AVIA 337

Mission and Humanitarian Pilot Flight Courses

Walla Walla University

SEVENTH-DAY ADVENTIST HIGHER EDUCATION

I certify that:

The information contained in this publication is true and correct in content and policy and I am aware that the institution must complete with applicable statutes and regulations and that failure to comply may lead to suspension or withdrawal of programs by the WSAC/SAA and/or DVA.

This institution does not provide any commission, bonus, or other incentive payment based directly or indirectly on success in securing enrollments or financial aid to any persons or entities engaged in any student recruiting or admission activities or in making decisions regarding the award of student financial assistance.

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Carolyn Denny, Registrar, Walla Walla University

DEPARTMENT OF TECHNOLOGY
AVIATION PROGRAM
AVIA 337 – MISSION/HUMANITARIAN FLIGHT TRAINING
MISSION/HUMANITARIAN FLIGHT TRAINING COURSE OUTLINE

Instructor Qualifications:
Certified Flight Instructor (CFI) with Director Approval

Student Name:

_____

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Revision: I	Date: 09/01/2016	LOG OF REVISIONS

The Walla Walla University Aviation Faculty have prepared the following revisions. Each revision has a revision number and date.

LOG OF REVISIONS		
Revision #	**Date**	**Initials**
Original	12/23/2015	MG/MT
I	09/01/2016	MG/MT

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INTRODUCTION

This course fulfills the requirements of 14 CFR, Section 61, Subpart A, Section 31(f), for obtaining the endorsement to act as Pilot in Command of a high performance airplane, meaning an airplane with an engine of more than 200 horsepower.

COURSE OBJECTIVE:

The student will obtain the knowledge, skill, and aeronautical experience necessary to operate a high performance airplane as well as valuable skills utilized in the mission and humanitarian fields.

COURSE COMPLETION STANDARD:

The student will demonstrate/show through written exams, oral tests, flight tests, and appropriate records that they possess the knowledge, skill, and experience requirements necessary to obtain a high performance endorsement. At the completion of flight training the student will have received a high performance endorsement as well as training time specifically designed around mission and humanitarian flying.

STAGE EXAM/END-OF-COURSE CHECK

The syllabus incorporates a stage exam and an end-of-course check.

The student will complete a stage exam as listed in this training course outline. The student will complete the stage exam with a grade of 70% or better. All subject areas shown to be deficient by the stage exam will be reviewed with an authorized instructor.

The student will complete the end-of-course check as listed in this training course outline. The student will complete the end-of-course check with a director or check instructor. Students unable to meet these standards will require additional instruction before re-qualifying to take the end of course check.

Training records will be updated to reflect the stage exam and the end of course check.

STUDENT INFORMATION

CESSNA 182 CHECKOUT:

In accordance with Walla Walla University's Aviation Standard Operating Procedures, in order to solo the Cessna 182 or to fly without a flight instructor the student must have 5 hours dual on make and model and complete a checkout with an aviation faculty.

REQUIREMENTS FOR COMPLETION:

In order to receive the one-time endorsement from an authorized flight instructor as required by FAR 61.31(f) the student must receive ground and flight training in a tailwheel airplane and demonstrate adequate proficiency and competency in the aircraft. It is at the instructor's discretion whether a student has achieved the proper level of competency prior to receiving the endorsement.

LESSON DESCRIPTION AND STAGES OF TRAINING:

Each lesson is fully described within the syllabus, including the objectives, standards, and measurable units of accomplishment and learning for each lesson.

AVIA 337					
STAGE	LESSON	DUAL GRND	DUAL	XC	EXAM
	Lesson Times are Shown in Hours				
I	1	0.5	1.5		
	2	0.3	1		
	3	0.3	2		
	4				1
	5[1]	0.5	1.5		
II	6	0.2	2		
	7	0.6	3	3	
	8	0.5	1.5	1.5	
	9	0.2	1		
	10	0.2	1		
	11	0.2	3.5	3.5	
	12	0.5	2		
Class Totals:		4	20	8	1

[1] By the end of Lesson 5 the student should have demonstrated the proficiency required by 61.31(I)) and the ground and flight training required to receive the Tailwheel Endorsement.

STAGE I

STAGE OBJECTIVE

During this stage, the student obtains the foundation for high performance airplane training. The student becomes familiar with the training airplane and learns how the airplane manages the higher horsepower. Through review and the introduction of maneuvers, the student will gain the proficiency to receive the high performance endorsement as stated in 61.31(f).

