instruction Received	Night Take-off/ Landings	Night PIC	Night Take-Off/ Landing PIC	Number of Flights	Number of Aero-Tows	Number of Ground Launches	Number of Powered Launches
Airplanes				PIC			PIC				PIC	PIC				
				SIC			SIC				SIC	SIC				
Rotor-craft				PIC			PIC				PIC	PIC				
				SIC			SIC				SIC	SIC				
Powered Lift				PIC			PIC				PIC	PIC				
				SIC			SIC				SIC	SIC				
Gliders																
Lighter Than Air																
Simulator																
Training Device																
PCATD																

IV. Have you failed a test for this certificate or rating? ☐ Yes ☐ No

V. Applicants's Certification -- I certify that all statements and answers provided by me on this application form are complete and true to the best of my knowledge and I agree that they are to be considered as part of the basis for issuance of any FAA certificate to me. I have also read and understand the Privacy Act statement that accompanies this form.

Signature of Applicant	Date

FAA Form 8710-1 (4-00) Supersedes Previous Edition

NSN: 0052-00-682-5007

IACRA Form 8710 – 1
(SAMPLE)

Instructor's Recommendation

I have personally instructed the applicant and consider this person ready to take the test.

Date	Instructor's Signature (Print Name & Sign)	Certificate No:	Certificate Expires

Air Agency's Recommendation

The applicant has successfully completed our _____ course, and is recommended for certification or rating without further _____ test.

Date	Agency Name and Number	Officials Signature / Title

Designated Examiner or Airman Certification Representative Report

- ☐ Student Pilot Certificate Issued (Copy attached)
- ☐ I have personally reviewed this applicant's pilot logbook and/or training record, and certify that the individual meets the pertinent requirements of 14 CFR Part 61 for the certificate or rating sought.
- ☐ I have personally reviewed this applicant's graduation certificate, and found it to be appropriate and in order, and have returned the certificate.
- ☐ I have personally tested and/or verified this applicant in accordance with pertinent procedures and standards with the result indicated below.
  - ☐ Approved – Temporary Certificate Issued (Original Attached)
  - ☐ Disapproved – Disapproval Notice Issued (Original Attached)

Location of Test (Facility, City, State)	Duration of Test: Ground	Simulator/FTD	Flight

Certificate or Rating for Which Tested	Type(s) of Aircraft Used	Registration No.(s)

Date	Examiner's Signature (Print Name & Sign)	Certificate No.	Designation No.	Designation Expires

Evaluator's Record (Use For ATP Certificate and/or Type Ratings)

	Inspector	Examiner	Signature and Certificate Number	Date
Oral	☐	☐		
Approved Simulator/Training Device Check	☐	☐		
Aircraft Flight Check	☐	☐		
Advanced Qualification Program	☐	☐		

Aviation Safety Inspector or Technician Report

I have personally tested this applicant in accordance with or have otherwise verified that this applicant complies with pertinent procedures, standards, policies, and or necessary requirements with the result indicated below.

☐ Approved – Temporary Certificate Issued (Original Attached) ☐ Disapproved – Disapproval Notice Issued (Original Attached)

Location of Test (Facility, City, State)	Duration of Test: Ground	Simulator/FTD	Flight

Certificate or Rating for Which Tested	Type(s) of Aircraft Used	Registration No.(s)

- ☐ Student Pilot Certificate Issued
- ☐ Examiner's Recommendation
  - ☐ Accepted ☐ Rejected
- ☐ Reissue or Exchange of Pilot Certificate
- ☐ Special Medical test conducted – report forwarded to Aeromedical Certification Branch, AAM-330
- ☐ Certificate or Rating Based on
  - ☐ Military Competence
  - ☐ Foreign License
  - ☐ Approved Course Graduate
  - ☐ Other Approved FAA Qualification Criteria
- ☐ Flight Instructor ☐ Ground Instructor
  - ☐ Renewal
  - ☐ Reinstatement
  - Instructor Renewal Based on
    - ☐ Activity ☐ Training Course
    - ☐ Test ☐ Duties and Responsibilities

Training Course (FIRC) Name	Graduation Certificate No.	Date

Date	Inspector's Signature (Print Name & Sign)	Certificate No.	FAA District Office

Attachments:
- ☐ Student Pilot Certificate (Copy)
- ☐ Knowledge Test Report
- ☐ Temporary Airman Certificate
- ☐ Notice of Disapproval
- ☐ Superseded Airman Certificate

☐ Airman's Identification (ID)

Form of ID _____

Number _____

Expiration Date _____

Telephone Number _____

ID:

Name: _____

Date of Birth: _____

Certificate Number: _____

E-Mail Address _____

FAA Form 8710-1 (4-00) Supersedes Previous Edition — Electronic Version (Adobe) — NSN: 0052-00-682-5007

IACRA Form 8710 – 1
(SAMPLE)

Retesting after a failed practical test endorsement

In the event of an unsuccessful checkride the instructor must give instruction in the areas that the student failed during their checkride. The following endorsements must be given prior to their next checkride.

11a – PRIVATE PILOT RETESTING AFTER A FAILURE OF A PRACTICAL TEST: 61.49(a)

I have given _____[First name, MI, Last name] the necessary training required by FAR 61.49(a) for retesting after a failure and find him/her proficient to pass the Private Pilot Practical Test.

_____
Printed Name

_____
Signature Date

_____
CFI# Exp. Date

11a - Private Pilot Retesting After A Failure of a Practical Test (Sample)

Post-Checkride Checklist

□ Temporary Airmen Certificate – Copy to Student file

□ Photo of Student standing next to helicopter – Copy to Student file

PAGE INTENTIONALLY LEFT BLANK

APPENDIX A

Quizzes and Exams

Stage 1/**Module 1 Quiz**
Aerodynamics

Name: _____
Grade: _____
Date: _____
Instructor:

1. What are Newton's three laws?
   A. _____
   B. _____
   C. _____

2. What are the four aerodynamic forces? _____, _____, _____, and _____

3. What is the lift equation? Lift = _____ _____ _____ _____

4. What parts of the lift equation can you change as a pilot? _____

5. Name the two different types of airfoils? _____

6. What is pitch angle? _____

7. What is angle of attack? _____

Stage 1/**Module 8 Quiz**
Airports Operations

Name: _____
Grade: _____
Date: _____
Instructor:

1. What are the pattern altitude restrictions at HRR? _____
_____

2. What are the northern distance limits for a right closed traffic pattern and why? _____
_____

3. What is the one controlled airspace you will not find on the VFR charts, and where is it?
_____

4. Explain the following;
   Magnetic variation: _____
   Magnetic deviation: _____
   Magnetic dip: _____
   Wind correction angle: _____

5. What is the meaning of the squawked code on the transponder as follows?
   1200: _____ 7700: _____ 7600: _____ 7500: _____

6. When listening to ATIS there are several pieces of information that are very important to us and that we need to know before taking off, list them:
   W) _____
   V) _____
   S) _____
   T) _____
   A)_____
   R) _____
   Any special warnings and hazards.
   The current ATIS identifier.

7. When making radio calls, what is the specific format we should us?
   W) (Initial contact only) _____
   W) _____
   W) _____
   W) _____
   (Initial contact only) _____

8. **True or False** – Pilots should read back ALL ATC instructions.

9. If ATC advises you of traffic in your area, what should you do once you locate the traffic? (Choose the best response)
   Keep your eyes peeled.
   Do nothing special.
   Advise ATC that you have traffic in sight and will maintain visual separation.
   Keep flying and avoid the traffic.

10. What is the emergency radio frequency? _____

11. When is the airport beacon on? _____

12. Identify the different colors of the different airport beacons.
    Civilian Land: _____ Water Airport: _____
    Military Airport: _____ Heliport: _____

13. Identify the different colors of the airport lighting system.
    Runway Center: _____ Runway Edge: _____ Beginning of Runway: _____
    End of Runway: _____ Taxiway Edge: _____ Taxiway Center: _____

14. What are the operating hours at Hawthorne Airport? _____

15. When does the Hawthorne tower close? _____

16. What does the Hawthorne airspace revert to when the tower closes? _____

17. Name the three types of pilot controlled lighting and how each is activated? _____
    _____
    _____

18. How do you turn on the pilot controlled lighting for Hawthorne Airport at night? _____
    _____

19. Identify the 500' obstacle(s) heading south on a left crosswind departure to TOA on your chart. _____
    _____

20. Can a student pilot land at LAX? _____

21. Can a student pilot transition through LAX? _____

22. Helicopters operating in TOA airspace north of runways shall use frequency _____.

23. Helicopters operating in TOA airspace south of runways shall use frequency _____.

24. At TOA the north pad shall only be used during hours of? _____

25. At TOA the north pad traffic pattern shall be kept south of _____ and remain within the displaced _____.

26. When shall helicopters be instructed to vacate TOA north pad due to safety? _____
    _____

27. What is the pattern altitude for north pad at TOA? _____

28. Identify altitude restrictions and frequencies to operate at TOA;
    West PCH route: _____ feet, frequency _____.
    North route: _____ feet, frequency _____.
    Southeast route: _____ feet, frequency _____.
    South Crenshaw: _____ feet, frequency _____.
    Northeast route: _____ feet, frequency _____.

29. Identify the five different arrival and departure routes of TOA on your aeronautical chart. _____
    _____
    _____

30. You are on upwind of 29L to make a Northeast departure. TOA control tower said, "Start right turn, northeast departure is approved". You got traffic in sight on your right side. What are you going to do? _____
    _____

31. Helicopters operating in LGB airspace south of runway 30 shall use frequency _____.

32. Helicopters operating in LGB airspace north of runway 30 shall use frequency _____.

33. At LGB the pad shall only be used during hours of? _____

34. What is the pattern altitude for the pads at LGB? _____
_____

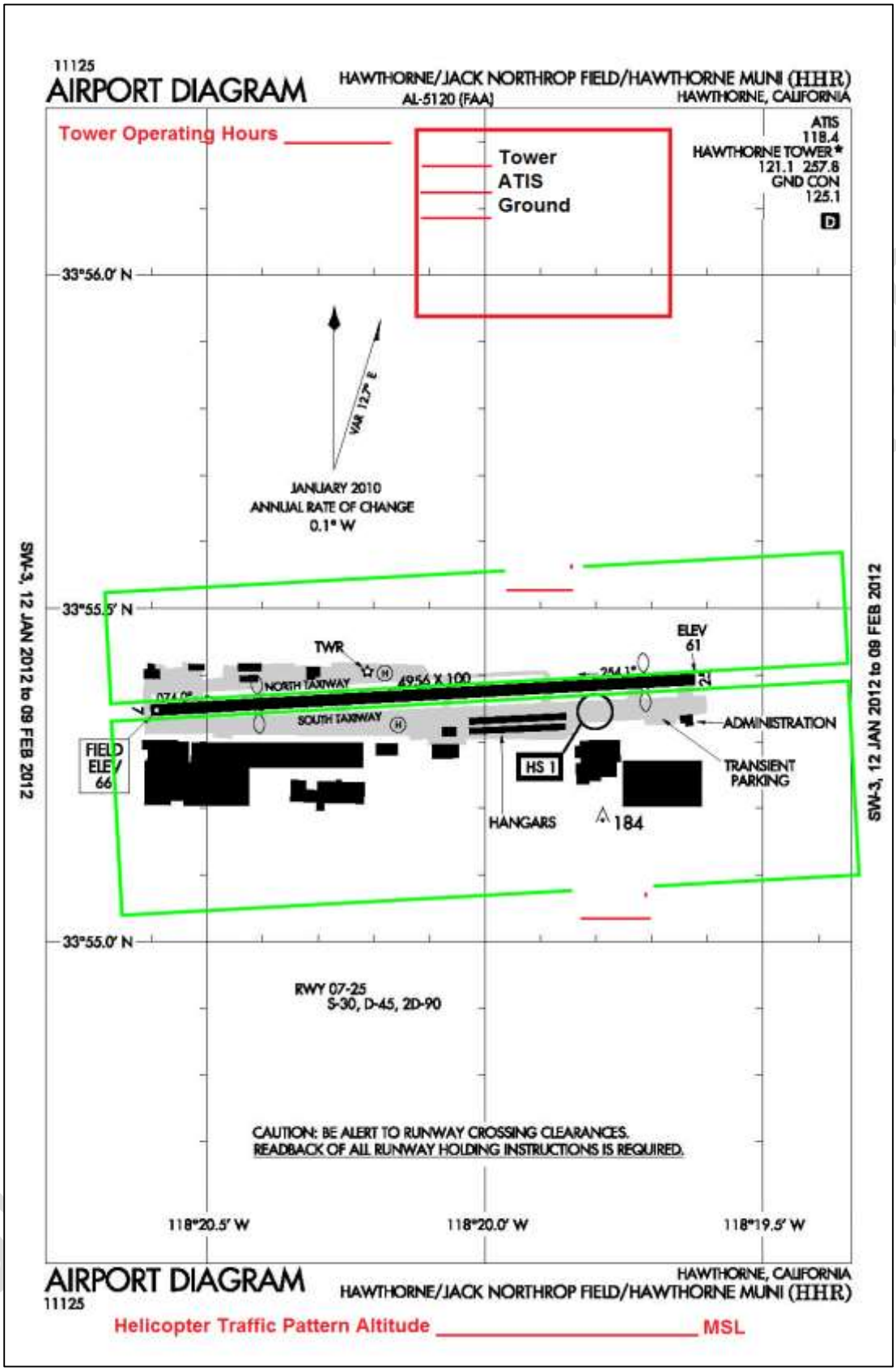
35. Identify the four commonly used arrival and departure routes of LGB on your aeronautical chart. _____
_____

