



International Civil Aviation Organization

**NINETEENTH MEETING OF THE METEOROLOGY SUB-GROUP
(MET SG/19) OF APANPIRG**

Bangkok, Thailand, 3 – 6 August 2015

Agenda Item 6 Research, development and implementation issues in the MET field

6.2) Observations and reports

**PROVISION OF THE FULL U.S. METAR/SPECI REPORTS ON
SADIS DISSEMINATION SYSTEMS**

(Presented by WIFS Provider State)

SUMMARY

This paper informs the group of a recent change to U.S. national policy with respect to the use of METARs and SPECI reports for all operators landing or departing the U.S., both from abroad and within the U.S. The “full” U.S. METAR and SPECI report, including “remarks” are to be considered for all flight decision making. . In accordance with international protocol on the distribution of the METAR the US removed the Remarks of the METAR. This practice will cease and in the future the US will provide a complete METAR that includes Remarks.

This paper relates to – **Strategic Objectives:**

A: **Safety** – *Enhance global civil aviation safety*

Global Plan Initiatives:

GPI-19 Meteorological Systems

1. INTRODUCTION

1.1 On 9 September 2014, the United States (U.S.) National Transportation Safety Board (NTSB) published *Aircraft Accident Report – Crash During a Nighttime Nonprecision Instrument Approach to Landing, UPS Flight 1354, Airbus A300-600, N155UP, Birmingham, Alabama, August 14, 2013*

http://www.nts.gov/news/events/Pages/2014_UPS1354_BMG.aspx

1.2 In response to the safety recommendations from the NTSB report, the U.S. Federal Aviation Administration (FAA) has deemed that information contained in the Remarks section of the US. METAR/SPECI report to be safety critical and must be considered for all operational decision making by the pilot and flight dispatcher (details are provided in Appendix A). This new policy applies to existing national regulations CFR Part 121.601 (Appendix B), CFR Part 129.19 (Appendix C), as well as ICAO Annex 2 – *Rules of the Air* and Annex 6 - *Operations of Aircraft* (Appendix D).

1.3 The purpose of this paper is to inform the international community that U.S. METAR and SPECI reports will contain the complete report on the World Area Forecast System (WAFS) File Service (WIFS). These reports will also be made available to SADIS and to Regional Operations Centers.

2. DISCUSSION

2.1 U.S. National practices for meteorological observation, as well as aviation regulations pertaining to the use of meteorological observations, use the terms “ceiling” and “variable ceiling” when reporting clouds. These practices have been in place for over 50 years. A “ceiling” is defined as “*The height above the earth’s surface of the lowest layer that is reported as broken or overcast; or the vertical visibility into an indefinite ceiling.*” A “variable ceiling” is defined as “*A ceiling of less than 3,000 feet which rapidly increases or decreases in height by established criteria during the period of observation.*” These definitions are documented in the U.S. Aeronautical Information Publication (AIP).

2.2 At all U.S. AOP and non-AOP airports, cloud bases are observed by automated systems. The system uses a laser beam ceilometer and is called a Cloud Height Indicator (CHI). Describing the CHI’s computer algorithm is quite complex and beyond the scope of this paper. Part of the algorithm tests for a variable ceiling layer (broken or overcast). The height of the upper and lower limits of the variability are then encoded in the “Remarks” (RM) section of the U.S. METAR and SPECI reports, per U.S. National practice and documented in the U.S. AIP.

2.3 The U.S. National practice on reporting a variable ceiling differs from the Recommended Practice in Annex 3 – *Meteorological Service for International Air Navigation* for reporting clouds, which states in 4.5.4.3 f) “*when the cloud base is diffuse or ragged or fluctuating rapidly, the minimum height of cloud base, or cloud fragments, should be reported*”. For the U.S. to align with this Recommended Practice would require costly modifications to the algorithm and system. While the U.S. practice for reporting a variable ceiling (fluctuating cloud layer) does not align with Annex 3, U.S. policy and practice is for the pilot and operator to use the worst reported conditions in a METAR/SPECI for aeronautical decision making, such as instrument approach minimums. Thus the lowest variability value of a ceiling must be used for as the reported cloud layer for instrument approach minimums.

