CFI Special Emphasis Program

Maintenance Procedures to Teach by Example

Presented to: Orlando FSDO CFI Special Emphasis Program

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Federal Aviation Administration

Gratitude for the research team

- Bob Jex and the Orlando FSDO
- Mark Griffin – Designated Pilot Examiner, flight instructor, aircraft owner/operator
- Dennis Kochan – Flight instructor, A & P mechanic, Inspector Authorization, aircraft owner/operator
- Many pilots without the benefit of your professional instruction

Share your background

- How long have you been a CFI? (Poll Q1)
- Where do you flight instruct? (Poll Q2)
- In which aircraft do you teach? (Poll Q3)

Your role in safety - airworthiness

- **Maintenance basics**
- **Maintenance practices**
- **Communicating with mechanics**
- **Aircraft preflight inspections**
  - Documents
  - Maintenance records
  - Inoperative equipment
  - Recording and reporting discrepancies

What to ask your mechanic

There is just one question you need to ask:

Is the aircraft airworthy?

What the DPE is required to see

"**Aircraft Requirements.** Ensure the applicant has the proper aircraft maintenance records, logbooks, airworthiness certificate, and aircraft registration to determine that the aircraft is airworthy and suitable for the practical test. After review, return the documents to the applicant."

(https://fsims.faa.gov/wdocs/orders/8900_2.htm)

What the DPE is required to do

"The designee will determine whether the applicant's aircraft is airworthy and suitable for the practical test after the review of the aircraft's maintenance records, aircraft logbooks, airworthiness certificate, FCC aircraft station license (if applicable), and aircraft registration."

(https://fsims.faa.gov/wdocs/orders/8900_2.htm)

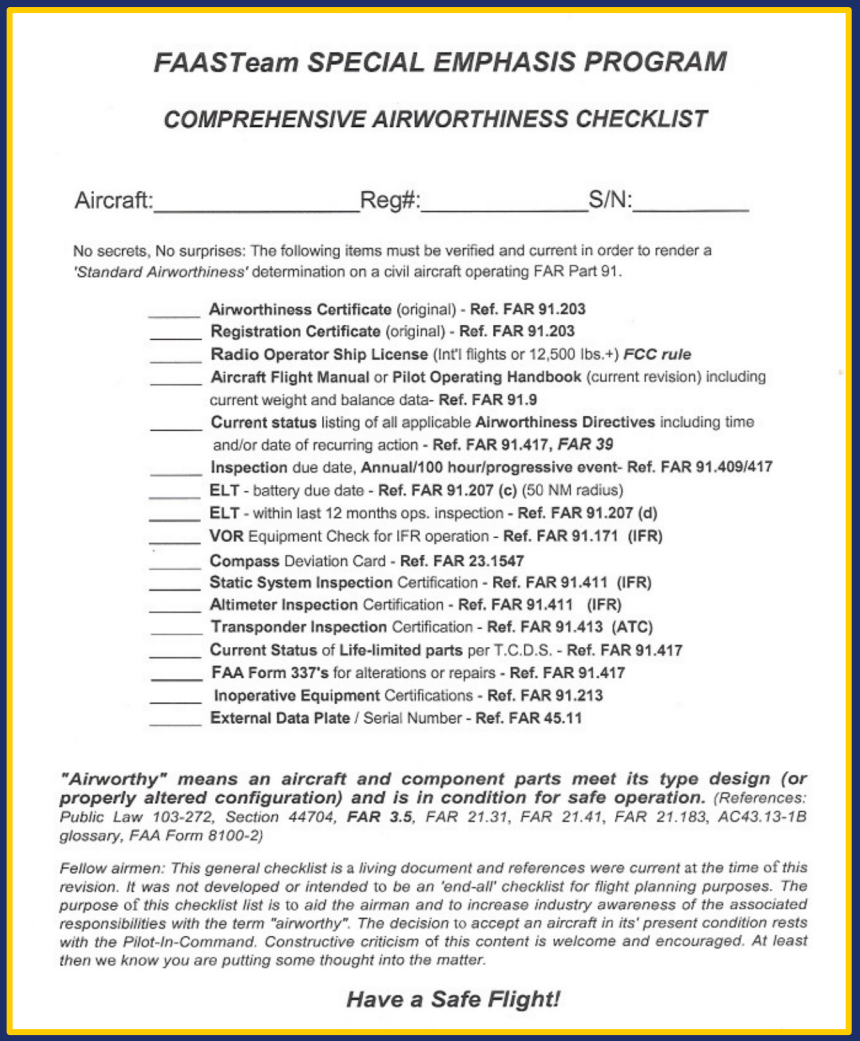
How you can help your student

https://www.faasafety.gov/files/gslac/library/documents/2012/Apr/63083/FAA_M_PamphletFinal.pdf

