

# THE COMPLETE MULTI-ENGINE PILOT SYLLABUS

**FIFTH EDITION** Bob Gardner

## THE COMPLETE MULTI-ENGINE PILOT SYLLABUS

**FIFTH EDITION** Bob Gardner



AVIATION SUPPLIES & ACADEMICS, INC. NEWCASTLE, WASHINGTON

©1995–2022 Aviation Supplies & Academics, Inc. All rights reserved. 7005 132nd Place SE, Newcastle, Washington 98059 USA

Visit the ASA website often for any updates due to FAA regulatory and procedural changes that may affect this book: **www.asa2fly.com** 

ASA-MPT-S-PD

### Multi-Engine Rating Syllabus

Appendix A from The Complete Multi-Engine Pilot textbook

#### **ENROLLMENT PREREQUISITES**

The student must be able to read, speak, write, and understand the English language and must possess a valid Private, Commercial, or ATP certificate with instrument, single-engine, land ratings, and a third-class medical certificate (or higher) prior to enrollment.

#### TRAINING COURSE OBJECTIVES

The student will obtain the aeronautical skill and knowledge necessary to meet the requirements of a Private, Commercial, or ATP certificate (depending upon the certificate held at time of enrollment), with an airplane category, instrument rating, and multiengine land class rating.

#### COURSE COMPLETION STANDARDS

The student will demonstrate, by way of a flight and written test, the aeronautical skill and knowledge necessary to obtain a Private, Commercial, or ATP certificate (depending upon the certificate held at time of enrollment), with an airplane category, instrument rating, and a multi-engine land class rating. Each task in each area of operation in the *Airman Certification Standards* (ACS) will have been accomplished by the student. The instructor will not proceed to the next lesson until the student is able to explain and/or demonstrate the elements of the procedure or maneuver as required by the ACS.

## Recommended Materials for the Multi-Engine Rating

- *The Complete Multi-Engine Pilot,* by Bob Gardner (ASA-MPT)
- FAA Airman Certification Standard (www.faa.gov)
- FAR/AIM (ASA-FR-AM-BK, published annually)
- *Multi-Engine Oral Exam Guide*, by Michael Hayes (ASA-OEG-ME)

#### **TRAINING SYLLABUS**

The FAA does not require a specified amount of experience to obtain a multi-engine rating. Hours shown for each lesson for flight training, preflight briefing, and post-flight critique are offered as a guide to the instructor. Time used for an individual lesson may be adjusted to the student's needs. The instructor is responsible for ensuring all requirements are met. Points at which normal student progress should meet the requirements of the *Airman Certification Standards* for a *task* in an *area of operation* will include a note indicating this, listed under the Skills.

#### MULTI-ENGINE RATING COURSE HOURS

The FAA does not specify how much time should be spent training for a multi-engine rating. Instructors may choose to have the student practice solo (or with a safety pilot), in addition to the following Dual Flight lessons. Ground instruction includes preflight briefings, post-flight critiques, and classroom or personal study.

Instructors and students are encouraged to integrate Aviation Training Devices (ATDs) technology with existing methods of aviation instruction and training. Instructors are encouraged to challenge students by altering the virtual environment within which the lessons take place. This can be done by changing the weather (adding turbulence, altering the winds, or assigning the ceiling and visibility to the approach minimum conditions), and/or simulating a system or engine failure. These changes can be set to occur randomly or within a specified time frame, allowing the students to learn flight and decision-making skills simultaneously. In conjunction with training to the Airman Certification Standards at all times, this method will encourage a willing suspension of disbelief and maximize the value of ATDs in a curriculum. The practice of flying the lesson in a ATD before heading out to the airplane will result in a more efficient training program.

Lesson	Dual Flight	Dual X/C	Dual Night	Instrument Instruction	Ground Instruction
1	1.0				2.0
2	1.0			0.3	2.0
3	1.5			0.5	2.0
4	1.5			0.5	2.0
5	1.0		1.0	0.3	2.0
6	2.0	2.0		1.0	2.0
7	1.0			0.3	2.0
8	1.0			0.3	2.0
TOTALS	10.0 hours	2.0 hours	1.0 hours	3.2 hours	16.0 hours

#### LESSON 1 Dual

1.0 hour flight
2.0 hours ground instruction

#### **GROUND TRAINING**

#### **Objective:**

For the student to be introduced to the Multi-Engine Rating program, and learn the flight school requirements, procedures, regulations, and grading criteria. Student will also be introduced to multi-engine aerodynamics, regulations associated with multi-engine training, and the training airplane Pilot's Operating Handbook (POH).

#### Content

- \_\_\_\_\_ Review of course and objectives
- \_\_\_\_\_ School requirements, procedures, regulations
- \_\_\_\_\_ Grading criteria, student's expectations
- \_\_\_\_\_ Federal Aviation Regulations, Parts 61, 91, 23
- \_\_\_\_\_ Multi-engine aerodynamics
- \_\_\_\_\_ Service ceiling
- \_\_\_\_\_ Absolute service ceiling
- \_\_\_\_\_ Single-engine service ceiling
- \_\_\_\_\_ Single-engine absolute service ceiling
- \_\_\_\_ Centerline thrust
- \_\_\_\_\_ Critical engines
- \_\_\_\_\_ P-factor
- \_\_\_\_ Counter-rotating propellers
- \_\_\_\_\_ Review POH associated with training airplane

#### **Completion Standards**

Student must complete all review questions following the assigned reading.

#### Assignment

*The Complete Multi-Engine Pilot*, Introduction and Chapter 1; Pilot's Operating Handbook

#### **FLIGHT TRAINING**

#### **Objective:**

For the student to be introduced and become familiar with the multi-engine preflight inspection, checklist operations, starting and taxi procedures, and the airplane controls and systems.

#### Content

- \_\_\_\_ Preflight inspection and aircraft documents
- (certificates and documents, aircraft logbooks, airplane servicing)
- \_\_\_\_ Discuss cockpit management
- \_\_\_\_\_ Starting Procedures
- \_\_\_\_ Taxi
- \_\_\_\_\_ Run-up procedures
- \_\_\_\_\_ Checklist introduction and use
- \_\_\_\_ Normal takeoff
- \_\_\_\_\_ Four Basics: straight and level, climbs,
- descents, turns
- \_\_\_\_\_ Steep turns
- \_\_\_\_ Demo slow flight
- \_\_\_\_ Demo power-on stall
- \_\_\_\_ Demo power-off stall
- \_\_\_\_\_ Collision avoidance procedures
- \_\_\_\_\_ Normal approach and landing
- \_\_\_\_\_ Postflight procedures

#### **Completion Standards**

Student must conduct the preflight with minimum assistance, properly use all checklists, start and taxi the airplane, and operate the airplane system and controls.