

*HWG-10 Presentation to the  
FAA Aging Aircraft Workshop*

Presentation By:

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# *HWG-10 Presentation Highlights*

- HWG-10 Work Scope
- HWG-10 Official Tasking
- Part 91/135 Aircraft Fleet Analysis
- HWG-10 Current Status
  - Non-Intrusive Aircraft Evaluations To-Date
  - Non-Intrusive Wiring Survey Summary
  - General Observations during Aircraft Evaluations

# *HWG-10 Presentation Highlights (Continued)*

- HWG-10 Current Status (Continued)
  - Intrusive Wiring Inspection Update
  - OEM Aircraft Specific Report Update
  - Subcommittee WG-6 to –9 Update
  - Timeline for Final Report to ATSRAC
  - Evaluated Aircraft Photographs

# *HWG-10 Work Scope*

- Scope
  - Investigate the applicability of previous ATSRAC recommendations and identify unique issues specific to Small Transport Aircraft (STA) in 14 CFR Parts 91/135 and recommend appropriate action
  - The priority focus will be that of aircraft wiring as a system

# *HWG-10 Official Tasking*

- Investigate the Applicability of ATSRAC recommendation to STA Electrical Wire Interconnect Systems (EWIS)
- Identify Issues unique to these Systems and recommend appropriate actions based of results from:
  - Sample Inspections of In-Service & Retired STA
  - Fleet Service History Review to identify trends/areas of concern, and
  - Coordinate with other ATSRAC HWG's to ensure ATSRAC Reports to FAA consider the needs of STA's

## *Part 91 / 135 US Fixed Wing Turbine-Powered– Fleet Analysis*

- Fixed Wing Turbine-Powered Fleet Total - Number of US Aircraft as of December, 2001 – **14,837** – Source: AVData Inc, 2002
- Fixed Wing Turbine-Powered – **Jet Aircraft** - 8,605 or 58% of the total Fixed Wing Turbine-Powered Aircraft in the US – *Source: AVData Inc. 2002*

# *Part 91 / 135 US Fixed Wing Turbine-Powered – Jet Aircraft*

- Part 135 Aircraft
  - 2,306 as of December 2001 which represents 27% of Total US Jet Aircraft Fleet – *Source: Air Charter Guide, 2002*

# *Part 91 / 135 – Jet Aircraft – Inspection Requirements*

- Part 91 Turbine-Powered Aircraft  
Inspection Requirements FAR 91.409(f)
  - Selection of Inspection Program:
    - A Continuous Airworthiness Inspection Program that is part of a continuous airworthiness maintenance program currently in use by a person holding an air carrier certificate...

# *Part 91 / 135 – Jet Aircraft – Inspection Requirements*

- Selection of Inspection Program (Cont.):
  - An Approved Aircraft Inspection Program (AAIP)
  - Current Inspection Program Recommended by the Manufacturer
    - **MAJORITY OF THE OWNER/OPERATOR’S USE THIS PROGRAM.**

# *Part 91 / 135 – Jet Aircraft – Inspection Requirements*

- Part 135 Turbine Powered Aircraft  
Inspection Requirements FAR 135.411  
(a)
  - Aircraft that are type certificated for a passenger seating configuration, ...of 9 seats or less, shall be maintained under Parts 91 and 43...An approved aircraft inspection program (AAIP) may be used...

# *Part 91 / 135 – Jet Aircraft – Inspection Requirements*

- Part 135 Turbine Powered Aircraft Inspection Requirements FAR 135.419 (a)
  - Whenever the Administrator finds that the aircraft inspections required or allowed under Part 91...are not adequate to meet the part, or upon application by a certificate holder's operations specification...to require or allow an approved aircraft inspection program (AAIP)...
    - **REQUIREMENT FOR AAIP TO AIRCRAFT WITH 10 SEATS OR MORE**

# *HWG-10 Current Status*

- Non-Intrusive Aircraft Evaluations
  - Original Plan – 40 Aircraft – 5 Manufacturers – 8 Specific Models
    - 39 Aircraft have been completed
  - Our Plan has changed to a total of 39 Aircraft Evaluations because of aircraft availability

# *Safety Of Flight Concerns*

No Safety of Flight Concerns have  
been found in the Aircraft  
Evaluations.