36. Identify reporting points for LGB on your aeronautical chart. _____
_____

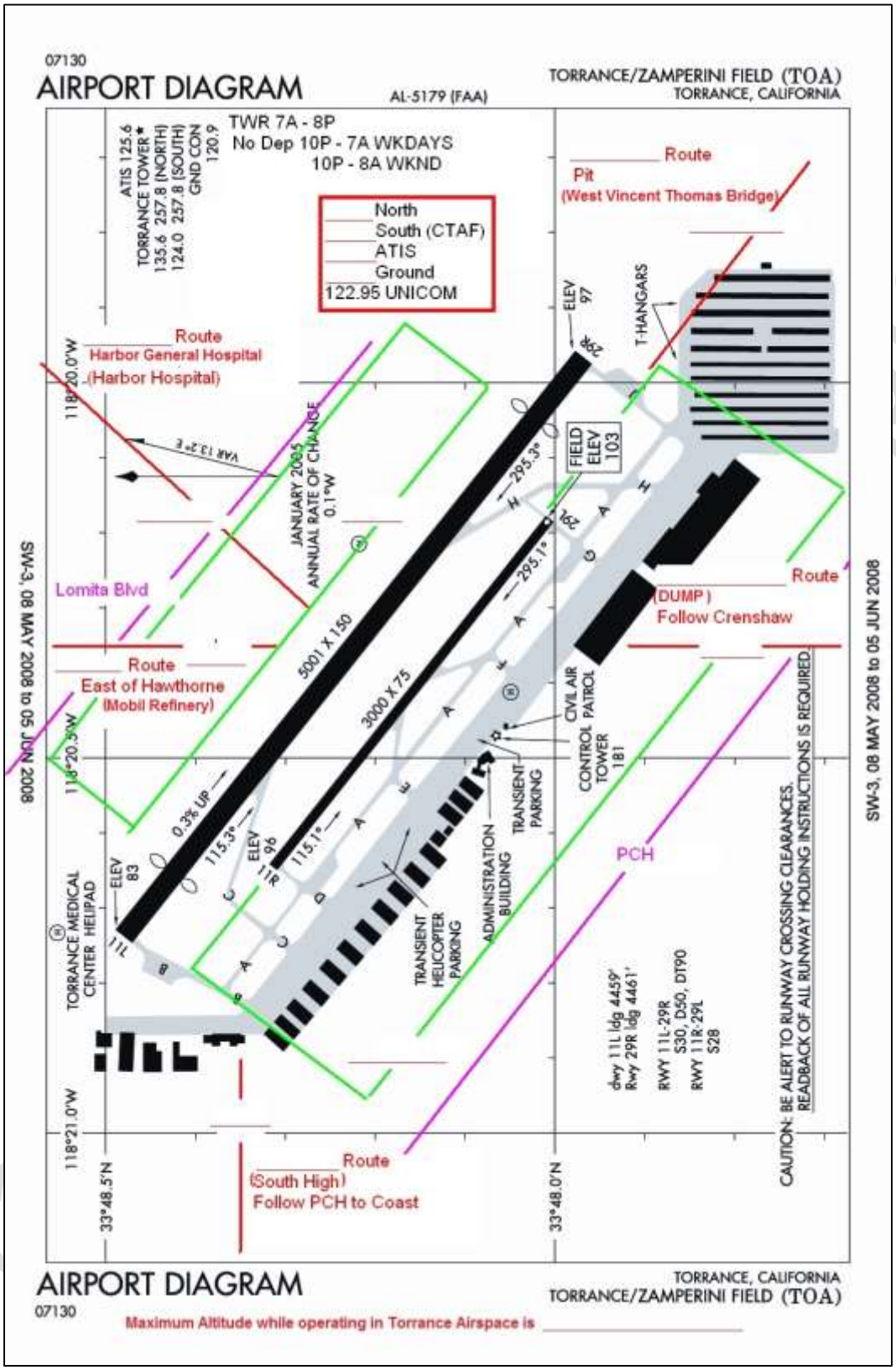
37. What are the two altitude restrictions for helicopters at LGB? _____
_____

38. Identify the location of the 500' tower at the North West corner of LGB's airspace. _____

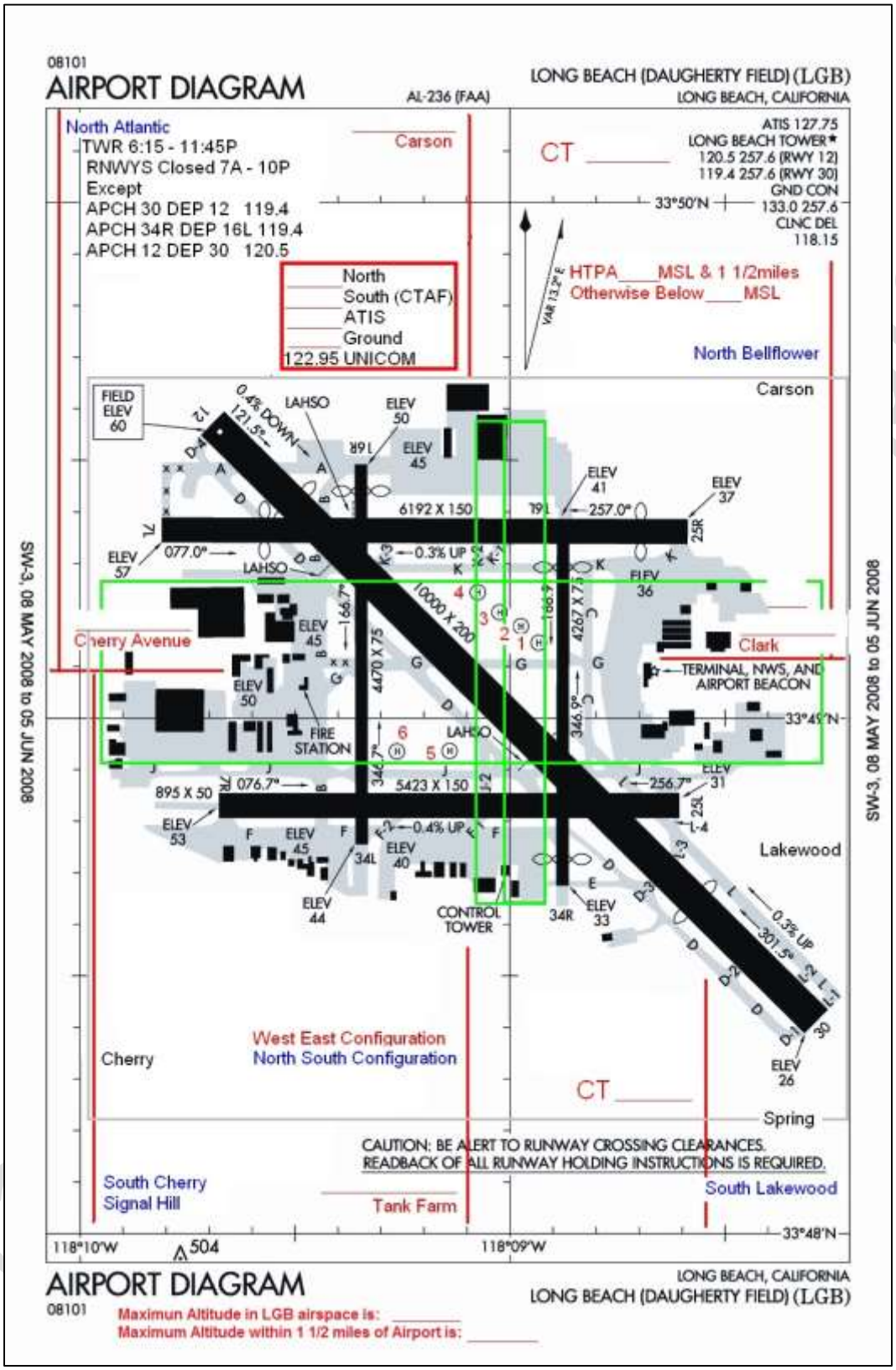
39. Complete the following four Airport Diagrams, by filling in the missing information on the red lines. Including arrival & departure route names, altitudes, airport frequencies, traffic pattern altitudes and airspace operating altitudes.



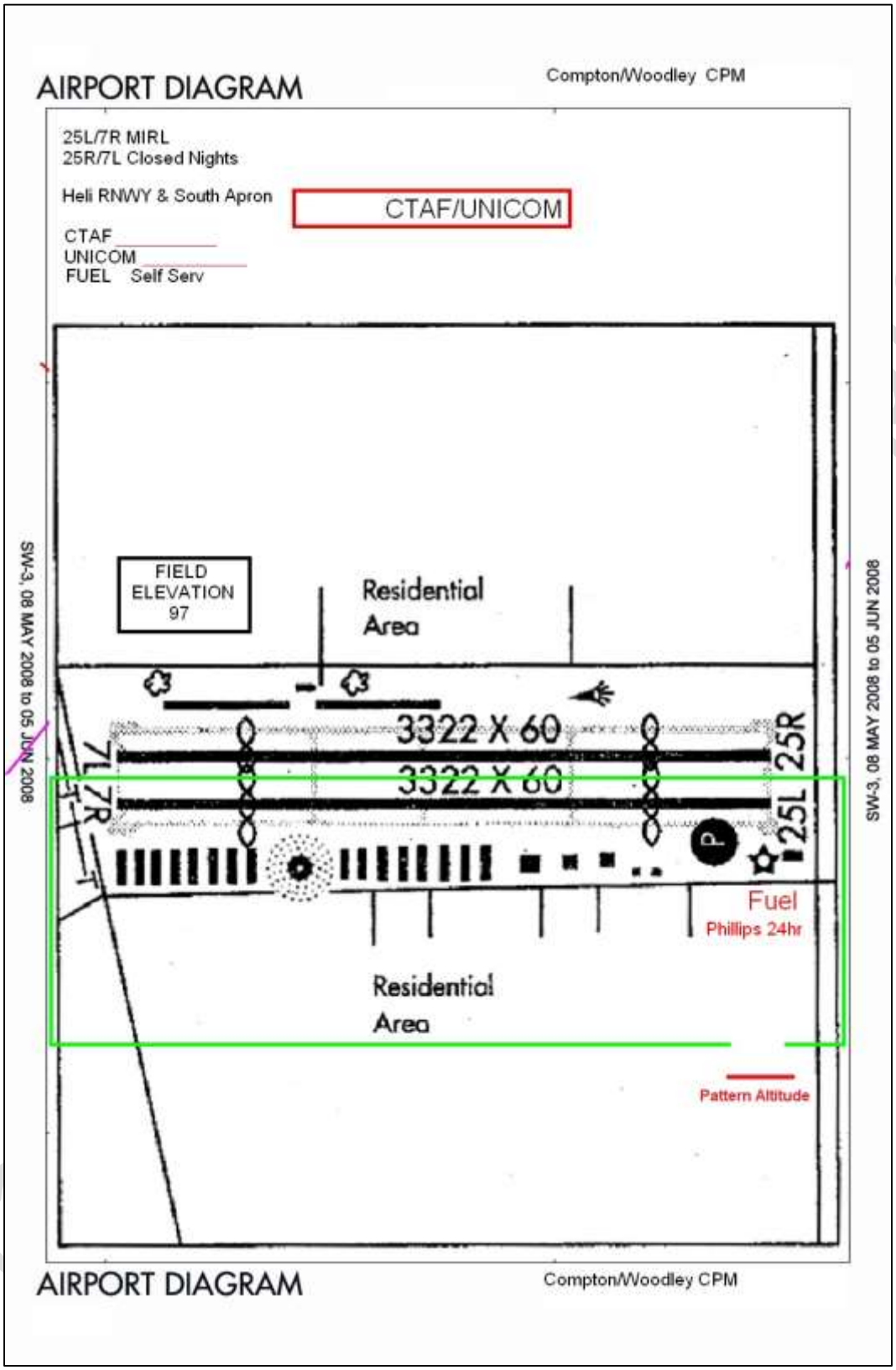
Fill in the missing information



Fill in the missing information



Fill in the missing information



Fill in the missing information

Stage 1/**Module 12 Quiz**
Navigation

Name: _____
Grade: _____
Date: _____
Instructor:

1. Explain the lost procedure: _____
_____
_____
_____
_____

2. Explain the lost communication procedure: _____
_____
_____
_____
_____

Stage 1/Module 14 Exam
Introduction to Helicopter Flying

Name: _____
Grade: _____
Date: _____
Instructor:

Choose the most correct answer choice.

1. How many hours are required for completion of the Private Pilot Certificate, following a Part 141 program?

   A - 35 hours of flight training, 35 hours of ground training.
   B - 40 hours of flight training, 35 hours of ground training.
   C - 73 hours of flight training, 40 hours of ground training.

2. Safety belts are required to be properly secured about which persons in an aircraft and when?

   A- Pilots only, during takeoffs and landings.
   B - Passengers, during taxi, takeoffs, and landings only.
   C - Each person on board the aircraft during the entire flight.

3. The angle between the chord line of an airfoil and the relative wind is known as the angle of

   A - lift.
   B - attack.
   C - incidence.

4. What is ground effect?

   A - The result of interference of the Earth with airflow patterns around the helicopter.
   B - The result of alteration of airflow patterns increasing induced drag around the rotor blades.
   C - The result of disruption of airflow patterns about the blades of a rotor to the point where the rotor no longer supports the weight of the helicopter in flight.

5. The wind condition that requires maximum caution when avoiding wake turbulence on landing is a

   A- light, quartering headwind.
   B - light, quartering tailwind.
   C - strong headwind.

