



ICAO

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North American, Central American and Caribbean Office

WORKING PAPER

MET/TF/2 — WP/07  
23/02/24

**Second Meeting of the North American, Central American and Caribbean Working Group  
(NACC/WG) Aeronautical Meteorology (MET) Task Force (TF) (MET/TF/02)**

Mexico City, Mexico, 27 February to 1 March 2024

**Agenda Item 4: Quality Management Systems**

**OPERATIONAL CHALLENGES DUE TO QUALITY WEATHER FORECASTING AND REPORTING**

(Presented by IATA)

<b>EXECUTIVE SUMMARY</b>	
This working paper is aimed at providing the operational challenges faced by operators due to inaccurate quality weather forecasting and reporting in the region. This paper highlights the importance of accurate weather forecasting and reporting needed from States to increase airline efficiency on fuel planning for safe operations. IATA encourages a collaborative approach between users and States to jointly identify the deficiencies along with possible means to improve.	
<b>Action:</b>	The Meeting is invited to: a) Recommend States and MET offices, take measures to address inaccurate meteorological forecast and reports. b) The group develop an action plan to work with identified airports.
<b>Strategic Objectives:</b>	<ul style="list-style-type: none"><li>• Safety</li><li>• Air Navigation Capacity and Efficiency</li></ul>
<b>References:</b>	<ul style="list-style-type: none"><li>• ICAO Annex 3, Meteorological Service for International Air Navigation</li><li>• ICAO Doc 9750 – Global Air Navigation Plan (GANP)</li><li>• Doc 10004 – Global Air Safety Plan (GASP)</li><li>• IATA Safety Report 2022</li><li>• IATA LATAM/CAR Regional Coordinating Group</li></ul>

**1. Introduction**

1.1 The IATA Regional Coordinating Group for Latin America and Caribbean (LATAM/CAR) in evaluating the regional strategy, and priorities in alignment with industry needs, provided operator challenges during the 55<sup>th</sup> meeting of the group in relation to quality weather forecasting and reporting due to the safety and operational challenges faced by operators.

1.2 In analysing the TAF (Terminal Area Forecast) and METAR's (Meteorological Terminal Aviation Routine Weather Report), airlines noted examples of airports with missing and/or inaccurate meteorological forecast and reports.

1.3 ICAO Annex 3 - Meteorological Service for International Air Navigation provides the recommendation seen in 1.3.1 of this working paper when it comes to accuracy of measurements, which the accuracy has been found lacking in some of the region's aerodrome for TAF and METAR's.

1.3.1 Recommendation— See Annex 3, attachment B – operationally desirable accuracy forecast.

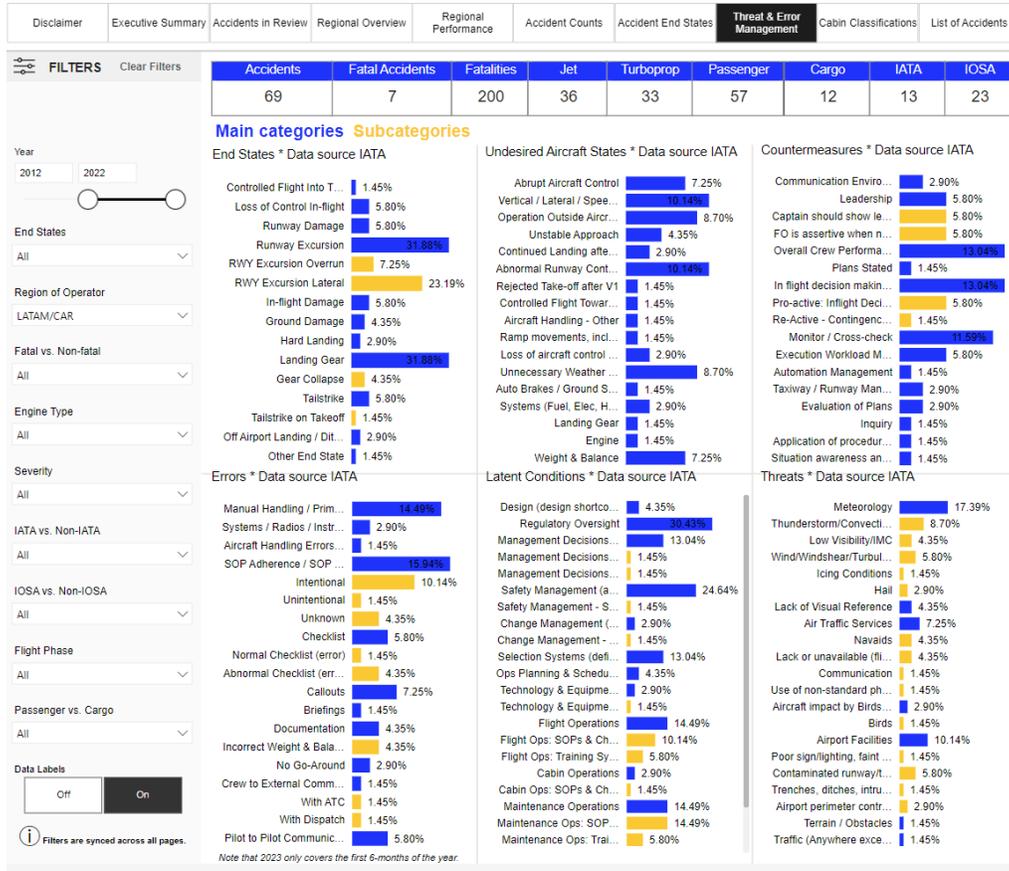
1.4 In order to address data sparsity and improve weather forecasting and reporting, International Air Transport Association (IATA) and World Meteorological Organization (WMO) signed an agreement to increase and improve the automated reporting of meteorological data by commercial aircraft to ensure safe operations in 2020, which saw an increase in the number of airlines participating in WICAP (WMO and IATA Collaborative AMDAR Programme (WICAP)).