Responsibility for airworthiness

- Who is responsible for maintaining an aircraft in an airworthy condition? (Poll Q4)
- Who is responsible for determining whether the aircraft is in a condition for safe flight?(Poll Q5)

Airworthy versus ”Flyworthy”



FAASTeam SPECIAL EMPHASIS PROGRAM

COMPREHENSIVE AIRWORTHINESS CHECKLIST

Aircraft:_____Reg#:_____S/N:_____

No secrets, No surprises: The following items must be verified and current in order to render a *'Standard Airworthiness'* determination on a civil aircraft operating FAR Part 91.

_____ **Airworthiness Certificate** (original) - **Ref. FAR 91.203**
_____ **Registration Certificate** (original) - **Ref. FAR 91.203**
_____ **Radio Operator Ship License** (Int'l flights or 12,500 lbs.+) ***FCC rule***
_____ **Aircraft Flight Manual** or **Pilot Operating Handbook** (current revision) including current weight and balance data- **Ref. FAR 91.9**
_____ **Current status** listing of all applicable **Airworthiness Directives** including time and/or date of recurring action - **Ref. FAR 91.417, *FAR 39***
_____ **Inspection** due date, **Annual/100 hour/progressive event**- **Ref. FAR 91.409/417**
_____ **ELT** - battery due date - **Ref. FAR 91.207 (c)** (50 NM radius)
_____ **ELT** - within last 12 months ops. inspection - **Ref. FAR 91.207 (d)**
_____ **VOR** Equipment Check for IFR operation - **Ref. FAR 91.171 (IFR)**
_____ **Compass** Deviation Card - **Ref. FAR 23.1547**
_____ **Static System Inspection** Certification - **Ref. FAR 91.411 (IFR)**
_____ **Altimeter Inspection** Certification - **Ref. FAR 91.411 (IFR)**
_____ **Transponder Inspection** Certification - **Ref. FAR 91.413 (ATC)**
_____ **Current Status** of **Life-limited parts** per T.C.D.S. - **Ref. FAR 91.417**
_____ **FAA Form 337's** for alterations or repairs - **Ref. FAR 91.417**
_____ **Inoperative Equipment** Certifications - **Ref. FAR 91.213**
_____ **External Data Plate** / Serial Number - **Ref. FAR 45.11**

"Airworthy" means an aircraft and component parts meet its type design (or properly altered configuration) and is in condition for safe operation. *(References: Public Law 103-272, Section 44704, **FAR 3.5**, FAR 21.31, FAR 21.41, FAR 21.183, AC43.13-1B glossary, FAA Form 8100-2)*

Fellow airmen: This general checklist is a living document and references were current at the time of this revision. It was not developed or intended to be an 'end-all' checklist for flight planning purposes. The purpose of this checklist list is to aid the airman and to increase industry awareness of the associated responsibilities with the term "airworthy". The decision to accept an aircraft in its' present condition rests with the Pilot-In-Command. Constructive criticism of this content is welcome and encouraged. At least then we know you are putting some thought into the matter.

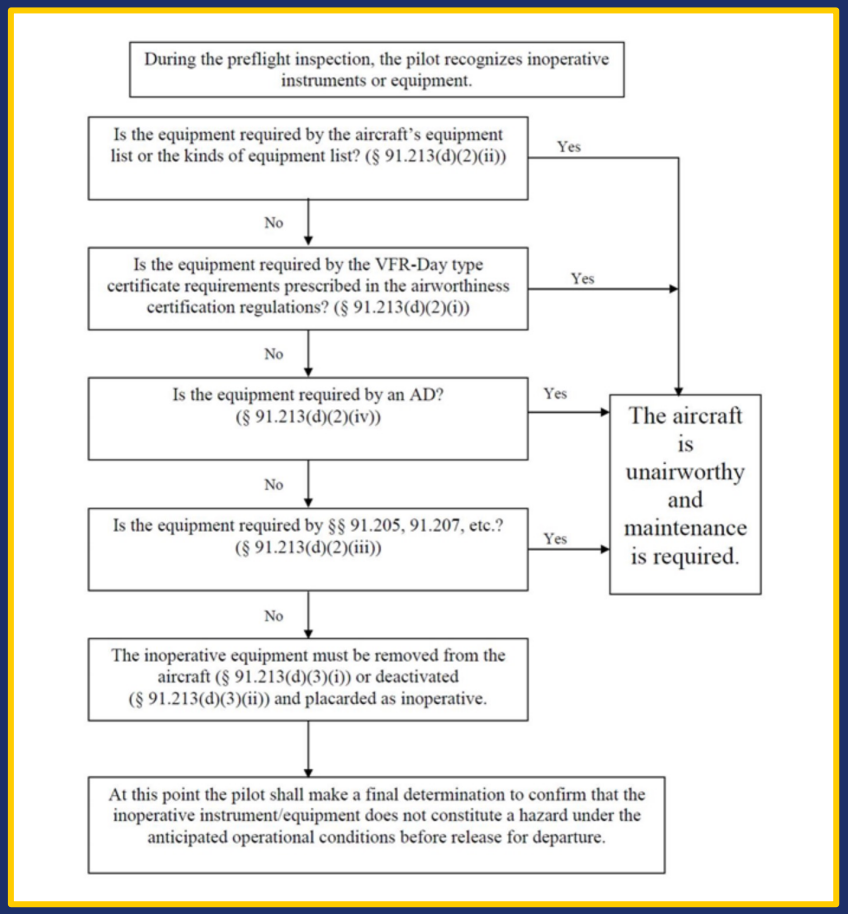
Have a Safe Flight!