6. The altitude deviation allowed by the PTS for operations in the pattern is

   A - 100 ft.
   B - 150 ft.
   C - 200 ft.

7. Which is appropriate for a helicopter approaching an airport for landing?

   A- Remain below the airplane traffic pattern.
   B - Avoid the flow of fixed wing traffic.
   C - Fly right hand traffic.

8. Which is the correct traffic pattern departure procedure to use at a non controlled airport?

   A - Depart in any direction consistent with safety after crossing the airport boundary.
   B - Make all turns to the left.
   C - Comply with the FAA traffic pattern procedures for the airport.

9. When the speed of a helicopter increases from 20 knots to 60 knots, parasite drag increases by a factor of

   A - three.
   B - six.
   C - nine.

10. The most effective method of scanning for other aircraft for collision avoidance during daylight hours is to use

    A - regularly spaced concentration on the 3-, 9-, and 12-o'clock positions.
    B - a series of short, regularly spaced eye movements to search each 10-degree sector.
    C - peripheral vision by scanning small sectors and utilizing off-center viewing.

11. What are the six primary instruments involved in the instrument scan?

A- Airspeed indicator, heading indicator, altimeter, VOR, vertical speed indicator, attitude indicator.
B - Heading indicator, tachometer, VOR, airspeed indicator, altimeter, turn coordinator.
C - Heading indicator, altimeter, vertical speed indicator, turn coordinator, attitude indicator, airspeed indicator.

12. As VFR pilots, it is most crucial for the pilot-in command to perform the instrument scan,

A - equally dividing his/her time between the 6 primary instruments and the engine instruments.
B - while maintaining collision avoidance by dividing his/her time between inside and outside the cockpit.
C - keeping his/her head inside the cockpit at all times.

13. Current charts must be used at all times. Sectional charts are revised

A - every 56 days.
B - no more than once a year.
C - every 6 months.

14. Information concerning parachute jumping sites may be found in the

A - NOTAMs.
B - Airport/Facility directory.
C - graphic notices and supplementary data.

15. Most midair collision accidents occur during

A- hazy days.
B - clear days.
C - cloudy nights.

16. Students must uphold at all times

A- FAA regulations.
B - school requirements and procedures.
C - both A and B.

17. The four forces acting on a helicopter in flight are

A- lift, weight, thrust, and drag.
B - lift, weight, gravity, and thrust.
C - lift, gravity, power, and friction.

18. Who is responsible for making the go/no-go decision for each flight?

A - Pilot-in-command.
B - Certified flight instructor.
C - Chief flight instructor.

19. When you fly solo, you are pilot-in-command, and you are required to have in your personal possession a

A - pilot certificate and logbook.
B - pilot certificate, photo ID, and medical certificate.
C - CFI solo endorsement, and copy of the FAR/AIM.

20. During forward cruising flight at constant airspeed and altitude, the individual rotor blades, when compared to each other, are operating

A- with increasing lift on the retreating blade.
B - with decreasing angle of attack on the advancing blade.
C - at unequal airspeed, unequal angles of attack and equal lift moment.

21. Name the four strokes of a piston engine:

A - Intake, induction, power, expansion.
B - Intake, compression, power, exhaust.
C - Intake, compression, power, expansion.

22. Which condition is most favorable to the development of carburetor icing?

A- Any temperature below freezing and a relative humidity of less than 50%.
B - Between 32°F and 50°F and low humidity.
C - Between 20°F and 70°F and high humidity.

23. Clouds, fog, or dew will always form when

A- water vapor condenses.
B - water vapor is present.
C - relative humidity reaches 100%.

24. What instrument(s) will be affected if the pitot tube becomes clogged, but the static vents remain clear?

A - Airspeed indicator.
B - Vertical speed indicator.
C - Both A and B.

25. In steady straight-and-level flight

A - lift is greater than drag and thrust equals weight.
B - weight equals lift and drag equals thrust.
C - lift equals weight and thrust is greater than drag.

26. The lift differential that exists between the advancing main rotor blade and the retreating main rotor blade is known as

A — transverse flow effect.
B — dissymmetry of lift.
C — hunting tendency.

27. Who is responsible for determining if an aircraft is in condition for safe flight?

A — A certificated aircraft mechanic.
B — The pilot-in-command.
C — The owner or operator.

28. If the outside air temperature (OAT) at a given altitude is warmer than standard, the density altitude is

A — equal to pressure altitude.
B — lower than pressure altitude.
C — higher than pressure altitude.

29. Which combination of atmospheric conditions will reduce aircraft takeoff and climb performance?

A- Low temperature, low relative humidity, and low density altitude.
B - High temperature, low relative humidity, and low density altitude.
C - High temperature, high relative humidity, and high density altitude.

30. If the temperature/dew point spread is small and decreasing, and the temperature is 62°F, what type of weather is most likely to develop?

A - Freezing precipitation.
B - Thunderstorms.
C - Fog or low clouds

31. What conditions are necessary for the formation of thunderstorms?

A - High humidity, lifting force, and unstable conditions.
B - High humidity, high temperature, and cumulus clouds.
C - Lifting force, moist air, and extensive cloud cover.

32. Two-way radio communication must be established with the Air Traffic Control facility having jurisdiction over the area prior to entering which class airspace?

A - Class C.
B - Class E.
C - Class G.

33. An airport's rotating beacon operated during daylight hours indicates

A - that weather at the airport located in Class D airspace is below basic VFR weather minimums.
B - there are obstructions on the airport.
C - the Air Traffic Control tower is not in operation.

34. The numbers 9 and 27 on a runway indicate that the runway is oriented approximately

A - 009° and 027° true.
B - 090° and 270° true.
C - 090° and 270° magnetic.

35. If two-way communication fails at an airport with a tower and cannot be restored, the recommended procedure is to

A - make an off-airport landing.
B - turn on your landing light, enter the airport area on final approach, and land as soon as possible.
C - observe traffic flow, enter the traffic pattern on the downwind, look for light signals from the tower, and squawk 7600 on your transponder.

36. In an in-flight emergency requiring emergency action, the pilot-in-command

A - may deviate from any rule of 14 CFR Part 91 to the extent required to meet that emergency.
B - must not deviate from any rule of 14 CFR Part 91.
C - may deviate from any rule of 14 CFR Part 91 but only after receiving prior permission from ATC.

37. Student pilots are responsible for all information, rules, and regulations in Parts

A - 61, and 91.
B - 91, and 121.
C - 1, and 67.

38. A person may not act as a crewmember of a civil aircraft if alcoholic beverages have been consumed by that person within the preceding

A - 8 hours.
B - 12 hours.
C - 24 hours.

39. List the grade and capacity of the fuel and oil to be used in the training aircraft used for solo flight:

	Grade	Capacity
Fuel	_____	_____
Oil	_____	_____

40. What do each of the following ATC light signals mean?

	in flight	on the ground
Steady green	_____	_____
Flashing green	_____	_____
Steady red	_____	_____
Flashing red	_____	_____
Flashing white	_____	_____
Alternating red and green	_____	_____

Stage 2/**Module 1**
Pre-Solo Exam

Name: _____
Grade: _____
Date: _____
Instructor: _____

1. The Low Rotor RPM Warning Light and Horn comes on, you should…

   _____

2. When could Catastrophic Rotor Stall occur and what are the preventions?(SN-10 & SN-24)

   _____

3. What is the number one cause of solo accidents and how can they be prevented?

   _____

4. Your Governor Off light comes on in flight, what should you do?

   _____

   _____

5. In flight you get a feeling of weightlessness and the helicopter begins to roll rapidly to the right.
   What is this called? _____
   How do you recover from this? _____
   List the possible causes? _____
6. What are the consequences of an incorrect recovery from this situation?

   _____

7. What is the minimum altitude for helicopters per the FAA?

   _____

8. What is the minimum recommended safe altitude for helicopters and why?

   _____

9. Your Clutch light comes on in flight, describe the correct reactions to this situation…

   _____

   _____

   _____

10. During your solo flights, explain what flight characteristics are going to change and what you should be aware of

    _____

    _____

11. Your low fuel light comes on, what should you do? (How much fuel should you have planned for)

    _____

    _____

12. If something is not right while performing a maneuver, such as too high of an approach. What should you do?(Circle the answer)
    [Just go for it] [Pray] [Go Around] [Ask Anthony]
13. What are the limitations for your solo flights?
    Ceiling >= _____ Visibility >= _____ Wind <= _____ Gusts <= _____
14. Complete the following Weight & Balance sheets for the aircraft you will be flying.

Robinson R22 - Beta II - Weight & Balance N_____

ITEM	LIMIT	WEIGHT	LONG ARM	LONG MOMENT	LAT ARM	LAT MOMENT
Empty Weight						
Pilot Name	Solo Min 135lbs Max 240 lbs		78		+ 10.7	
Pilot Baggage	Max 50 lbs		78		+ 10.7	
Passenger Name	Max 240 lbs		78		-9.3	
Passenger Baggage	Max 50 lbs		78		-9.3	
Door (Right) Remove	-5.2 lbs		77.5		+21.0	
Door (Left) Removed	-5.2 lbs		77.5		-21.0	
Cyclic Removed	-0.8 lbs		68		-8.0	
Collective Removed	-1.1 lbs		80.7		-19.5	
Pedals Removed	-0.8 lbs		46.5		-9.5	
Total W&B with Zero Fuel		No Fuel Weight	No Fuel CG	Long Empty Moment	No Fuel Lat CG	Lat Empty Moment
Min 920 lbs	**Max 1370 lbs**					
Main Tank 19.2 Max **Gallons -->**	Max 115.2 lbs		108.6		-11.0	
Aux Tank 10.5 Max **Gallons -->**	Max 63 lbs		103.8		+11.2	
Total W&B with Takeoff Fuel		Take Off Weight	Takeoff Fuel CG	Long Full Moment	Takeoff Fuel Lat CG	Lat Full Moment
Min 920 lbs	**Max 1370 lbs**					

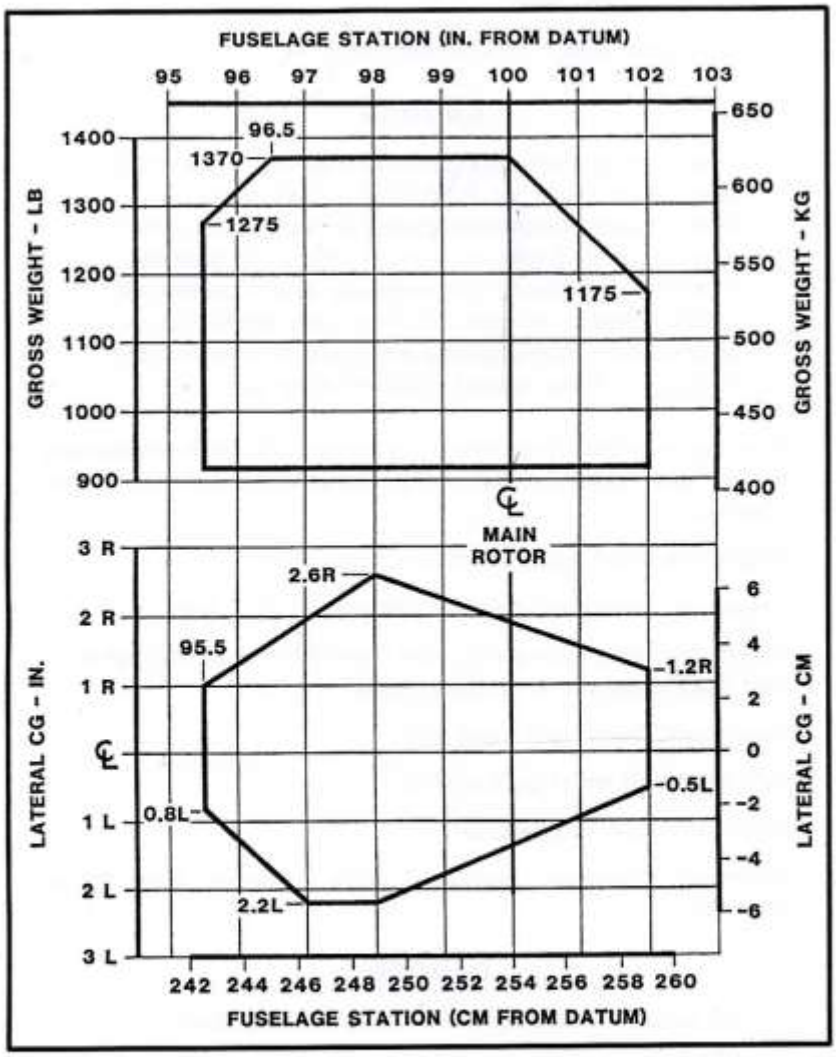
1 Gallon = 6 lbs Moment = Weight x Arm Center of Gravity = Total Moment / Total Weight

VFR Required Fuel = ETE _____ Minutes + Engine Starup & Shutdo _____ Minutes - Reserve 20 Minutes = _____ Minutes
_____ Gallons + _____ Gallons + 3 Gallons _____ Gallons

Max OGE: _____ Feet Max IGE: _____ Feet Fuel Burn Rate: 9 Gallons Per Hour (For Flight Planning)

