FPAW/AFS Update

Federal Aviation Administration

FAA Flight Standards AFS-430
Fall
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Presented to:	FPAW
By:	Gordon Rother AFS-430
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Overview

- **DAY ONE**
  - Weather Technology in the Cockpit – Advisory Circular (AC) 00-63A (Chg. One Pending)
  - FAA Regulatory Guidance
  - FAA Policy and Guidance
- **DAY TWO**
  - Airborne Weather Sensors

AC 00-63A Use of Flight Deck Displays of Digital Weather and Aeronautical Information

- This Advisory Circular (AC) provides guidance to flight crew members and other airmen on the **best practices** for the use of data link to access Flight Information Services (FIS).

- This AC addresses both the Federal Aviation Administration (FAA) FIS–Broadcast (FIS-B) provided through:

  - The Automatic Dependent Surveillance–Broadcast (ADS-B) Universal Access Transceiver (UAT) network

  - And non-FAA FIS systems provided through commercial data link services.

AC 00-63 Continued
Flight Information Services (FIS).

- FIS is a service that provides meteorological information (METI) and Aeronautical Information (AI) to enhance pilot awareness of weather and/or airspace constraints while providing information for decision support tools and improving safety.

- METI and AI data link services enable flight crews to support the Next Generation Air Transportation System (NextGen) concepts of information sharing and provide airmen with a common operating picture necessary to support the evolving global air traffic management (ATM) concepts.

AC 00-63 Continued
Advantages of FIS METI and AI

- FIS of METI and AI can augment pilot voice communications with Flight Service Stations (FSS), other air traffic control (ATC) facilities

- Airline dispatch centers, flight following facilities, or other Operations Control Centers (OCC), typically referred to as System Operations Control (SOC).

- In addition, Internet connectivity provides the capability for Baseline Synchronization Services (BSS) to be utilized to update the aircraft's navigational and other databases prior to flight.

Regulatory Guidance

- **14 CFR 91.103 Preflight Action**
  - Each pilot in command shall, before beginning a flight, become familiar with **all available information** concerning that flight. This information **must include**
  - (a) For a flight under IFR or a flight not in the vicinity of an airport, **weather reports and forecasts**, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which the pilot in command has been advised by ATC;

Regulatory Guidance

- **§121.601 Aircraft dispatcher information to pilot in command: Domestic and flag operations.**

  (a) The aircraft dispatcher shall provide the pilot in command **all available current reports** or information on airport conditions and irregularities of navigation facilities that may affect the safety of the flight.

  (b) Before beginning a flight, the aircraft dispatcher shall provide the pilot in command with all **available weather reports** and **forecasts** of weather phenomena that may affect the safety of flight, **including adverse weather phenomena,** such as clear air turbulence, thunderstorms, and low altitude wind shear, for each route to be flown and each airport to be used.

  (c) During a flight, the aircraft dispatcher shall provide the pilot in command any additional **available information of meteorological conditions** (including adverse weather phenomena, such as clear air turbulence, thunderstorms, and low altitude wind shear), and irregularities of facilities and services that may affect the safety of the flight.

Regulatory Guidance

- **§121.655 Applicability of reported weather minimums.**
  - In conducting operations under §§121.649 through 121.653, the ceiling and visibility values **in the main body of the latest weather report control for VFR and IFR takeoffs and landings and for instrument approach procedures on all runways of an airport**. However, if the latest weather report, including an oral report from the control tower, contains a visibility value specified as runway visibility or runway visual range for a particular runway of an airport, that specified value controls for VFR and IFR landings and takeoffs and straight-in instrument approaches for that runway

Regulatory Guidance

- **§121.651 Takeoff and landing weather minimums: IFR: All certificate holders**
  - 2) At airports within the United States and its territories or at U.S. military airports, unless the **latest weather report** for that airport issued by the U.S. National Weather Service, a source approved by that Service, or a source approved by the Administrator, reports the visibility to be equal to or more than the visibility minimums prescribed for that procedure. For the purpose of this section, the term “U.S. military airports” means airports in foreign countries where flight operations are under the control of U.S. military authority.
  - (c) **If a pilot has begun the final approach segment** of an instrument approach procedure in accordance with paragraph (b) of this section, **and after that receives a later weather report indicating below-minimum conditions, the pilot may continue the approach to DA/DH or MDA.** Upon reaching DA/DH or at MDA, and at any time before the missed approach point, the pilot may continue the approach below DA/DH or MDA if either the requirements of §91.175(l) of this chapter, or the following requirements are met:

Regulatory Guidance

- **§135.219 IFR: Destination airport weather minimums.**

  No person may take off an aircraft under IFR or begin an IFR or over-the-top operation **unless the latest weather reports or forecasts**, or any combination of them, indicate that weather conditions at the estimated time of arrival at the next airport of intended landing will be at or above authorized IFR landing minimums.

- **§135.225 IFR: Takeoff, approach and landing minimums**.

  (c) If a pilot has begun the final approach segment of an instrument approach to an airport under paragraph (b) of this section, and the **pilot receives a later weather report indicating that conditions have worsened** to below the minimum requirements, then the pilot may continue the approach only if the requirements of §91.175(l) of this chapter are met.

FAA Policy and Guidance

- **Current, Latest & Available Weather**

  - Throughout 14 CFR, there are requirements to have the "current," "available," or "latest weather reports or forecast

  - The purpose of regulations that establish weather minimums, or that require flight crews and dispatchers to consider weather conditions, is to prevent unsafe flight operations

  - The phrases "current weather," "latest weather report," and "available forecasts" have occasionally been interpreted inappropriately, resulting in noncompliance with 14 CFR and in diminished safety during flight operations

FAA Policy and Guidance

Definitions of Current, Latest and Available Weather

- **“**Current,” with respect to a weather report, means present and actual;
- “Available,” with respect to a weather report and/or forecast, means for immediate use, obtainable, and accessible; and
- “Latest,” with respect to a weather report and/or forecast means just completed, most current, and up-to-the-minute.

Challenges

- EFB Weather in the Cockpit poses regulatory challenges with compliance based on the FAA guidance on regulatory text (Today, latest weather for IFR is from the tower or via ATIS, one minute updated METAR data may create additional workload)

- Data integrity to the EFB may create distractions and increased workload when relying on weather products which are not current or updated

- Recent observations on 121 flight decks have demonstrated those challenges, this makes it difficult to rely on this weather information for aeronautical decision making

Challenges

- 121 operators must rely on proven methods and regulatory requirements to have the aircraft dispatcher push the information to the flight crew. Assumptions are dangerous territory

- 91 and 135 operators should have contingency plans if the EFB weather information is NOT available or updated

AFS approach to WTIC

Policy

- **AC 00-63, Use of Cockpit Displays of Digital Weather and Aeronautical Information – Recent updates**

  - New FIS-B products will be added within the next 48 months

  - EFB usage

- **Airman's Information Manual (AIM)**

- **Training**
  - Need to improve training across airline operations
  - Link to FAAST team weather information https://www.faasafety.gov/gslac/ALC/lib_categoryview.aspx?categoryId=5

Questions

- **Day one wrap up**
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