



Doc 4444-ATM
Amendment No. 10
30/9/20

AMENDMENT NO. 10

TO THE

PROCEDURES

FOR

AIR NAVIGATION SERVICES

AIR TRAFFIC MANAGEMENT

SIXTEENTH EDITION — 2016

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Checklist of Amendments
to the PANS-ATM (Doc 4444), Sixteenth Edition

Date of applicability

Sixteenth Edition	
Amendment No. 7-A	
(Approved by the President of the Council of ICAO on behalf of the Council on 6 June 2016)	10 November 2016
Amendment No. 7-B	
(Approved by the President of the Council of ICAO on behalf of the Council on 6 June 2016)	5 November 2020
Amendment No. 8	8 November 2018
(Approved by the President of the Council of ICAO on behalf of the Council on 6 August 2018)	
Amendment No. 9	5 November 2020
(Approved by the President of the Council of ICAO on behalf of the Council on 19 May 2020)	
Amendment No. 10	4 November 2021
(Approved by the President of the Council of ICAO on behalf of the Council on 19 June 2020)	
Replacement pages (xix), 1-16, 1-17, 1-18, 4-19, 4-20, 4-21, 7-7, 7-8, 11-27, 11-28, 12-11, 12-11A, 12-11B, A1-2, A1-4, A1-5	



Transmittal note

Amendment No. 10

to the

Procedures for Air Navigation Services

AIR TRAFFIC MANAGEMENT
(Doc 4444)

1. Insert the following new and replacement pages in the PANS-ATM (Sixteenth Edition) to incorporate Amendment No. 10 which becomes applicable on 4 November 2021.

- a) Page (xix) — Foreword
- b) Pages 1-17 to 1-19 — Chapter 1
- c) Pages 4-19, 4-20 and 4-21 — Chapter 4
- d) Pages 7-7 and 7-8 — Chapter 7
- e) Pages 11-27 and 11-28 — Chapter 11
- f) Pages 12-11, 12-11A, and 12-11B — Chapter 12
- g) Pages A1-2, A1-4 and A1-5 — Appendix 1

2. These pages should be retained separately from the PANS-ATM proper until the applicability date is reached, at which time they should be incorporated into the PANS-ATM.

3. Record the entry of this amendment on page (iii).

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject(s)</i>	<i>Approved Applicable</i>
9	The second meeting of the Separation and Airspace Safety Panel (SASP/2), the tenth meeting of the Wake Turbulence Specific Working Group (WTSWG/10) and the fourth meeting of the Meteorology Panel (METP/4).	Reduced lateral and longitudinal performance based separation minima, reduced wake turbulence separation minima, ATS surveillance separating minima where VHF is not available, special procedures for in-flight contingencies in oceanic airspace, strategic lateral offset procedures (SLOP), alignment of reporting of heavy dust and sand storms with Annex 3, and alignment with Annex 19 terminology for safety risk assessment.	19 May 2020 5 November 2020
10	Eighth Meeting of the 220th Session of the ICAO Council	Postponement of the applicability date of Amendment 7-B: Amendment concerning the use of an enhanced global reporting format for assessing and reporting runway surface conditions.	19 June 2020 4 November 2021

Required navigation performance (RNP). A statement of the navigation performance necessary for operation within a defined airspace.

Note.— Navigation performance and requirements are defined for a particular RNP type and/or application.

Rescue coordination centre. A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.

Rescue unit. A unit composed of trained personnel and provided with equipment suitable for the expeditious conduct of search and rescue.

RNP type. A containment value expressed as a distance in nautical miles from the intended position within which flights would be for at least 95 per cent of the total flying time.

Example.— RNP 4 represents a navigation accuracy of plus or minus 7.4 km (4 NM) on a 95 per cent containment basis.

Runway. A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

Runway-holding position. A designated position intended to protect a runway, an obstacle limitation surface, or an ILS/MLS critical/sensitive area at which taxiing aircraft and vehicles shall stop and hold, unless otherwise authorized by the aerodrome control tower.

Note.— In radiotelephony phraseologies, the expression “holding point” is used to designate the runway-holding position.

Runway incursion. Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft.

Runway visual range (RVR). The range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line.

Safety management system (SMS). A systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures.

Secondary radar. A radar system wherein a radio signal transmitted from the radar station initiates the transmission of a radio signal from another station.

Secondary surveillance radar (SSR). A surveillance radar system which uses transmitters/receivers (interrogators) and transponders.

Segregated parallel operations. Simultaneous operations on parallel or near-parallel instrument runways in which one runway is used exclusively for approaches and the other runway is used exclusively for departures.

Sending unit/controller. Air traffic services unit/air traffic controller transmitting a message.

Note.— See definition of “receiving unit/controller”.

Shoreline. A line following the general contour of the shore, except that in cases of inlets or bays less than 30 nautical miles in width, the line shall pass directly across the inlet or bay to intersect the general contour on the opposite side.

SIGMET information. Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather and other phenomena in the atmosphere that may affect the safety of aircraft operations.

Significant point. A specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes.

Note.— There are three categories of significant points: ground-based navigation aid, intersection and waypoint. In the context of this definition, intersection is a significant point expressed as radials, bearings and/or distances from ground-based navigation aids.

Situation display. An electronic display depicting the position and movement of aircraft and other information as required.

Slush.[†] Water-saturated snow which with a heel-and-toe slap-down motion against the ground will be displaced with a splatter; specific gravity: 0.5 up to 0.8.