ROBINSON
MODEL R22

SECTION 2
LIMITATIONS



R22 ALPHA, BETA, AND BETA II
CENTER OF GRAVITY LIMITS

FAA APPROVED: 1 JUL 2005

2-5

Robinson R44 - Raven I - Weight & Balance

N_____

ITEM	LIMIT	WEIGHT	LONG ARM	LONG MOMENT	LAT ARM	LAT MOMENT
Empty Weight						
Pilot (Right Fwd)	Solo Min 150 lbs Max 300 lbs		49.5		+ 12.2	
Pilot Baggage	Max 50 lbs		44		+ 11.5	
Passenger (Left Fwd)	Max 300 lbs		49.5		-10.4	
Passenger Baggage	Max 50 lbs		44		-11.5	
Passenger (Right Rear)	Max 300 lbs		79.5		+ 12.2	
Passenger Baggage	Max 50 lbs		79.5		+ 12.2	
Passenger (Left Rear)	Max 300 lbs		79.5		-12.2	
Passenger Baggage	Max 50 lbs		79.5		-12.2	
Door (Fwd Right) Remov	-7.5 lbs		49.4		+24.0	
Door (Fwd Left) Removed	-7.5 lbs		49.4		-24.0	
Door (Rear Right) Remov	-7.0 lbs		75.4		+23.0	
Door (Rear Left) Remove	-7.0 lbs		75.4		-23.0	
Cyclic Removed	-0.6 lbs		35.8		-8.0	
Collective Removed	-0.8 lbs		47		-21.0	
Pedals Removed	-0.8 lbs		16.8		-9.5	
Total W&B with Zero Fuel		**No Fuel Weight**	**No Fuel CG**	**Long Empty Moment**	**No Fuel Lat CG**	**Lat Empty Moment**
Min 1550 lbs	**Max 2400 lbs**					
Main Tank 30.6 Max **Gallons -->**	Max 183.6 lbs		106		-13.5	
Aux Tank 18.3 Max **Gallons -->**	Max 109.8 lbs		102		+13.5	
Total W&B with Takeoff Fuel		**Take Off Weight**	**Takeoff Fuel CG**	**Long Full Moment**	**Takeoff Fuel Lat CG**	**Lat Full Moment**
Min 1550 lbs	**Max 2400 lbs**					

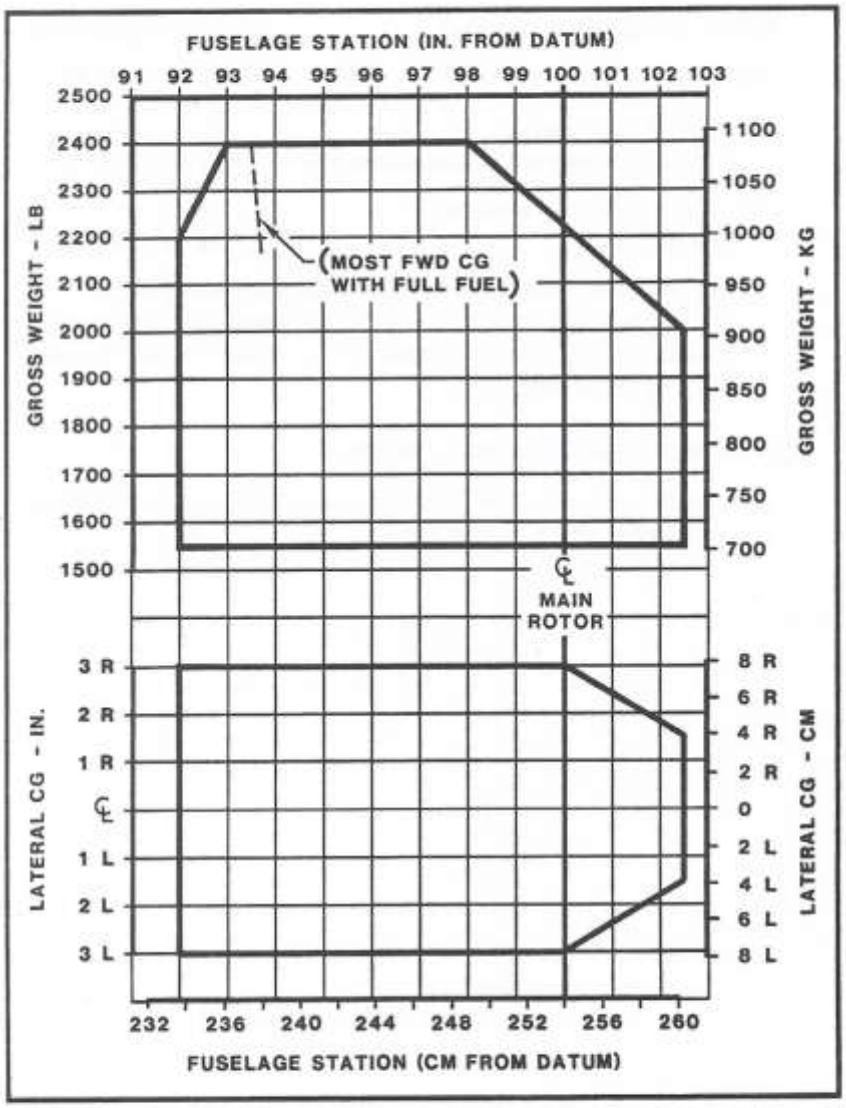
1 Gallon = 6 lbs Moment = Weight x Arm Center of Gravity = Total Moment / Total Weight

VFR Required Fuel = ETE _____ Minutes + Engine Starup & Shutdo _____ Minutes - Reserve 20 Minutes = _____ Minutes
_____ Gallons + _____ Gallons + 6 Gallons = _____ Gallons

Max OGE: _____ Feet Max IGE: _____ Feet Fuel Burn Rate: 18 Gallons Per Hour (For Flight Planning)

ROBINSON
MODEL R44

SECTION 2
LIMITATIONS



CENTER OF GRAVITY LIMITS

FAA APPROVED: 16 APR 2003

2-4

Robinson R44 - Raven II & Clipper II - Weight & Balance N_____

ITEM	LIMIT	WEIGHT	LONG ARM	LONG MOMENT	LAT ARM	LAT MOMENT
Empty Weight						
Pilot (Right Fwd)	Solo Min 150 lbs Max 300 lbs		49.5		+ 12.2	
Pilot Baggage	Max 50 lbs		44		+ 11.5	
Passenger (Left Fwd)	Max 300 lbs		49.5		-10.4	
Passenger Baggage	Max 50 lbs		44		-11.5	
Passenger (Right Rear)	Max 300 lbs		79.5		+ 12.2	
Passenger Baggage	Max 50 lbs		79.5		+ 12.2	
Passenger (Left Rear)	Max 300 lbs		79.5		-12.2	
Passenger Baggage	Max 50 lbs		79.5		-12.2	
Door (Fwd Right) Remov	-7.5 lbs		49.4		+24.0	
Door (Fwd Left) Removed	-7.5 lbs		49.4		-24.0	
Door (Rear Right) Remov	-7.0 lbs		75.4		+23.0	
Door (Rear Left) Remove	-7.0 lbs		75.4		-23.0	
Cyclic Removed	-0.6 lbs		35.8		-8.0	
Collective Removed	-0.8 lbs		47		-21.0	
Pedals Removed	-0.8 lbs		16.8		-9.5	
Total W&B with Zero Fuel		**No Fuel Weight**	**No Fuel CG**	**Long Empty Moment**	**No Fuel Lat CG**	**Lat Empty Moment**
Min 1600 lbs	**Max 2500 lbs**					
Main Tank 30.6 Max **Gallons -->**	Max 183.6 lbs		106		-13.5	
Aux Tank 18.3 Max **Gallons -->**	Max 109.8 lbs		102		+13.5	
Total W&B with Takeoff Fuel		**Take Off Weight**	**Takeoff Fuel CG**	**Long Full Moment**	**Takeoff Fuel Lat CG**	**Lat Full Moment**
Min 1600 lbs	**Max 2500 lbs**					

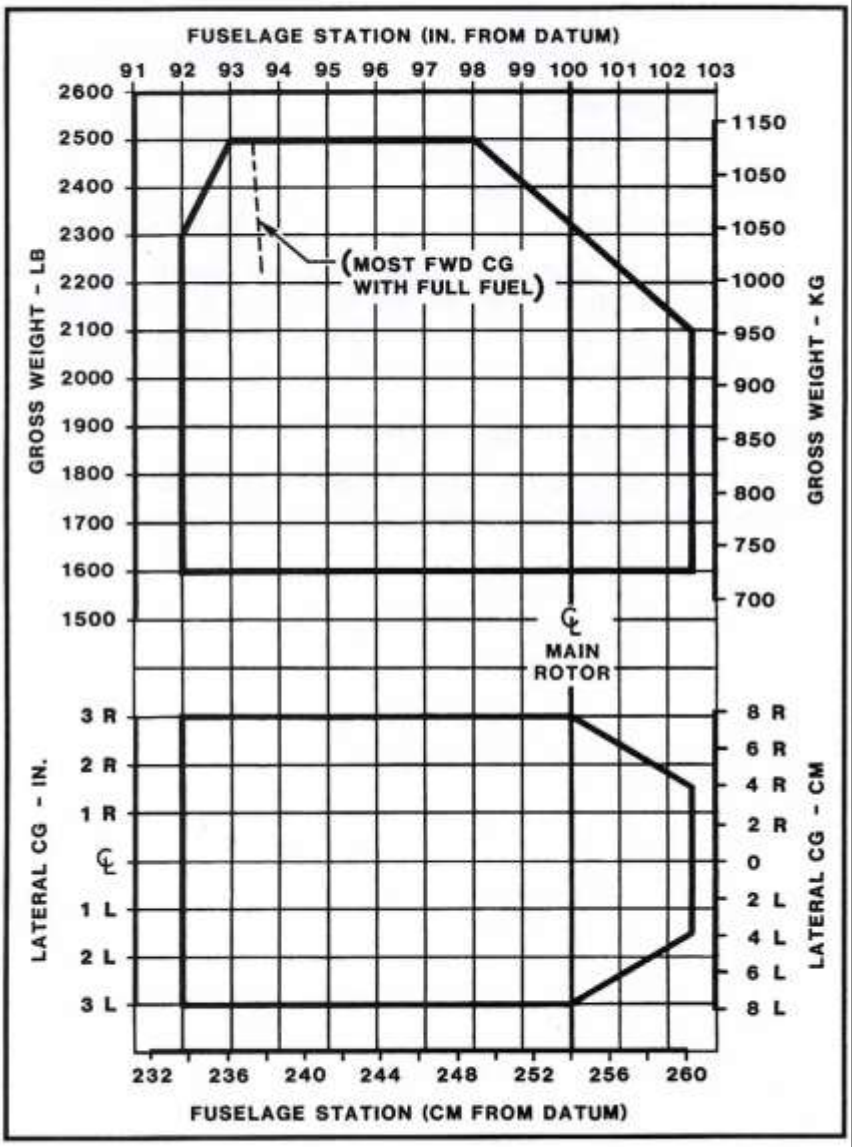
1 Gallon = 6 lbs Moment = Weight x Arm Center of Gravity = Total Moment / Total Weight

VFR Required Fuel = ETE _____ Minutes + Engine Starup & Shutdo _____ Minutes - Reserve 20 Minutes = _____ Minutes
_____ Gallons + _____ Gallons + 6 Gallons = _____ Gallons

Max OGE: _____ Feet Max IGE: _____ Feet Fuel Burn Rate: 18 Gallons Per Hour (For Flight Planning)

ROBINSON
MODEL R44 II

SECTION 2
LIMITATIONS



CENTER OF GRAVITY LIMITS

15. Are you required to file a flight plan for your solo Cross Country flights by Star Helicopters? _____

16. How do you file your flight plan? _____

17. What are your minimum weather conditions _____and maximum wind _____ with gusts of _____

18. What are the minimum forecasted weather conditions needed to fly your solo flights? _____

19. How long past your expected arrival time from your solo flights must the must the above minimum weather conditions be forecasted for? _____

20. Are you required to complete a weight and balance before your solo flights by Star Helicopters? _____

21. Why do we do a weight & balance before every flight? _____

22. Are you allowed to take passengers on your solo flights? _____

23. Can you practice emergency procedures on your solo flights? _____

24. Are you allowed to land off airport on your solo flights? _____

25. How many hours of dual training must you have received before you can solo in a R22? _____

26. What do you do if you encounter bad weather on your solo flight? _____

27. Are you allowed to fly at night during your solo flights? _____

28. Are you permitted to remove the right door during your solo flights by Star Helicopters? _____

29. Are the dual controls allowed to be installed during a solo? _____

30. Why do we do IGE and OGE calculations? _____

31. Are you required to do IGE and OGE hover calculations before every flight? _____

32. If we can do on OGE hover can we perform and IGE hover? _____

33. If you are instructed to maintain 500 feet or below during your solo, what altitude should you maintain? ____

34. Is this pre-solo test required before you can solo? _____

35. This pre-solo test must be corrected to _____% before you can solo.

36. When landing at un-controlled airports a helicopter pilot prefers to use (Circle you choices).
    Runways
    Taxi Ways
    Other areas

37. Why do we try and avoid runways at non-towered airports? _____

38. Which FAR Regulation tells us to avoid fixed wing traffic at Non-Towered airports? _____

Stage 3/Module 5 Exam
Advanced Maneuvers

Name: _____
Grade: _____
Date: _____
Instructor:

Choose the most correct answer choice.

1. The purpose of the lead-lag (drag) hinge in a three-bladed, fully articulated helicopter rotor system is to compensate for

   A - Coriolis effect.
   B - coning.
   C - geometric unbalance.

2. High airspeeds, particularly in turbulent air, should be avoided primarily because of the possibility of

   A - an abrupt pitch up.
   B - retreating blade stall.
   C - a low frequency vibration developing.

3. The maximum forward speed of a helicopter is limited by

   A - retreating blade stall.
   B - rotor RPM red line.
   C - solidity ration.

