Multi-Engine Instructor Handbook

February 2009

Instruction on Multi-Engine Aircraft

So you're getting ready to instruct on the multi: you've probably instructed for a while and you're ready for a new challenge. You may have completed your multi rating and group 1 instrument rating flight tests, but you're not ready to instruct yet. What now? What's different?

The basics of instruction are the same, but the subject material and airplane are different. These are both an advantage and a responsibility. The consequences of mistakes are magnified. Any deficiencies in basic airplane control or procedures on the student's part *and* on your part will make instruction difficult.

It is acceptable and sometimes preferable to teach your students differently from how you were taught. If you do so, you should know the reason why you were taught that way, and why you should teach it different. Use your head, your experience, and the advice of supervising/more experienced instructors to decide where and when to try new methods. Your goal is to produce a pilot who, at the very least, has the skills to become as good as or better than you.

If your student has aspirations of becoming a professional pilot, and especially if they hold a commercial license, expect them to act professional in their training. Preparation is perhaps the biggest problem. Your protégé should not be arriving at 8:00 for an 8:00 booking, and neither should you—he/she will not bother to be on time if you do not do the same. Granted, you will often have legitimate delays, but your student must feel that you are doing everything reasonable to be on time.

This document will deal with preparing you to teach on a multi-engine aircraft. It is not intended to replace any textbooks or resources, but to supplement them with knowledge based on school policy and experience. I have attempted to not limit the advice to those who will train on the Travel Air, based on limited knowledge of the Seneca. If you are going to train students on the Seneca, you may need to correct some of my counsel.

Your Knowledge Base

Know the basics – it's important that you know *everything* the student must learn plus much more:

- Multi Ground School slides
- Multi Air Exercises
- Harv's Air Travel Air SOPs
- Flight Test Guides – Multi-Engine Rating & Instrument Rating
- Flight Instructor Guide – Multi-Engine Rating
- Aircraft Flight Manual – memorize all airspeeds/limitations, aircraft systems, and emergency procedures, and be proficient with all charts for performance and weight/balance

- Multi Ground School Package
- Aircraft systems: if a student points to something on the plane and asks you what it is, how it works, and why, you should know. So ask these questions yourself. Some of the system/equipment manufacturers have websites with tutorials and reference guides—visit these.
- Textbooks
- Regulations: CARS, AIM

Multi-Engine Training

For the first flight, you have a choice of making it a demonstration multi flight test or demonstrating an exercise and letting them try it. If you choose the latter, it will likely take 2 or 3 flights until you have covered everything. Regardless of what you choose, introduce engine failures in cruise before engine failures in the overshoot, and master two engine landings before single engine landings. When the exercises have all been covered at least once, try to cover most if not all exercises on each flight.

In general for airwork, please work so that your students do a realistic safety check beforehand. This means that the CALL/HASEL will look a bit different for each exercise. She/he should think of the exercises to be worked on for the flight when doing the walkaround: should that passenger really come along, or should the tow-bar be in the back for stalls?

Aircraft Documents

These are a perennial weakness of multi rating students. The documents are very similar to those from the single engine aircraft, but make sure you take the time to cover these documents in detail. Even though your student already has a private or commercial license, do not make assumptions about their knowledge; quiz them thoroughly and make sure they are familiar with the aircraft's paperwork.

Aircraft Performance

Performance charts: the candidate must understand the charts, but also the limitations—is the time to climb chart even useful? How do the numbers compare to real life—how far down the runway do we really lift off, and why? How would you calculate takeoff distance with a tailwind? How much fuel should we allow for startup/taxi/runup/takeoff?

Principles of Flight – One Engine Inoperative

Your student must have a thorough understanding of the aerodynamics and performance involved with an engine-out situation. Point out that even though power is (at best) 50%

compared with two engines, performance will now be 25-30% because of added drag and lost lift.

Remember that Vmc is basically a worst case scenario: if any of the conditions are changed, then control of the aircraft may be maintained at a lower airspeed. However, many of these actions—like extending the gear—will result in far worse performance. Note that for the Travel Air, Vmc is *very* close to the (actual) stalling speed: no wonder the airplane is rolling toward the dead engine!

Understanding of Vyse tends to be weak: it's easy to grasp best rate of climb, but what if the airplane is above its density altitude ceiling, or airplane control is not perfect, so that you can't maintain altitude? The common answer is to pitch up further—wrong! Make sure that you explain that even if Vyse is maintained, the plane may descend. But it will descend much slower than if a different airspeed was used.