Note.— Combinations of ice, snow and/or standing water may, especially when rain, rain and snow, or snow is falling, produce substances with specific gravities in excess of 0.8. These substances, due to their high water/ice content, will have a transparent rather than a cloudy appearance and, at the higher specific gravities, will be readily distinguishable from slush.

Snow (on the ground).[†]

- a) **Dry snow.** Snow which can be blown if loose or, if compacted by hand, will fall apart upon release; specific gravity: up to but not including 0.35.
- b) **Wet snow.** Snow which, if compacted by hand, will stick together and tend to or form a snowball; specific gravity: 0.35 up to but not including 0.5.
- c) **Compacted snow.** Snow which has been compressed into a solid mass that resists further compression and will hold together or break up into lumps if picked up; specific gravity: 0.5 and over.

Special VFR flight. A VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC.

SSR response. The visual indication, in non-symbolic form, on a situation display, of a response from an SSR transponder in reply to an interrogation.

Standard instrument arrival (STAR). A designated instrument flight rule (IFR) arrival route linking a significant point, normally on an ATS route, with a point from which a published instrument approach procedure can be commenced.

Standard instrument departure (SID). A designated instrument flight rule (IFR) departure route linking the aerodrome or a specified runway of the aerodrome with a specified significant point, normally on a designated ATS route, at which the en-route phase of a flight commences.

Standard message element. Part of a message defined in the PANS-ATM (Doc 4444) in terms of display format, intended use and attributes.

Stopway. A defined rectangular area on the ground at the end of take-off run available prepared as a suitable area in which an aircraft can be stopped in the case of an abandoned take-off.

Surveillance radar. Radar equipment used to determine the position of an aircraft in range and azimuth.

Taxiing. Movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.

[†] Applicable until 3 November 2021.

Taxiway. A defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

- a) *Aircraft stand taxilane.* A portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.
- b) *Apron taxiway.* A portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.
- c) *Rapid exit taxiway.* A taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimizing runway occupancy times.

Terminal control area (TMA). A control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes.

Threshold. The beginning of that portion of the runway usable for landing.

Time difference of arrival (TDOA). The difference in relative time that a transponder signal from the same aircraft (or ground vehicle) is received at different receivers.

Total estimated elapsed time. For IFR flights, the estimated time required from take-off to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome. For VFR flights, the estimated time required from take-off to arrive over the destination aerodrome.

Touchdown. The point where the nominal glide path intercepts the runway.

Note.— “Touchdown” as defined above is only a datum and is not necessarily the actual point at which the aircraft will touch the runway.

Track. The projection on the earth’s surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid).

Traffic avoidance advice. Advice provided by an air traffic services unit specifying manoeuvres to assist a pilot to avoid a collision.

Traffic information. Information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision.

Transfer of control point. A defined point located along the flight path of an aircraft, at which the responsibility for providing air traffic control service to the aircraft is transferred from one control unit or control position to the next.

Transferring unit/controller. Air traffic control unit/air traffic controller in the process of transferring the responsibility for providing air traffic control service to an aircraft to the next air traffic control unit/air traffic controller along the route of flight.

Note.— See definition of “accepting unit/controller”.

Transition altitude. The altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes.

Transition layer. The airspace between the transition altitude and the transition level.

Transition level. The lowest flight level available for use above the transition altitude.

Uncertainty phase. A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

Unmanned free balloon. A non-power-driven, unmanned, lighter-than-air aircraft in free flight.

Note.— Unmanned free balloons are classified as heavy, medium or light in accordance with specifications contained in Annex 2, Appendix 5.

Vectoring. Provision of navigational guidance to aircraft in the form of specific headings, based on the use of an ATS surveillance system.

VFR. The symbol used to designate the visual flight rules.

VFR flight. A flight conducted in accordance with the visual flight rules.

Visibility. Visibility for aeronautical purposes is the greater of:

- a) the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognized when observed against a bright background;
- b) the greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background.

Note 1.— The two distances have different values in air of a given extinction coefficient, and the latter b) varies with the background illumination. The former a) is represented by the meteorological optical range (MOR).

Note 2.— The definition applies to the observations of visibility in local routine and special reports, to the observations of prevailing and minimum visibility reported in METAR and SPECI and to the observations of ground visibility.

Visual approach. An approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain.

Visual meteorological conditions. Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.

Note.— The specified minima are contained in Annex 2, Chapter 4.

Visual surveillance system. An electro-optical system providing an electronic visual presentation of traffic and any other information necessary to maintain situational awareness at an aerodrome and its vicinity.

VMC. The symbol used to designate visual meteorological conditions.

Waypoint. A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Waypoints are identified as either:

Fly-by waypoint. A waypoint which requires turn anticipation to allow tangential interception of the next segment of a route or procedure, or

Flyover waypoint. A waypoint at which a turn is initiated in order to join the next segment of a route or procedure.

Section 1.—Position information:

- 1) aircraft identification
- 2) position
- 3) time
- 4) flight level or altitude
- 5) next position and time over
- 6) ensuing significant point

Section 2.—Operational information:

- 7) estimated time of arrival
- 8) endurance

Section 3.—Meteorological information:

- 9) wind direction
- 10) wind speed
- 11) wind quality flag
- 12) air temperature
- 13) turbulence (if available)
- 14) humidity (if available).

4.12.2.2 Section 1 of the air-report is obligatory, except that elements 5) and 6) thereof may be omitted when so prescribed on the basis of regional air navigation agreements. Section 2 of the air-report, or a portion thereof, shall only be transmitted when so requested by the operator or a designated representative, or when deemed necessary by the pilot-in-command. Section 3 of the air-report shall be transmitted in accordance with Annex 3, Chapter 5.

