



# Spring Update

Volume 1, Issue 2

## A Message from the Director on AIR's Transformation

The Aircraft Certification Service (AIR) continues to pursue the vision of [AIR:2018](#) through a holistic transformation to a more efficient and effective organization. This issue highlights recent initiatives that remove barriers in the certification process, reduce the FAA's level of involvement in the critical path, embrace innovative, safety-enhancing solutions, and increase AIR's agility.

- Selecting two fuels for further engine and aircraft testing brings the general aviation community one stop closer to eliminating the reliance on leaded fuel.
- The Part 23 Notice of Proposed Rulemaking utilizes performance-based rules to encourage innovation while maintaining or improving the level of safety.
- The policy allowing the approval of Non-Required Safety Enhancing Equipment (NORSEE) for all products demonstrates our commitment to finding new ways to encourage safety advancements while streamlining the certification process.

Industry commitment is vital to a successful transformation, and AIR recognizes the need to engage with our industry stakeholders to reinforce this foundation. In support of this goal, we have conducted AIR Transformation briefings with various industry groups, launched a [public website](#) with the latest news and information, and began establishing an industry focus group to gather input on our plan for reorganizing into functional divisions. As valued partners, I encourage you to take full advantage of these opportunities, and I look forward to increasing our efficiency and effectiveness *together*.

Dorenda D. Baker

## In the News:

### Expediting Exports



The FAA and Brazil's civil aviation authority, ANAC, recently signed an amendment to the current Implementation Procedures for Airworthiness (IPA) permitting the export of used aircraft, engines, and propellers of third country State of Design (SoD) from Brazil to the U.S. Requested by ANAC, this [amendment](#) facilitates the direct export of used products from Brazil to the U.S. without first returning to the SoD.

### New STC Enhances Safety, Lowers Cost

In April 2016, the FAA approved a supplemental type certificate (STC) that will potentially lower avionic upgrade costs for several popular type-certificated GA aircraft models. This STC permits owners of specific popular type-certificated airplanes to remove existing vacuum powered mechanical altitude indicator and install a specific electronic display as a replacement. The replacement offers a more reliable attitude indicator and increases the pilots situational awareness. This application of risk-based decision making and the safety continuum establishes a framework that can be used by others to enhance safety and reduce cost.



On March 31, 2016, AIR signed the NORSEE policy.

For the latest news, visit the [AIR Transformation public website!](#)

## FAA Announces Finalists to Get the Lead Out of GA Fuel

As part of an ongoing effort to develop an acceptable unleaded fuel for small airplanes, the FAA [announced that it has selected Shell and Swift fuels](#) for further engine and aircraft testing. Based on a review of extensive Phase 1 test data along with updated Feasibility Assessments submitted by each fuel provider, these two formulations are likely to have the least impact on the General Aviation (GA) fleet.

To prepare for the extensive and complex Phase 2 engine and aircraft test program, the FAA is now working with producers to coordinate fuel deliveries, and with industry supporters who will provide the engines and aircraft necessary for testing. Test data will help the companies obtain an ASTM International Production Specification for their fuels and allow the FAA to authorize the existing GA fleet to use the unleaded replacement fuels. The testing will begin this summer and conclude in 2018. To stay informed about progress towards getting the lead out of general aviation fuel, visit and subscribe to the [FAA's aviation gasoline webpage](#).

## Proposed Part 23 Rule Embraces Innovation and Safety

The FAA is reviewing comments received on a [proposed rule](#) that overhauls the airworthiness standards for general aviation aircraft. By restructuring Part 23 and replacing the current prescriptive design requirements with performance-based standards, this proposal will help get safety enhancing technologies into the marketplace quickly while reducing costs.

This is a perfect demonstration of the AIR Transformation in action, specifically how the appropriate support of standards activities can increase efficiency and effectiveness.

Successfully reaching this milestone, an accomplishment rooted in the 2008-2009 Part 23 Certification Process Study, required significant collaboration between the FAA and industry. Watch the [Part 23 video](#) to learn more about how the proposed rule would revitalize general aviation.

## NORSEE Policy Refreshes Certification

On March 31, 2016, AIR signed a [policy allowing the approval of Non-Required Safety Enhancing Equipment \(NORSEE\)](#) for all product types. Expanding on an earlier [Angle of Attack \(AOA\) policy](#), the NORSEE policy is scalable and adjustable to accommodate and encourage the installation of safety enhancements into part 23, 27, and 29 aircraft. In other words, this policy alleviates both real and perceived challenges to incorporating safety advancements in the general aviation (GA) and rotorcraft fleets.

The NORSEE policy will reduce equipment costs by allowing applicants the flexibility to select various industry standards that suit their product, as long as it meets the minimum design requirements established by the FAA.

