

Amendment 81 to the International Standards and Recommended Practices, Meteorological Service for International Air Navigation (Annex 3 to the Convention on International Civil Aviation) was adopted by the Council at the fifth meeting of its 231st Session on 18 March 2024. The amendments are listed below:

SL No.	What exists	Amendments	Comment
1.	Nil	<p>2.2.10 Recommendation. - <i>Contracting States should ensure that the meteorological information supplied to the users listed in 2.1.2 is provided through information services.</i></p> <p><i>Note 1. – In the context of system - wide information management (SWIM), the notion of information service addresses machine-to-machine interaction in a service - oriented architecture.</i></p> <p><i>Note 2. – Procedures on information services are contained in the Procedures for Air Navigation Services – Information Management (PANS-IM, Doc 10199).</i></p> <p><i>Note 3. – Guidance material on information services can be found in the Manual on System -wide Information Management Implementation (Doc 10203).</i></p>	New text to be inserted in ANO 3 para 2.2.10.
2.	5.5 i) as of 4 November 2021, runway breaking action encountered is not as good as reported.	5.5 i) runway breaking action encountered is not as good as reported.	The words “as of 4 November 2021,” in i) to be deleted.

*Note.— Requirements concerning the exchange of operational meteorological information are given in Chapter 11 and Appendix 10 of this Annex.*

2.2.6 Demonstration of compliance of the quality system applied shall be by audit. If non-conformity of the system is identified, action shall be initiated to determine and correct the cause. All audit observations shall be evidenced and properly documented.

2.2.7 Owing to the variability of meteorological elements in space and time, to limitations of observing techniques and to limitations caused by the definitions of some of the elements, the specific value of any of the elements given in a report shall be understood by the recipient to be the best approximation of the actual conditions at the time of observation.

*Note.— Guidance on the operationally desirable accuracy of measurement or observation is given in Attachment A.*

2.2.8 Owing to the variability of meteorological elements in space and time, to limitations of forecasting techniques and to limitations caused by the definitions of some of the elements, the specific value of any of the elements given in a forecast shall be understood by the recipient to be the most probable value which the element is likely to assume during the period of the forecast. Similarly, when the time of occurrence or change of an element is given in a forecast, this time shall be understood to be the most probable time.

*Note.— Guidance on the operationally desirable accuracy of forecasts is given in Attachment B.*

2.2.9 The meteorological information supplied to the users listed in 2.1.2 shall be consistent with Human Factors principles and shall be in forms which require a minimum of interpretation by these users, as specified in the following chapters.

*Note.— Guidance material on the application of Human Factors principles can be found in the Human Factors Training Manual (Doc 9683).*

2.2.10 **Recommendation.**— *Contracting States should ensure that the meteorological information supplied to the users listed in 2.1.2 is provided through information services.*

*Note 1.— In the context of system-wide information management (SWIM), the notion of information service addresses machine-to-machine interaction in a service-oriented architecture.*

*Note 2.— Procedures on information services are contained in the Procedures for Air Navigation Services — Information Management (PANS-IM, Doc 10199).*

*Note 3.— Guidance material on information services can be found in the Manual on System-wide Information Management Implementation (Doc 10203).*

### 2.3 Notifications required from operators

2.3.1 An operator requiring meteorological service or changes in existing meteorological service shall notify, sufficiently in advance, the meteorological authority or the aerodrome meteorological office concerned. The minimum amount of advance notice required shall be as agreed between the meteorological authority or aerodrome meteorological office and the operator concerned.

2.3.2 The meteorological authority shall be notified by the operator requiring service when:

- a) new routes or new types of operations are planned;
- b) changes of a lasting character are to be made in scheduled operations; and
- c) other changes, affecting the provision of meteorological service, are planned.

Such information shall contain all details necessary for the planning of appropriate arrangements by the meteorological authority.

2.3.3 The operator or a flight crew member shall ensure that, where required by the meteorological authority in consultation with users, the aerodrome meteorological office concerned is notified:

- a) of flight schedules;
- b) when non-scheduled flights are to be operated; and
- c) when flights are delayed, advanced or cancelled.

2.3.4 **Recommendation.**— *The notification to the aerodrome meteorological office of individual flights should contain the following information except that, in the case of scheduled flights, the requirement for some or all of this information may be waived as agreed between the aerodrome meteorological office and the operator concerned:*

- a) aerodrome of departure and estimated time of departure;
- b) destination and estimated time of arrival;
- c) route to be flown and estimated times of arrival at, and departure from, any intermediate aerodrome(s);
- d) alternate aerodromes needed to complete the operational flight plan and taken from the relevant list contained in the regional air navigation plan;
- e) cruising level;
- f) type of flight, whether under visual or instrument flight rules;
- g) type of meteorological information requested for a flight crew member, whether flight documentation and/or briefing or consultation; and
- h) time(s) at which briefing, consultation and/or flight documentation are required.

### 5.5 Special aircraft observations

Special observations shall be made by all aircraft whenever the following conditions are encountered or observed:

- a) moderate or severe turbulence; or
- b) moderate or severe icing; or
- c) severe mountain wave; or
- d) thunderstorms, without hail, that are obscured, embedded, widespread or in squall lines; or
- e) thunderstorms, with hail, that are obscured, embedded, widespread or in squall lines; or
- f) heavy duststorm or heavy sandstorm; or
- g) volcanic ash cloud; or
- h) pre-eruption volcanic activity or a volcanic eruption; or

*Note.— Pre-eruption volcanic activity in this context means unusual and/or increasing volcanic activity which could presage a volcanic eruption.*

- i) runway braking action encountered is not as good as reported.

### 5.6 Other non-routine aircraft observations

When other meteorological conditions not listed under 5.5, e.g. wind shear, are encountered and which, in the opinion of the pilot-in-command, may affect the safety or markedly affect the efficiency of other aircraft operations, the pilot-in-command shall advise the appropriate air traffic services unit as soon as practicable.

*Note.— Icing, turbulence and, to a large extent, wind shear are elements which, for the time being, cannot be satisfactorily observed from the ground and for which in most cases aircraft observations represent the only available evidence.*

### 5.7 Reporting of aircraft observations during flight

5.7.1 Aircraft observations shall be reported by air-ground data link. Where air-ground data link is not available or appropriate, special and other non-routine aircraft observations during flight shall be reported by voice communications.

5.7.2 Aircraft observations shall be reported during flight at the time the observation is made or as soon thereafter as is practicable.

5.7.3 Aircraft observations shall be reported as air-reports.

### 5.8 Relay of air-reports by air traffic services units

The meteorological authority concerned shall make arrangements with the appropriate ATS authority to ensure that, on receipt by the air traffic services units of:

- a) special air-reports by voice communications, the air traffic services units relay them without delay to their associated meteorological watch office; and
- b) routine and special air-reports by data link communications, the air traffic services units relay them without delay to their associated meteorological watch office, the WAFCs and the centres designated by regional air navigation agreement for the operation of aeronautical fixed service Internet-based services.

### 5.9 Recording and post-flight reporting of aircraft observations of volcanic activity

Special aircraft observations of pre-eruption volcanic activity, a volcanic eruption or volcanic ash cloud shall be recorded on the special air-report of volcanic activity form. A copy of the form shall be included with the flight documentation provided to flights operating on routes which, in the opinion of the meteorological authority concerned, could be affected by volcanic ash clouds.

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