STAGE COMPLETION STANDARD

At the completion of this stage, the student will demonstrate an understanding of the basic flight maneuvers introduced in this stage, normal and crosswind takeoffs and landings, stalls, and go arounds. The student will have the proficiency required for introduction of backcountry flight procedures, unprepared runway surfaces, and mission humanitarian flying. This stage is completed when the student has demonstrated the proficiency required for the high performance endorsement and has received the required flight and ground training.

FLIGHT LESSON 1 – DUAL

LESSON OBJECTIVE:

During this lesson, the student will be familiarized with the training airplane and airport traffic operations. High performance characteristics will be covered, and the student will be introduced to power application, high performance stalls, and Cessna 182 landings.

CONTENT:

Section A – Lesson Introduction

Preflight Preparations and Procedures

- ❑ Certificates and Documents
- ❑ Use of Checklists
- ❑ Positive Exchange of Flight Controls
- ❑ Preflight Inspection
- ❑ Location of Fire Extinguisher and First Aid Kit

Flight Orientation

- ❑ Engine Starting
- ❑ Radio Communications
- ❑ Normal and Crosswind Taxi
- ❑ Pretakeoff Check
- ❑ Use of Trim
- ❑ Normal Takeoff and Climb
- ❑ Climbs and Descents
- ❑ Level Off
- ❑ Straight-and-Level Flight
- ❑ Level Stalls
- ❑ Shallow and Steep Banked Turns in Both Directions
- ❑ Normal Approach and Landing
- ❑ Post Flight Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will have knowledge of aircraft systems and the necessity of checking their operation before flight. Additionally, the student will be familiar with the control systems

and how they are used to manage the high performance powerplant.

Record Keeping

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 1 **LESSON# 1**

DATE	DUAL GRND	DUAL	XC	EXAM
	0.5	**1.5**		
Totals				

FLIGHT LESSON 2 – DUAL

LESSON OBJECTIVE:

During this lesson, the student will review the procedures introduced in Flight Lesson 1 to gain proficiency in basic aircraft control. The student will be introduced to power on and power off stalls, slow flight, and low altitude flight.

CONTENT:

Section A – Lesson Review

- ❑ Preflight Inspection
- ❑ Engine Starting
- ❑ Radio Communications
- ❑ Normal and Crosswind Taxi
- ❑ Use of Trim
- ❑ Pretakeoff Check
- ❑ Normal Takeoff and Climb
- ❑ Straight-and-level Flight
- ❑ Climbs
- ❑ Shallow and Steep Banked Turns in Both Directions
- ❑ Normal Approach and Landing
- ❑ Post Flight Procedures
- ❑ Go Around

Section B – Lesson Introduction

- ❑ Airport Operations
- ❑ Airspeed Transitions
- ❑ Flight at Approach Airspeed
- ❑ Collision Avoidance Precautions
- ❑ Power On Stalls
- ❑ Power Of Stalls
- ❑ Slow Flight
- ❑ Flight at Low Altitude

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to make

takeoffs without instructor assistance. Preflight activities will be conducted accurately, and the student will display an increased understanding and proficiency in coordinated airplane attitude control. The student will have an understanding of the landings but require instructor assistance.

Record Keeping

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 1 **LESSON# 2**

DATE	DUAL GRND	DUAL	XC	EXAM
	0.3	**1**		
Totals				

FLIGHT LESSON 3 – DUAL

LESSON OBJECTIVE:

During this lesson, the student will review the procedures introduced in Flight Lessons 1 and 2 to gain proficiency in basic aircraft control. The student will practice takeoffs and landings.

CONTENT:

Section A – Lesson Review

- ❑ Use of Checklists
- ❑ Engine Starting
- ❑ Pretakeoff Check
- ❑ Normal and Crosswind Taxi
- ❑ Normal Takeoff and Climb
- ❑ Flight at Approach Airspeed
- ❑ Normal Approach and Landing
- ❑ Crosswind Approach and Landing
- ❑ Go Around

COMPLETION STANDARDS:

The student will perform unassisted takeoffs and landings. The student will demonstrate correct communications and traffic pattern procedures.

Record Keeping

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 1 **LESSON# 3**

DATE	DUAL GRND	DUAL	XC	EXAM
	0.3	**2**		
Totals				

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FLIGHT LESSON 4 – EXAM

LESSON OBJECTIVE:

The objective of this lesson is to evaluate the student's knowledge through a high performance endorsement stage exam.

CONTENT:

- ❑ High Performance Endorsement Exam

COMPLETION STANDARDS:

The student should score at least 70% on the stage exam. In addition, the instructor is responsible for reviewing those questions missed.

