

Flight Dynamics, LLC



Flight Operations

Advanced Tailwheel Course

Student Workbook

Current Revision: Rev: -

Revision	Date	Approval	Revision	Date	Approval
Initial	10-1-2008	R. Anderson			

REVISION HISTORY

Revision	Changes

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Introduction to Flight Dynamics Advanced Tailwheel Course

Contents:

Unit #	Description	Gnd Time	Flt Time
Flight Lesson 1	Demonstration and evaluation of level of tailwheel skills		1.3
Ground Lesson 1	Review of tailwheel knowledge	1.5	
Flight Lesson 2	Advanced tailwheel techniques I		1.3
Ground Lesson 2	Review of weak areas I	0.5	
Flight Lesson 3	Advanced tailwheel techniques II		1.3
Ground Lesson 3	Review of weak areas II	0.5	
Flight Lesson 4	Cross country flight		2.6
Ground Lesson 4	Review	1.0	
Flight Lesson 5	PIC practical and oral exam (optional)		1.3
Total		4.5 hrs	7.8 hrs

Solo Requirement

Insurance:

1. 25 hours of PIC tailwheel time and 10 hours in 7AC or,
2. 10 hours of instruction received in the Flight Dynamics 7AC

Flight Dynamics:

1. Meets minimum insurance requirements, and
2. Satisfactory completed the Flight Dynamics Advanced Tailwheel course, and
3. Passes both an oral and practical exam in the 7AC, and
4. Approved by the Chief Pilot.

Flight Lesson 1: Demonstration and evaluation of level of tailwheel skills

Flight Lesson 1 is the demonstration and evaluation by the instructor of the current state of the students tailwheel practical proficiency.

Lesson prerequisites: Tailwheel endorsement

Completion Standards: End of basic taiwheel course proficiency

A	P	Inst.	Topic
D			Student demonstrates starting, taxi, takeoff and climb
D			Airwork
D			Student demonstrates to the satisfaction of the instructor navigation to grass field (if applicable)
D			Student demonstrates to the satisfaction of the instructor 3-point takeoffs and landing
D			Student demonstrates to the satisfaction of the instructor wheel takeoffs and landings
D			Student demonstrates to the satisfaction of the instructor navigation to home field (if applicable)
D			Student demonstrates to the satisfaction of the instructor Taxiing on a paved taxiway with proper crosswind controls
D			Student demonstrates to the satisfaction of the instructor, P-lead check, shut down and post flight inspection

Notes: _____

Ground Time: _____

Instructor: _____ Date completed: _____

Ground Lesson 1: Review of Tailwheel Knowledge

Ground lesson 1 is a basic introduction to the tailwheel course and the knowledge required to perform Flight 1. Flight 1 is an introduction to the Aeronca Champ and is comprised of air work specific to low horsepower tailwheel airplanes.

A	P	Inst.	Topic
I			Introduce Student Work Book
I			FARs governing tailwheel operations and proficiency (See App. A)
I			The history of tailwheel airplanes and the Aeronca Champ
I			The safety record of tailwheel airplanes
			The Aeronca Champ 7AC (Basics)
			The Aeronca Champ 7AC airframe
			The Aeronca Champ 7AC's 65hp Continental Engine
			Airwork (major points: expanded discussion to follow)
			Coordination
			Stalls
			Navigation
			Terminology
			Review of basic aerodynamics
			Important handling qualities factors for tailwheel airplanes
			The dynamics of a crosswind takeoff and landing (use only the terminology of upwind and down wind)
			Taxiing
			3-point tailwheel takeoffs and landings
			Wheel takeoffs and landings
			Hand propping
			Handling qualities with respect to wheel landings
			Company policies

Notes: _____

Ground Time: _____

Instructor: _____ Date completed: _____

Flight Lesson 2: Advanced tailwheel techniques I

Flight 2 is the introduction of advanced tailwheel techniques for a low horsepower tailwheel airplane. 1) Crosswind takeoff and landing practice on pavement in real wind conditions, 2) One wheel go-arounds, 3) power off approaches (flair without power) and 4) power off approaches using flight path and turns for glideslope control.

Lesson Prerequisites: Completion of Ground Lesson 1

A	P	Inst.	Topic
I			Student practices starting (Student learns propping), taxi, takeoff and climb
P			Student practices navigation to grass field (if applicable)
P			Student practices 3-point and wheel takeoffs and
P			Student practices navigation to home field (if applicable)
I			Instructor demonstrates and student practices ,One wheel go-arounds, power off approaches using turns and means other than slip and spot landings
P			Student practices taxiing on a paved taxiway with proper crosswind controls
P			Student practices P-lead check, shut down, post flight inspection, post flight cleaning and discuss proper method of tying down the aircraft

Notes: _____

Ground Time: _____

Flight Time: _____

Instructor: _____ Date completed: _____

Ground Lesson 2: Review of weak areas I

Ground lesson 2 is designed to provide the student will additional practice in weak areas of knowledge.