1.5 Quality weather reporting and forecasting provides operators with the ability to enhance their operations which can also be linked to Doc 10004 – GASP, Goal 6, which focuses on the need to ensure the appropriate infrastructure is available to support safe operations as described in Doc 9750 – GANP which addresses interoperability of system-wide information management dealing with Meteorological information supporting enhance operational efficiency and safety.

1.6 Enhancing the accuracy of weather forecasting and reporting provided by the States, will increase airline efficiency on fuel planning for safe operations.

## **2. Discussion**

2.1 In the 2022 [IATA Annual Safety Report](#), review of the Threat & Error Management main categories as seen below in the LATAM/CAR region, showed the highest level of threat for the 10 years period reviewed as Meteorology.



2.2 Analysing the information on some of the region’s METAR’s, showed that the conditions varied significantly from what was published in the TAF which would have supported better planning to avoid potential diversions.

2.3 Diversion not considering delays on returning flights, or passenger lost connection in some of the airports reviewed, showed over 150 passengers impacted in one flight alone that had to be diverted. Examples of airports with inaccurate meteorological forecast and reported data can be found in **Appendix A** of this working paper specific to the North America and Central America region.

2.4 The airlines concluded that quality weather reporting will increase safety of operations by enabling the allocating of the right amount of fuel for the expected weather conditions and improve efficiency by avoiding carrying extra-fuel for inaccurate weather forecast.

### 3. Discussion

3.1 The Meeting is invited to:

- a) Take note of information provided.
- b) Recommend States and MET offices, take measures to address inaccurate meteorological forecast and reports.

- c) The group develop an action plan to work with identified airports.

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## APPENDIX A

**Operational Challenges due to Quality Weather Forecasting and Reporting  
Sample Airports with inaccurate data**

TAF MROC 102300Z 1100/1124 24005KT 9999 SCT020 TX27/1118Z TN18/1110Z TEMPO  
1100/1106 VRB02KT BKN020 TEMPO 1106/1112 06004KT TEMPO 1120/1123 RA BKN030=

METAR MROC 110800Z 25002KT 0800 -DZ FG BKN002 20/20 A3006 NOSIG=  
SPECI MROC 110721Z VRB01KT 0800 -DZ FG BKN002 20/20 A3007 NOSIG=  
METAR MROC 110700Z 25003KT 2000 BR BKN003 20/20 A3007 NOSIG=  
METAR MROC 110600Z 29004KT 2000 BR BKN003 21/20 A3008 NOSIG=  
METAR MROC 110500Z VRB02KT 1200 -DZ BR BKN003 20/20 A3009 NOSIG=  
SPECI MROC 110420Z VRB02KT 0800 R07/0800D FG BKN002 21/20 A3009 NOSIG=  
METAR MROC 110400Z VRB02KT 2000 0500SW R07/0600N BR BKN003 21/20 A3009 NOSIG=  
METAR MROC 110300Z VRB02KT 9999 4000SW BCFG FEW005 BKN120 21/20 A3009  
NOSIG=  
METAR MROC 110200Z 22002KT 9999 VCFG FEW006 SCT020 BKN100 21/20 A3007 NOSIG=  
METAR MROC 110100Z 24003KT 9000 4000SW BCFG SCT003 BKN015 21/21 A3006 NOSIG=  
METAR MROC 110000Z 25003KT 9000 BCFG SCT003 BKN020 21/21 A3004 NOSIG=

MGGT 102300Z 1100/1200 05010KT 8000 BKN014 OVC080 TX23/1120Z TN14/1112Z TEMPO  
1100/1200 12018KT 6000 RADZ OVC016 TEMPO 1106/1118 BKN010 BECMG 1116/1118  
BKN018=

MGGT 101700Z 1018/1118 05010KT 8000 BKN018 OVC080 TX22/1020Z TN14/1112Z TEMPO  
1018/1118 12018KT 6000 RADZ OVC016 BECMG 1100/1102 BKN014 TEMPO 1106/1118  
BKN010 BECMG 1116/1118 BKN018=

METAR MGGT 110200Z 21012KT 1200 -DZ BR BKN002 BKN013 17/17 Q1019 A3009 APCH CLSD=

METAR MGGT 110108Z 21010KT 1200 -RA BR BKN002 BKN013 APCH CLSD=

SPECI MGGT 110108Z 21010KT 1200 -RA BR BKN002 BKN013 APCH CLSD=

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METAR MGGT 110100Z 22008KT 1500 -RA BR SCT002 OVC013 17/17 Q1019 A3009 BEST APCH  
N=

METAR MGGT 110000Z 22008KT 1300 RA BR SCT002 OVC015 17/17 Q1017 A3003 APCH CLSD=

*SPECI MGGT 102340Z 22008KT 1200 RA BR SCT002 OVC017 APCH CLSD=*

METAR MGGT 102300Z 20008KT 2500 RA BR SCT004 BKN017 BKN080 17/17 Q1017 A3003=

*SPECI MGGT 102243Z 22008KT 2500 RA BR SCT004 BKN017 BKN080=*

METAR MGGT 102200Z 20010KT 3000 -RA BR SCT004 SCT017 BKN080 18/17 Q1016 A3000=

— END —