# *Non-Intrusive Wiring Survey Summary*

| Findings Summary  | Aircraft Type |               |              |               |              |               |              |               | Summary       |
|---|---------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|---------------|
|   | AC Model A    | AC Model B    | AC Model C   | AC Model D    | AC Model E   | AC Model F    | AC Model G   | AC Model F    |               |
| Number of Aircraft Inspected  | 5             | 5             | 5            | 5             | 4            | 5             | 5            | 5             | 39            |
| % of the Model Fleet  | 5.90%         | 2.90%         | 0.61%        | 0.90%         | 2.10%        | 2.10%         | 1.05%        | 0.80%         | 0.6% to 6%    |
| Age Range   | 19 to 21      | 11 to 24      | 10 to 18     | 18 to 25      | 11 to 12     | 20 to 30      | 12 to 15     | 11 to 32      | 10 to 32      |
| Hour Range  | 4785 to 7835  | 4130 to 12001 | 3258 to 8413 | 7223 to 12408 | 4130 to 8083 | 8770 to 17389 | 4271 to 5904 | 3572 to 13014 | 3258 to 17389 |
| Landing (Cycles) Range  | 4846 to 5684  | 3473 to 8558  | 2682 to 5692 | 5709 to 9873  | 2746 to 7498 | 4843 to 8500  | 2638 to 3389 | 3187 to 13252 | 2638 to 13252 |
| Inspections Performed By  | WG & OEM      | WG & OEM      | WG & OEM     | WG & OEM      | WG & OEM     | WG & OEM      | OEM          | WG & OEM      | WG & OEM      |
| Immediate Fleet Wide Safety   |               |               |              |               |              |               |              |               | 0             |
| Significant Items   |               |               |              |               |              |               |              |               | 73            |
| Significant Items per AC (Avg.)   |               |               |              |               |              |               |              |               | 1.9           |
| Total Findings  |               |               |              |               |              |               |              |               | 2256          |
| Findings per AC (Avg.)  |               |               |              |               |              |               |              |               | 58            |
| <i>Evaluation Findings % to Specific Model Totals by Appendix A Categories:</i> |               |               |              |               |              |               |              |               |               |
| Connectors  | 3.20%         | 1.90%         | 5.40%        | 3.30%         | 1.70%        | 1.80%         | 0%           | 2.30%         | 2.75%         |
| Terminations  | 2.30%         | 0.60%         | 0.30%        | 6.70%         | 0            | 0.40%         | 0%           | 5.50%         | 1.99%         |
| Installations (General)   | 80%           | 79.50%        | 87%          | 87%           | 90.50%       | 86.40%        | 97.40%       | 80.70%        | 84.53%        |
| Wiring Condition  | 14.40%        | 18%           | 7.30%        | 2.90%         | 7.80%        | 11.40%        | 2.60%        | 11.50%        | 10.73%        |
| <b>Significant Items</b>  |               |               |              |               |              |               |              |               |               |
| % of Significant Items (73 Items) to All Model (2256 Items) Evaluation Findings | 3.24%         |               |              |               |              |               |              |               |               |

# *General Observations From the Evaluations*

- Aircraft overall in good condition
- Problem Areas
  - Wiring Repair
    - Training Issues
    - Use of OEM Standard Practice Manuals
  - Routing of Modification Wiring
    - Training Issues
    - Lack of use of Industry Standard Guidelines (AC 43.13) and OEM Standard Practice Manuals

# *General Observations From the Evaluations (cont.)*

- Clamping and Structural Contact
  - Training Issues
  - Instructions for Continuous Airworthiness Issues
- “Clean as you go” philosophy
  - Training Issue

# *Intrusive Inspections (Wiring)*

- Protocol has been approved by the working group
  - Protocol was derived from HWG –1 and –2 initial inspections and additional items that have been learned
- Wiring from 3 aircraft have been made available for inspection
- We are expecting a final report in December

# *OEM Aircraft Specific Reports*

- Reports have been submitted to the Working Group awaiting final approval

## *Subcommittee Review of Working Group 6 through 9 Final Reports*

- Subcommittee Chairs are diligently reviewing the Final Reports with their teams and developing recommendations for HWG-10 to review and approve
  - Currently WG-6 and WG-7 Final Reports are in draft form
  - WG-8 and WG-9 Final Reports have been made public

# WG-10 Timeline for Final Report to ATSRAC

| Task Description  | Compliance Date    |
|---|--------------------|
| ➤ Subcommittee (WG-6 to -9) Draft Final Report – Submitted to Final Report Subcommittee | NOV 1, 2002        |
| ➤ WG-10 Meeting in Dallas   | DEC 3 to 5, 2002   |
| Subcommittee (WG-6 to -9) Final Report Presentation                                     |                    |
| WG-10 Approval – Subcommittee Final Report Approval                                     |                    |
| Final Report Subcommittee Presentation  |                    |
| ➤ WG-10 Draft Final Report submitted to WG  | DEC 16, 2002       |
| ➤ WG-10 Telecom   | JAN 5, 2003 ???    |
| Final Comments to WG-10 Final Report  |                    |
| ➤ WG-10 Final Report submitted to ATSRAC for review                                     | JAN 15, 2003 ???   |
| ➤ WG-10 Final Report – ATSRAC Presentation Development                                  | JAN 17, 2003       |
| ➤ ATSRAC Meeting – Savannah ???   | JAN 21 to 23, 2003 |
| WG-10 – ATSRAC Presentation   |                    |

*Evaluated Aircraft  
Photographs*

*Thank You*

Any Comments or Questions?