



*International Civil Aviation Organization*

**FIFTEENTH MEETING OF THE ASIA/PACIFIC METEOROLOGICAL  
INFORMATION EXCHANGE WORKING GROUP  
(MET/IE WG/15)**

Bangkok, Thailand, 20 – 22 March 2017

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**Agenda Item 5: Quality control, monitoring and management of meteorological information**

**UPGRADE OF QUALITY CONTROL PROGRAM IN METAR**  
(Presented by the Republic of Korea)

**SUMMARY**

This paper presents the upgrade of quality control functions in METAR input system to decrease the number of METAR errors.

**1. INTRODUCTION**

1.1 For the purpose of providing error-free OPMET information to the user, AMO/KMA has implemented the monthly and the annual evaluation of METAR formatting and coding errors by human factor in all 13 aerodromes included AMO/KMA and the upgrade of quality control system for METAR production since January 1, 2011.

**2. DISCUSSION**

**REVIEW(ROBEX WG 13, 2015)**

2.1 AMO notified observers of errors or mistakes in evaluation results and gave training about the regulation on METAR. As a result, the number of errors has been reduced from 248 in 2011 to 163 in 2012.

2.2 However, such methods have reached the limit. The number of errors in the first half of 2013 increased by 102 compared to 91 in the first half of 2012. To reduce the number of errors, AMO analyzed the errors from January to June 2013, and found out that many observers had repeatedly produced METAR errors: errors by misprinting, weather phenomenon errors and missing of trend forecast in order of frequency count.

2.2 Based on these, the METAR input system, as part of the AMIS (Aviation Meteorological Integrated information System), was upgraded by adding QC program for the protection of METAR errors by human factor, and was applied to 7 aerodromes (except military aerodrome) in 2013. As a result, the number of errors has been significantly reduced from 153 in 2012 to 62 in 2014.

### **Advanced improvement of Quality control program in METAR**

2.3 The METAR input system has been upgraded to improve the quality control of OPMET information and the work efficiency. METAR of 6 military aerodromes has been applied to the new input system from March 1, 2015. Previously, AMO observers had received METAR that be compliant with FAA format on the telephone, translated into ICAO format and transmitted through AFTN. As new input systems are applied, the METAR message was automatically received over the network, instead of a telephone call, FAA Format automatically translate into ICAO Format instead of translating directly by observers. The translated METAR is transmitted through AFTN after quality control. As a result of bugs and new human errors, the number of errors was 61 in 2015, similar to 2014. AMO has constantly updated with bug fixes and up to about 70 QC functions of implementation in ICAO and WMO (ICAO ANNEX 3, ICAO Doc. 8896, WMO-No. 49 Regulation, WMO-No. 306). As a result, the number of errors reduced to 39 in 2016.

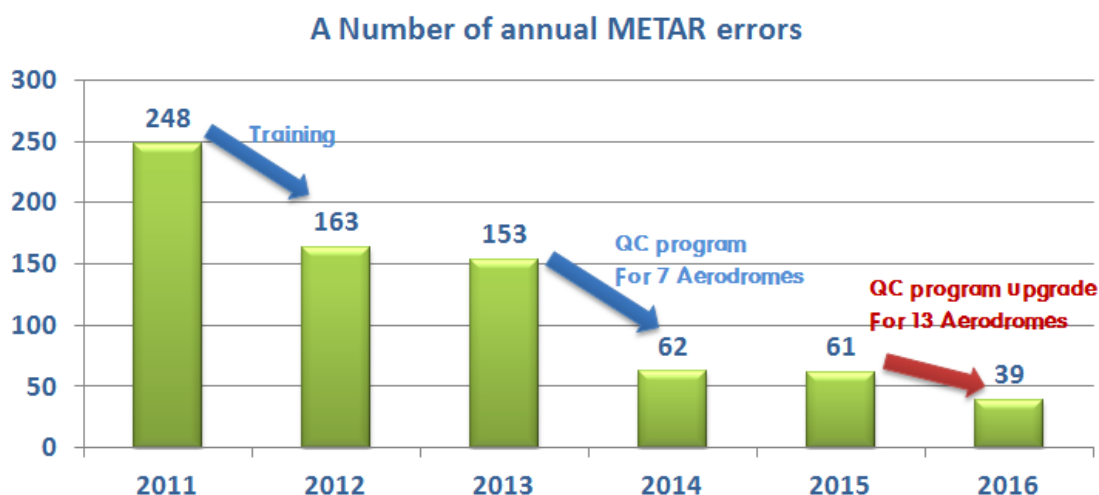


Fig. 2. The decrease of annual METAR errors due to the training of observers and the improvement of METAR input system.

2.4 A continuous upgrade of this system will enable the production of error-free METAR with quality control and further the complete automation for production of Aerodrome Climatological Summaries and Tables (WMO-No. 49).

### **3. ACTION REQUIRED BY THE MEETING**

- 3.1 The meeting is invited to:
- a) Discuss QC program that are running in each aerodrome meteorological office

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