

Multiengine (ME) Add-On Info
Ref: 2012 FAR Part 61.63 (c) (1-4)

When calling an FBO or flight school for pricing, be sure to ask exactly what the FAA requires for a multiengine add on **Ref: 2012 FAR Part 61.63 (c) (1-4)**. Usually companies will have a syllabus or recommended course of instruction. That's fine, but you may not require all they offer. Therefore, it's negotiable. When quoted a price, companies will normally give a range of cost to complete. This is normal as everyone is different and you may take more or less time. Be sure to ask for the details.....instructor cost per hour, aircraft cost, fuel cost, fuel surcharge costs, books and materials cost, simulator (if any) cost, ground school cost, FAA check flight cost, and are there insurance costs. Who pays if the aircraft is damaged?

You want to and need to be on a very specific syllabus to complete your training. After each flight you and your instructor should modify the syllabus based on your progress. Ensure each flight is based on a very specific written flight profile that will be flown. **STUDY AND CHAIR FLY THIS PROFILE BEFORE EACH FLIGHT.** You may need to alter this plan based on conditions. Every flight should be followed up with a detailed oral and written debrief. A good gauge is that for every hour flown, there should be a solid 30-45 mins of detailed discussion about what was completed, how you did as compared to the Practical Test Standards (PTS), and what the plan is for the next flight. I say this because ME flying is expensive and unless you have a spare barrel of \$\$, you want to make sure every minute spent in the air is time well spent. Over the last 5 years I have come across 1 or 2 flight instructors willing to go to this amount of written detail.

Required for an add-on to a Commercial Airplane, with an Instrument rating:

1. Multiengine Instructor (MEI) signoff for knowledge items
2. MEI signoff for proficiency
 - a. Preflight, airport ops, takeoffs, landings, go around, performance maneuvers, navigation, slow flight, stalls, EP's, ME Ops, high altitude ops, post flight.
 - b. No written exam required
 - c. No specific amount of hours required (plan on 10-15)
3. Update your FAA License – new plastic version with current address. Military pilots can use their “home of record” on their license as an option.
4. Current 3rd Class (or higher) FAA Medical or military “Up-Chit”.
 - a. If you are a military pilot and have an “up chit” or “up slip” to fly as a military pilot, you **DO NOT NEED AN FAA MEDICAL** to fly your ME Practical Flight. Very few examiners or other flight instructors know or understand this. Open the current Federal Aviation Regulations (2012 or later) to 14 CFR 61.23 (B) (9 i- i i).

Training

To complete this syllabus in the least amount of time and cost it is imperative you do a considerable amount of self study, “chair flying”, and “cold cockpit” practice. The **Completion Standards** outlined in the Jeppesen Syllabus are a good gauge of the level of detail required.

Ground (includes Grnd School & Pre/Post Flight Briefing) = 15 hours

Flight Time = 10-15 hours

FAA Check = \$250 - \$400

Books = \$100 - \$200

Insurance Costs: \$0 (Damage to the aircraft is covered under my insurance when you fly with me)

Total = \$5200 - \$7500 (Based on the number of hours you require to be proficient. You should plan on 10-15 flying hours)

Extra Training (if you require or desire it)

After your instructor is willing to endorse your log book as being ready for the practical flight with an examiner, you are the sole judge of your readiness to pass the practical. The learning curve can be steep for some, particularly if you haven't flown fixed wing airplanes in awhile or if you are a low time single engine airplane pilot. My feeling on this is that a low time airplane pilot (less than 200 hours) or a pilot who is primarily a helicopter pilot and flew some fixed wing in flight training (standard for USN, USMC, USCG) can complete this training in 10-15 hours and pass a check flight. But.....