Examples from the field

1. Airworthiness
2. Registration
3. Pilot Operating Handbook
4. Airworthiness Directives/Service Bulletins
5. 100-hour inspections
6. ELT
7. Pitot/static and transponder inspection
8. Weight & balance
9. Light Sport aircraft placard
10. Inoperative equipment

(14 CFR Part 91)

Inoperative equipment



(https://fsims.faa.gov/wdocs/orders/8900_2.htm Figure 4-42 Flowchart - Operating Without a Minimum Equipment List)

Maintenance discrepancies

- Process
- How-to communicate the discrepancy
- Follow-up
- Discussion with maintainer (learn from it)
- Flight test needed (when and by whom)

Common discrepancies

- **Tire inflation (Poll Q6 and Poll Q7)**
- **Tire condition**

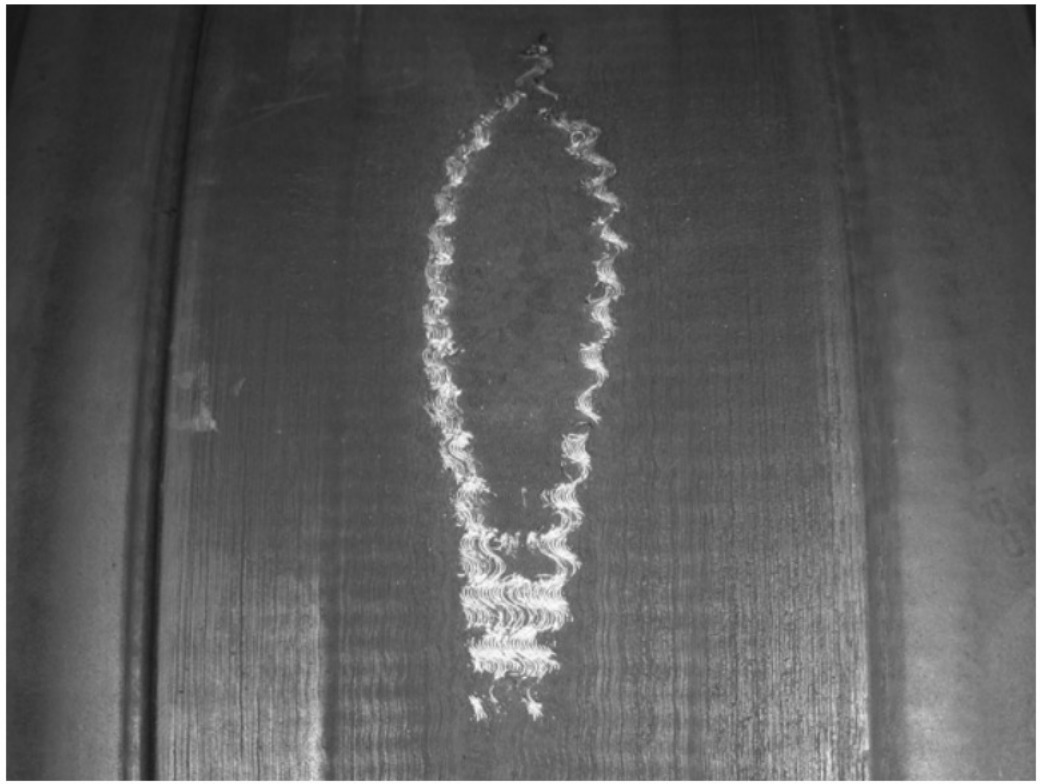


Figure 505. Wear Beyond Limits

Figure 507. Shoulder Wear due to Underinflation

Figure 514. Chevron Cutting

8.8.4. The appearance and severity of chevron cutting is greatest when ambient temperatures and aircraft landing speeds are high causing greater tire acceleration at "spin-up."