Record Keeping

SCORE: _____

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 1 **LESSON# 4**

DATE	DUAL GRND	DUAL	XC	EXAM
				1
Totals				

FLIGHT LESSON 5 – DUAL

LESSON OBJECTIVE:

During this flight the instructor should determine if the student is proficient and ready to receive the tailwheel endorsement. As stated in FAR 61.31(f), in order to act as Pilot in Command of a high performance aircraft the pilot must receive an endorsement from an authorized instructor indicating the student has received flight and ground training.

CONTENT:

Section A – Lesson Review

- ❑ Engine Starting
- ❑ Normal and Crosswind Taxi
- ❑ Pretakeoff Check
- ❑ Normal Takeoff and Climb
- ❑ Traffic Pattern Operations
- ❑ Collision Avoidance Precautions
- ❑ Slow Flight
- ❑ Power On Stalls
- ❑ Power Off Stalls
- ❑ Normal Approach and Landing
- ❑ Crosswind Approach and Landing
- ❑ Go Around
- ❑ Post Flight Procedure

COMPLETION STANDARDS:

This lesson and Stage I are complete when the student can competently perform preflight duties and all other procedures necessary for the safe operation of a high performance aircraft on the ground and in flight, with primary focus on go arounds, landings, and crosswind takeoffs and landings. At the end of this lesson the student should receive the high performance endorsement from the authorized instructor, if they have not already.

Record Keeping

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 1 **LESSON# 5**

DATE	DUAL GRND	DUAL	XC	EXAM
	0.5	**1.5**		
Totals				

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STAGE II

STAGE OBJECTIVE:

This stage allows the student to expand the skills learned in the previous stage. The student is introduced to short-field unprepared runway take off and landing procedures as well as backcountry flight techniques and decision-making. The student will be introduced to backcountry cross-country procedures, learning to plan and conduct cross-country flights using pilotage, dead reckoning, and radio navigation systems and how to safely conduct flights in backcountry regions.

STAGE COMPLETION STANDARD:

This stage is complete when the student can accurately plan and conduct backcountry cross-country flights. In addition, the student will have the proficiency to safely demonstrate consistent results in performing short-field and unprepared runway takeoffs and landings. The proficiency level must be such that the successful and safe outcome of each task is never in doubt.

FLIGHT LESSON 6 – DUAL

LESSON OBJECTIVE:

During this lesson, the student will be introduced to unprepared runways (grass and gravel) and landing techniques for these kinds of surfaces. Backcountry traffic pattern procedures will also be introduced and demonstrated. Suggested landing sites are Martin Field (grass) and the Snake River gravel strips.

CONTENT:

Section A – Lesson Review

- ❑ Traffic Pattern Operations
- ❑ Normal and Crosswind Taxi
- ❑ Normal Approach and Landing
- ❑ Crosswind Approach and Landing

Section B – Lesson Introduction

- ❑ Short-Field Takeoff and Climb
- ❑ Short-Field Approach and Landing
- ❑ Unprepared Runway Landing Site Selection
- ❑ Unprepared Runway Landings
- ❑ Backcountry Landing Site Traffic Pattern

COMPLETION STANDARDS:

The student will be able to explain what factors go into selecting a proper landing site for unprepared landings. The student should be able to perform without difficulty landings, and require little assistance on unprepared runways.

Record Keeping

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 2 **LESSON# 6**

DATE	DUAL GRND	DUAL	XC	EXAM
	0.2	**2**		
Totals				

FLIGHT LESSON 7 – DUAL

LESSON OBJECTIVE:

The student will be introduced to backcountry cross-country planning and flight techniques as well as review of Lesson 5 unprepared runway landing site landings, decision making, and traffic patterns.

CONTENT:

PREFLIGHT DISCUSSION:

Section A – Lesson Introduction

- ❑ Navigation Log
- ❑ Backcountry Flight Plan/Itinerary
- ❑ Sectional Charts
- ❑ Flight Publications
- ❑ Route Selection
- ❑ Obtaining Weather Information
- ❑ Fuel Requirements
- ❑ Determining Performance and Limitations
- ❑ Cockpit Management
- ❑ Aeromedical Factors
- ❑ Aeronautical Decision Making (ADM)
- ❑ Resource Use
- ❑ Workload Management

CROSS COUNTRY FLIGHT:

Section A – Departure

- ❑ Departure
- ❑ Use of Navigation Methods
- ❑ Power Settings and Mixture Control

Section B – En Route

- ❑ Position Fix by Radio Aids
- ❑ Lost Procedures
- ❑ Diversion to an Alternate Procedure

Section C – Arrival

- ❑ Go-around

- ❑ Unprepared Runway Landings
- ❑ Normal Approach and Landing
- ❑ Crosswind Approach and Landing
- ❑ Backcountry Traffic Patterns
- ❑ Unprepared Runway Selection

COMPLETION STANDARDS:

This lesson is complete when the student successfully completes a backcountry cross-country navigation log and flight. The student should have a basic understanding of route selection factors for back country and be comfortable with unprepared runway landings.

