Custom Checklists – Teaching Aids for New Students

by Larry Bothe, MCFI, 7/29/01

Like many flight instructors, I have taught beginning students in the venerable Cessna 150 for a long time. The checklists provided in the owner's manual are reasonably complete for a generic airplane, but to some degree they presuppose a working knowledge of the airplane and its terminology. Unfortunately, the newer students have not yet acquired this knowledge. This caused me to have to repeat the same reminders over and over again as we sat in the airplane and got ready for a flight lesson. After I retired from industry and began doing more flight instruction (a lot less money but way more fun) I decided to see if I could improve the situation. An expanded checklist, customized to the individual airplane, and to some extent to our home airfield (Seymour, IN), seemed to be what was needed.

I started out with Cessna's Before Starting Engine, Starting Engine, Before Take-off and Take-off checklists. Then I added clarifying notes, eg., to "MIXTURE – RICH" I added "red knob, push in." I also expanded some of Cessna's check items. Instead of just "Flight Instruments and Radios – Set", I listed out the individual instruments and what action was necessary to "set" them. Ditto the radios, starting with the intercom so I could stop shouting at the earliest possible time. Finally, I added items that Cessna didn't include, like a reminder to put on the headset, switch the transponder to Altitude, the field elevation at SER, etc.

The first pass at this checklist was done last fall. I did it just on plain paper (not laminated) and then tried it on students in order to "validate" my work. Items that were misinterpreted or difficult for the students to understand were revised. After a couple weeks and several revisions I had enough confidence to laminate the checklist and leave it in the plane. Since that time I have noticed a few things that needed improvement. My current version is presented below.

I have found this custom checklist to be very, very helpful. Now most students can get in the airplane and prepare to taxi, without any prompting from me, after just one or two lessons. Yes, they still occasionally skip an item or get ahead of themselves, and I sometimes have to admonish a student to read the entire line of the checklist in order to get the desired action, but it is way better than the basic checklists provided by manufacturers.

CHECKLIST FOR 1973 C-150L, N10131

Exterior pre-fight inspection completed – You did climb up and CHECK the FUEL in the tanks VISUALLY, right?

PRESTART

1. Hobbs meter, check against sheet on clipboard
2. Buckle safety belts, leave loose
3. Adjust seat position
4. Tighten safety belts
5. Fuel valve ON
6. Radio, transponder and intercom all turned OFF
7. Control lock removed

START ENGINE

1. CARB HEAT (small black knob) COLD/OFF (push in)
2. MIXTURE (red knob) FULL RICH (push in)
3. THROTTLE (large black knob): Adj. friction, OPEN ¼" (push in a little)
4. PRIME: None if hot, 1 shot if warm, 2 shots if very cold
5. Yell "CLEAR PROP", then LOOK AROUND
6. MASTER switch (double red rocker) ON
7. BRAKES, hold
8. MAGNETO switch ("ignition key") to START
9. OIL PRESSURE - comes up in 30 seconds

GET READY TO TAXI

1. HEADSET, put on
2. INTERCOM on; set MIC SQUELCH and VOLUME
3. TRANSPONDER – To Standby; "SBY"
4. RADIO – Freq. 122.80, set VOLUME (pull and adjust)
5. Check BEACON ON, day and night (other lights at night)
6. FLAPS UP before taxi
8. WHICH RUNWAY? Look at wind tee, decide; or, call Ground Control at towered field

TAXI TO RUN-UP AREA NEAR ACTIVE RUNWAY

Prepared by Larry Bothe, rev. 7/27/01

BEFORE TAKE-OFF (RUN-UP)

1. ENGINE RUN-UP:
   a. Throttle up to 1700 rpm
   b. Oil pressure in green
   c. Oil temp in green (usually right at bottom of green)
   d. Suction gauge in green (usually at top of green)
   e. Carb heat, pull ON, check for RPM drop, push OFF
   f. Magneto check: 2 clicks to left to check right mag, note RPM drop (max 125), then back to both. Then 1 click left to check left mag, note drop (max 125) then back to both. Max difference between R & L = 50
   g. Alternator (charging) check: Left half of Master off, then back on, note if ammeter comes back up
   h. Throttle back to 1000 rpm
2. CONTROLS: FREE & CORRECT ("box" the controls")
3. INSTRUMENTS (In sideways "U" order)

   a. Artificial horizon on horizon line
   b. Clock agrees with your wristwatch
   c. Altimeter: Set to field elevation (SER = 583 ft.)
   d. OBS (course selector): Set if using VOR
   e. Gyro compass: Set to agree with magnetic compass
4. TRIM wheel: Set to Take-Off (bottom of white box)
5. FLAPS UP (unless soft or rough field, then 10 degrees)
6. DOORS/windows shut/latched
7. TRANSPONDER to Altitude; “ALT”

READY FOR TAKE-OFF (*Note time off*)

1. ANNOUNCE intentions on radio, listen for reply; or, call Tower at towered field
2. LOOK for other traffic
3. TAXI out on to runway
4. CHECK gyro compass against runway number (heading)
5. HEELS BACK, just toes on bottom of rudder pedals
6. OPEN THROTTLE all the way, promptly
7. ROTATE nose @ 55 mph, wait for liftoff
8. CLIMB at 80 mph

Consider customizing checklists for your aircraft and locations to assist in new student learning.

Larry Bothe is an FAA Designated Pilot Examiner, FAASTeam Representative and Gold Seal Instructor in the Indianapolis, IN FSDO area. He is also a Master Certified Flight Instructor as designated by Master Instructors, LLC and has over 6500 hours in more than 70 types of aircraft. He may be contacted at LBothe@comcast.net.