

CAP STANDARD 71-3
31 March 2020



Aircrew Training, Balloon

NATIONAL HEADQUARTERS CIVIL AIR PATROL
Maxwell Air Force Base, Alabama

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Introduction

This document identifies CAP-approved syllabi for use in training members participating in CAP balloon activities. Other syllabi will be considered for approval based on an identified need. Requests should be routed via Wing CC, Region CC to CAP/DO approval. Include an outline of the curriculum and vendor name and contact information, if applicable. Written approval from CAP/DO must be received prior to use.

TRAINING COURSE OUTLINE w/ TRAINING SYLLABUS

PRIVATE PILOT CERTIFICATION COURSE: LIGHTER-THAN-AIR FREE BALLOON WITH AIRBORNE HEATER- FLIGHT TRAINING: 16 HOURS (HRS)

1. ENROLLMENT PREREQUISITES: Students enrolling in the flight course must possess a valid student pilot certificate or another aircraft rating.
2. FLIGHT TRAINING COURSE OBJECTIVE: The student will obtain the aeronautical skills and experience necessary to meet the requirements for a Private Pilot Certification with a Lighter-Than-Air Free Balloon rating, limited to Airborne Heater.
3. TRAINING CURRICULUM: This page intentionally left blank
one hour (HR) or increments which may be lengthened or shortened as weather or student's learning dictates. It is imperative, however, that each subject matter and maneuver be completed satisfactorily. COURSE Sessions are outlined in one-half hour
4. FLIGHT TRAINING COURSE COMPLETION STANDARDS: The student must demonstrate through flight test and school records that he has the necessary aeronautical skill and experience to obtain a Private Pilot Certification with a Lighter-Than-Air Free Balloon rating, limited to Airborne Heater.

PRE-SOLO FLIGHT PHASE (10 HRS)

PRE-SOLO OBJECTIVE: The student will be instructed in the basic flying procedures and skill necessary for the first solo flight.

PRE-SOLO COMPLETION STANDARDS: The stage will be successfully completed when the student is capable of conducting solo flight safely.

1. FLIGHT LESSON ONE (ONE HR) DUAL:

- a. Objective: The student will be familiarized with the training aircraft, its operating characteristics, instruments, and flight systems, pre-flight procedures, and safety precautions to be followed. A pre-flight of aircraft documents to establish good operating practices. The student will be instructed in basic flight maneuvers.
- b. Content:
- (1) Pre-flight discussion - Familiarity with the A/C documents, flight manual, and logbook establishing check of inspection dates and times and procedures for logging A/C flight time.
 - (2) Introduction.
 - (a) Pre-flight preparation - Use of check lists/preflight procedures.
 - (b) Envelope lay-out and hook-up.
 - (c) Crew briefing.
 - (d) Inflation procedures.
 - (e) Pre-takeoff checks.
 - (f) Weigh-off procedures.
 - (g) Basic flight maneuvers.
 - (h) In-flight safety procedures.
 - (i) Landing stance.
 - (j) Landing procedures.
 - (k) Deflation procedures.
 - (l) Post-flight procedures.
 - (i) Pack up.
 - (ii) Transporting system.
 - (iii) Refueling.
 - (iv) Balloon storage.
 - (3) Post-flight discussion and critique.
 - (4) Preview of next lesson.
- c. Completion Standards: the student will be able to establish safe ascents and descents and possess a reasonable working knowledge of the training aircraft.

2. FLIGHT LESSON TWO (ONE HR) DUAL:

- a. Objective: The student will be familiarized with the training aircraft, its operating characteristics, instruments, and flight systems, pre-flight procedures, and safety precautions to be followed. A pre-flight of aircraft documents to establish good operating practices. The student will be instructed in basic flight maneuvers.
- b. Content:
- (1) Pre-flight discussion - Familiarity with the A/C documents, flight manual, and logbook establishing check of inspection dates and times and procedures for logging A/C flight time.
 - (2) Introduction.
 - (a) Pre-flight preparation - Use of check lists/preflight procedures.
 - (b) Envelope lay-out and hook-up.
 - (c) Crew briefing.
 - (d) Inflation procedures.
 - (e) Pre-takeoff checks.
 - (f) Weigh-off procedures.
 - (g) Basic flight maneuvers.
 - (h) In-flight safety procedures.
 - (i) Landing stance.
 - (j) Landing procedures.
 - (k) Deflation procedures.
 - (l) Post-flight procedures.
 - (i) Pack up.
 - (ii) Transporting system.
 - (iii) Refueling.
 - (iv) Balloon storage.
 - (3) Post-flight discussion and critique.
 - (4) Preview of next lesson.
- c. Completion Standards: the student will be able to establish safe ascents and descents and possess a reasonable working knowledge of the training aircraft.