2.4 U.S. METARs and SPECIs do not include a “supplementary” section. Rather supplemental-like information, including specified recent weather at the aerodrome, and significant information which elaborates on data contained in the body of the report (Appendix E) are appended in a section referred to as “Remarks”, which is documented in the U.S. AIP, GEN 3.5, Meteorological Services, paragraph 30.3.12.

2.5 In that ICAO does not recognize the Remarks section of the U.S. METAR and SPECI reports, the U.S. has traditionally removed that section from the report before distributing the report globally via the aeronautical fixed services (AFS).

2.6 Now that the FAA has established the national policy for all operators to use the information in the remarks section of the METAR and SPECI reports for all operational decision making, the U.S. will no longer remove these remarks for dissemination beyond the U.S.

2.7 The change in policy by the U.S. FAA on the need for operators to use the Remarks of the US METAR/SPECI is also applicable to foreign operators who arrive or depart at U.S. AOP aerodromes. Annex 6 – *Operations of Aircraft – Part 1 – International Commercial Air Transport*

requires operators to ensure their pilots are informed and comply with pertinent laws, regulations and procedures of the States in which they operate. The relevant excerpt from Annex 6 is provided in Appendix D to this paper.

3. CONCLUSION

3.1 U.S. METARs and SPECIs will no longer have “remarks” removed from the report.

3.2 Effective date for the provision of the METAR/SPECI with Remarks has not been established. Once the date is finalized it will be made available on the WIFS website, WAFS Change Notification Board, and appropriate U.S. notification services.

4. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.

APPENDIX A

In response to the NTSB report the FAA has deemed the information in the Remarks section of a METAR/SPECI as safety critical and that operators need to use that information accordingly in their decision making when it was reported in the METAR and SPECI reports. This policy is documented in FAA's Order 8900.1 - Flight Standards Information Management System, Change 360, Volume 3, Section 1, paragraph 3-2051A1, and Section 2, paragraph 3-2072E. Relevant excerpts from the referenced document are provided below.

FAA Order 8900.1 - Flight Standards Information Management System, Volume 3, Section 1, paragraph 3-2051A1: (*underlined for illustration only*)

Combination of Weather Reports and Forecasts—The Worst Weather Conditions are Controlling. When regulations regarding the selection of destination and alternate airports require “weather reports or forecasts, or any combination thereof” to indicate that weather conditions will be at or above the authorized minimums at the ETA, the worst weather conditions take precedence. The FAA Office of the Chief Counsel (AGC) has consistently interpreted regulatory text requiring “any combination” of weather reports or forecasts to mean that the worst weather conditions contained in any combination of weather reports or forecasts must be considered and are therefore the controlling factor. These interpretations also make the information contained in “Remarks” and the conditional language of a weather report or forecast as operationally significant as the information appearing in the body or primary language of the report or forecast. Therefore, it is FAA policy that the worst weather condition is the controlling factor when selecting a destination or alternate airport, regardless of whether the worst condition is depicted in the body or “Remarks” of a weather report, or in the primary or conditional language of a weather forecast. Ultimately, the burden of proof is on the certificate holder to show compliance with regulatory requirements and FAA legal interpretations. Therefore, each certificate holder must be able to show at all times that any combination of available weather reports and forecasts indicate that the weather at the destination and any alternate airport will be at or above the authorized minimums at the ETA

FAA Order 8900.1 - Flight Standards Information Management System Volume 3, Section 2, paragraph 3-2072E: (*underlined for illustration only*)

Remarks Contained in a Surface Weather Report. A METAR or SPECI contains a report of wind, visibility, RVR, present weather, sky condition, temperature, dew point, and altimeter setting. In the United States and its territories, this information is collectively referred to as the body of the report. In addition to information contained in the body of the report, significant information which elaborates on data contained in the body of the report may be appended in a section referred to as “Remarks.” Information contained in “Remarks” will often include recent significant weather at the airport or its vicinity. The contents of the remarks will vary according to the type of weather station and degree of automation. Remarks may be automated or manual and may appear in coded, abbreviated, or plain language. The FAA considers the information contained in the “Remarks” section of a weather report to be as operationally significant as the information contained in the body of the weather

report. Therefore, information contained in “Remarks” must be considered for all operational decision making. “Remarks” in a METAR or SPECI are typically identified as “RMK” and will generally be used to elaborate on the following type of information:

