

Safety Update: Are Your Preflight Inspections Becoming Routine?

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In our last two articles, we highlighted the importance of developing a higher level of Situational Awareness (SA) during flight. Now, let's take a step back and apply Situational Awareness to your aircraft Preflight Inspections.

One memorable flight review in the summer of 2003 comes to mind. A newly minted private pilot had recently purchased a 1960s era Cessna 172. After completing the ground portion of his flight review, we walked from the FBO building across the blacktop ramp to the tiedowns. He proudly described his quest to find a good paint deal on his Skyhawk. From 30 feet away, the creme colored airplane with metallic burgundy trim sparkled in the bright morning sunlight. I admired the updated paint scheme as we walked toward his Skyhawk. As he began his preflight, I began my preflight as well.

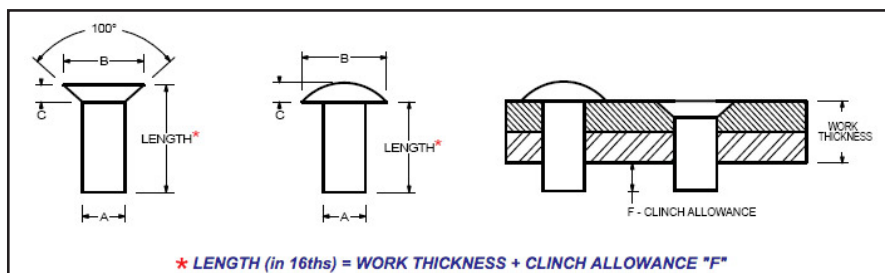
After completing his walk around, the young pilot gave the typical thumbs up. My preflight, however, stopped at the left fuselage side and empennage. I asked if he noticed anything unusual during his preflight. He responded, "No, nothing unusual. Did you see any runs or bubbles in the paint?" I then asked him to carefully examine the fuselage once again. He took a moment to glance admiringly at the high gloss finish and then remarked that the paint job looked great to him.

What I observed, however, was perfectly smooth aircraft skin. His "good deal" painter managed to grind the heads off every fuselage rivet from the rear windows to the aircraft tail. So, what was securing the fuselage skin to the airframe? Color paint and clear coat. The pilot stated that sources other than an approved FAA paint shop were utilized. The Aircraft Logbook showed no paintwork entries. Needless to say, we did not fly that day. I suggested that he ground the airplane and contact his Aircraft Inspector (IA) for follow-up.

Now, let's take a step beyond a routine walk around and examine this excellent article on "Advanced Preflight After Maintenance" prepared by the FAA Aviation Safety Team (FAASTeam).

"A" Body Diameter; "B" Head Diameter; "C" Head Height

Aircraft rivet installation guides specify the minimum installed head height and tail height for every protruding rivet head size. Grinding or sanding removes the rivet's alodine or anodized finish.



ADVANCED PREFLIGHT AFTER MAINTENANCE

Maintenance-related problems are one of the most deadly causes of accidents in general aviation. Contributing to this is a pilot's failure to identify maintenance discrepancies because of a lack of knowledge and improper techniques used during the preflight of the aircraft.



Color and Clear Coat

So What Can Pilots Do?

Conduct an Advanced Preflight that goes beyond the normal preflight checklist. Advanced preflight is a program that helps you become more aware of all the safety-related data on your aircraft, and focuses on a detailed approach to your preflight inspection, based on your aircraft's maintenance history. While this requires some time, consider developing an additional items checklist that can be used in conjunction with the aircraft's preflight checklist for all future preflight inspections. It is a valuable tool whether you own, rent, or borrow an aircraft.



Put Yourself in the Right Mindset — assume that there is something wrong, even if you used the best mechanic. Mechanics typically do an excellent job, but if you assume that all is right, you'll miss catching any possible mistakes, worn items or improperly rigged items, or whatever else might be wrong. Always look over any part of the aircraft that has maintenance performed on it.

Use Your Senses, and a notepad, to write down anything you sense is not right. LISTEN to the airplane (not just the engine!). Do you SMELL anything abnormal? Fuel? Oil? Does it vibrate more than usual (FEEL)? Do you TASTE (or smell for that matter) any of that acrid smoke that comes with burning electrical items? Step 10 to 15 feet back from the airplane. Does anything LOOK out of place? Be prepared to abort takeoff if something goes wrong or doesn't feel right.

Before Your First Flight After Maintenance:

- **Learn all you can about the maintenance that was performed.** Discuss all work that was done with the mechanic. Ask what to look out and watch for during the first flight. Do not just accept that the work was done. Ask: What was touched, repaired, or replaced, and what was accomplished?



- **Don't assume the part(s) replaced are the only parts removed.**

Ask what was removed and/or disconnected to facilitate the work performed. Often disassembly needs to be done to get to the inoperative part. For example:

- Upholstery / seats, tracks, floors / emergency exits
- Interior and exterior access panels especially in hard-to-see places of the aircraft
- Yokes / control cables, linkages, and surfaces
- Equipment and appliances / wires and connectors
- Hydraulic / vacuum / brake / pitot and static / fuel lines

- **Pay attention to trim positions.** Check for unimpeded flight control surface deflections. Make sure they go in the proper direction!

- **Check fuel tank for water, sediment, and proper fuel grade.** Use a sampler cup to drain a small quantity of fuel. Place it in front of a white (not blue) background to see what's in the fuel. Pull out the strainer drain knob for about four seconds to clear it of water or sediment.

- **After an oil change, always check the engine oil level to ensure it has the proper amount of oil.**

- **Always check your logbook and paperwork prior to flight to ensure the correct records have been entered.** Check for proper log entries for the work performed and the return to service, or the aircraft isn't legal to fly. Always ensure you have your aircraft's correct documents (e.g., airworthiness certificate and registration) onboard.

- **If you see a warning tag / sign on the aircraft, or on the sign-out or status board, DO NOT FLY THE AIRCRAFT!** Check with the maintenance facility prior to taking the aircraft.

- **Participate in, or observe your mechanic perform, an annual or 100-hour inspection.**

It's a great way to learn about your aircraft's systems, components, and any areas prone to failure or weakness.

Resources

- NTSB Safety Alert — Advanced Preflight After Maintenance: <https://go.usa.gov/cK7Py>
- FAA's Advanced Preflight Pamphlet: <https://go.usa.gov/xVy44>
- "Advanced Preflight," FAA Safety Briefing, Mar/Apr 2012: <https://go.usa.gov/cK7ma>

2022 Legislative Luncheon - March 2, 2022

Save the date for SCAA 's Legislative Luncheon on March 2, 2022. Join your fellow association members as they meet with legislators and their staff on the Statehouse grounds in Columbia.

Registration details are coming soon!

