


# Preflight Inspection

<p><b>Objective</b></p>	
<p>To ensure the applicant learns the purpose of and can exhibit a clear understanding of the preflight inspection and how to perform the procedure properly.</p>	
<p><b>Purpose</b></p>	
<p>A safe flight begins with an airworthy airplane. Before any flight, pilots must thoroughly inspect the airplane to ensure airworthiness. Mechanics forget to attach items, wind can damage an airplane sitting on the ramp, and fuel and fluids leak. This lesson introduces pilots to the preflight inspection procedure, and teaches them how to determine what is normal and abnormal for their particular airplane.</p>	
<p><b>Schedule</b></p>	<p><b>Equipment</b></p>
<ul style="list-style-type: none"> <li>● <b>Ground Lesson:</b> 10 minutes - <i>At the airplane</i></li> <li>● Initial             <ul style="list-style-type: none"> <li>■ <b>Before Flight:</b> 15 minutes - <i>Introduction and Demonstration</i></li> </ul> </li> <li>● Every Flight             <ul style="list-style-type: none"> <li>■ <b>Before Flight:</b> 10 minutes - <i>Student Performs</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Airplane Checklist</li> <li>● Airplane Maintenance Records</li> </ul>
<p><b>Student Actions</b></p>	<p><b>Instructor Actions</b></p>
<ul style="list-style-type: none"> <li>● Ask any questions, receive study material for the next lesson.</li> <li>● Watch linked video.</li> <li>● Review listed references.</li> </ul>	<ul style="list-style-type: none"> <li>● Deliver the ground lesson (below).</li> <li>● Demonstrate the procedure.</li> <li>● Debrief after each flight.</li> </ul>
<p><b>Completion Standards</b></p>	
<ul style="list-style-type: none"> <li>● <b>Ground:</b> Student can explain the purpose of the preflight inspection procedure and how to execute it properly.</li> <li>● <b>Before Flight:</b> Student can perform the procedure, including the following.             <ul style="list-style-type: none"> <li>● Determining airworthiness paperwork (inspections, etc.) are correct and current</li> <li>● Follows a preflight inspection checklist</li> <li>● Inspecting flight controls, fuselage, engine, fuel, wheels/brakes, lights, pitot/static system, antennas, etc.</li> <li>● Noting any defects, using sound judgement to determine airworthiness</li> </ul> </li> </ul>	

## References

- GeneralAviationGuru - "How to Preflight a Cessna 172 [HD]"
  - YouTube - <https://www.youtube.com/watch?v=C-yqLXZtkjA>
- FAA-H-8083-3B (Airplane Flying Handbook) - Chapter 2, Page 2-9 [Preflight Assessment of the Aircraft]
- FAA-H-8083-25B (Pilot's Handbook of Aeronautical Knowledge) - Chapter 6 [Flight Controls], Chapter 7 [Aircraft Systems]
- FAA-S-ACS-6B (Private Pilot ACS) - Area II Task A
- FAA-S-ACS-7A (Commercial Pilot ACS) - Area II Task A
- FAA-S-8081-6D (CFI PTS) - Area V Task A

