



**INTERNATIONAL CIVIL AVIATION ORGANISATION**  
**AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)**  
**METEOROLOGY SUB-GROUP TENTH MEETING (MET/SG/11)**  
*(Nairobi, Kenya, 8 – 10 July 2013)*

---

**Agenda Item 6 of the:           New challenges facing AFI Meteorological Services: Future Developments with regards to OPMET information**

**INCLUDING STATE OF RUNWAY REPORTS IN METAR/SPECI  
AND MET REPORT/SPECIAL ISSUED IN THE AFI REGION**

*(Presented by ASECNA)*

**SUMMARY**

This paper presents the procedure being validated in Lome, Togo, for the evaluation of puddles on the runway of the Lome Gnassingbe Eyadema International Airport. This procedure was necessary because of numerous requests from operators. The meeting is invited to consider the proposed amendment to paragraph 3 of this rating action.

**1.           Introduction**

1.1           ASECNA's Gnassing be Eyadema International Airport, Lome Togo, has experienced in recent times, a significant number of runway excursions due to the presence of water puddles on the runway. For this reason, it may be necessary to have a procedure for the assessment of puddles on the runway. Pending a related AFI regional air navigation agreement, ASECNA has undertaken work in this issue in Lome (Togo), and is making available its experience through an internal procedure in order to provide solution on this issue.

1.2           Following a number of incidents/accidents at ASECNA airports, due to water puddles on the runway the meeting may wish to discuss the possibility of including this information as supplementary information of METAR/SPECI or MET REPORT/SPECIAL, to contribute in solving issues related to runway safety.

**2.           Discussions**

2.1           It should be noted that the observation and inclusion in the supplementary section of METAR/SPECI or MET REPORT/SPECIAL, of information related to the state of the runway, is only permitted through regional air navigation agreement as per ICAO *Recommendation* 4.6.1.5 of Appendix 3.

2.2           Following incidents/accidents caused by this recurring phenomenon on some runways of international airports of ASECNA Member States, the Agency has developed procedures for the implementation of this observation.

2.3           Procedure:

2.3.1 It is based on determining the presence of rain water on the runway with a device called "Film Water Meter" which gives specific information at three states : dry, wet or contaminated. To do so, three steps are required:

- ✓ Training of concerned staff on the concept and the equipment;
- ✓ the acquisition of common and individual equipment;
- ✓ Taking the measurements.

*Training concerned staff:*

2.3.2 Theoretical knowledge and minimum practices to acquire before using the equipment are the following:

- ✓ mapping water accumulation and measurement areas;
- ✓ operational impact of various runway surface for flight operations and the information pilots need;
- ✓ information to be transmitted to the aeronautical information services in plain language;
- ✓ the conditions of use of the measurement unit;
- ✓ measuring of water depth.

*Common and individual equipment:*

Common equipment:

- ✓ A vehicle equipped with a VHF and a rotating beacon;
- ✓ The measuring device along with a notebook;
- ✓ A calculator;
- ✓ A flashlight;
- ✓ A record book.

Individual equipment:

- ✓ raincoat;
- ✓ Boots.

*Taking the Measurements*

Triggering measurements:

The measurements shall be made:

- ✓ when a heavy to moderate rain or a rain shower occurs;
- ✓ when water puddles are reported by pilots or personal circulating on the maneuvering area;
- ✓ when a pilot requests it;
- ✓ when significant changes in the condition of the runway appears.

Parameters to be evaluated:

The evaluation of the state of the runway surface includes:

- ✓ distribution of the water over the whole surface of the runway (in %);
- ✓ the water thickness.

The extent of the contamination is usually determined visually.

Evaluation of water thickness on the runway:

It is recommended to estimate the water thickness on a two levels scale:

- ✓ less than 3 mm (the state of the runway is called "wet");
- ✓ Greater than or equal to 3 mm (the state of the runway is called "contaminated by water"), this information is supplemented by an estimate of the thickness.

Method and means of measurement used:

The measurements are taken with the device (Water Meter Film) and are expressed in millimeters (mm).

2.3.3 It is recommended that a minimum of three measurements by the third of the runway. The duration of a measurement, as described, is estimated at about twenty minutes for a runway of 3000 m.

Parameters to provide:

- ✓ the water thickness;
- ✓ the extent (given by the third of the runway).

2.3.4 These parameters are issued by the third of the runway, called A, B and C, with A being the first third of the main runway.

Dissemination of the Information:

By the end of the measurements, the measurement team designated provide through VHF the information in plain language to the control tower that transmits them to pilots.

2.4 In this regard, to contribute in solving runway safety issues in the AFI region, the meeting may wish to formulate the following recommendation:

**Draft Conclusion 11/xx: Inclusion the state of runway reports in METAR/SPECI and MET REPORT/SPECIAL issued in the AFI region**

**That, the observations of the state of the runway in terms of water puddles measurements on the runway, be included in METAR/SPECI and MET REPORT/SPECIAL issued in the AFI region.**

**3. Action the Meeting**

3.1 The meeting is invited to:

- a) Note the information in this paper,
- b) decide on the above draft Conclusion proposed for the Sub-Group's consideration.