Ancillary Controls

First of all, are ***you*** always operating the heater, closing the door, and manipulating the cowl flaps to keep the engines happy? I know that it's easier for you to do this, but you should be teaching your student how to operate the *whole* plane. Getting him/her to operate all the ancillary controls as a matter of habit will ensure that he/she won't forget during the flight test. Combine this with regular questioning to make sure that your student has a thorough understanding of the systems (and not just regular operation). Don't forget to cover seasonal items such as the heater, and differences in operating certain systems in winter or summer, or in IMC; it is common for a Group 1 Instrument candidate to have never used pitot heat, or for a Multi rated pilot to assume that the cabin is heated the same way as in a Cessna 172.

Taxiing

To tell you the truth, your prospective student probably still needs instruction on taxiing in a *single*, never mind a twin! In Steinbach, work hard on teaching him/her to manage momentum: if the props are chewed up, it's your fault. Spring will make taxiing quite difficult in some places and impossible in others. In this case, circuits at Steinbach North are a good idea—then you don't have to find a firm place to turn around or pass other planes.

And you thought you escaped students who drag the brakes! You will get people who use more than 1500 RPM to taxi at a walking pace. Take control from them and point out how you just reduced the power to 800 RPM and you're still moving at the same speed. I've even had to take control and abort a takeoff because the student would not release the brakes. You're an instructor: you'll never cease to be amazed at what people will do with an airplane.

Watch your prop-wash more now than ever. With a 152, it's annoying and bad airmanship. With a light twin, it can be dangerous. When the ground is firm enough in Steinbach, a good place to run-up is parallel to the taxiway.

Watch the twin while someone else is turning around: you'll be surprised how much the nosewheel tire flexes and slides (winter) in a tight turn or when changing directions. Learn to recognize and teach this, so that you work within the nosewheel radius and don't stress the nosegear assembly more than necessary. This means turning the nosewheel smoothly and watching differential power and differential brake inputs: some are necessary for a tight turn, but not much. In winter, it's very easy to get the twin sliding—it will take much more time and skill to catch the slide than in a smaller plane.

Takeoffs

Unfortunately, the average private pilot can perform a takeoff with their eyes closed. By this I mean that they give no thought to density altitude, takeoff weight, obstacles, GO/NO GO point or emergencies, and don't check full power or airspeed before they leave terra firma. When handed a takeoff briefing to recite, most pilots will happily memorize and spit it out mechanically; monkeys can do this sort of thing, and their record with flying planes is not very good. Do not let your student get away with this: make them think!

- For example, what if you lost an engine 50 feet above ground during the climbout, and you were at 100 mph? Would you continue? If not, would you close the throttles? Where would you land? If your gear were still down, would you retract them? If the gear were up, would you extend them? Would you even bother to extend flaps?
- And the answer is…it depends. If performance will be good, then continuing at 100 mph is an option. Reducing the throttles may be necessary to maintain control, but closing the throttles (especially at low airspeed) will cause the airplane to drop quickly. Gear: if you retracted them at the right point, then extension is a bad idea. Retraction is a must unless you can land on a runway or road. Flaps: do you have time? Performance and controllability will determine your options.

If your student needs a lot of work on landings, and they're on the standard syllabus (IFR and multi together), do more landings in Winnipeg from IFR approaches. I talk about this more in the IFR section.

Circuits

Speed is usually the main concern here: arriving, departing, and in the circuit. You'll need to do some serious "defensive driving" because the other traffic may have no idea how much space you'll need. The other factor is that you'll do full stops exclusively.

Generally speaking, one lap around the circuit will take you the same time as the singles. You're going faster, but you're also going out farther. If you're lucky, you'll get one circuit for every two that the other traffic does, unless there's no other traffic.

Landings

Most importantly, ***do not leave the gear up!*** *The Travel Air has had 2 gear-up landings within a span of 2 years.* These incidents (*not* accidents, because they were perfectly preventable) cannot be attributed to students or even lack of experience on the instructor's part. There may have been many external factors which had an influence, but each ultimately came down to a lack of precaution on the instructor's part. Regardless of what happens in the airplane, you are in charge of bringing the aircraft safely. The 20 or so years of multi and multi-IFR training previous to that contained no such accidents.