## Ground Lesson Outline

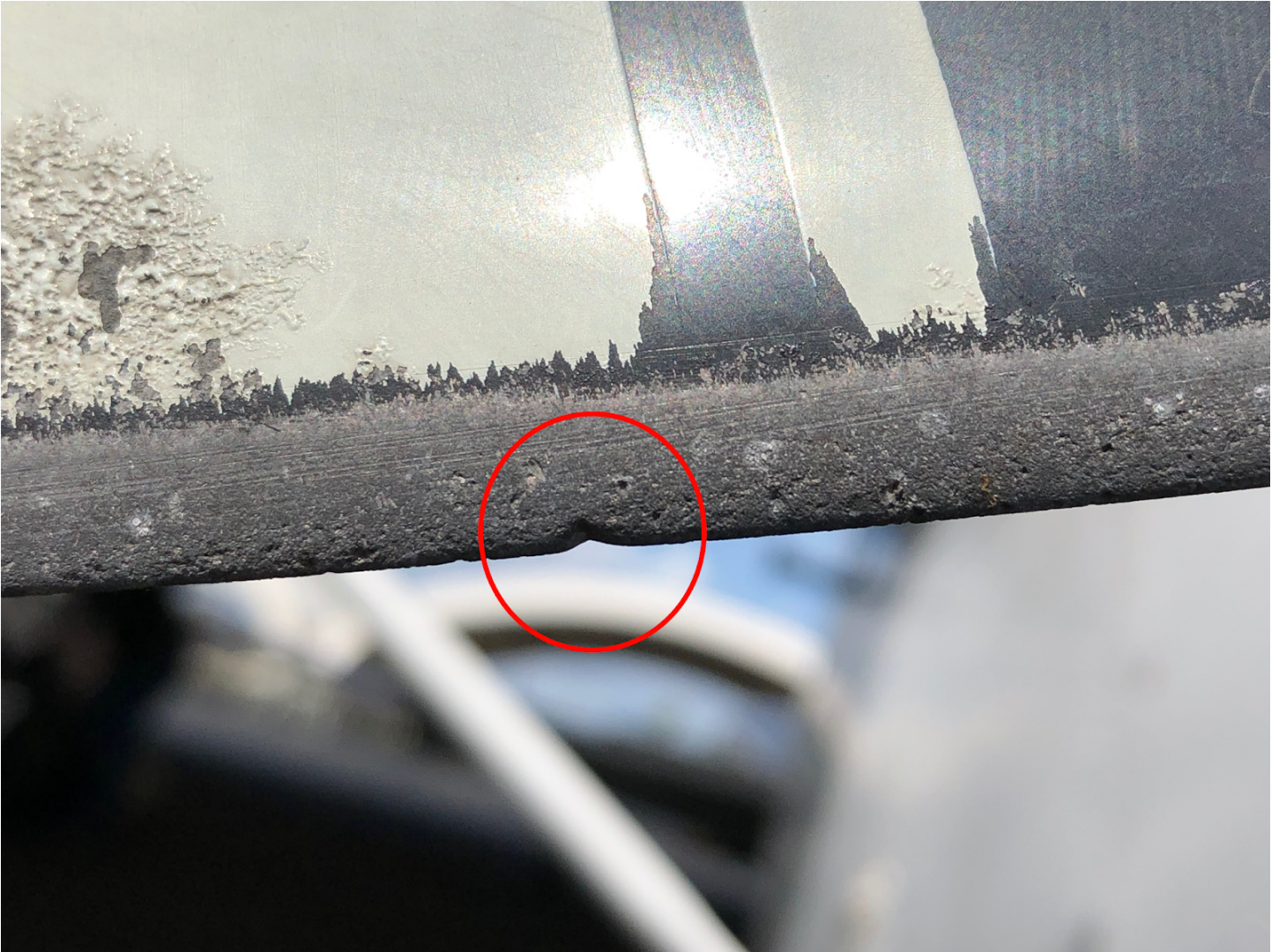
- Establishing Airworthiness
  - Inspections, ADs, etc.
- Preflight Inspection
  - Reasons for Preflight Inspections
  - Importance of using a checklist
  - Items that should be inspected - Flight controls, fuel, engine, lights, wheels/brakes, pitot/static ports, antennas, etc.
  - Pilot judgement, ADM/Risk Management - Accept no unnecessary risk
- Fuselage and Flight Controls
  - Removal of control lock, ailerons, elevator, rudder, trim tabs, flaps
  - Hinges, control rods/cables, proper free movement
  - Stall indicator
  - Cracks, missing screws, bent/crumpled areas
  - Ice/Frost - None permitted! (Removal, etc.)
  - Removal of chocks/tiedowns, securing of baggage area, any loose items, and baggage door
- Engine / Propeller
  - Oil level, belts, visible oil leaks, air filter, exhaust system, propeller dings, etc.
  - Adding oil
- Fuel
  - How to check quantity, fuel quality, drain locations, vent locations
  - What to do in case of contaminated fuel
- Wheels/Brakes
  - Tire wear, wheel brake pads, visible hydraulic leaks, etc.
- Lights
  - Battery, landing/strobe/nav/anti-collision lights
- Pitot/Static
  - Pitot tube cover removal, static port free from debris
- Antennas
  - None missing, abnormally bent, etc.
- Oxygen system, including supply and proper operation (if applicable).

## Common Errors

- **Failure to use or the improper use of checklist.**
- **Hazards which may result from allowing distractions to interrupt a visual inspection.**
- Inability to recognize discrepancies to determine airworthiness.
- **Failure to ensure servicing with the proper fuel and oil.**
- Failure to ensure proper loading and securing of baggage, cargo, and equipment.

## Ground Lesson Supplement

- **Propeller Ding** - Can catch a fingernail on the ding



- **Checking Fuel Quantity and Quality** - *Visually* inspect fuel level and quantity.