4. Ground resonance is most likely to develop when

   A — on the ground and harmonic vibrations develop between the main and tail rotors.
   B — a series of shocks causes the rotor system to become unbalanced.
   C — there is a combination of a decrease in the angle of attack on the advancing blade and an increase in the angle of attack on the retreating blade.

5. If the pilot experiences ground resonance, and the rotor RPM is not sufficient for flight,

   A- open the throttle full and liftoff.
   B - apply the rotor brake and stop the rotor as soon as possible.
   C - attempt to takeoff at that power setting.

6. If the pilot were to make a near-vertical power approach into a confined area with the airspeed near zero, what hazardous condition may develop?

   A- Ground resonance when ground contact is made.
   B - A settling-with-power condition.
   C - Blade stall vibration could develop.

7. If anti-torque failure occurred during the landing touchdown, what could be done to help straighten out a left yaw prior to touchdown?

   A- A flare to zero airspeed and vertical descent to touchdown should be made.
   B - Apply available throttle to help swing the nose to the right just prior to touchdown.
   C - A normal running landing should be made.

8. The upward bending of the rotor blades resulting from the combined forces of lift and centrifugal force is known as:

   A - coning.
   B - blade slapping.
   C - inertia.

9. Which is a precaution to be observed during an autorotative descent?

   A - Normally, the airspeed is controlled with the collective pitch.
   B - Normally, only the cyclic control is used to make turns.
   C - Do not allow the rate of descent to get too low at zero airspeed.

10. What is the procedure for a slope landing?

    A- When the downslope skid is on the ground, hold the collective pitch at the same position.
    B - Minimum rpm shall be held until the full weight of the helicopter is on the skid.
    C - When parallel to the slope, slowly lower the upslope skid to the ground prior to lowering the downslope skid.

11. Which action would be appropriate for confined area operations?

    A- Takeoff and landings must be made into the wind.
    B - Plan the flight path over areas suitable for a forced landing.
    C - a very steep angle of descent should be used to land on the selected spot.

12. The principal reason the shaded area of a Height vs. Velocity Chart should be avoided is

A - turbulence near the surface can diphase the blade dampers.
B - rotor rpm may decay before ground contact is made if an engine failure should occur.
C- insufficient airspeed would be available to ensure a safe landing in case of an engine failure.

13. Takeoff from a slope is normally accomplished by

A - moving the cyclic in a direction away from the slope.
B - bringing the helicopter to a level attitude before completely leaving the ground.
C - moving the cyclic stick to a full up position as the helicopter nears a level attitude.

14. Which is a correct general rule for pinnacle and ridgeline operations?

A — Gaining altitude on takeoff is more important than gaining airspeed.
B — The approach path to a ridgeline is usually perpendicular to the ridge.
C — A climb to a pinnacle or ridgeline should be performed on the upwind side.

15. Before beginning a confined area or pinnacle landing, the pilot should first

A- execute a high reconnaissance.
B - execute a low reconnaissance.
C - fly around the area to discover areas of turbulence.

16. Under what condition should a helicopter pilot consider using a running takeoff?

A - When gross weight or density altitude prevents a sustained hover at normal hovering altitude.
B - When normal climb speed is assured between 10 and 20 feet.
C - When the additional airspeed can be quickly converted to altitude.

17. If possible, when departing a confined area, what type of takeoff is preferred?

A - A normal takeoff from a hover.
B - A vertical takeoff.
C - A normal takeoff from the surface.

18. The proper action to initiate a quick stop is to apply

A- forward cyclic and lower the collective pitch.
B - aft cyclic and raise the collective pitch.
C - aft cyclic and lower the collective pitch.

19. Which flight technique is recommended for use during hot weather?

A - Use minimum allowable rpm and maximum allowable manifold pressure during all phases of flight.
B - During hovering flight, maintain minimum engine rpm during left pedals turns and maximum engine rpm during right pedal turns.
C - During takeoff accelerate slowly into forward flight.

20. What action should the pilot take if engine failure occurs at altitude?

A - Open the throttle as the collective pitch is raised.
B - Reduce cyclic back stick pressure during turns.
C - Lower the collective pitch control as necessary, to maintain rotor rpm.

Stage 4/Module 3 Final Exam
Prep for Checkride

Name: _____
Grade: _____
Date: _____
Instructor:

Choose the most correct answer choice.

1. What type of fuel can be substituted in an aircraft if the recommended octane is not available?

   A- The next higher octane aviation gas.
   B - The next lower octane aviation gas.
   C - Unleaded automotive gas of the same octane rating.

2. If recency of experience requirements for night flight are not met and official sunset is 1830, the latest time passengers may be carried is

   A — 1829.
   B — 1859.
   C — 1929.

3. The wind at 5,000 feet AGL is southwesterly while the surface wind is southerly. This difference in direction is primarily due to

   A- stronger pressure gradient at higher altitudes.
   B - friction between the wind and the surface.
   C - stronger Coriolis force at the surface.

4. Except when necessary for takeoff or landing, what is the minimum safe altitude for a pilot to operate an aircraft anywhere?

   A - An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.
   B - An altitude of 500 feet above the surface and no closer than 500 feet to any person, vessel, vehicle or structure.
   C - An altitude of 500 feet above the highest obstacle

5. During a night flight, you observe steady red and green lights ahead and at the same altitude. What is the general direction of movement of the other aircraft?

   A- The other aircraft is crossing to the left.
   B - The other aircraft is flying away from you.
   C - The other aircraft is approaching head on.

6. When changing from autorotation for maximum endurance to one for maximum range, the airspeed must be _ and the rate of descent will _____.

   A — increase, decrease.
   B — decrease, increase.
   C — increase, increase.

7. One weather phenomenon which will always occur when flying across a front is a change in the

   A — wind direction.
   B — type of precipitation.
   C — stability of the air mass.

8. What are characteristics of a moist, unstable air mass?

   A- Cumuliform clouds and showery precipitation.
   B - Poor visibility and smooth air.
   C - Stratiform clouds and showery recipitation.

METAR KINK 12845Z 11012G18KT 15SM SKC 25/17 A3000
METAR KBOI 121854Z 13004KT 30SM SCT150 17/6 A3015
METAR KLAX 121852Z 25004KT 6SM BR SCT007 SCT250 16/15 A2991
SPECI KMDW 121856Z 32005KT 1 1/2SM RA OVC007 17/16 A2980 RMK RAB35
SPECI KJFK 121853Z 18004KT 1/2SM FG R04/2200 OVC005 20/18 A3006

Exam Figure 3.

9. (Refer to Exam Figure 3.) What are the current conditions depicted for Chicago Midway Airport (KMDW)?

A - Sky 700 feet overcast, visibility 1-1/2 SM, rain.
B - Sky 7000 feet overcast, visibility 1-1/2 SM, heavy rain.
C - Sky 700 feet overcast, visibility 11, occasionally 2 SM, with rain.

10. From which primary source should information be obtained regarding expected weather at the estimated time of arrival if your destination has no Terminal Aerodrome Forecast?

A- Low-level Prognostic Chart.
B - Weather Depiction Chart.
C - Aviation Area Forecast.

11. Offset flapping hinges_____ assist in keeping the fuselage parallel with the rotor disc and they allow a ____ range of center of gravity position.

A- do/narrower
B - do not/wider
C - do/wider

12. A 10-knot wind at 45° to the runway direction will cause a crosswind component of

A- 7 knots.
B - 10 knots.
C - 4 knots.

13. According to the Private Rotorcraft Practical Test Standards, during a straight in autorotation a student is required to come to a hover within _____ feet of a designated point.

A- 200
B - 100
C - 300

14. According to the Private Rotorcraft Practical Test Standards, a student must maintain what accuracy standards during navigation tasks

A- +/- 100 feet altitude, +/- 10 degrees heading.
B - +/- 200 feet altitude, +/- 10 degrees heading.
C - +/- 200 feet altitude, +/- 15 degrees heading.

15. Which light signal from the control tower clears a pilot to taxi?

A — Flashing green.
B — Steady green.
C — Flashing white.

16. How should contact be established with an EnRoute Flight Advisory Service (EFAS) station, and what service would be expected?

A - Call EFAS on 122.2 for routine weather, current reports on hazardous weather, and altimeter settings.
B - Call EFAS on 122.5 for advisory service pertaining to severe weather.
C - Call EFAS on 122.0 for information regarding actual weather and thunderstorm activity along proposed route.

17. If you have to land on a high level landing site surrounded by irregular features you should aim to complete the approach

A- short of the site.
B - over the site.
C - on the site.

18. If there is an inversion above your planned cold mountain landing site, you should anticipate that translational lift will _____ as you descend through the inversion.

A — increase
B — decrease
C — remain the same

19. Generally ice accretion is _____on sharp objects.

A- faster
B - slower
C - the same

20. A major risk of rotor blade icing is the resulting unbalancing of blades which can cause on landing.

A - recirculation
B - ground resonance
C - asymmetric loading

APPENDIX B

Cross-Country Flight Planning

Cross-Country Flight Planning Training Overview

In order to insure a standardized and efficient method of Cross-Country flight planning instruction, all Flight instructors will teach using the following cross country flights. The TAC Chart should be setup using the planning the route and preparing the TAC Chart section, the Navigation Log should be completed using the Preparing the navigation Log Section and the Flight plan should be completed using the sample Flight Plan form.

Cross-Country Flights – Part 141

Destination airports for all dual/solo cross-country flights are as follows:

1st Cross-Country Flight (Dual)
HHR-AJ0 (Using Dead Reckoning)
AJ0-HHR (Using Pilotage)

2nd Cross-Country Flight (Dual)
HHR-AJO-F70 (Using Dead Reckoning)
F70-HHR (Using Pilotage)

3rd Cross-Country Flight (Solo)
HHR-AJO-F70 (Using Dead Reckoning)
F70-HHR (Using Pilotage)

A new flight plan must be filled and activated for each solo cross-country flight and is recommended for student practice on all duel cross-country flights.

Cross-Country Flights – Part 61

Destination airports for all dual/solo cross-country flights are as follows:

1st Cross-Country Flight (Dual)
HHR-AJ0 (Using Dead Reckoning)
AJ0-HHR (Using Pilotage)

2nd Cross-Country Flight (Dual)
HHR-AJO-F70 (Using Dead Reckoning)
F70-HHR (Using Pilotage)

3rd Cross-Country Flight (Solo)
HHR-AJO-F70 (Using Dead Reckoning)
F70-HHR (Using Pilotage)

4th Cross-Country Flight (Solo)
HHR-AJO-F70 (Using Dead Reckoning)
F70-HHR (Using Pilotage)

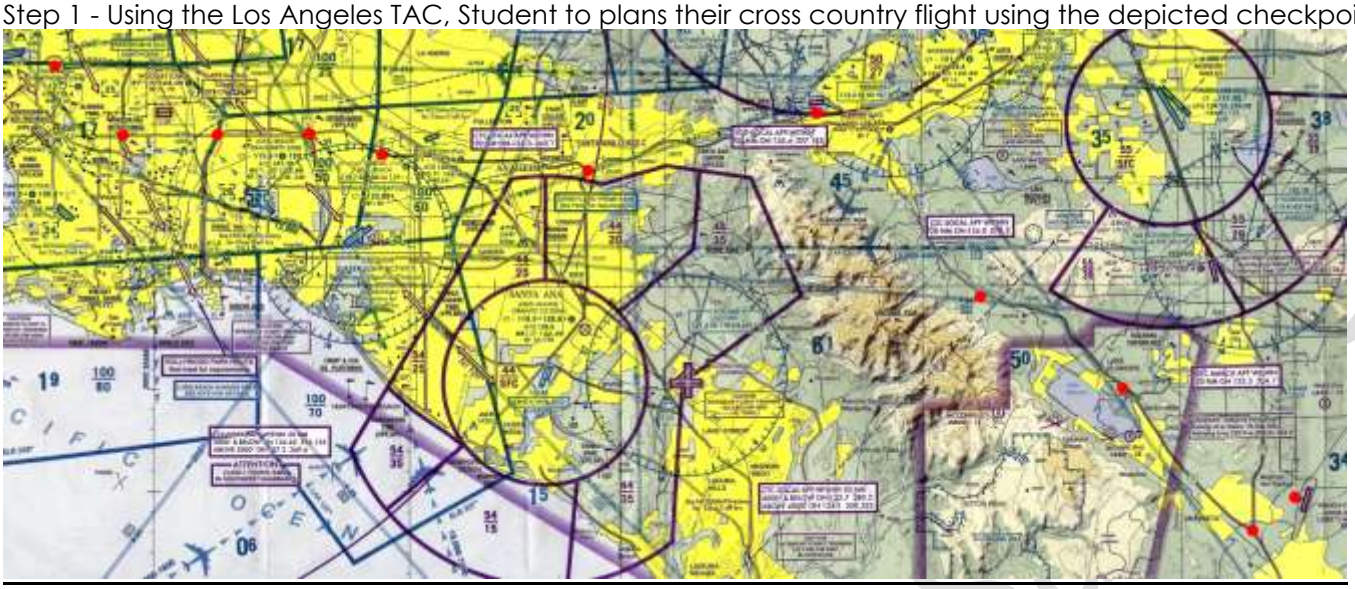
A new flight plan must be filled and activated for each solo cross-country flight and is recommended for student practice on all duel cross-country flights.