Note.—While element 4), flight level or altitude, may, in accordance with 4.11.2.1, be omitted from the contents of a position report transmitted by radiotelephony when so prescribed on the basis of regional air navigation agreements, that element may not be omitted from Section 1 of an air-report.

4.12.3 Contents of special air-reports

4.12.3.1 Special air-reports 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

- i) as of 4 November 2021 runway braking action encountered is not as good as reported.

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

In addition, in the case of transonic and supersonic flight:

- j) moderate turbulence; or
- k) hail; or
- l) cumulonimbus clouds.

4.12.3.2 When air-ground data link is used, special air-reports shall contain the following elements:

message type designator
aircraft identification

Data block 1:

latitude
longitude
pressure-altitude
time

Data block 2:

wind direction
wind speed
wind quality flag
air temperature
turbulence (if available)
humidity (if available)

Data block 3:

condition prompting the issuance of the special air-report; to be selected from the list a) to k) presented under 4.12.3.1.

4.12.3.3 When voice communications are used, special air-reports shall contain the following elements:

Message type designator

Section 1.—Position information

- 1) aircraft identification
- 2) position
- 3) time
- 4) flight level or altitude

Section 3.—Meteorological information

- 5) condition prompting the issuance of the special air-report; to be selected from the list a) to k) presented under 4.12.3.1.

4.12.4 Compilation and transmission of air-reports by voice communications

4.12.4.1 Forms based on the model AIREP SPECIAL form at Appendix 1 shall be provided for the use of flight crews in compiling the reports. The detailed instructions for reporting, as given at Appendix 1, shall be complied with.

4.12.4.2 The detailed instructions, including the formats of messages and the phraseologies given at Appendix 1, shall be used by flight crews when transmitting air-reports and by air traffic services units when retransmitting such reports.

Note.— Increasing use of air-reports in automated systems makes it essential that the elements of such reports be transmitted in the order and form prescribed.

4.12.5 Recording of special air-reports of volcanic activity

Special air-reports containing observations of volcanic activity shall be recorded on the special air-report of volcanic activity form. Forms based on the model form for special air-reports of volcanic activity at Appendix 1 shall be provided for flight crews operating on routes which could be affected by volcanic ash clouds.

Note.— The recording and reporting instructions may conveniently be printed on the back of the special air-report of volcanic activity form.

4.12.6 Forwarding of meteorological information

4.12.6.1 When receiving ADS-C reports which contain a meteorological information block, air traffic services units shall relay the basic ADS-C and meteorological information blocks and aircraft registration without delay to the world area forecast centres (WAFCs).

Note.— Specifications concerning the format to be used in the relay of meteorological information to the WAFCs are contained in the Manual on Aeronautical Meteorological Practice (Doc 8896).

4.12.6.2 When receiving special air-reports by data link communications, air traffic services units shall forward 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.

4.12.6.3 As of 5 November 2020, when receiving special air-reports by voice communications, air traffic services units shall forward them without delay to their associated meteorological watch offices, with the exception of conditions applying to runway braking action encountered.

4.12.7 Forwarding of braking action information (Applicable as of 4 November 2021)

When receiving special air-reports by voice communications concerning braking action encountered that is not as good as reported, air traffic service units shall forward them without delay to the appropriate aerodrome operator.

4.13 PRESENTATION AND UPDATING OF FLIGHT PLAN AND CONTROL DATA

4.13.1 General

The appropriate authority shall establish provisions and procedures for the presentation to controllers, and subsequent updating, of flight plan and control data for all flights being provided with a service by an ATS unit. Provision shall also be made for the presentation of any other information required or desirable for the provision of ATS.

4.13.2 Information and data to be presented

4.13.2.1 Sufficient information and data shall be presented in such a manner as to enable the controller to have a complete representation of the current air traffic situation within the controller's area of responsibility and, when relevant, movements on the manoeuvring area of aerodromes. The presentation shall be updated in accordance with the progress of aircraft, in order to facilitate the timely detection and resolution of conflicts as well as to facilitate and provide a record of coordination with adjacent ATS units and control sectors.

4.13.2.2 An appropriate representation of the airspace configuration, including significant points and information related to such points, shall be provided. Data to be presented shall include relevant information from flight plans and position reports as well as clearance and coordination data. The information display may be generated and updated automatically, or the data may be entered and updated by authorized personnel.

4.13.2.3 Requirements regarding other information to be displayed, or to be available for display, shall be specified by the appropriate authority.

4.13.3 Presentation of information and data

4.13.3.1 The required flight plan and control data may be presented through the use of paper flight progress strips or electronic flight progress strips, by other electronic presentation forms or by a combination of presentation methods.

4.13.3.2 The method(s) of presenting information and data shall be in accordance with Human Factors principles. All data, including data related to individual aircraft, shall be presented in a manner minimizing the potential for misinterpretation or misunderstanding.

4.13.3.3 Means and methods for manually entering data in ATC automation systems shall be in accordance with Human Factors principles.

4.13.3.4 When flight progress strips (FPS) are used, there should be at least one individual FPS for each flight. The number of FPS for individual flights shall be sufficient to meet the requirements of the ATS unit concerned. Procedures for annotating data and provisions specifying the types of data to be entered on FPS, including the use of symbols, shall be specified by the appropriate ATS authority.

Note.— Guidance material on the use of paper FPS is contained in the Air Traffic Services Planning Manual (Doc 9426).