3. FLIGHT LESSON THREE (ONE HR) DUAL:

- a. Objective: The student will receive instructions in pre-flight procedures, inflation procedures, basic flight maneuvers, and refueling procedures.
- b. Content:
 - (1) Pre-flight discussion.
 - (2) Obtaining weather brief.
 - (3) Launch site selection.
 - (4) Balloon paperwork check.
 - (5) Review.
 - (a) Pre-flight procedures.
 - (b) Envelope lay-out and hook-up.
 - (c) Crew briefing.
 - (d) Inflation procedures.
 - (e) Pre-takeoff checks.
 - (f) Weigh-off procedures.
 - (g) Emergency procedures.
 - (h) Landing procedures.
 - (i) Post-flight procedures.
 - (i) Pack up.
 - (ii) Transporting system.
 - (iii) Refueling.
 - (iv) Balloon storage.
 - (6) Controlled ascents and descents.
 - (7) Level flight.
 - (8) Flare-out to landing.
 - (9) Ground tracking.
 - (10) Normal approach and landing.
 - (11) Deflation.
 - (12) Post-flight procedures.
 - (13) Post-flight discussions and critique. Instruct on power line dangers and avoidance procedures.
 - (14) Preview of next lesson.
- c. Completion Standards: The student will be able to control ascents and descents with +/- 200 ft., maintain level flight within +/- 200 feet, and ground track within 40 feet of the surface without contact with the ground.

4. FLIGHT LESSON FOUR (ONE HR) DUAL:

a. Objective: The student will receive instructions in pre-flight procedures, inflation procedures, basic flight maneuvers, and refueling procedures.

b. Content:

- (1) Pre-flight discussion.
- (2) Obtaining weather brief.
- (3) Launch site selection.
- (4) Balloon paperwork check.
- (5) Review.
 - (a) Pre-flight procedures.
 - (b) Envelope lay-out and hook-up.
 - (c) Crew briefing.
 - (d) Inflation procedures.
 - (e) Pre-takeoff checks.
 - (f) Weigh-off procedures.
 - (g) Emergency procedures.
 - (h) Landing procedures.
 - (i) Post-flight procedures.
 - (i) Pack up.
 - (ii) Transporting system.
 - (iii) Refueling.
 - (iv) Balloon storage.
- (6) Controlled ascents and descents.
- (7) Level flight.
- (8) Flare-out to landing.
- (9) Ground tracking.
- (10) Normal approach and landing.
- (11) Deflation.
- (12) Post-flight procedures.
- (13) Post-flight discussions and critique. Instruct on power line dangers and avoidance procedures.
- (14) Preview of next lesson.

c. Completion Standards: The student will be able to control ascents and descents with +/- 200 ft., maintain level flight within +/- 200 feet, and ground track within 40 feet of the surface without contact with the ground.

5. FLIGHT LESSON FIVE (ONE HR) DUAL:

- a. Objective: This flight period will be used to develop proficiency and review previously introduced flight maneuvers. Airport operations and navigation will also be introduced.

NOTE: The student from this lesson on will be responsible for obtaining a weather brief, pre-flight of the aircraft, and inflation procedures.

b. Content:

- (1) Pre-flight discussion.
- (2) Pre-flight preparation and procedures.
- (3) Inflation and launch/weigh-off.
- (4) Airport operations, including communications with ATC and light signals.
- (5) Performance maneuvers, including
 - (a) Controlled ascents and descents including flight to 2000 feet AGL.
 - (b) Level flight.
 - (c) Ground tracking.
- (6) Navigation.
- (7) Flare-out to landing.
- (8) Normal approach and landing.
- (9) Deflation.
- (10) Post-flight procedures.
- (11) Post-flight discussion and critique.
- (12) Preview of next lesson.

- c. Completion Standards: The student should display increased proficiency in maintaining level flight, controlled ascents and descents with +/- 150 feet and ground tracking within 30 feet of the surface. The student should also begin to show proficiency with all ground and pre-flight operations.

6. FLIGHT LESSON SIX (ONE HR) DUAL:

- a. Objective: This flight period will be used to develop proficiency and review previously introduced flight maneuvers. Airport operations and navigation will also be introduced.

NOTE: The student from this lesson on will be responsible for obtaining a weather brief, pre-flight of the aircraft, and inflation procedures.

b. Content:

- (1) Pre-flight discussion.
- (2) Pre-flight preparation and procedures.
- (3) Inflation and launch/weigh-off.
- (4) Airport operations, including communications with ATC and light signals.
- (5) Performance maneuvers, including
 - (a) Controlled ascents and descents including flight to 2000 feet AGL.
 - (b) Level flight.
 - (c) Ground tracking.
- (6) Navigation.
- (7) Flare-out to landing.
- (8) Normal approach and landing.
- (9) Deflation.
- (10) Post-flight procedures.
- (11) Post-flight discussion and critique.
- (12) Preview of next lesson.