Weight & Balance

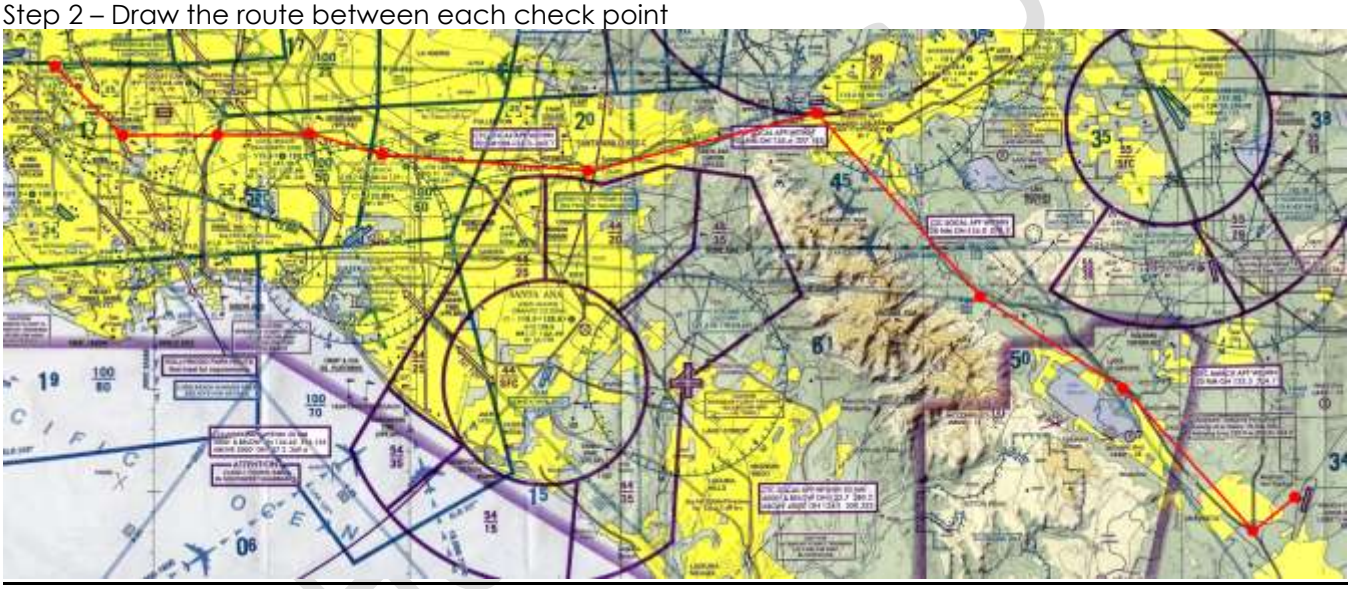
Student should begin their Cross-Country flight planning by doing a Weight & Balance calculation to determine the maximum amount of fuel they can carry to complete the Cross-Country flight.

Planning the Route and Preparing the TAC Chart

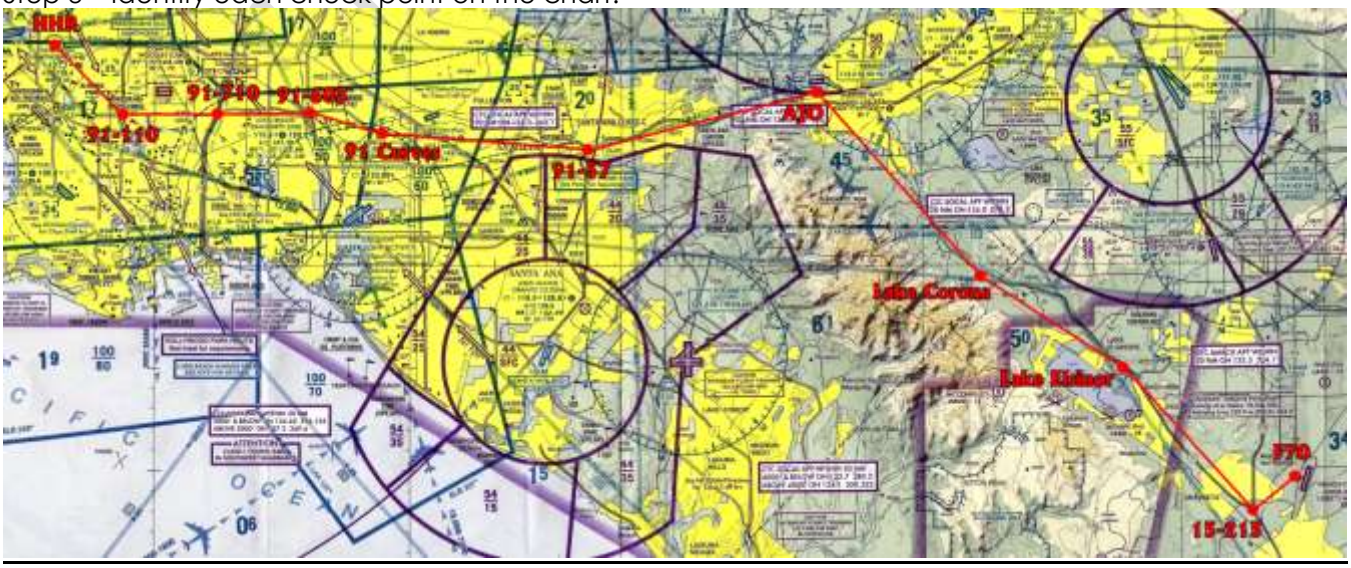
Step 1 - Using the Los Angeles TAC, Student to plans their cross country flight using the depicted checkpoints.



Step 2 – Draw the route between each check point

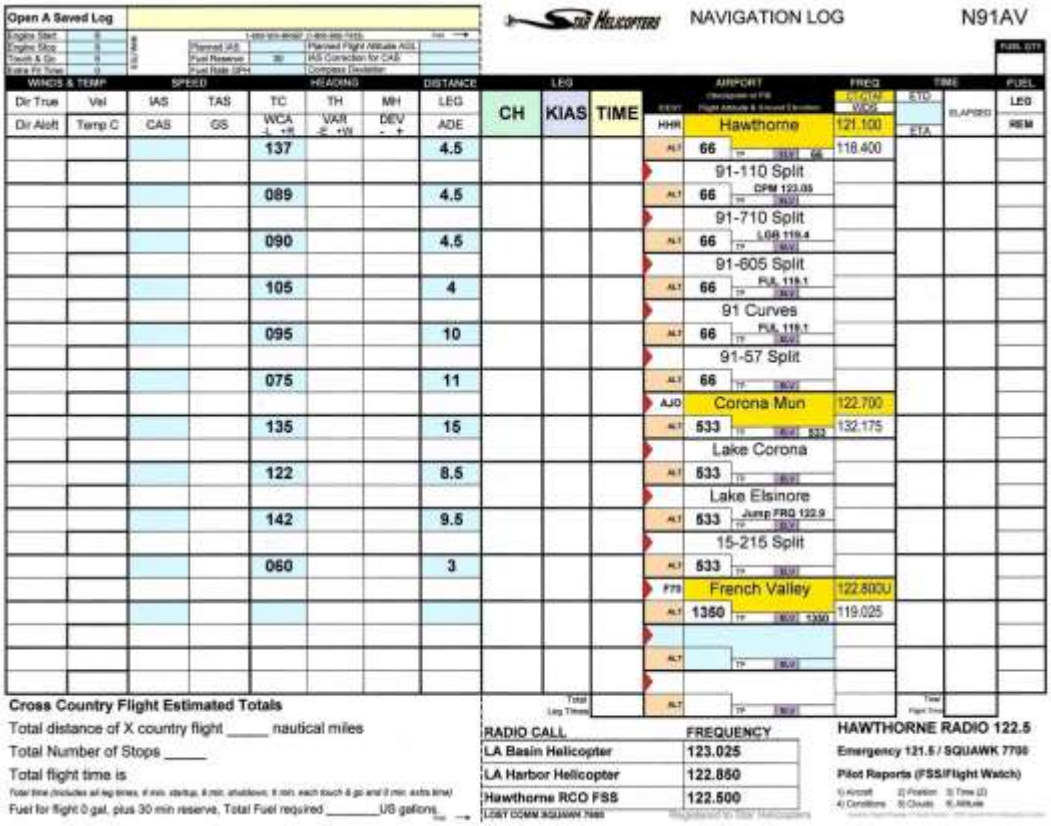


Step 3 – Identify each check point on the chart.



Preparing the Navigation Log

Step 1 Enter each check point on the Navigation Log and enter TC and Distance for each leg



Open A Saved Log

Star Helicopters NAVIGATION LOG N91AV

Dir True / Dir Aloft	Vel / Temp C	IAS / CAS	TAS / GS	TC / WCA -L +R	TH / VAR -E +W	MH / DEV - +	LEG / ADE	CH	KIAS	TIME	AIRPORT	FREQ	ETD / ETA	ELAPSED	LEG / REM
											HHR Hawthorne	121.100 / 118.400			
				137			4.5				ALT 66				
											91-110 Split				
				089			4.5				ALT 66 CPM 123.05				
											91-710 Split				
				090			4.5				ALT 66 LOB 119.4				
											91-605 Split				
				105			4				ALT 66 FUL 119.1				
											91 Curves				
				095			10				ALT 66 FUL 119.1				
											91-57 Split				
				075			11				ALT 66				
											AJO Corona Mun	122.700			
				135			15				ALT 533	132.175			
											Lake Corona				
				122			8.5				ALT 533				
											Lake Elsinore				
				142			9.5				ALT 533 Jump FRQ 122.9				
											15-215 Split				
				060			3				ALT 533				
											F70 French Valley	122.800U			
											ALT 1350	119.025			

Cross Country Flight Estimated Totals

Total distance of X country flight _____ nautical miles

Total Number of Stops _____

Total flight time is

Fuel for flight 0 gal, plus 30 min reserve, Total Fuel required _____US gallons

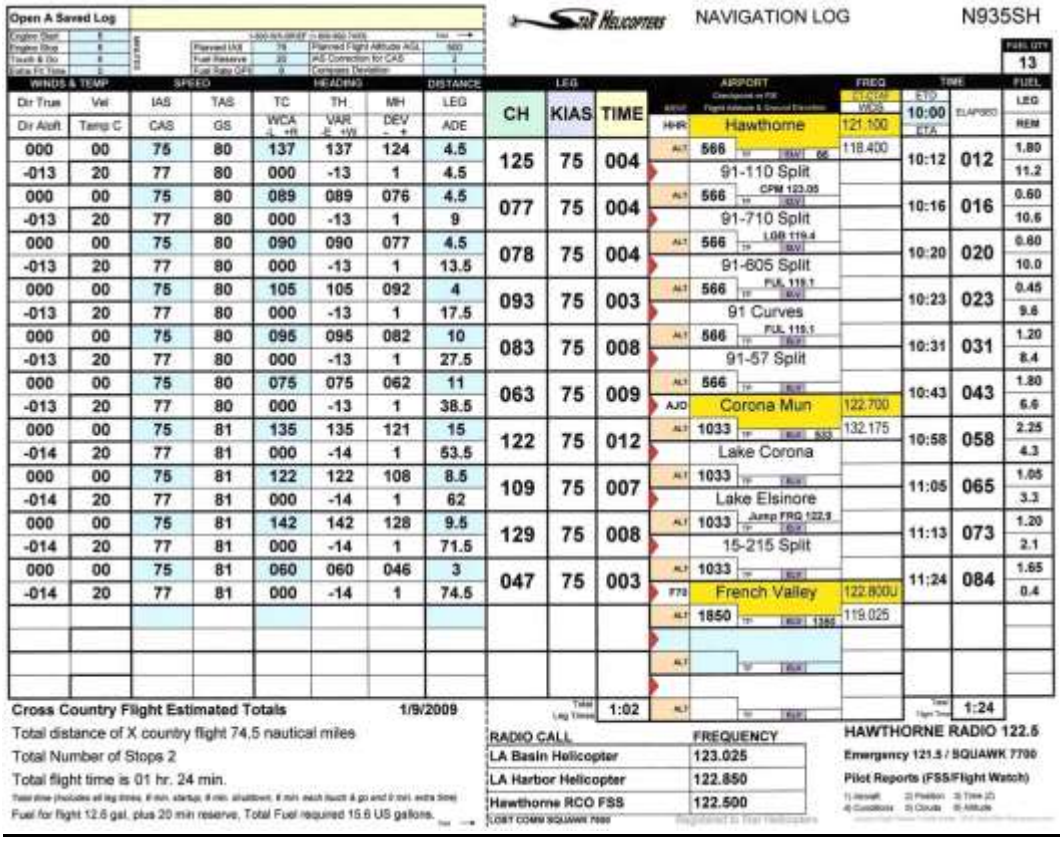
RADIO CALL	FREQUENCY
LA Basin Helicopter	123.025
LA Harbor Helicopter	122.850
Hawthorne RCO FSS	122.500

HAWTHORNE RADIO 122.5

Emergency 121.5 / SQUAWK 7700

Pilot Reports (FSS/Flight Watch)

Step 2 Complete the calculations needed to complete the navigation log



Open A Saved Log

Star Helicopters NAVIGATION LOG N935SH

FUEL QTY 13

Dir True / Dir Aloft	Vel / Temp C	IAS / CAS	TAS / GS	TC / WCA -L +R	TH / VAR -E +W	MH / DEV - +	LEG / ADE	CH	KIAS	TIME	AIRPORT	FREQ	ETD / ETA	ELAPSED	LEG / REM
											HHR Hawthorne	121.100 / 118.400	10:00		
000	00	75	80	137	137	124	4.5	125	75	004	ALT 566		10:12	012	1.80
-013	20	77	80	000	-13	1	4.5				91-110 Split				11.2
000	00	75	80	089	089	076	4.5	077	75	004	ALT 566 CPM 123.05		10:16	016	0.60
-013	20	77	80	000	-13	1	9				91-710 Split				10.6
000	00	75	80	090	090	077	4.5	078	75	004	ALT 566 LOB 119.4		10:20	020	0.60
-013	20	77	80	000	-13	1	13.5				91-605 Split				10.0
000	00	75	80	105	105	092	4	093	75	003	ALT 566 FUL 119.1		10:23	023	0.45
-013	20	77	80	000	-13	1	17.5				91 Curves				9.6
000	00	75	80	095	095	082	10	083	75	008	ALT 566 FUL 119.1		10:31	031	1.20
-013	20	77	80	000	-13	1	27.5				91-57 Split				8.4
000	00	75	80	075	075	062	11	063	75	009	ALT 566		10:43	043	1.80
-013	20	77	80	000	-13	1	38.5				AJO Corona Mun	122.700			6.6
000	00	75	81	135	135	121	15	122	75	012	ALT 1033	132.175	10:58	058	2.25
-014	20	77	81	000	-14	1	53.5				Lake Corona				4.3
000	00	75	81	122	122	108	8.5	109	75	007	ALT 1033		11:05	065	1.05
-014	20	77	81	000	-14	1	62				Lake Elsinore				3.3
000	00	75	81	142	142	128	9.5	129	75	008	ALT 1033 Jump FRQ 122.9		11:13	073	1.20
-014	20	77	81	000	-14	1	71.5				15-215 Split				2.1
000	00	75	81	060	060	046	3	047	75	003	ALT 1033		11:24	084	1.65
-014	20	77	81	000	-14	1	74.5				F70 French Valley	122.800U			0.4
											ALT 1850	119.025			

Cross Country Flight Estimated Totals 1/9/2009

Total distance of X country flight 74.5 nautical miles

Total Number of Stops 2

Total flight time is 01 hr. 24 min.