	<b>Policy Statement</b>	
Subject: Approval of Non-Required Safety Enhancing Equipment (NORSEE)	Date: 03/31/16 Initiated By: A.V. AIR-103	Policy No: PS-AIR-21-1882
<b>Summary</b> This policy statement addresses equipment that is not required by any Federal regulation with the intent to encourage greater aircraft safety. Section 1 provides guidance and procedures for testing, design, and production approval for U.S. manufacturers pursuant to Title 14 of the Code of Federal Regulations (14 CFR) 23.101, "Approval of aircraft," the equipment designated as "Non-Required Safety Enhancing Equipment" (NORSEE) that is determined to be a minor change to type design and whose failure condition is minor. Section 2 of this policy addresses NORSEE with failure conditions above minor.		
<b>Definition of Key Terms</b> In the policy statement below, the terms "must," "should," and "recommend" have specific meanings that are explained in Appendix 1.		
<b>Applicability</b> This policy statement applies to CFR part 23, 27, 29 category and producer aircraft (Appendix 1). It includes part 23 (transport category) and encompasses all the air categories.		
<b>Mission Objective</b> The Federal Aviation Administration's (FAA) mission is to provide the safest, most efficient airspace system in the world. AIR 2018 calls on the FAA to improve aviation safety through a variety of methods. One of these is "to encourage and enable voluntary safety enhancements" as found in the AIR 2015 Roadmap for AIR 2018. Used correctly, the FAA has not differentiated between non-required equipment and the special class of non-required equipment that can enhance safety. To support its mission, the FAA is implementing an approval process to allow		

# General Aviation Fleet Modernization

*Real and perceived barriers in current FAA regulations and policies make it difficult for the general aviation (GA) community to incorporate safety advancements. The Aircraft Certification Service (AIR) is developing and implementing solutions to break down those barriers, facilitate GA fleet modernization, and promote safety.*

## 362,000 GA Aircraft Worldwide

(approximately 160,000 FAA-certificated)

- 137,600+ Piston Airplanes
- 9,600+ Turboprop Airplanes
- 11,600+ Business Jet Airplanes (part 23 and 25)

## Top 4 Leading Causes of Accidents (2008-2015):

1. Loss of Control (LOC)
2. Controlled Flight Into Terrain (CFIT)
3. System Component Failure – Powerplant
4. Fuel Exhaustion

**238 Fatal Accidents**

**384 Fatalities - in 2015**



## FOCUS AREAS for EXISTING FLEET (Retrofit):

Reorganizing Part 23 will facilitate the incorporation of new technologies on future fleet designs. For the current fleet, AIR is applying safety continuum principals and making risk-based decisions to support faster and easier incorporation of the safety features below.

### PROPULSION ENHANCEMENTS

**Benefits:** Improves reliability, ease of maintenance & operation, reduces workload, helps prevent engine failure accidents.

### ADVANCED FLIGHT DISPLAYS (PFD/MFD)

**Benefits:** Intuitive, integrated information for pilot, improves situational awareness, replaces obsolete equipment, helps prevent LOC and CFIT accidents.

### AUTOPILOT & ENVELOPE PROTECTION SYSTEMS

**Benefits:** Reduces workload, helps prevent LOC and CFIT accidents.

### ENGINE MONITORING SYSTEMS

**Benefits:** Allows better engine management, decreases maintenance costs, helps prevent engine failure accidents.

### FUEL GAUGE SYSTEMS

**Benefits:** Provides low fuel warning, helps prevent fuel exhaustion accidents.

### ADS-B IN/OUT

**Benefits:** Improves traffic & situational awareness, provides weather in the cockpit.

### NON-REQUIRED SAFETY ENHANCING EQUIPMENT (NORSEE)

**Benefits:** Facilitates approvals, reduces equipment costs by removing excessive design assurance, supports modernization, reduces unnecessary regulatory barriers. (<http://go.usa.gov/cuJPw>)

### ANGLE OF ATTACK (AOA)

**Benefits:** Increases pilot awareness and helps prevent LOC accidents. (<http://go.usa.gov/cuJPe>)

### ATTITUDE INDICATORS

**Benefits:** Allows instrument replacement, improves reliability, lowers maintenance costs, helps prevent LOC accidents. (<http://go.usa.gov/cuJEx>)



## Future (R&D) Efforts:

### ADVANCED AUTOPILOTS (REFUSE TO CRASH)

**Benefits:** Reduces workload and pilot error, helps prevent LOC and CFIT accidents.

### FUTURE AUTOMATION

**Benefits:** Increases safety, simplifies operations and future flight operations.

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