- c. Completion Standards: The student should display increased proficiency in maintaining level flight, controlled ascents and descents with +/- 150 feet and ground tracking within 30 feet of the surface. The student should also begin to show proficiency with all ground and pre-flight operations.

7. FLIGHT LESSON SEVEN (ONE HR) DUAL:

- a. Objective: The student will be introduced to high wind take-off and landing procedures along with in-flight emergency procedures. Previously introduced flight maneuvers will be practiced as will short field landings.
- b. Content:
 - (1) Pre-flight discussion.
 - (2) Pre-flight preparation/procedures.
 - (3) High wind inflation procedures.
 - (4) Controlled ascents and descents.
 - (5) Level flight.
 - (6) In-flight emergency procedures.
 - (7) Ground tracking.
 - (8) Short field landings.
 - (9) Landings over obstacles.
 - (10) High wind landing procedures.
 - (11) Post-flight procedures.
 - (12) Post-flight discussion and critique.
 - (13) Preview of next lesson.
- c. Completion Standards: The student should be familiar with all flight systems and show a working knowledge of emergency procedures. The student should also be able to perform controlled ascents, descents, and level flights within +/-100 feet, and be able to ground track within 20 feet of the surface.

8. FLIGHT LESSON EIGHT (ONE HR) DUAL:

- a. Objective: The student will be introduced to high wind take-off and landing procedures along with in-flight emergency procedures. Previously introduced flight maneuvers will be practiced as will short field landings.
- b. Content:
 - (1) Pre-flight discussion.
 - (2) Pre-flight preparation/procedures.
 - (3) High wind inflation procedures.
 - (4) Controlled ascents and descents.
 - (5) Level flight.
 - (6) In-flight emergency procedures.
 - (7) Ground tracking.
 - (8) Short field landings.
 - (9) Landings over obstacles.
 - (10) High wind landing procedures.
 - (11) Post-flight procedures.
 - (12) Post-flight discussion and critique.
 - (13) Preview of next lesson.
- c. Completion Standards: The student should be familiar with all flight systems and show a working knowledge of emergency procedures. The student should also be able to perform controlled ascents, descents, and level flights within +/-100 feet, and be able to ground track within 20 feet of the surface.

9. FLIGHT LESSON NINE (ONE HR) DUAL - PRE-SOLO REVIEW:

- a. Objective: The purpose of this lesson is to determine if the student possesses the appropriate aeronautical skills required to safely solo the training aircraft. During this lesson the student will ascend to 2,000 feet AGL. This review and lesson maybe conducted by any course flight instructor. Upon successful completion of this lesson, the student should be ready to take and pass the Aeronautical Knowledge test as per 14 CFR 61.105.
- b. Content:
 - (1) Pre-flight discussion.
 - (2) Pre-flight preparation/procedures.
 - (a) Pre-inflation procedures check.
 - (b) Inflation procedure check.
 - (3) Ascents, descents, and level flight check.
 - (4) Emergency procedures including instruction on power lines.
 - (5) Landing procedures check.
 - (6) Post-flight procedures check.
 - (7) Post-flight discussion and critique.
 - (8) Preview of next lesson.
- c. Completion Standards: The student will display a high degree of proficiency in executing emergency procedures and also show continued improvement in controlled ascents and descents and level flights within +/- 100 feet and be able to ground track within +/- 20 feet of the surface.

10. FLIGHT LESSON TEN (ONE HR) DUAL - PRE-SOLO REVIEW:

- a. Objective: The purpose of this lesson is to determine if the student possesses the appropriate aeronautical skills required to safely solo the training aircraft. During this lesson the student will ascend to 2,000 feet AGL. This review and lesson maybe conducted by any course flight instructor. Upon successful completion of this lesson, the student should be ready to take and pass the Aeronautical Knowledge test as per 14 CFR 61.105.
- b. Content:
 - (1) Pre-flight discussion.
 - (2) Pre-flight preparation/procedures.
 - (a) Pre-inflation procedures check.
 - (b) Inflation procedure check.
 - (3) Ascents, descents, and level flight check.
 - (4) Emergency procedures including instruction on power lines.
 - (5) Landing procedures check.
 - (6) Post-flight procedures check.
 - (7) Post-flight discussion and critique.
 - (8) Preview of next lesson.
- c. Completion Standards: The student will display a high degree of proficiency in executing emergency procedures and also show continued improvement in controlled ascents and descents and level flights within +/- 100 feet and be able to ground track within +/- 20 feet of the surface.