1. The learning curve is vertical. You will be behind the aircraft on the first 2-3 flights. Takeoff at 85 KIAS or cruise at 160 KIAS is a whole lot different than 0 KIAS helo takeoffs or 90 KIAS single engine cruise speeds. In some cases you have half the time to complete twice as many items as you did in a single engine airplane or helicopter.
2. An extra 10 hours like some large commercial flight training companies offer to get you "comfortable" is in most cases 5 hours too much extra cost. 10+ hours to get you comfortable will put you to sleep. If you are a rated military pilot and have several 100 combat sorties under your belt, an extra 3-5 hours is plenty.
3. Discuss this with your instructor in detail as the time arises and develop a plan both you and your budget can live with.

YouTube Videos – These are the best, shortest, and easiest to understand discussions on ME aero I have come across.

1. Midwest Corporate Air, Inc. - Multiengine Aerodynamics I
2. Midwest Corporate Air, Inc. - Multiengine Aerodynamics II

Books & study materials

1. [Guided Flight Discovery: Multi Engine](#) by Liz Kailey, Dave Chance, Gary Kennedy and Virgil Poleshook (2004)
2. Multi-Engine Oral Exam Guide: The Comprehensive Guide to Prepare You for the FAA Oral Exam (Oral Exam Guide series) [Paperback] [Michael D. Hayes](#)
3. [Multi-Engine Syllabus](#) by Jeppesen (2001)
4. Pilot Operating Handbook (BE-95, Beech Travelair)
5. VFR & IFR Chart
6. Pacific Chart Supplement
7. If you are an IPAD in-flight user, be sure you are comfortable with the applications and have a paper backup to be legal.

Ground School

1. 4-5 Ground sessions augmented by the Online Gleim Multiengine Course

Equipment

1. Headset (I have one you can borrow)
2. Flat Kneeboard
 - a. When you are cruising at 160 KIAS +, cockpit management and organization are keys to success. There is little time to look up a frequency or flip through a stack of approach plates looking for something. Memorize the freqs or have them written on your kneeboard. Have all the departures, arrivals, and approach plates easily accessible and have them studied ahead of time.

- b. For you multi-crewed cockpit pilots – Keep in mind this is single piloted IFR flying and single pilot cockpit management both in normal cruise and during emergencies. There is no copilot to look up the freqs or handle the checklist during or after an emergency.

Time

1. 10 hours of Ground Training (4-5 meetings)
2. 10-15 hours of flight time (8-10 flights)
3. 15-20 hours of study time
 - a. Plan on self study.....think “CPT’s” if you attended Naval Flight Training
4. Factor in the drive to airport, brief, debrief, pre-flights, etc.

**Rough estimate – 4-6 weeks of effort

I strongly recommend you “block off” a time to do this. Start the syllabus and complete it in less than 2 months. If you start, stop, and start again it will only cost you more in both money and time. You want to fly on average, twice per week with a ground school per week. You want to take your check flight within a day or two after completing the syllabus. Be sure to inform/coordinate your goal to your significant other. Many aspiring aviators have had their wings clipped when you spent more time and money at the airport than on the last birthday gift you bought him/her!!

FAA (or DPE) CHECKFLIGHT (if the FAA does it, it is free)

** Keep in mind this is the FAA or a civilian Designated Pilot Examiner. They want to see you succeed but will not hesitate to fail you if you are not prepared. This isn’t a big deal. It will require you to get more training (ground and or air) on only the section you failed and redo just that section with them.

- Plan on a 2-3 hour oral exam
 - o In-depth knowledge of ME aerodynamics, Vmc, drag
 - o Aircraft systems – BE 95
 - o Engine out diagnosis and in-flight procedures
 - o Emergency Procedures
 - o Memorize all V-Speeds and understand them
- 2.0 proficiency check flight
 - o Failed Engine – on takeoff roll, in the pattern, at altitude, and on an instrument approach.
 - o Engine shutdown and in-flight restart
 - o Vmc Demo
 - o Steep Turns
 - o Stalls – Power on, Power off, Cruise landings
 - o Being the PIC and being confident in your abilities to handle the aircraft.