Record Keeping

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 2 **LESSON# 7**

DATE	DUAL GRND	DUAL	XC	EXAM
	0.6	**3**	**3**	
Totals				

FLIGHT LESSON 8 – DUAL

LESSON OBJECTIVE:

The instructor will evaluate the student's ability to plan and perform a short backcountry cross-country and perform a landing and takeoff from an unprepared runway.

CONTENT:

PREFLIGHT DISCUSSION:

Section A – Lesson Review

- ❑ Navigation Log
- ❑ Backcountry Flight Plan/Itinerary
- ❑ Sectional Charts
- ❑ Flight Publications
- ❑ Route Selection
- ❑ Obtaining Weather Information
- ❑ Fuel Requirements
- ❑ Determining Performance and Limitations
- ❑ Cockpit Management
- ❑ Aeromedical Factors
- ❑ Aeronautical Decision Making (ADM)
- ❑ Resource Use
- ❑ Workload Management

CROSS COUNTRY FLIGHT:

Section A – Departure

- ❑ Departure
- ❑ Use of Navigation Methods
- ❑ Power Settings and Mixture Control

Section B – En Route

- ❑ Position Fix by Radio Aids
- ❑ Lost Procedures
- ❑ Diversion to an Alternate Procedure

Section C – Arrival

- ❑ Go-around

- ❑ Unprepared Runway Landings
- ❑ Normal Approach and Landing
- ❑ Crosswind Approach and Landing
- ❑ Backcountry Traffic Patterns
- ❑ Unprepared Runway Selection

COMPLETION STANDARDS:

The student will perform takeoffs and landings smoothly, while maintaining good directional control. All approaches will be stabilized. The student should plan a safe backcountry flight using pilotage and/or dead reckoning, choose a safe landing spot, and perform a landing and takeoff at an unprepared runway.

Record Keeping

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 2 **LESSON# 8**

DATE	DUAL GRND	DUAL	XC	EXAM
	0.5	**1.5**	**1.5**	
Totals				

FLIGHT LESSON 9 – DUAL

LESSON OBJECTIVE:

During this lesson, the student will practice the listed maneuvers to gain proficiency and confidence.

CONTENT:

Section A – Lesson Review

- ❑ Normal and/or Crosswind Takeoffs and Climbs
- ❑ Normal and Crosswind Taxi
- ❑ Power Off Stalls
- ❑ Power On Stalls
- ❑ Slow Flight
- ❑ Normal Approaches and Landings
- ❑ Crosswind Approaches and Landings
- ❑ Short-field Takeoffs and Landings
- ❑ Go Around

COMPLETION STANDARDS:

This lesson is complete when the student has conducted the assigned solo flight. During the lesson, the student should attempt to gain proficiency in each of the above listed maneuvers.

Record Keeping

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 2 **LESSON# 9**

DATE	DUAL GRND	DUAL	XC	EXAM
	0.2	**1**		
Totals				

FLIGHT LESSON 10 – DUAL

LESSON OBJECTIVE:

During this lesson, the student will practice the listed maneuvers to gain proficiency and confidence.

CONTENT:

Section A – Lesson Review

- ❑ Normal and/or Crosswind Takeoffs and Climbs
- ❑ Normal and Crosswind Taxi
- ❑ Power Off Stalls
- ❑ Power On Stalls
- ❑ Slow Flight
- ❑ Normal Approaches and Landings
- ❑ Crosswind Approaches and Landings
- ❑ Short-field Takeoffs and Landings
- ❑ Go Around
- ❑ Unprepared Runway (Grass/Gravel) Takeoffs and Landings

COMPLETION STANDARDS:

This lesson is complete when the student has conducted the assigned solo flight. During the lesson, the student should attempt to gain proficiency in each of the above listed maneuvers.

Record Keeping

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 2 **LESSON# 10**

DATE	DUAL GRND	DUAL	XC	EXAM
	0.2	**1**		
Totals				

FLIGHT LESSON 11 – DUAL

LESSON OBJECTIVE:

The instructor will evaluate the student's ability to plan and perform a short backcountry cross-country and perform a landing and takeoff from an unprepared runway. This should be a multi-leg flight as a capstone of the coursework.