- When extending gear, be aware of the *signs of proper extension*: pitching/drag/noise/gear lights/mechanical indicator.
- *Double check gear* extension on final leg
- *Place one hand over gear switch* on short final and do not remove until you have cleared the runway and have stopped for the post-landing check. The exception is if you take control of the aircraft (make sure ***you*** don't accidentally retract the gear!)
- For practicing landings, do full stop and back-track **only**. *No touch-and-go circuits allowed.*

The twin is not a Cessna 152: you cannot bounce, stall-land, or land in a crab or drift without fear of damage. Yes, it takes some time to learn how to land the Travel Air, but if your student's basic landing skills are lacking, send them back to a Cessna for more practice.

If your students don't take engine failure seriously enough, or are sloppy with their approaches, force them to overshoot from a single-engine approach. This can really open their eyes to the danger of that condition—the proximity to ground will give them a *measurable* demonstration of a light twin's lack of performance on one engine. However, caution must be exercised: don't do this if the density altitude is high, your student's skill level is low, or your comfort/experience level is low. The "dead" engine should be idling and ready to assist.

The consequences of landing too long in a light twin are worse than in a Cessna 172, so keep firm Land/Overshoot points in mind. The same thing you've done with teaching initial landings holds true: help a lot at first to ensure good landings and gradually withdraw help until—when they're almost ready for flight test—you make them overshoot from bad landings (instead of always fixing them yourself).

Engine Failures

By now, you should know how incredibly critical these checks can be. The cause check should be memorized, but it's still a good idea to retrieve the checklist to make sure no items are missed. The first part of the check (M-P-P, Gear/Flaps, ID/Verify) must be memorized and accomplished quickly *but slow enough to maintain control of the aircraft and not miss any items*. The common error is (you guessed it!) to rush the checks so that airplane control suffers and something is missed.

Your student should have these procedures memorized early in the training. If he/she can't easily memorize 10 items, you're wasting time and money. You know how expensive multi/MIFR training is, so make that time efficient. Be prepared and make sure your student is as well.

If the situation is a (simulated) engine fire, then your student might want to confirm that the fire is *actually out* after completing the relevant checklist. Fire is probably the worst thing that can happen in an aircraft, and if it continues, there's no guarantee that the plane will hold together.

Engine Failure in the Overshoot

Students should be good at engine failures in cruise before you seriously start working on this. Common error: leaving the nose way above the horizon and letting the airspeed bleed off while trying to run through procedures. Maintain that speed! Also, approach the overshoot with a good 10 mph over blue line to make the exercise a little easier.

Stall – Cruise Configuration

For this exercise, the aim is to teach students to recognize what the aircraft does as they bring it up to, into, and out of a full stall. Most students have a hard time identifying the 'break', or the point when the airflow separates from the wing. Having the nose higher when the stall happens will make airflow separation much easier to identify. You could even take a piece of string and tape one end on the wing so that they see it for themselves!

A common error is to let the airplane pitch up *on its own* when it gains airspeed in the recovery. In the Travel Air, if the nose is let up too early, the stall horn will sound.

Approach to Stall – Landing Configuration

Please treat this as a realistic simulation of a dangerous situation close to the ground. Some altitude loss is acceptable, but not much. The Travel Air in particular will pitch up very quickly and the stall horn will sound when power is added, so make sure that students understand why and push forward just a bit to maintain attitude. (Power = prop-wash over wing and elevator.) I have even experimented with powering through the imminent stall—no reduction of angle of attack—but the Travel Air is rather unstable at this point, and any power differential can create a roll upset. This last technique, if done correctly, results in no altitude loss, but is too much to ask of a student pilot.

Flight at Reduced Airspeed

You can get the plane slowed down to the target airspeed a couple different ways, but the aim is to teach your student how to accurately control the plane in the landing configuration and while transitioning to that configuration. Pay attention to how much power is needed to offset the drag of each and all additions of gear and flaps, and the trim/pitch changes needed to stabilize the

plane during and after changes in configuration. Students commonly use too little power to offset drag, and let the plane climb too much when flaps are extended.

This exercise flows nicely into the engine failure during overshoot: get them to set the plane up for a (made-up) IFR approach and give them an engine failure in the missed. You can even make it a non-precision approach where they descend to an altitude, maintain it for a time and then overshoot.