4.13.3.5 Data generated automatically shall be presented to the controller in a timely manner. The presentation of information and data for individual flights shall continue until such time as the data is no longer required for the purpose of providing control, including conflict detection and the coordination of flights, or until terminated by the controller.

Note.— Jet blast and propeller slipstream can produce localized wind velocities of sufficient strength to cause damage to other aircraft, vehicles and personnel operating within the affected area.

7.4.1.7 ABNORMAL AIRCRAFT CONFIGURATION AND CONDITION

7.4.1.7.1 Whenever an abnormal configuration or condition of an aircraft, including conditions such as landing gear not extended or only partly extended, or unusual smoke emissions from any part of the aircraft, is observed by or reported to the aerodrome controller, the aircraft concerned shall be advised without delay.

7.4.1.7.2 When requested by the flight crew of a departing aircraft suspecting damage to the aircraft, the departure runway used shall be inspected without delay and the flight crew advised in the most expeditious manner as to whether any aircraft debris or bird or animal remains have been found or not.

7.5 ESSENTIAL INFORMATION ON AERODROME CONDITIONS

Note.— See Chapter 11, 11.4.3.4, regarding messages containing information on aerodrome conditions.

7.5.1 Essential information on aerodrome conditions is information necessary to safety in the operation of aircraft, which pertains to the movement area or any facilities usually associated therewith. For example, construction work on a taxi strip not connected to the runway-in-use would not be essential information to any aircraft except one that might be taxied in the vicinity of the construction work. As another example, if all traffic must be confined to runways, that fact should be considered as essential aerodrome information to any aircraft not familiar with the aerodrome.

7.5.2 Essential information on aerodrome conditions shall include information relating to the following:

- a) construction or maintenance work on, or immediately adjacent to the movement area;
- b) rough or broken surfaces on a runway, a taxiway or an apron, whether marked or not;
- c) snow, slush, ice or frost on a runway, a taxiway or an apron [applicable until 3 November 2021];
- c) water, snow, slush, ice or frost on a runway, a taxiway or an apron [applicable as of 4 November 2021];
- d) water on a runway, a taxiway or an apron [applicable until 3 November 2021];
- d) anti-icing or de-icing liquid chemicals or other contaminant on a runway, taxiway or apron [applicable as of 4 November 2021];
- e) snow banks or drifts adjacent to a runway, a taxiway or an apron;
- f) other temporary hazards, including parked aircraft and birds on the ground or in the air;
- g) failure or irregular operation of part or all of the aerodrome lighting system;
- h) any other pertinent information.

Note.— Up-to-date information on the conditions on aprons may not always be available to the aerodrome control tower. The responsibility of the aerodrome control tower in relation to aprons is, with respect to the provisions of 7.5.1 and 7.5.2, limited to the transmission to aircraft of the information which is provided to it by the authority responsible for the aprons.

7.5.3 Essential information on aerodrome conditions shall be given to every aircraft, except when it is known that the aircraft already has received all or part of the information from other sources. The information shall be given in sufficient time for the aircraft to make proper use of it, and the hazards shall be identified as distinctly as possible.

Note.— “Other sources” include NOTAM, ATIS broadcasts, and the display of suitable signals.

7.5.4 When a not previously notified condition pertaining to the safe use by aircraft of the manoeuvring area is reported to or observed by the controller, the appropriate aerodrome authority shall be informed and operations on that part of the manoeuvring area terminated until otherwise advised by the appropriate aerodrome authority.

7.6 CONTROL OF AERODROME TRAFFIC

7.6.1 General

As the view from the flight deck of an aircraft is normally restricted, the controller shall ensure that instructions and information which require the flight crew to employ visual detection, recognition and observation are phrased in a clear, concise and complete manner.

7.6.2 Designated positions of aircraft in the aerodrome traffic and taxi circuits

The following positions of aircraft in the traffic and taxi circuits are the positions where aircraft normally receive aerodrome control tower clearances. Aircraft should be watched closely as they approach these positions so that proper clearances may be issued without delay. Where practicable, all clearances should be issued without waiting for aircraft to initiate the call.

Position 1. Aircraft initiates call to taxi for departing flight. Runway-in-use information and taxi clearances given.

Position 2. If there is conflicting traffic, the departing aircraft will be held at this position. Engine run-up will, when required, normally be performed here.

Position 3. Take-off clearance is issued here, if not practicable at position 2.

Position 4. Clearance to land is issued here as practicable.

Position 5. Clearance to taxi to apron is issued here.

Position 6. Parking information issued here, if necessary.

Note 1.— Arriving aircraft executing an instrument approach procedure will normally enter the traffic circuit on final except when visual manoeuvring to the landing runway is required.

Note 2.— See Figure 7-1.

7.6.3 Traffic on the manoeuvring area

7.6.3.1 CONTROL OF TAXIING AIRCRAFT

7.6.3.1.1 TAXI CLEARANCE

7.6.3.1.1.1 Prior to issuing a taxi clearance, the controller shall determine where the aircraft concerned is parked. Taxi clearances shall contain concise instructions and adequate information so as to assist the flight crew to follow the correct taxi routes, to avoid collision with other aircraft or objects and to minimize the potential for the aircraft inadvertently entering an active runway.

7.6.3.1.1.2 When a taxi clearance contains a taxi limit beyond a runway, it shall contain an explicit clearance to cross or an instruction to hold short of that runway.

11.4.3.3 MESSAGES CONCERNING THE OPERATION OF AERONAUTICAL FACILITIES

Note.— General provisions concerning this subject are set forth in Annex 11, 4.2.

