



**WORKING PAPER**

**MEETING OF THE METEOROLOGY PANEL (METP)  
WORKING GROUP MOG**

**FIRST MEETING**

**Gatwick, London, United Kingdom, 8 to 11 September 2015**

**Agenda Item 4: Matters relating to WAFS**

**4.3.6.1: WAFS Matters relating to Amendment 78 of ICAO Annex 3**

**PROPOSED UPDATE TO CHAPTER 9 OF ICAO ANNEX 3 – METEOROLOGICAL SERVICE  
FOR INTERNATIONAL AIR NAVIGATION**

(Presented by the WAFC Provider States)

**SUMMARY**

This Working Paper proposes an update to the content of Chapter 9 to ICAO Annex 3 – *Meteorological Service for International Air Navigation* in order to appropriately reflect the availability of gridded forecasts of cumulonimbus cloud (CB), icing and turbulence.

**1. INTRODUCTION**

1.1 The group will be familiar with the content of Chapter 9 to ICAO Annex 3 – *Meteorological Service for International Air Navigation*.

1.2 This Working Paper proposes an update to appropriately reflect the availability of gridded forecasts of cumulonimbus cloud (CB), icing and turbulence.

**2. DISCUSSION**

2.1 Section 9.1.3a of Chapter 9 to ICAO Annex 3, states;

9.1.3 Meteorological information supplied to operators and flight crew members shall be up to date and include the following information, as agreed between the meteorological authority and the operators concerned:<sup>1</sup>

<sup>1</sup> Note: The text used in this sentence is that as currently proposed for Amendment 77 to ICAO Annex 3. However, the difference between Amendment 76 and 77 in regard to the matter under discussion is inconsequential.

- a) forecasts of
  - 1) upper wind and upper-air temperature;
  - 2) upper-air humidity;
  - 3) geopotential altitude of flight levels;
  - 4) flight level and temperature of tropopause;
  - 5) direction, speed and flight level of maximum wind; and
  - 6) SIGWX phenomena;

*Note.— Forecasts of upper-air humidity and geopotential altitude of flight levels are used only in automatic flight planning and need not be displayed.*

2.2 As the group will note, there is no reference to gridded forecasts of CB, icing and turbulence, which have been operational since November 2013.

2.3 It is proposed that a reference be added, as indicated below;

9.1.3 Meteorological information supplied to operators and flight crew members shall be up to date and include the following information, as established by the meteorological authority in consultation with operators concerned:<sup>2</sup>

- a) forecasts of
  - 1) upper wind and upper-air temperature;
  - 2) upper-air humidity;
  - 3) geopotential altitude of flight levels;
  - 4) flight level and temperature of tropopause;
  - 5) direction, speed and flight level of maximum wind; and
  - 6) cumulonimbus cloud, icing and turbulence
  - 7) SIGWX phenomena;

*Note 1.— Forecasts of upper-air humidity and geopotential altitude of flight levels are used only in automatic flight planning and need not be displayed.*

*Note 2.— Forecasts of cumulonimbus cloud, icing and turbulence are intended to be processed and, if necessary, visualised according to the specific thresholds relevant to user operations.*

### 3. CONCLUSIONS

3.1 The group will be aware that the gridded forecasts for CB, icing and turbulence have been operational since November 2013. A review of ICAO Annex 3 reveals an omission in relation to such forecasts in Chapter 9.

3.2 As such, it is proposed that section 9.1.3 of Chapter 9 be modified accordingly, and the group is invited to formulate the following draft Conclusion;

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<sup>2</sup> Note: The text used in this sentence is that as currently proposed for Amendment 77 to ICAO Annex 3. However, the difference between Amendment 76 and 77 in regard to the matter under discussion is inconsequential.

**Conclusion 1/.... — Amendment to Annex 3, Chapter 9,  
regarding the availability of gridded  
forecasts of cumulonimbus cloud (CB),  
icing and turbulence**

That, the METP be invited to consider the proposed amendment to ICAO Annex 3 – *Meteorological Service for International Air Navigation*, as described in section 2.3 of this working paper.

**4. ACTION BY THE METP-WG/MOG**

4.1 The METP-WG/MOG is invited to:

- a) note the information contained in this working paper; and
- b) decide on a draft conclusion for the group's consideration.

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