Figure 516. Aggressive Wear from Heavy Braking

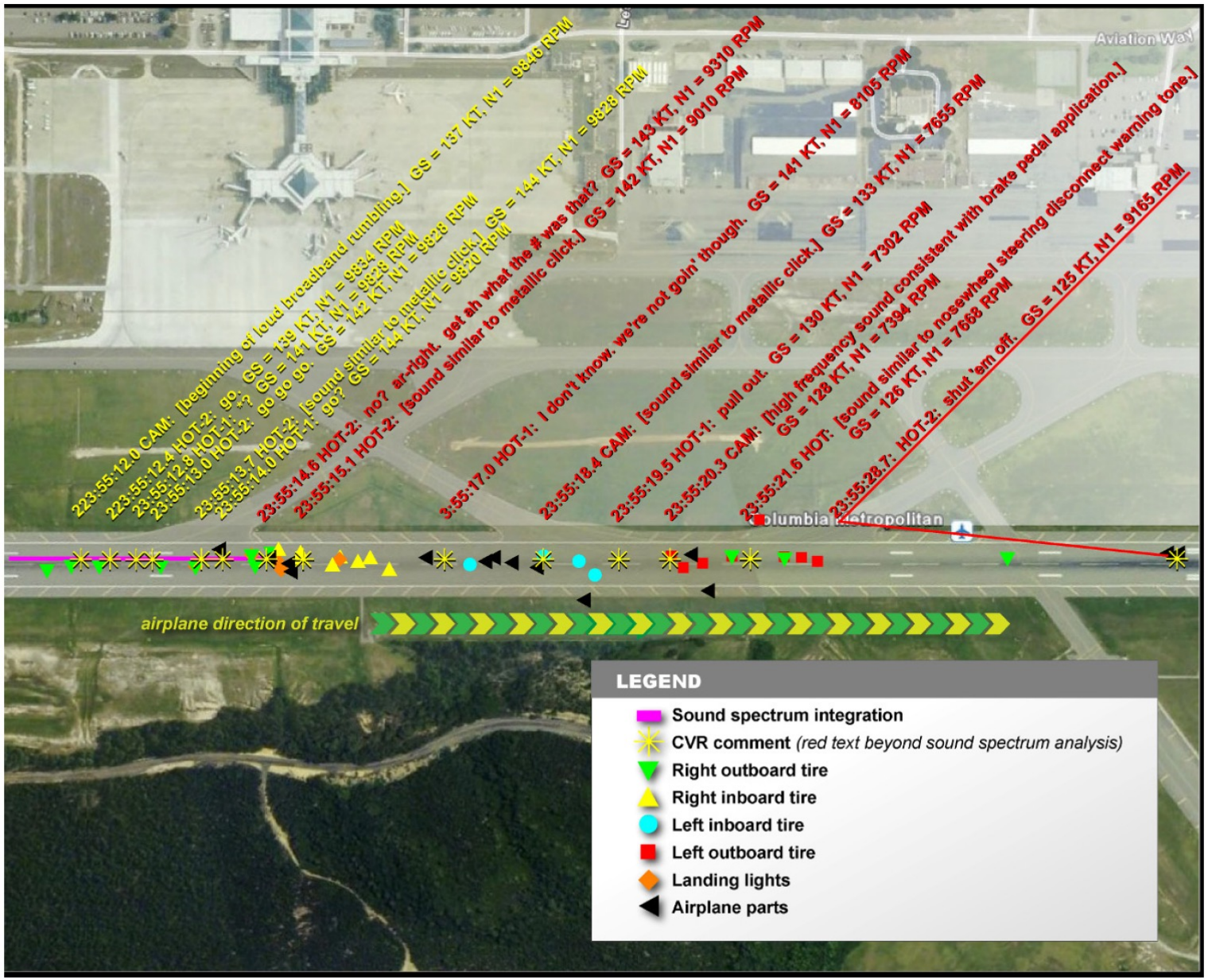


Figure 6. Map of Columbia Metropolitan Airport showing integrated sound spectrum data, cockpit voice recorder comments, and wreckage locations plotted.

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