Messages concerning the operation of aeronautical facilities shall be transmitted to aircraft from whose flight plan it is apparent that the operation of the flight may be affected by the operating status of the operating facility concerned. They shall contain appropriate data on the service status of the facility in question, and, if the facility is out of operation, an indication when the normal operating status will be restored.

11.4.3.4 MESSAGES CONTAINING INFORMATION ON AERODROME CONDITIONS

Note.— Provisions regarding the issuance of information on aerodrome conditions are contained in Chapter 7, 7.5.

11.4.3.4.1 Whenever information is provided on aerodrome conditions, this shall be done in a clear and concise manner so as to facilitate appreciation by the pilot of the situation described. It shall be issued whenever deemed necessary by the controller on duty in the interest of safety, or when requested by an aircraft. If the information is provided on the initiative of the controller, it shall be transmitted to each aircraft concerned in sufficient time to enable the pilot to make proper use of the information.

11.4.3.4.2 Until 3 November 2021, information that water is present on a runway shall be transmitted to each aircraft concerned, on the initiative of the controller, using the following terms:

DAMP — the surface shows a change of colour due to moisture.

WET — the surface is soaked but there is no standing water.

STANDING WATER — for aeroplane performance purposes, a runway where more than 25 per cent of the runway surface area (whether in isolated areas or not) within the required length and width being used is covered by water more than 3 mm deep.

11.4.3.4.2 As of 4 November 2021, whenever information is provided concerning runway surface conditions that may adversely affect aircraft braking action, the following terms shall be used, as necessary:

COMPACTED SNOW

DRY

DRY SNOW

DRY SNOW ON TOP OF COMPACTED SNOW

DRY SNOW ON TOP OF ICE

FROST

ICE

SLUSH

STANDING WATER

WATER ON TOP OF COMPACTED SNOW

WET**WET ICE****WET SNOW****WET SNOW ON TOP OF COMPACTED SNOW****WET SNOW ON TOP OF ICE**

11.4.3.4.3 As of 4 November 2021, appropriate ATS units shall have available for transmission to aircraft, upon request, the runway condition report (RCR) information. This shall be passed to aircraft in the order of the direction of landing or take-off.

11.4.3.5 MESSAGES CONCERNING AIR TRAFFIC INCIDENT REPORTS

When an aircraft involved in an incident has a destination outside the area of responsibility of the ATS unit where the incident occurred, the ATS unit at the destination aerodrome should be notified and requested to obtain the pilot's report. The following information should be included in the message:

- a) type of incident (AIRPROX, procedure or facility);
 - b) identification of the aircraft concerned;
 - c) time and position at time of incident;
 - d) brief details of incident.
-

CIRCUMSTANCES

12.3.1.11 AERODROME INFORMATION
(Applicable until 3 November 2021)

Phraseologies

- a) *[(location)] RUNWAY SURFACE CONDITION RUNWAY (number) (condition);*
- b) *[(location)] RUNWAY SURFACE CONDITION RUNWAY (number) NOT CURRENT;*
- c) *LANDING SURFACE (condition);*
- d) *CAUTION CONSTRUCTION WORK (location);*
- e) *CAUTION (specify reasons) RIGHT (or LEFT), (or BOTH SIDES) OF RUNWAY [number];*
- f) *CAUTION WORK IN PROGRESS (or OBSTRUCTION) (position and any necessary advice);*
- g) *RUNWAY REPORT AT (observation time) RUNWAY (number) (type of precipitant) UP TO (depth of deposit) MILLIMETRES. ESTIMATED SURFACE FRICTION GOOD (or MEDIUM TO GOOD, or MEDIUM, or MEDIUM TO POOR, or POOR);*
- h) *BRAKING ACTION REPORTED BY (aircraft type) AT (time) GOOD (or MEDIUM to GOOD, or MEDIUM, or MEDIUM to POOR, or POOR);*
- i) *RUNWAY (or TAXIWAY) (number) WET [or STANDING WATER, or SNOW REMOVED (length and width as applicable), or TREATED, or COVERED WITH PATCHES OF DRY SNOW (or WET SNOW, or COMPACTED SNOW, or SLUSH, or FROZEN SLUSH, or ICE, or WET ICE, or ICE UNDERNEATH, or ICE AND SNOW, or SNOWDRIFTS, or FROZEN RUTS AND RIDGES)];*
- j) *TOWER OBSERVES (weather information);*
- k) *PILOT REPORTS (weather information).*

12.3.1.11 AERODROME INFORMATION(Applicable as of
4 November 2021)

Note 1.— See 11.4.3.4.3 for requirements for passing runway condition reports (RCRs) to pilots.

Note 2.— This information is provided for runway thirds or the full runway, as applicable.

- a) [(*location*) RUNWAY (*number*) SURFACE CONDITION [CODE (*three digit number*)] followed as necessary by:
 - 1) ISSUED AT (*date and time UTC*);
 - 2) DRY, or WET ICE, or WATER ON TOP OF COMPACTED SNOW, or DRY SNOW, or DRY SNOW ON TOP OF ICE, or WET SNOW ON TOP OF ICE, or ICE, or SLUSH, or STANDING WATER, or COMPACTED SNOW, or WET SNOW, or DRY SNOW ON TOP OF COMPACTED SNOW, or WET SNOW ON TOP OF COMPACTED SNOW, or WET, or FROST;
 - 3) DEPTH ((*depth of deposit*) MILLIMETRES or NOT REPORTED);
 - 4) COVERAGE ((*number*) PER CENT or NOT REPORTED);
 - 5) ESTIMATED SURFACE FRICTION (GOOD, or GOOD TO MEDIUM, or MEDIUM, or MEDIUM TO POOR, or POOR, or LESS THAN POOR);
 - 6) AVAILABLE WIDTH (*number*) METRES;
 - 7) LENGTH REDUCED TO (*number*) METRES;
 - 8) DRIFTING SNOW;
 - 9) LOOSE SAND;
 - 10) CHEMICALLY TREATED;
 - 11) SNOWBANK (*number*) METRES [LEFT, or RIGHT, or LEFT AND RIGHT] [OF or FROM] CENTRELINE;
 - 12) TAXIWAY (*identification of taxiway*) SNOWBANK (*number*) METRES [LEFT, or RIGHT, or LEFT AND RIGHT] [OF or FROM] CENTRELINE;
 - 13) ADJACENT SNOWBANKS;
 - 14) TAXIWAY (*identification of taxiway*) POOR;
 - 15) APRON (*identification of apron*) POOR;
 - 16) Plain language remarks;