Lesson Prerequisites: Completion of Ground Lesson 1

A	P	Inst.	Topic
			Review weak areas from Ground Lesson 1

Notes: _____

Ground Time: _____

Instructor: _____ Date completed: _____

Flight Lesson 3: Advanced tailwheel techniques II

Flight 3 is the continued practice of advanced tailwheel techniques for a low horsepower tailwheel airplane. 1) Crosswind takeoff and landing practice on pavement in real wind conditions, 2) One wheel go-arounds, 3) power off approaches (flair without power) and 4) power off approaches using flight path and turns for glideslope control.

Lesson prerequisites: Satisfactory completion of ground lesson 2 and flight lesson 1

A	P	Inst.	Topic
I			Student practices starting (Student learns propping), taxi, takeoff and climb
P			Student practices 3-point and wheel takeoffs and
I			Student practices, one wheel go-arounds, power off approaches using turns and means other than slips and spot landings
P			Student practices taxiing on a paved taxiway with proper crosswind controls
P			Student practices, P-lead check, shut down, post flight inspection, post flight cleaning and discuss proper method of tying down the aircraft

Notes: _____

Ground Time: _____ Flight Time: _____

Instructor: _____ Date completed: _____

Flight Lesson 4: Cross country flight

Flight Lesson 4 is the refinement of advanced tailwheel techniques in a unfamiliar setting. The student will perform a short cross country flight to demonstrate 1) dead reckoning navigation, 2) diversion and lost techniques, 3) engine out glides to a field and 4) takeoffs and landings at an unfamiliar airport.

Lesson prerequisites: Satisfactory completion of ground lesson 2 and flight lesson 2

Performance standards: Student should be able to perform a satisfactory wheel takeoff and 3 point landing on grass at the conclusion of the lesson.

A	P	Inst.	Topic
I			Student performs starting, taxi, takeoff and climb
P			Student practices navigation to a field 50 nm away including dead reckoning, lost procedures and diversion procedure
P			Student practices entering the pattern and 3-point and wheel takeoffs and landing to a full stop taxi back at the cross country field
P			Student practices navigation to home field including dead reckoning, lost procedures and high altitude engine out
I			Student practices one wheel go-around and landing on a paved runway
P			Student practices taxiing on a paved taxiway with proper crosswind controls
P			Student practices, P-lead check, shut down, post flight inspection, post flight cleaning and discuss proper method of tying down the aircraft

Notes: _____

Ground Time: _____

Flight Time: _____

Instructor: _____

Date completed: _____

Flight Lesson 5: PIC oral and practical exam (optional)

Flight Lesson 5 is practice of all of the techniques learned to date in the demanding environment of a paved airport.

Lesson prerequisites: Satisfactory completion of ground lesson 3 and flight lesson

4. Completion of required tasks sheet.

Completion Standards: Only some review required to meet FAA tailwheel endorsement signoff.

A	P	Inst.	Topic
D			Student practices starting (Student demonstrates propping), taxi, takeoff and climb
D			Airwork including slow flight <ul style="list-style-type: none"> ➤ Power off stalls ➤ Power on stalls ➤ Cross controlled stalls ➤ Spin awareness
D			Student demonstrates navigation to grass field (if applicable) <ul style="list-style-type: none"> ➤ Dead reckoning ➤ Lost procedures ➤ Diversions
D			Student demonstrates <ul style="list-style-type: none"> ➤ 3-point and wheel takeoffs and landing to a full stop taxi back ➤ One wheel go-around ➤ Power off approaches to a spot landing
D			Student demonstrates navigation to home field (if applicable)
D			Student demonstrates, P-lead check, shut down and post flight inspection

Notes: _____

Satisfactory: _____ Unsatisfactory: _____ Incomplete: _____

Ground Time: _____ Flight Time: _____

Instructor: _____ Date completed: _____

Appendix A: Tailwheel FAR 61.31(i)

§ 61.31 Type rating requirements, additional training, and authorization requirements.

(i) *Additional training required for operating tailwheel airplanes.* (1) Except as provided in paragraph (i)(2) of this section, no person may act as pilot in command of a tailwheel airplane unless that person has received and logged flight training from an authorized instructor in a tailwheel airplane and received an endorsement in the person's logbook from an authorized instructor who found the person proficient in the operation of a tailwheel airplane. The flight training must include at least the following maneuvers and procedures:

(i) Normal and crosswind takeoffs and landings;

(ii) Wheel landings (unless the manufacturer has recommended against such landings); and

(iii) Go-around procedures.

(2) The training and endorsement required by paragraph (i)(1) of this section is not required if the person logged pilot-in-command time in a tailwheel airplane before April 15, 1991.

Appendix B: Required Items

The following must be observed in actual conditions to be satisfactory by the instructor pilot during the training:

- 1) Pavement wheel landings with an actual crosswind of 8 to 12 MPH.

Date: _____ Crosswind: _____ Instructor: _____

Instructor signature: _____

- 2) Pavement 3-point landings with an actual crosswind of 8 to 12 MPH.

Date: _____ Crosswind: _____ Instructor: _____

Instructor signature: _____

- 3) Pavement one-wheel go-around with an actual crosswind of 8 to 12 MPH.

Date: _____ Crosswind: _____ Instructor: _____

Instructor signature: _____