



ADVISORY CIRCULAR

**CAA-AC-MET005
DECEMBER 2022**

GUIDANCE ON TECHNICAL SPECIFICATIONS RELATED TO PREPARATION AND ISSUANCE OF SIGMET MESSAGES

1.0 PURPOSE

This Advisory Circular (AC) provides guidance to the MET service provider on the technical specifications related to the preparation and issuance of SIGMET information.

2.0 REFERENCES

- 2.1 Regulation 46 and Schedule 6 of the Civil Aviation (Meteorological Service for Air navigation) Regulations, 2022.
- 2.2 ICAO Doc. 8896; Manual of Aeronautical Meteorological Practice

3.0 GUIDANCE AND PROCEDURES

3.1 General

- 3.1.1 The Civil Aviation (Meteorological Service for Air Navigation) Regulation, 2022, under Regulation 46 require the Meteorological Service Provider to designate a Meteorological Watch Office (MWO) equipped with tools and facilities, for purposes of maintaining continuous watch over meteorological conditions affecting flight operations within Entebbe Flight Information Region (FIR).
- 3.1.2 The MWO shall prepare and issue SIGMET information in accordance with Regulation 46 of the Civil Aviation (Meteorological Service for Air Navigation) Regulation, 2022.

3.2 SPECIFICATIONS RELATED TO SIGMET INFORMATION

3.2.1 Format of SIGMET messages

- 3.2.1.1 The content and order of elements in a SIGMET message shall be in accordance with the template shown in Appendix I to this Advisory Circular.
- 3.2.1.2 Messages containing SIGMET information shall be identified as "SIGMET". Each SIGMET message shall have a sequence number reference corresponding with the number of SIGMET messages issued for the Entebbe FIR since 0001 UTC on the day concerned.
- 3.2.1.3 SIGMET information shall be based on special air-reports; weather satellite data or ground-based observations such as weather radar observations; or forecasts. SIGMET messages concerning

thunderstorms, tropical cyclones or severe squall lines shall not include references to associated turbulence or icing, since each SIGMET reports one particular weather phenomena.

3.2.1.4 In preparing a SIGMET message, only one of the following phenomena shall be included in a SIGMET message, using the abbreviations below or ICAO approved abbreviations in Appendix II.

(i) In SIGMET messages, thunderstorms at cruising levels irrespective of altitude shall be reported with abbreviations as indicated-

• Obscured	OBSC TS
• Embedded	EMBD TS
• Frequent	FRQ TS
• Squall line	SQL TS
• Obscured with hail	OBSC TSGR
• Embedded with hail	EMBD TSGR
• Frequent, with hail	FRQ TSGR
• Squall line with hail	SQL TSGR

(ii) Reporting tropical cyclone in SIGMET messages at cruising levels irrespective of altitude, TC should be reported when; -

• A tropical cyclone has a duration of at least a 10-minute mean
• TC (+ cyclone name) only with a surface wind speed of 17 m/s (34 kt) or more

(iii) Reporting icing in SIGMET messages at cruising levels irrespective of altitude-

• severe icing	SEV ICE
• severe icing due to freezing rain	SEV ICE (FZRA)
• freezing rain	FZRA

(iv) Reporting turbulence in SIGMET messages at cruising levels irrespective of altitude only when it's severe-

• Severe turbulence	SEV TURB
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(v) Reporting other phenomena at cruising levels irrespective of altitude-

• severe mountain wave	SEV MTW
• heavy duststorm	HVY DS
• heavy sandstorm	HVY SS
• volcanic ash	VA (+ volcano name, if known)
• radioactive cloud	RDOACT CLD

(vi) Only one element from those listed in (i) to (v) above shall be used in a SIGMET. It should be noted that although SIGMET information is required to be issued for cruising levels, there is no stated lower limit regarding the height for which a SIGMET should be issued. MWOs should issue a

SIGMET irrespective of the altitude of the phenomenon, since the occurrence of the weather phenomena is of importance to aircraft during all phases of flight. This requirement is stated in Regulation 46 of the Civil Aviation (Meteorological Services for Air Navigation) Regulation, 2022, for all SIGMETs.