- b) [(*location*)] RUNWAY SURFACE CONDITION RUNWAY (*number*) NOT CURRENT;
- c) LANDING SURFACE (*condition*);
- d) CAUTION CONSTRUCTION WORK (*location*);
- e) CAUTION (*specify reasons*) RIGHT (*or LEFT*), (*or BOTH SIDES*) OF RUNWAY [*(number)*];
- f) CAUTION WORK IN PROGRESS (*or OBSTRUCTION position and any necessary advice*);
- g) BRAKING ACTION REPORTED BY (*aircraft type*) AT (*time*) GOOD (*or GOOD TO MEDIUM, or MEDIUM, or MEDIUM TO POOR, or POOR*);
- h) TAXIWAY (*identification of taxiway*) WET [*or STANDING WATER, or SNOW REMOVED (length and width as applicable), or CHEMICALLY TREATED, or COVERED WITH PATCHES OF DRY SNOW (or WET SNOW, or COMPACTED SNOW, or SLUSH, or FROZEN SLUSH, or ICE, or WET ICE, or ICE UNDERNEATH, or ICE AND SNOW, or SNOWDRIFTS, or FROZEN RUTS AND RIDGES or LOOSE SAND)*];
- i) TOWER OBSERVES (*weather information*);
- j) PILOT REPORTS (*weather information*).

<i>Circumstances</i>	<i>Phraseologies</i>
<p>12.3.1.13 REDUCED VERTICAL SEPARATION MINIMUM (RVSM) OPERATIONS</p> <p>... to ascertain RVSM approval status of an aircraft</p> <p>... to report RVSM approved status</p> <p>... to report RVSM non-approved status followed by supplementary information</p> <p><i>Note.— See 12.2.4 and 12.2.5 for procedures relating to operations in RVSM airspace by aircraft with non-approved status.</i></p> <p>... to deny ATC clearance into RVSM airspace</p> <p>... to report when severe turbulence affects the capability of an aircraft to maintain height-keeping requirements for RVSM</p> <p>... to report that the equipment of an aircraft has degraded below minimum aviation system performance standards</p> <p>... to request an aircraft to provide information as soon as RVSM-approved status has been regained or the pilot is ready to resume RVSM operations</p> <p>... to request confirmation that an aircraft has regained RVSM-approved status or a pilot is ready to resume RVSM operations</p> <p>... to report ability to resume RVSM operations after an equipment or weather-related contingency</p>	<p>a) CONFIRM RVSM APPROVED;</p> <p>*b) AFFIRM RVSM;</p> <p>*c) NEGATIVE RVSM [<i>(supplementary information, e.g. State aircraft)</i>];</p> <p>d) UNABLE ISSUE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN [or DESCEND TO, or CLIMB TO] (<i>level</i>);</p> <p>*e) UNABLE RVSM DUE TURBULENCE;</p> <p>*f) UNABLE RVSM DUE EQUIPMENT;</p> <p>g) REPORT WHEN ABLE TO RESUME RVSM;</p> <p>h) CONFIRM ABLE TO RESUME RVSM;</p> <p>*i) READY TO RESUME RVSM.</p>

* Denotes pilot transmission.

Appendix 1

INSTRUCTIONS FOR AIR-REPORTING BY VOICE COMMUNICATIONS

1. Reporting instructions
2. Special air-report of volcanic activity form (Model VAR)
3. Examples

1. Reporting instructions

MODEL AIREP SPECIAL

ITEM	PARAMETER	TRANSMIT IN TELEPHONY as appropriate	
—	Message-type designator: • special air-report	[AIREP] SPECIAL	
Section 1	1	Aircraft identification <i>(aircraft identification)</i>	
	2	Position POSITION <i>(latitude and longitude)</i> OVER <i>(significant point)</i> ABEAM <i>(significant point)</i> <i>(significant point) (bearing) (distance)</i>	
	3	Time <i>(time)</i>	
	4	Level FLIGHT LEVEL <i>(number)</i> or <i>(number)</i> METRES or FEET CLIMBING TO FLIGHT LEVEL <i>(number)</i> or <i>(number)</i> METRES or FEET DESCENDING TO FLIGHT LEVEL <i>(number)</i> or <i>(number)</i> METRES or FEET	
	5	Next position and estimated time over <i>(position) (time)</i>	
	6	Ensuing significant point <i>(position) NEXT</i>	
Section 2	7	Estimated time of arrival <i>(aerodrome) (time)</i>	
	8	Endurance ENDURANCE <i>(hours and minutes)</i>	
Section 3	9	Phenomenon encountered or observed, prompting a special air-report: <ul style="list-style-type: none"> • Moderate turbulence • Severe turbulence • Moderate icing • Severe icing • Severe mountainwave • Thunderstorms without hail • Thunderstorms with hail • Heavy dust/sandstorm • Volcanic ash cloud • Pre-eruption volcanic activity or volcanic eruption <p><i>(Applicable as of 4 November 2021)</i> Runway braking action <ul style="list-style-type: none"> • Good • Good to Medium • Medium • Medium to Poor • Poor • Less than Poor </p>	TURBULENCE MODERATE TURBULENCE SEVERE ICING MODERATE ICING SEVERE MOUNTAINWAVE SEVERE THUNDERSTORMS THUNDERSTORMS WITH HAIL DUSTSTORM or SANDSTORM HEAVY VOLCANIC ASH CLOUD PRE-ERUPTION VOLCANIC ACTIVITY or VOLCANIC ERUPTION <i>(Applicable as of 4 November 2021)</i> GOOD GOOD TO MEDIUM MEDIUM MEDIUM TO POOR POOR LESS THAN POOR