Fuel for flight 12.6 gal, plus 20 min reserve, Total Fuel required 15.6 US gallons.

Total Leg Times 1:02 Total Flight Time 1:24

RADIO CALL	FREQUENCY
LA Basin Helicopter	123.025
LA Harbor Helicopter	122.850
Hawthorne RCO FSS	122.500

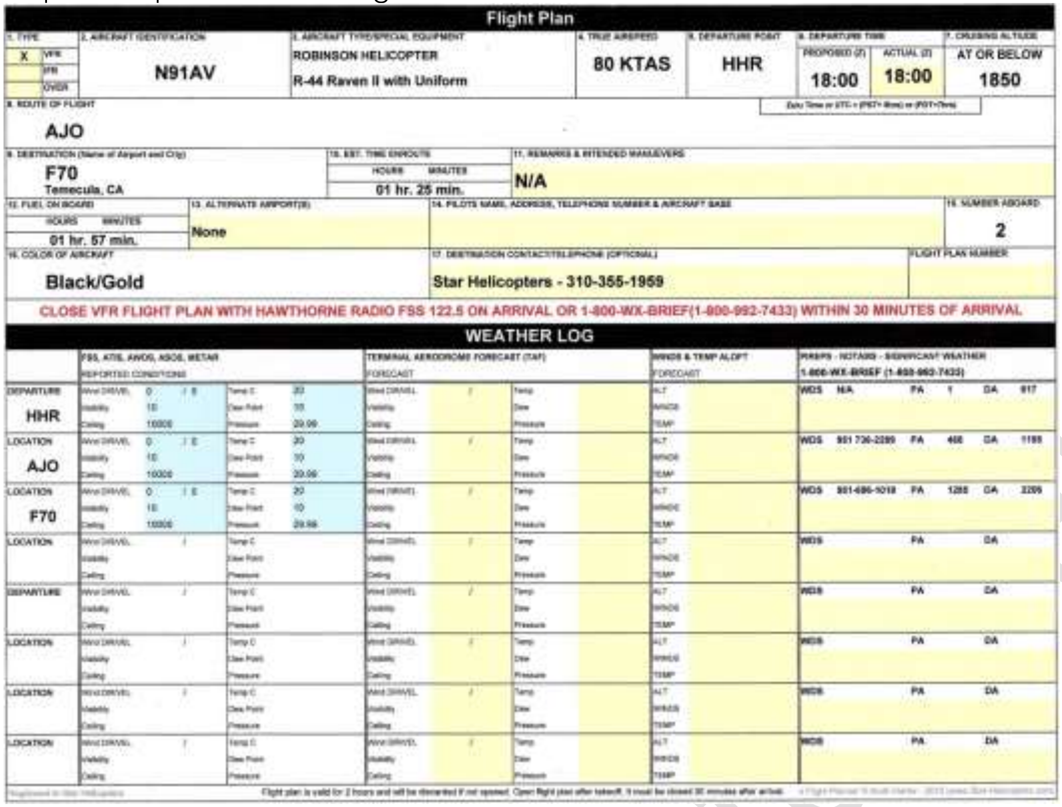
HAWTHORNE RADIO 122.5

Emergency 121.5 / SQUAWK 7700

Pilot Reports (FSS/Flight Watch)

Preparing and Filing a Flight Plan

Step 1 Complete all of the Flight Plan Information items 1 thru 17 with the correct information.



Flight Plan

1. TYPE: X VFR ☐ IFR ☐ DVFR
2. AIRCRAFT IDENTIFICATION: N91AV
3. AIRCRAFT TYPE/SPECIAL EQUIPMENT: ROBINSON HELICOPTER R-44 Raven II with Uniform
4. TRUE AIRSPEED: 80 KTAS
5. DEPARTURE POINT: HHR
6. DEPARTURE TIME: PROPOSED (Z) 18:00 ACTUAL (Z) 18:00
7. CRUISING ALTITUDE: AT OR BELOW 1850
8. ROUTE OF FLIGHT: AJO
9. DESTINATION (Name of Airport and City): F70 Temecula, CA
10. EST. TIME ENROUTE: HOURS MINUTES 01 hr. 25 min.
11. REMARKS & INTENDED MANEUVERS: N/A
12. FUEL ON BOARD: HOURS MINUTES 01 hr. 57 min.
13. ALTERNATE AIRPORT(S): None
14. PILOTS NAME, ADDRESS, TELEPHONE NUMBER & AIRCRAFT BASE:
15. NUMBER ABOARD: 2
16. COLOR OF AIRCRAFT: Black/Gold
17. DESTINATION CONTACT/TELEPHONE (OPTIONAL): Star Helicopters - 310-355-1959

FLIGHT PLAN NUMBER:

CLOSE VFR FLIGHT PLAN WITH HAWTHORNE RADIO FSS 122.5 ON ARRIVAL OR 1-800-WX-BRIEF(1-800-992-7433) WITHIN 30 MINUTES OF ARRIVAL

WEATHER LOG

	FSS, ATIS, AWOS, ASOS, METAR REPORTED CONDITIONS	TERMINAL AERODROME FORECAST (TAF) FORECAST	WINDS & TEMP ALOFT FORECAST	PIREPS - NOTAMS - SIGNIFICANT WEATHER 1-800-WX-BRIEF (1-800-992-7433)
DEPARTURE HHR	Wind DIR/VEL 0 / Visibility 10 Ceiling 10000 Temp C 20 Dew Point 10 Pressure 29.99	Wind DIR/VEL / Visibility Ceiling Temp Dew Pressure	ALT WINDS TEMP	WDS N/A PA 1 DA 917
LOCATION AJO	Wind DIR/VEL 0 / Visibility 10 Ceiling 10000 Temp C 20 Dew Point 10 Pressure 29.99	Wind DIR/VEL / Visibility Ceiling Temp Dew Pressure	ALT WINDS TEMP	WDS 951 736-2289 PA 468 DA 1199
LOCATION F70	Wind DIR/VEL 0 / Visibility 10 Ceiling 10000 Temp C 20 Dew Point 10 Pressure 29.98	Wind DIR/VEL / Visibility Ceiling Temp Dew Pressure	ALT WINDS TEMP	WDS 951-696-1018 PA 1288 DA 2209
LOCATION	Wind DIR/VEL / Visibility Ceiling Temp C Dew Point Pressure	Wind DIR/VEL / Visibility Ceiling Temp Dew Pressure	ALT WINDS TEMP	WDS PA DA
DEPARTURE	Wind DIR/VEL / Visibility Ceiling Temp C Dew Point Pressure	Wind DIR/VEL / Visibility Ceiling Temp Dew Pressure	ALT WINDS TEMP	WDS PA DA
LOCATION	Wind DIR/VEL / Visibility Ceiling Temp C Dew Point Pressure	Wind DIR/VEL / Visibility Ceiling Temp Dew Pressure	ALT WINDS TEMP	WDS PA DA
LOCATION	Wind DIR/VEL / Visibility Ceiling Temp C Dew Point Pressure	Wind DIR/VEL / Visibility Ceiling Temp Dew Pressure	ALT WINDS TEMP	WDS PA DA
LOCATION	Wind DIR/VEL / Visibility Ceiling Temp C Dew Point Pressure	Wind DIR/VEL / Visibility Ceiling Temp Dew Pressure	ALT WINDS TEMP	WDS PA DA

Step 2 Call WX-Brief to file your flight plan and obtain a weather briefing and fill out the Weather Log section.

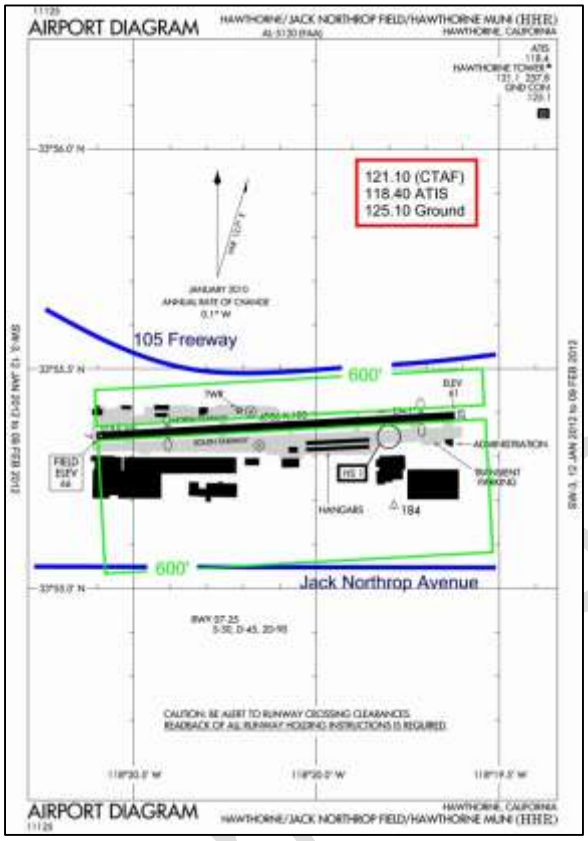
Preparing a Frequency List

List all of the frequencies for the airports and areas along your cross country sheet and printout.

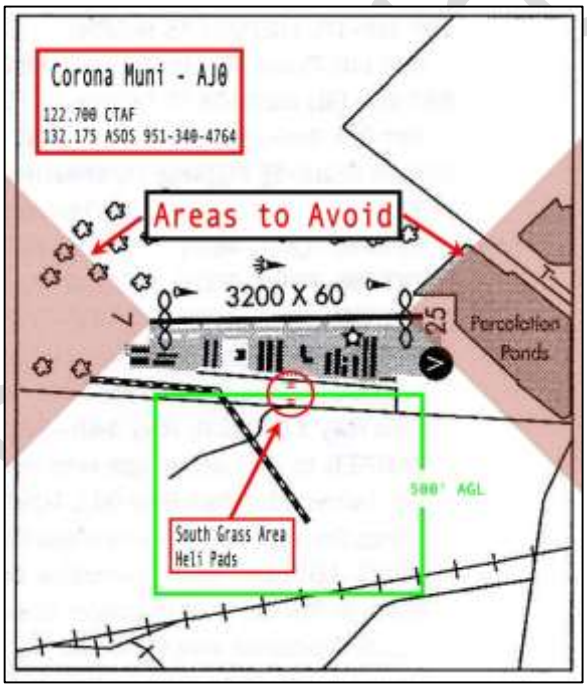
HAWTHORNE (HHR)	**ATIS**	**118.4**
	CT/CTAF	**121.10**
COMPTON (CPM)	**CTAF**	**123.05**
LONG BEACH (LGB)	**ATIS**	**127.75**
	CT/CTAF (North)	**119.4**
	CT (South)	**120.50**
FULLERTON (FUL)	**ATIS**	**125.05**
	CT/CTAF	**119.1**
CORONA (AJO)	**ASOS**	**132.175**
	CTAF	**122.7**
LAKE ELSINORE	**Jump Freq**	**122.9**
FRENCH VALLEY	**AWOS**	**119.025**
	CTAF	**122.8**
LA BASIN		**123.025**
HARBOR (S of 91)		**122.850**
LAX (HELI)	**CT**	**119.80**
HAWTHORNE RCO	**FSS**	**122.5**
		122.2
EMERGENCY		**121.5**

Airport Diagrams

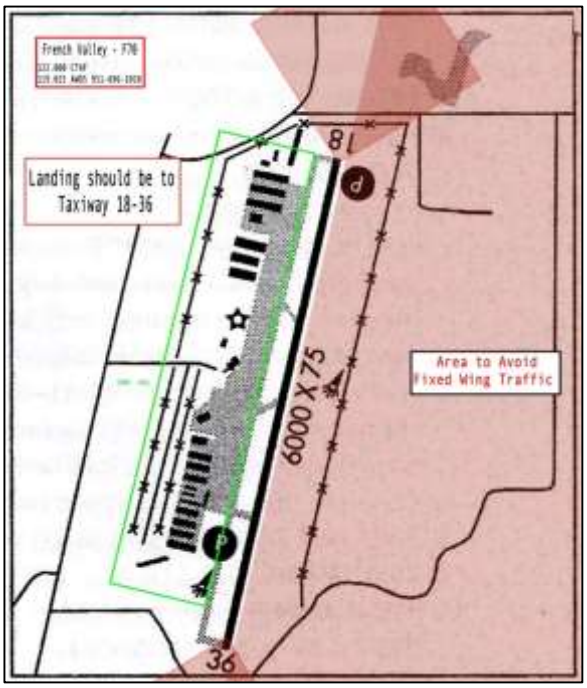
Print an airport diagram for each airport you intend to land at on your cross-country flight.