(the following is a partial listing)

- Volcanic eruptions;
- Funnel clouds, tornadoes, or waterspouts – began/ended/location/movement;
- Peak wind – gusts of 25 knots (kts) or greater and time of occurrence (PK WND);

- Tower or surface visibility when both are reported (TWR/SFC);
- Lightning – frequency, type, and location (LTG);
- Variable ceiling height (CIG)

APPENDIX B

The following is from:

**United States Code of Federal Regulations,
Title 14 – Aeronautics and Space,
Chapter 1 – Federal Aviation Administration, Department of Transportation,
Subchapter G – Air Carriers and Operators for Compensation of Hire:
Certification and Operations,
Part 121 – Operating Requirements: Domestic, Flag, and Supplemental
Operations**
(sometimes referred to as FAR Part 121)

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

(underlined for illustration only)

(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.

APPENDIX C

The following is from:

**United States Code of Federal Regulations,
Title 14 – Aeronautics and Space,
Chapter 1 – Federal Aviation Administration, Department of Transportation,
Subchapter G – Air Carriers and Operators for Compensation of Hire:
Certification and Operations,
Part 129 – Operations: Foreign air carriers and foreign operators of U.S.-
registered aircraft engaged in common carriage
(sometimes referred to as FAR Part 129)**

§129.19 Air traffic rules and procedures.

(underlined for illustration only)

(a) Each pilot must be familiar with the applicable rules, the navigational and communications facilities, and the air traffic control and other procedures, of the areas to be traversed by him within the United States.

(b) Each foreign air carrier shall establish procedures to assure that each of its pilots has the knowledge required by paragraph (a) of this section and shall check the ability of each of its pilots to operate safely according to applicable rules and procedures.

(c) Each foreign air carrier shall conform to the practices, procedures, and other requirements prescribed by the Administrator for U.S. air carriers for the areas to be operated in.

APPENDIX D

Annex 2 – Rules of the Air, Chapter 2, Applicability of the Rules of the Air , section 2.3
Responsibility for compliance with the rules of the air: (*underlined for illustration only*)

2.3.2 Pre-flight action. Before beginning a flight, the pilot-in-command of an aircraft shall become familiar with all available information appropriate to the intended operation. Pre-flight action for flights away from the vicinity of an aerodrome, and for all IFR flights, shall include a careful study of available current weather reports and forecasts, taking into consideration fuel requirements and an alternative course of action if the flight cannot be completed as planned.

Annex 6 – Operations of Aircraft – Part 1 – International Commercial Air Transport, Chapter 3, section 3.1 Compliance with Laws, Regulations and Procedures: (*underlined for illustration only*)

3.1.1 An operator shall ensure that all employees when abroad know that they must comply with the laws, regulations and procedures of those States in which operations are conducted.

3.1.2 An operator shall ensure that all pilots are familiar with the laws, regulations and procedures, pertinent to the performance of their duties, prescribed for the areas to be traversed, the aerodromes to be used and the air navigation facilities relating thereto. The operator shall ensure that other members of the flight crew are familiar with such of these laws, regulations and procedures as are pertinent to the performance of their respective duties in the operation of the aeroplane.

APPENDIX E

The following is from **U.S. Federal Meteorological Handbook Number 1 (FMH-1)** – *Surface Weather Observations and Reports*:

U.S. METAR contains a report of wind, visibility, runway visual range, present weather, sky condition, temperature, dew point, and altimeter setting collectively referred to as "**the body of the report**". In addition, coded and/or plain language information which elaborates on data in the body of the report may be appended to the METAR. This significant information can be found in the section referred to as "**Remarks**". The contents of the remarks will vary according to the type of weather station.

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