1. Position reports and special air-reports

1.1 Section 1 is obligatory for position reports and special air-reports, although Items 5 and 6 thereof may be omitted when prescribed in *Regional Supplementary Procedures*; Section 2 shall be added, in whole or in part, only when so requested by the operator or its designated representative, or when deemed necessary by the pilot-in-command; Section 3 shall be included in special air-reports.

1.2 Special air-reports shall be made whenever any of the phenomena listed under Item 15 are observed or encountered. Items 1 to 4 of Section 1 and the appropriate phenomenon specified in Section 3, Item 15, are required from all aircraft. The phenomena listed under "SST" shall be reported only by supersonic transport at transonic and supersonic cruising levels.

1.3 In the case of special air-reports containing information on volcanic activity, a post-flight report shall be made on the volcanic activity reporting form (Model VAR). All elements which are observed shall be recorded and indicated respectively in the appropriate places on the form Model VAR.

1.4 Special air-reports shall be made as soon as practicable after a phenomenon calling for a special air-report has been observed.

1.5 If a phenomenon warranting the making of a special air-report is observed at or near the time or place where a routine air-report is to be made, a special air-report shall be made instead.

2. Detailed reporting instructions

2.1 Items of an air-report shall be reported in the order in which they are listed in the model AIREP SPECIAL form.

— MESSAGE TYPE DESIGNATOR. Report "SPECIAL" for a special air-report.

Section 1

Item 1 — AIRCRAFT IDENTIFICATION. Report the aircraft radiotelephony call sign as prescribed in Annex 10, Volume II, Chapter 5.

Item 2 — POSITION. Report position in latitude (degrees as 2 numerics or degrees and minutes as 4 numerics, followed by "North" or "South") and longitude (degrees as 3 numerics or degrees and minutes as 5 numerics, followed by "East" or "West"), or as a significant point identified by a coded designator (2 to 5 characters), or as a significant point followed by magnetic bearing (3 numerics) and distance in nautical miles from the point (e.g. "4620North07805West", "4620North07800West", "4600North07800West", LN ("LIMA NOVEMBER"), "MAY", "HADDY" or "DUB 180 DEGREES 40 MILES"). Precede significant point by "ABEAM", if applicable.

Item 3 — TIME. Report time in hours and minutes UTC (4 numerics) unless reporting time in minutes past the hour (2 numerics) is prescribed on the basis of regional air navigation agreements. The time reported must be the actual time of the aircraft at the position and not the time of origination or transmission of the report. Time shall always be reported in hours and minutes UTC when making a special air-report.

Item 4 — FLIGHT LEVEL OR ALTITUDE. Report flight level by 3 numerics (e.g. "FLIGHT LEVEL 310"), when on standard pressure altimeter setting. Report altitude in metres followed by "METRES" or in feet followed by "FEET", when on QNH. Report "CLIMBING" (followed by the level) when climbing, or "DESCENDING" (followed by the level) when descending, to a new level after passing the significant point.

Item 5 — NEXT POSITION AND ESTIMATED TIME OVER. Report the next reporting point and the estimated time over such reporting point, or report the estimated position that will be reached one hour later, according to the position reporting procedures in force. Use the data conventions specified in Item 2 for position. Report the estimated time over this position. Report time in hours and minutes UTC (4 numerics) unless reporting time in minutes past the hour (2 numerics) as prescribed on the basis of regional air navigation agreements.

Item 6 — ENSUING SIGNIFICANT POINT. Report the ensuing significant point following the "next position and estimated time over".

Section 2

Item 7 — ESTIMATED TIME OF ARRIVAL. Report the name of the aerodrome of the first intended landing, followed by the estimated time of arrival at this aerodrome in hours and minutes UTC (4 numerics).

Item 8 — ENDURANCE. Report "ENDURANCE" followed by fuel endurance in hours and minutes (4 numerics).

Section 3

Item 9 — PHENOMENON PROMPTING A SPECIAL AIR-REPORT. Report one of the following phenomena encountered or observed:

- moderate turbulence as "TURBULENCE MODERATE"
severe turbulence as "TURBULENCE SEVERE"

The following specifications apply:

Moderate — Conditions in which moderate changes in aircraft attitude and/or altitude may occur but the aircraft remains in positive control at all times. Usually, small variations in airspeed. Changes in accelerometer readings of 0.5 g to 1.0 g at the aircraft's centre of gravity. Difficulty in walking. Occupants feel strain against seat belts. Loose objects move about.