HHR



AJO



F70

Preparing The Knee Board

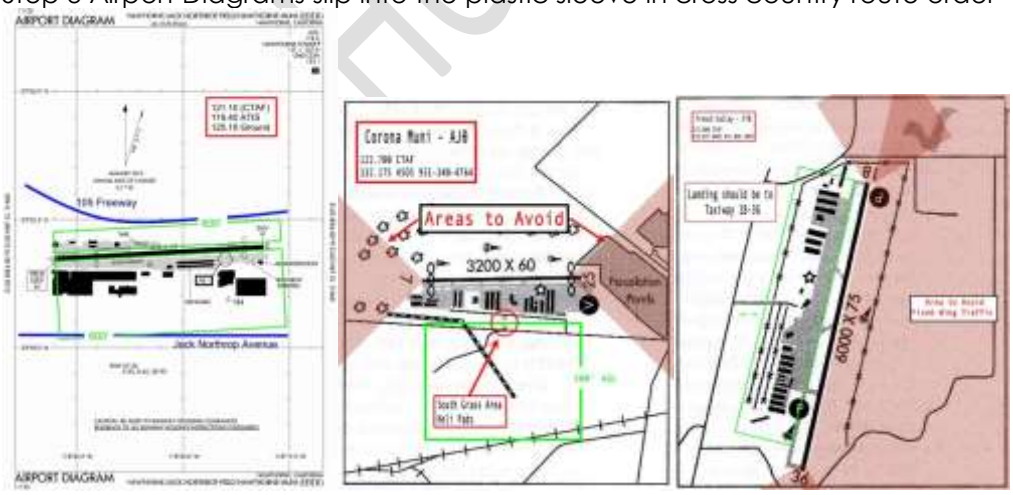
We strongly recommend that our helicopters students use the 9G kneeboard with the plastic holders.

Step 1 First Page Navigation Log Fold in half and slip into plastic sleeve

Step 2 Second Page Frequency List slip into plastic sleeve

HAWTHORNE (HHR)	ATIS	118.4
	CT/CTAF	121.10
COMPTON (CPM)	CTAF	123.05
LONG BEACH (LGB)	ATIS	127.75
	CT/CTAF (North)	119.4
	CT (South)	120.50
FULLERTON (FUL)	ATIS	125.05
	CT/CTAF	119.1
CORONA (AJO)	ASOS	132.175
	CTAF	122.7
LAKE ELSINORE	Jump Freq	122.9
FRENCH VALLEY	AWOS	119.025
	CTAF	122.8
LA BASIN	123.025	
HARBOR (S of 91)	122.850	
LAX (HELI)	CT	119.80
HAWTHORNE RCO	FSS	122.5
		122.2
EMERGENCY		121.5

Step 3 Airport Diagrams slip into the plastic sleeve in cross country route order



Step 4 Accordion fold the chart and attach to the kneeboard spring clip, so that it can be turned with one hand during the entire flight.

Navigation Log

Once your student has successfully completed their flight planning it is recommended that they use one of the following Star Helicopters prepared Navigation Log's (R22 or R44 depending on aircraft student is learning in) in their Kneeboard. So that you can verify that they are meeting the requirements of their Cross Country Dead Reckoning Navigation training and so that the student can clearly read the information of the Navigation Log.

STAR HELICOPTERS NAVIGATION LOG N935SH

FUEL QTY 13

LEG CH	LEG KIAS	LEG TIME	IDENT	AIRPORT / Checkpoint or FIX / Flight Altitude & Ground Elevation	FREQ CT-CTAF / WDS	TIME ETD / ETA	ELAPSED	FUEL LEG / REM
			HHR	Hawthorne	121.100	10:00		
125	75	004	ALT 566	TP ELV 66	118.400	10:12	012	1.80 / 11.2
				91-110 Split				
077	75	004	ALT 566	CPM 123.05 TP ELV		10:16	016	0.60 / 10.6
				91-710 Split				
078	75	004	ALT 566	LGB 119.4 TP ELV		10:20	020	0.60 / 10.0
				91-605 Split				
093	75	003	ALT 566	FUL 119.1 TP ELV		10:23	023	0.45 / 9.6
				91 Curves				
083	75	008	ALT 566	FUL 119.1 TP ELV		10:31	031	1.20 / 8.4
				91-57 Split				
063	75	009	ALT 566	TP ELV		10:43	043	1.80 / 6.6
			AJO	Corona Mun	122.700			
122	75	012	ALT 1033	TP ELV 533	132.175	10:58	058	2.25 / 4.3
				Lake Corona				
109	75	007	ALT 1033	TP ELV		11:05	065	1.05 / 3.3
				Lake Elsinore				
129	75	008	ALT 1033	Jump FRQ 122.9 TP ELV		11:13	073	1.20 / 2.1
				15-215 Split				
047	75	003	ALT 1033	TP ELV		11:24	084	1.65 / 0.4
			F70	French Valley	122.800U			
			ALT 1850	TP ELV 1350	119.025			
			ALT	TP ELV				
			ALT	TP ELV				
	Total Leg Times	1:02				Total Flight Time	1:24	

RADIO CALL	FREQUENCY
LA Basin Helicopter	123.025
LA Harbor Helicopter	122.850
Hawthorne RCO FSS	122.500

LOST COMM SQUAWK 7600

Registered to Star Helicopters

HAWTHORNE RADIO 122.5

Emergency 121.5 / SQUAWK 7700

Pilot Reports (FSS/Flight Watch)

1) Aircraft 2) Position 3) Time (Z)
4) Conditions 5) Clouds 6) Altitude

R22 Navigation Log

STAR HELICOPTERS NAVIGATION LOG N91AV

FUEL QTY 36

LEG CH	LEG KIAS	LEG TIME	IDENT	AIRPORT / Checkpoint or FIX / Flight Altitude & Ground Elevation	FREQ CT-CTAF / WDS	TIME ETD ##### / ETA	TIME ELAPSED	FUEL LEG / REM
			HHR	Hawthorne	121.100			
124	80	004	ALT 566	TP ELV 66	118.400	0:12	012	5.00 / 31.0
				91-110 Split				
076	80	004	ALT 566	CPM 123.05 TP ELV		0:16	016	1.67 / 29.3
				91-710 Split				
077	80	004	ALT 566	LGB 119.4 TP ELV		0:20	020	1.67 / 27.7
				91-605 Split				
092	80	004	ALT 566	FUL 119.1 TP ELV		0:24	024	1.67 / 26.0
				91 Curves				
082	80	008	ALT 566	FUL 119.1 TP ELV		0:32	032	3.33 / 22.7
				91-57 Split				
062	80	009	ALT 566	TP ELV		0:44	044	5.00 / 17.7
			AJO	Corona Mun	122.700			
121	80	012	ALT 1033	TP ELV 533	132.175	0:59	059	6.25 / 11.4
				Lake Corona				
108	80	007	ALT 1033	TP ELV		1:06	066	2.92 / 8.5
				Lake Elsinore				
128	80	008	ALT 1033	Jump FRQ 122.9 TP ELV		1:14	074	3.33 / 5.2
				15-215 Split				
046	80	003	ALT 1033	TP ELV		1:25	085	4.58 / 0.6
			F70	French Valley	122.800U			
			ALT 1850	TP ELV 1350	119.025			
			ALT	TP ELV				
			ALT	TP ELV				
	Total Leg Times	1:03				Total Flight Time	1:25	

RADIO CALL	FREQUENCY
LA Basin Helicopter	123.025
LA Harbor Helicopter	122.850
Hawthorne RCO FSS	122.500

LOST COMM SQUAWK 7600

Registered to Star Helicopters

HAWTHORNE RADIO 122.5

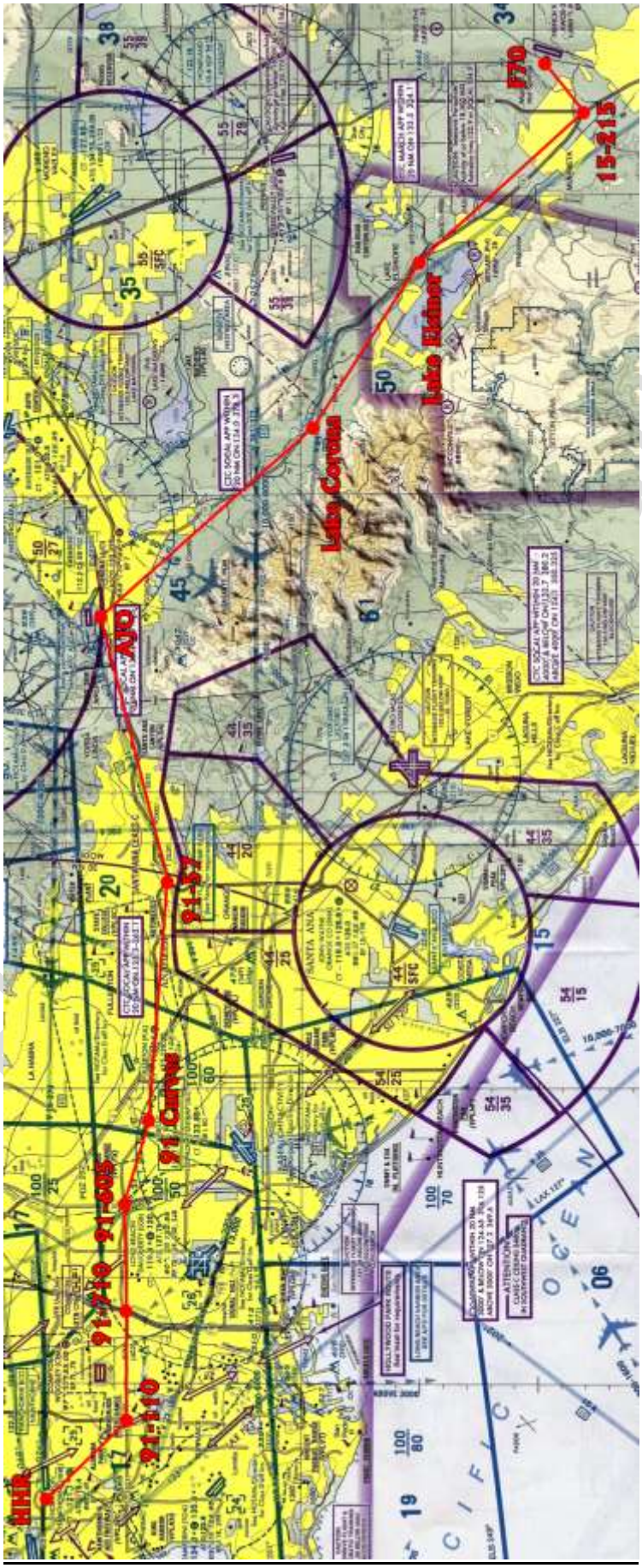
Emergency 121.5 / SQUAWK 7700

Pilot Reports (FSS/Flight Watch)

1) Aircraft 2) Position 3) Time (Z)
4) Conditions 5) Clouds 6) Altitude

R44 Navigation Log

Completed Cross-Country TAC



End of

Cross-Country Flight Planning

Congratulation on your successful completion of our

Flight & Ground Training Course
for
Private Pilot Helicopter Certification

14 CFR Part 141 and CFR Part 61
Rotorcraft/Helicopter Private Pilot Course

Star Helicopters LLC

Offers additional helicopter training courses
For

CFR Part 141 & CFR Part 61 Rotorcraft/Helicopter Private Pilot
CFR Part 141 & CFR Part 61 Rotorcraft/Helicopter Commercial Pilot
CFR Part 141 & CFR Part 61 Rotorcraft/Helicopter Instrument Rating
CFR Part 141 & CFR Part 61 Rotorcraft/Helicopter Flight Instructor
CFR Part 141 & CFR Part 61 Rotorcraft/Helicopter Flight Instructor Instrument

Fly Safe

Principles of Helicopter Flight Private Pilot Syllabus

This syllabus provides a comprehensive and integrated flight and ground school training program. Based on the text book Principles of Helicopter Flight, instructors and students can use this curriculum to complete the Private Pilot certificate course with a Helicopter rating.

Meeting all of the 14 CFR Part 141 and CFR Part 61Rotorcraft/Helicopter Private Pilot requirements as well as Private Pilot Add-on, this syllabus will ensure all experience and knowledge requirements have been met.

Flight lessons are presented side-by-side with their corresponding ground lessons. Reviews are included in each stage, allowing students to review material when necessary yet still follow the syllabus to maintain progress.

Instructor endorsements, stage exams (including a Pre-Solo written), airman certificate rating application (Form 8710), and a checkride checklist are included. This syllabus will take the student from start to finish in an efficient and logical manner, with the ultimate goal of achieving Private Pilot Helicopter certification.

Star Helicopters LLC

3670 W 120th Street
Hawthorne, CA 90250
310-355-1959