Steep Turn

Don't think that this is an easy exercise to teach or do: deviations happen faster and are harder to correct than in a slower aircraft. In particular, I have found it more difficult to do a perfect steep turn in the Travel Air than in any other plane at Harv's. Spend time in pointing out the right reference points, and make sure corrections are quick and small. Pilot Induced Oscillations are a common error here.

Intentional Engine Shutdown

Three situations are the norm—prop overspeed, engine fire, and oil system failure—but feel free to throw in some rough engine running to test your student's understanding of the plane and ability to troubleshoot. A general rule of thumb is that if an engine will still give you some power, keep it running.

If the decision has been made to shut down an engine, how will the rest of the flight be changed? What systems are affected?

IFR Training

Most of your students should be trained following the syllabus, so when you start IFR training, they may have little time in the twin—someone with 4 hours in the twin may have enough trouble remembering all the checks, never mind the IFR procedures. This is another reason why your student must be proficient in the simulator before you start flying approaches.

A good general instructing method is to occasionally let a deviation run its course, so that you see how long your student will go before recognizing/correcting the situation. **However**, this can be very dangerous in IFR training: you could easily lose traffic separation, obstacle clearance, or earn yourself a CADORS report. Only very rarely should you let the student do something which prompts a response from a controller, and only if it is very minor, like Arrival calling you back to prompt a clearance readback. Experience will help you decide how far to let a deviation slip, so at the beginning, play it safe.

Please don't do *all* the training in Winnipeg. Cross countries don't give you the best approaches-to-flight time ratio, but are closer to what your students will encounter once (if) they

get a job. Trips into the US (from CKK7) will break up the monotony, keep your apprentice busy and give them valuable experience. What does it benefit your student to have done the same 5 approaches 30 times? Especially for a newly minted IFR pilot, small differences in approaches will make a world of difference in how they perform. The ILS in Warroad is a perfect example: 3000' is the minimum for the procedure turn *and* the beacon crossing height, but I`ve had someone blindly combine an S-turn *and* modified racetrack only to turn in *7 miles from the FAF against a 25 knot headwind on one engine*. The ILS approaches in Winnipeg are all the same, so he never really planned his approach to suit the conditions and approach profile.

All minimums other than MDA/DH or radar vector altitudes should have 100' added as a margin of error. Your student *will* descend below their assigned or intended altitudes: procedure turn altitudes and intermediate stepdown altitudes are *minimums—the lowest you can safely go*. I know that you are looking outside, flying well above downtown Winnipeg, but pretend that you can't see anything. Besides, is it even smart to descend to 1700' AGL, 10 miles from the threshold? That's a bit excessive even for VFR, and with IFR, altitude is your safety—for obstacles and engine failures.

Get as much Actual IFR for your students (and you!) as you can **safely**. You'll have to be cautious about this one: the Travel Air doesn't handle hard IFR well (icing), and probably neither do you. Bite off a bit at a time: you know what they say about bold pilots (there are old pilots, there are bold pilots, but there are no old, bold pilots).

Simulator Training

For goodness sake, follow the syllabus! Almost all prospective IFR pilots will need some major brushing-up in radio navigation, especially ADF tracking. But first, he/she must be able to fly the simulator to headings and altitudes close to flight test standards. The first session should be like a check on type, in which you teach your student how to use the simulator themselves—including basic trouble-shooting. Next, give them a primer in twin checklists and power settings, and fixing their basic scan before moving on to radio navigation. You'll be spending a bit of time in the sim (and your student should be using it solo between flights), so start with the basics. In that vein, work from fixed card ADF to RMI, and from ADF/CDI alone to using the GPS for assistance.

A tip in cranking up the difficulty is to turn on radio chatter, or speed up the simulator. Don't forget system or instrument failures.

Obtaining Weather

Errors here are often ones that should not made on a private flight test. If a candidate wants to prepare a charter to Dryden, surely it`s not too much to ask to review and print the Ontario GFAs!

Departure

The departure procedures should be pretty much ironed out in the simulator (just like for SIFR), because in the twin, you'll be knocking on Winnipeg Terminal's front door faster than your student can finish a VOT check. You should have time to set up all the radios/GPS while the engines warm up. Still, don't forget to simulate departures from other aerodromes.

A common error is trying to do too much after takeoff, so that nothing gets done right and the airplane climbs right through the assigned or intended altitude. Your student should be organized, and follow procedures.