CONTENT:

PREFLIGHT DISCUSSION:

Section A – Lesson Review

- ❑ Navigation Log
- ❑ Backcountry Flight Plan/Itinerary
- ❑ Sectional Charts
- ❑ Flight Publications
- ❑ Route Selection
- ❑ Obtaining Weather Information
- ❑ Fuel Requirements
- ❑ Determining Performance and Limitations
- ❑ Cockpit Management
- ❑ Aeromedical Factors
- ❑ Aeronautical Decision Making (ADM)
- ❑ Resource Use
- ❑ Workload Management

CROSS COUNTRY FLIGHT:

Section A – Departure

- ❑ Departure
- ❑ Use of Navigation Methods
- ❑ Power Settings and Mixture Control

Section B – En Route

- ❑ Position Fix by Radio Aids
- ❑ Lost Procedures
- ❑ Diversion to an Alternate Procedure

Section C – Arrival

- ❑ Go-around

- ❑ Unprepared Runway Landings
- ❑ Normal Approach and Landing
- ❑ Crosswind Approach and Landing
- ❑ Backcountry Traffic Patterns
- ❑ Unprepared Runway Selection

COMPLETION STANDARDS:

The student will perform takeoffs and landings smoothly, while maintaining good directional control. All approaches will be stabilized. The student should plan a safe backcountry flight using pilotage and/or dead reckoning, choose a safe landing spot, and perform a landing and takeoff at an unprepared runway.

Record Keeping

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 2 **LESSON# 11**

DATE	DUAL GRND	DUAL	XC	EXAM
	0.2	**3.5**	**3.5**	
Totals				

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FLIGHT LESSON 12 – DUAL

LESSON OBJECTIVE:

This lesson is the end of course check (EOC) and will be conducted by a director or an authorized instructor. During this lesson the student must demonstrate knowledge and proficiency in all tasks as determined necessary for safe operation of a high performance aircraft in backcountry flying.

CONTENT:

S: Satisfactory Performance
U: Unsatisfactory Performance

SPECIAL EMPHASIS AREAS:

In addition to the specific areas of operation (AOs) and tasks identified in the oral and flight portions of the test, the following special emphasis areas will be evaluated throughout the EOC:

S	U	
❑	❑	Positive Aircraft Control
❑	❑	Positive Exchange of Flight Controls Procedure
❑	❑	Controlled Flight Into Terrain (CFIT)
❑	❑	Aeronautical Decision Making (ADM) and Risk Management
❑	❑	Wire Strike Avoidance
❑	❑	Checklist Usage
❑	❑	Temporary Flight Restrictions
❑	❑	Special Use Airspace
❑	❑	Aviation Security
❑	❑	Single Pilot Resource Management

AREAS OF OPERATION (AOs):

Section I – Preflight Preparation

S	U	
❑	❑	Certificates and Documents
❑	❑	Weather Information
❑	❑	Backcountry Cross-Country Flight Planning
❑	❑	Performance and Limitations

❑❑ Aeromedical Factors

Section II – Preflight Preparation

S U

❑❑ Preflight Inspection
❑❑ Cockpit Management
❑❑ Engine Starting
❑❑ Normal and Crosswind Taxi
❑❑ Before Takeoff Check

Section III – Airport Operations

S U

❑❑ Normal and Backcountry Traffic Patterns

Section IV – Takeoffs, Landings, and Go-Arounds

S U

❑❑ Normal and Crosswind Takeoff and Climb
❑❑ Crosswind Approach and Landing
❑❑ Normal Approach and Landing
❑❑ Short-field Takeoff and Maximum Performance Climb
❑❑ Short-field Approach and Landing
❑❑ Unprepared Runway (Grass/Gravel) Approach and Landing
❑❑ Go Around/Rejected Landing

Section V – Performance Maneuver

S U

❑❑ Steep Turns

Section VI – Navigation

S U

❑❑ Backcountry Pilotage and Dead Reckoning

Section VII – Slow Flight and Stalls

S U

❑❑ Maneuvering During Slow Flight
❑❑ Power-off Stalls
❑❑ Power-on Stalls
❑❑ Spin Awareness

Section VIII – Post Flight Procedures

S U

❑ ❑ After Landing, Parking, and Securing

COMPLETION STANDARDS

The student will demonstrate proficiency and competence in high perofrmance aircraft operations.

Record Keeping

STUDENT: _____

INSTRUCTOR: _____ **CERT#** _____

STAGE# 2 **LESSON# 12**

DATE	DUAL GRND	DUAL	XC	EXAM
	0.5	**2**		
Totals				