SOLO FLIGHT PHASE (6 HRS)

The student will make a minimum of one (1) solo flight in preparation for the practical flight test.

Solo Flight Objectives: The student will be allowed to practice the previously introduced flight maneuvers with and without the presence of an instructor in the basket.

Solo Flight Completion Standards: This stage will be successfully completed when the student passes the Final Phase Check and is prepared to pass the practical flight test.

NOTE: Solo Flight may only be attempted after the student has passed a pre-solo written exam. The student pilot certificate (if applicable) must be signed by the instructor prior to solo flight.

11. FLIGHT LESSON ELEVEN (1/2 HR DUAL/ 1/2 SOLO):

a. Objective: To practice all previously introduced flight maneuvers and emergency procedures to prepare for the student's first solo flight. Solo flight is designed to instill confidence in the student's abilities.

b. Content:

- (1) Pre-flight discussion.
- (2) Pre-flight preparation/procedures.
- (3) Practice flight maneuvers.
- (4) Practice emergency procedures.
- (5) Student supervised solo.
 - (a) Practice controlled ascents, descents, and level flight.
 - (b) Practice ground tracking.
 - (c) Practice full stop landings (if practical or a minimum of 2 touch-n-go's).
 - (d) Final landing site selection and deflation.
- (6) Post-flight procedures.
- (7) Post-flight discussion and critique.
- (8) Preview of next lesson.

c. Completion Standards: The student should display a working knowledge of all flight systems and emergency procedures and should more consistently maintain controlled ascents, descents, and level flight within +/- 100 feet, and ground track within 20 feet of the surface.

12. FLIGHT LESSON TWELVE (1 HR DUAL / 1 HR SOLO) OR 2 HRS DUAL:

- a. Objective: To practice all previously introduced flight maneuvers, and emergency procedures in preparation for the student's second supervised solo flight. Also, any areas needing further practice as evidenced by the first solo flight will be practiced.
- b. Content:
 - (1) Pre-flight discussion.
 - (2) Pre-flight preparation/procedures.
 - (3) Practice instructor selected maneuvers.
 - (4) Student supervised solo, or "mock" solo with instructor acting as a "passenger."
 - (5) Post-flight procedures.
 - (6) Post-flight discussion and critique.
 - (7) Preview of next lesson.
- c. Completion Standards: The student should display an increasingly confident and relaxed attitude while flying the aircraft solo. The student should be able to consistently control ascents, descents, and level flight within 100 feet, and be able to ground track within 20 feet of the surface.

13. FLIGHT LESSON THIRTEEN (1 HR DUAL / 1 HR SOLO) OR 2 HRS DUAL:

- a. Objective: To practice all previously introduced flight maneuvers, and emergency procedures in preparation for the student's second supervised solo flight. Also, any areas needing further practice as evidenced by the first solo flight will be practiced.
- b. Content:
 - (1) Pre-flight discussion.
 - (2) Pre-flight preparation/procedures.
 - (3) Practice instructor selected maneuvers.
 - (4) Student supervised solo, or "mock" solo with instructor acting as a "passenger."
 - (5) Post-flight procedures.
 - (6) Post-flight discussion and critique.
 - (7) Preview of next lesson.
- c. Completion Standards: The student should display an increasingly confident and relaxed attitude while flying the aircraft solo. The student should be able to consistently control ascents, descents, and level flight within 100 feet, and be able to ground track within 20 feet of the surface.

14. FLIGHT LESSON FOURTEEN (ONE HR) DUAL - FINAL PHASE CHECK:

- a. Objective: The purpose of this lesson is to determine if the student is competent to perform the flight operations required by 14 CFR 61.
- b. Content:
 - (1) Pre-flight discussion.
 - (2) Assembly and pre-flight operations.
 - (3) Inflation procedures.
 - (4) Controlled ascents.
 - (5) Controlled descents.
 - (6) Level flight.
 - (7) Ground tracking.
 - (8) Operation of airborne heater.
 - (9) Emergency operations.
 - (10) Reading instruments.
 - (11) Landings and selecting a site.
 - (12) Post-flight procedures.
 - (13) Post-flight discussion and critique.
- c. Completion Standards: The lesson will be successfully completed when the student demonstrates to the chief flight instructor or his designee that he is competent to perform each of the operations, as a private pilot, required by 14 CFR 61.

The student must have had 2 training flights within 60 days, including the Final Phase check. Upon successful completion of this lesson, the student should be ready to take and pass the practical flight test. The instructor should be able to make the proper endorsements to the student's log book and the airman's application (FAA form 8710) and the practical flight test can be scheduled.

NOTE: The practical flight test cannot be taken unless the applicant holds at least a private pilot certificate **or** has passed the private hot air balloon knowledge exam.

Change Record

Issue Date	Change Summary