Enroute

We simulate cross country flights so often for PPL and CPL—do the same for IFR. Ask cross country-specific questions on training flights, and treat at least part of the 100 nm flight as a charter. Once your former student gets a real IFR job, they'll be flying charters—cross countries—not hurriedly getting ready to do 2 approaches and a hold back to back. One big thing is keeping track of time.

Arrival

Common error: homing to an NDB. Too often, the candidate is busy briefing for an approach and you watch the BTS change from 310 to 285 in 3 minutes, and the candidate wonders why their hold entry didn't work or why the needle moved so slowly.

Also, don't let them rely on ATC to specify the top-of-descent. While coming back to CKK7 from Winnipeg under an IFR clearance, get your student to request clearance for the approach at a sensible point, instead of flying along fat, dumb, and happy, waiting for ATC to make the first move. This applies especially to coming back from the US: Terminal has *never* cleared me for an approach in time for us to use the RNAV B approach (during the day, I think the practice area traffic makes them nervous). If they won't let you down (this has happened), let them know that you're VMC and making calls on the local frequency on COM2. Anyway, the point is to make your protégé think and make sure they get the clearance necessary from ATC.

Holding

And you thought that your days of going around in little circles were over! I recommend using the double wind correction method as a start, and fixing errors with increasing/decreasing bank, but that's just me. Few flight test candidates can get a perfect hold after even 3 tries, but that's okay. What's not okay is turning the wrong way or crossing the beacon with no plan for estimated wind correction or even hold entry, or using the same wrong wind correction 3 times in a row. Make sure you try nonstandard holds and holds with tailwinds. A VOR/DME hold is a good idea once or twice, but not much more. Cover everything you can, but spend most of your time on the hard stuff.

ILS Approach

This is obviously the easiest IFR approach, yet Harv rarely awards flight test candidates a 4. Why? The most common error is in chasing the needles instead of setting the aircraft up correctly and completing a *normal* scan to keep the aircraft on track. The attitude indicator is still the primary instrument! With an approach at 120 mph, the nose will be just (2-3˚) below the horizon, VSI pegged at 5-600 fpm, the MP at 14-17 inches (depending on density altitude), and the wind correction angle should have been either figured out or estimated before intercepting the glideslope.

NDB Approach

Yes, pilots hate this type of approach above all others, but your flight test candidate will most likely have to fly this one for their flight test. First, is their basic ADF wind correction sharp? Don't let them rely on the GPS to fly NDB tracks; the Garmin is a tool, not a crutch. The IFR pilot should be able to use all the aircraft's equipment proficiently, but be able to perform well if it doesn't all work.

Timing is of the utmost importance, for both procedure turns and MAPs. If your student is advanced in their training and forgets to set the timer at the FAF, don't hesitate to make him/her initiate a missed approach. Also, ensure that an appropriate time is selected for the runway length, wind speed, aircraft configuration, circling procedure, and balance that with a margin of safety above Vyse.

Make sure that your students get *right* down to the MDA by the minimum recommended visibility. If they get down to minimums close to the MAP, then sighting the runway at minimums may result in a very high and fast approach to land. This is not just a recommendation: it's in the flight test guide. This applies also to all other non-precision approaches, including GPS. You can use this requirement to check and improve their situational awareness. Ask them to calculate the time/distance of this point, the descent required to reach it, and to report reaching it so they have a better idea of their position. ("One and a half mile final.")

GPS Approaches

Transport Canada now requires a GPS approach in addition to the NPA and PA on the IFR flight test, and there are a growing number of such approaches in Canada, so don't leave these on the sidelines. Luckily, you know from experience that flying these procedures is quite easy. The biggest obstacle will be in making sure your student is proficient in operating the Garmin 430. He/she should be at least familiar with it from a C172, but surprisingly few are capable of quickly moving through menus while flying.

Ensure that your students also know what to do in even of a missed approach—few realize that they have to push the OBS button to sequence the next waypoint.

For instructors in Steinbach, do the RNAV approach in CYAV (if possible); vice versa for instructors in CYAV. But don't get stuck flying only the RNAV approaches: fly GPS overlay approaches as well.

When flying the RNAV into CKK7, your student should be capable of making position and intention reports which are both accurate and discernible to VFR pilots. Calling "…crossing over MEDSO, inbound for the circling approach" only makes sense to local IFR pilots, so good use of the FPL and NRST pages are necessary to make good VFR position reports.