Severe — Conditions in which abrupt changes in aircraft attitude and/or altitude occur; aircraft may be out of control for short periods. Usually, large variations in airspeed. Changes in accelerometer readings greater than 1.0 g at the aircraft's centre of gravity. Occupants are forced violently against seat belts. Loose objects are tossed about.

- moderate icing as "ICING MODERATE"
severe icing as "ICING SEVERE"

The following specifications apply:

Moderate — Conditions in which change of heading and/or altitude may be considered desirable.

Severe — Conditions in which immediate change of heading and/or altitude is considered essential.

- Severe mountainwave as "MOUNTAINWAVE SEVERE"

The following specification applies:

Severe — Conditions in which the accompanying downdraft is 3.0 m/s (600 ft/min) or more and/or severe turbulence is encountered.

- thunderstorm without hail as "THUNDERSTORM"
thunderstorm with hail as "THUNDERSTORM WITH HAIL"

The following specification applies:

Only report those thunderstorms which are:

- obscured in haze; or
- embedded in cloud; or
- widespread; or
- forming a squall-line.

- heavy duststorm or sandstorm as "DUSTSTORM or SANDSTORM HEAVY"
- volcanic ash cloud as "VOLCANIC ASH CLOUD"
- pre-eruption volcanic activity or a volcanic eruption as "PRE-ERUPTION VOLCANIC ACTIVITY or VOLCANIC ERUPTION"

The following specification applies:

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

Note.— In case of volcanic ash cloud, pre-eruption volcanic activity or volcanic eruption, in accordance with Chapter 4, 4.12.3, a post-flight report shall also be made on the special air-report of volcanic activity form (Model VAR).

As of 4 November 2021:

- Good braking action as "BRAKING ACTION GOOD"

- Good to medium braking action as "BRAKING ACTION GOOD TO MEDIUM"
- Medium braking action as "BRAKING ACTION MEDIUM"
- Medium to poor braking action as "BRAKING ACTION MEDIUM TO POOR"
- Poor braking action as "BRAKING ACTION POOR"
- Less than poor braking action as "BRAKING ACTION LESS THAN POOR"

The following specifications apply [applicable as of 4 November 2021]:

Good — Braking deceleration is normal for the wheel braking effort applied and directional control is normal.

Good to medium — Braking deceleration or directional control is between Good and Medium.

Medium — Braking deceleration is noticeably reduced for the wheel braking effort applied or directional control is noticeably reduced.

Medium to poor — Braking deceleration or directional control is between Medium and Poor.

Poor — Braking deceleration is significantly reduced for the wheel braking effort applied or directional control is significantly reduced.

Less than poor — Braking deceleration is minimal to non-existent for the wheel braking effort applied or directional control is uncertain.

2.2 Information recorded on the volcanic activity reporting form (Model VAR) is not for transmission by RTF but, on arrival at an aerodrome, is to be delivered without delay by the operator or a flight crew member to the aerodrome meteorological office. If such an office is not easily accessible, the completed form shall be delivered in accordance with local arrangements made between the meteorological and ATS authorities and the operator.

3. Forwarding of meteorological information received by voice communications

When receiving special air-reports, air traffic services units shall forward these air-reports without delay to the associated meteorological watch office (MWO). In order to ensure assimilation of air-reports in ground-based automated systems, the elements of such reports shall be transmitted using the data conventions specified below and in the order prescribed.

- ADDRESSEE. Record station called and, when necessary, relay required.
- MESSAGE TYPE DESIGNATOR. Record "ARS" for a special air-report.

Note.— Where air-reports are handled by automatic data processing equipment which cannot accept this message-type designator, in accordance with Chapter 11, 11.4.2.6.5.2, the use of a different message-type designator is permitted by regional air navigation agreement.

- AIRCRAFT IDENTIFICATION. Record the aircraft identification using the data convention specified for Item 7 of the flight plan, without a space between the operator's designator and the aircraft registration or flight identification, if used (e.g. New Zealand 103 as ANZ103).

Section 1

Item 0 — POSITION. Record position in latitude (degrees as 2 numerics or degrees and minutes as 4 numerics, followed without a space by N or S) and longitude (degrees as 3 numerics or degrees and minutes as 5 numerics, followed without a space by E or W), or as a significant point identified by a coded designator (2 to 5 characters), or as a significant point followed by magnetic bearing (3 numerics) and distance in nautical miles (3 numerics) from the point (e.g. 4620N07805W, 4620N078W, 46N078W, LN, MAY, HADDY or DUB180040). Precede significant point by "ABM" (abeam), if applicable.

Item 1 — TIME. Record time in hours and minutes UTC (4 numerics).

Item 2 — FLIGHT LEVEL OR ALTITUDE. Record F followed by 3 numerics (e.g. F310), when a flight level is reported. Record altitude in metres followed by M or in feet followed by FT, when an altitude is reported. Record “ASC” (level) when climbing, or “DES” (level) when descending.

Section 3

Item 9 — PHENOMENON PROMPTING A SPECIAL AIR-REPORT. Record the phenomenon reported as follows:

- moderate turbulence as “TURB MOD”
- severe turbulence as “TURB SEV”
- moderate icing as “ICE MOD”
- severe icing as “ICE SEV”
- severe mountainwave as “MTW SEV”
- thunderstorm without hail as “TS”
- thunderstorm with hail as “TSGR”
- heavy sandstorm as “HVY SS”
- heavy duststorm as “HVY DS”
- volcanic ash cloud as “VA CLD”
- pre-eruption volcanic activity or a volcanic eruption as “VA”
- hail as “GR”
- cumulonimbus clouds as “CB”.

— TIME TRANSMITTED. Record only when Section 3 is transmitted.