VOR Approaches

Students usually have more difficulty descending on time with these approaches, especially on the VOR/DME RWY 36, because the final fix is 2 nm from the threshold (instead of 4) and the procedure turn limit is about 6 nm closer to the runway. Still, get them down to the MDA; for example, gear can be extended earlier than usual to assist in the descent (although good approach planning should make this unnecessary).

Transition to Landing

Please do not neglect this exercise: it is easy to fall into a rut of doing approaches to minima and then overshooting. Planning for this should happen when preparing the approach. How low is the MDA, is the approach track aligned with the runway, how long is the runway, what aircraft configuration and approach speed is best, etc? Also, some circling should be done to opposite or neighboring runways. Winnipeg will sometimes allow you to do an ILS on 13 and circle to 18, for example. If you are VFR and traffic conditions allow, don't be afraid of making something up.

Touch and go landings are permissible in Winnipeg: the runways are long enough for you to land, set up for takeoff, and go. Double check the gear (as usual!) and ***cover the switch*** until you're off the ground. Let the student know exactly what he/she and you will do on the touch and go.

Transitions when flying on one engine can be very difficult for students. ***Do not let the aircraft slow below Vyse***—use the 'dead engine' if necessary to maintain airspeed. At high density altitudes, it may even be necessary to bring the gear up in order to maintain altitude.

Missed Approach

It's easy to fall into a rut with this exercise, too. The problem is that ATC gives you all of 3 different missed approach procedures ("climb to 2500/3000, fly runway heading/turn when safely able to 070/250"). Even though your student is expecting this clearance after passing the FAF, he/she should still prepare the published MA, unless you are IFR—in which case ATC

gives you the MA clearance just after the approach clearance. The simulator will allow you to mix things up a bit.

First of all, you are PIC. You are responsible for the walkaround and airplane serviceability, fuel planning, Class D advisory, flight plan, clearance, and weather planning which your student completes or receives—ensure that it is done to your satisfaction! If something goes wrong, *you* have to answer, not your student.

ATC Communication

Cultivate a good relationship with controllers. They are professionals whose primary concern is the safe and efficient movement of traffic within their jurisdiction. Sometimes they will act in ways completely unsympathetic to your needs, but still treat them with respect—they have a much greater scope of knowledge and responsibility than you do. With that said, controllers are quite willing to make changes and allow you to do uncommon maneuvers, but give them as much advance notice as possible. The latter may require a certain measure of goodwill, but as you gain experience, don't be afraid of asking.

Emergency Procedures

Communication Failures: First of all, your student must know exactly what the AIM RAC 6 has to say on the matter. Second, make it realistic: what if ATC can hear you, or you can still hear ATC but they can`t hear you? Is your protégé aware of using different transponder modes, clicking the mike button, or transmitting blind? Would he/she check the basics, like volume, frequency, headset jacks, and audio panel? Another sticky situation is the classic training flight with an IFR flight plan and clearance: you're doing holds and approaches in Winnipeg, but your destination is Steinbach (or St. Andrews). You may need to ask the controllers what they would expect of you, since such a flight isn't covered in RAC 6.

How well does the candidate understand the various systems in the airplane? For example, are the Sandel EHSI or S-Tec autopilot affected by a vacuum system failure? Why don`t the Travel Air procedures call for fuel boost pumps to be turned on for takeoff or for switching tanks, as opposed to the Seneca? What happens to the fuel heater in the Travel Air if the cabin air vent is closed? How are the voltage regulators affected by an engine failure? Etc…

Engine failures: You had better hope that you don`t have (or cause) one of these in IMC. The procedure you drilled into your acolyte`s head during the multi rating changes a bit depending on circumstance. You must get them to think long enough about the situation to change the procedures accordingly. Limping along at low speed and losing altitude, all the while studiously perusing the checklist and eliminating all possible causes of failure, is hardly the best decision. Neither is adding full power and retracting the gear while following the glideslope, or hurrying down to land on one engine only to discover that the cause was an easily corrected blunder on your part!

I hope that the information here has been helpful. As I said, these are only tips gleaned from other instructors, common practice at Harv's Air Service, and my own experience. These are not to replace the advice or procedures given, but to combat common errors. Read as much as you can about instructing on a multi-engine plane. You'll have to figure out the rest.