- (vii) SIGMET information shall not contain unnecessary descriptive material. In describing the weather phenomena for which the SIGMET is issued, no descriptive material additional to that given in (i) to (v) above shall be included.
- (viii) The use of text additional to the abbreviations listed in (i) to (v) above should be kept to a minimum. Any additional text should be prepared in abbreviated plain language using approved ICAO abbreviations listed in *Appendix II*. If no ICAO approved abbreviations are available for any weather phenomena, English plain language text should be used.
- (ix) SIGMET, if disseminated in the digital form, shall be formatted in accordance with a globally interoperable information exchange model and shall use eXtensible Markup Language (XML) or Geography Markup Language (GML).
- (x) SIGMET if disseminated in the digital form, shall be accompanied by the metadata.

3.2.2 Dissemination of SIGMET messages

3.2.2.1 SIGMET messages shall be disseminated to meteorological watch offices, World Area Forecasting Centers (WAFCs), Air Traffic Control Centres, and other meteorological offices. In the case of SIGMET messages for volcanic ash, the messages shall also be disseminated to the Toulouse Volcanic Ash Advisory Centre (VAAC).

3.2.2.2 SIGMET messages shall be disseminated to international Operation Meteorological (OPMET) databanks and the centres designated for the operation of aeronautical fixed service (AFS) Internet-based services. In addition, SIGMET messages for volcanic ash cloud should be disseminated to VAACs. Airline Operators and crew should be supplied with SIGMET information, through the aerodrome meteorological offices. They should also obtain this information through the briefing offices automated meteorological information systems or automated information systems for pre-flight planning. Briefing Offices should access SIGMET messages for entire route from the Secure Aviation Data Information Service (SADIS) system and make them available to departing Pilots.

3.2.3 Criteria related to phenomena included in SIGMET and Special air-reports

3.2.3.1 An area of thunderstorms and cumulonimbus clouds should be considered-

- (i) Obscured (OBSC) if it is obscured by haze/smoke or cannot be readily seen due to darkness.
- (ii) Embedded (EMBD) if it is embedded within cloud layers and cannot be readily recognized.
- (iii) Isolated (ISOL) if it consists of individual features which affect or are forecast to affect, an area with maximum spatial coverage of less than 50 percent of the area concerned (at a fixed time or during the period of validity); and
- (iv) Occasional (OCNL) if it consists of well-separated features which affect, or are forecast to affect, an area with a maximum spatial coverage between 50 and 75 percent of the area concerned (at a fixed time or during the period of validity).

3.2.3.2 An area of thunderstorms should be considered frequent (FRQ) if within that area there is little or no separation between adjacent thunderstorms with a maximum spatial coverage greater than 75 percent of

the area affected, or forecast to be affected, by the phenomenon (at fixed time or during period of validity).

3.2.3.3 Squall line (SQL) should indicate a thunderstorm along a line with little or no space between individual clouds.

3.2.3.4 Hail (GR) should be used as a further description of the thunderstorm, as necessary.

3.2.3.5 Severe and moderate turbulence (TURB) should refer only to:

- (i) low-level turbulence associated with strong surface winds,
- (ii) rotor streaming, or
- (iii) turbulence whether in cloud or not in cloud including Clear Air Turbulence (CAT).

3.2.3.6 Turbulence shall be reported as-

- (i) Severe whenever the peak value of the cube root of EDR exceeds 0.7; and
- (ii) Moderate whenever the peak value of the cube root of EDR is above 0.4 and below or equal to 0.7.

3.2.3.7 A mountain wave (MTW) should be reported as-

- (i) Severe whenever an accompanying downdraft of 3.0 m/s (600 ft/min) or more and/or severe turbulence is observed or forecast; and
- (ii) Moderate whenever an accompanying downdraft of 1.75–3.0 m/s (350–600 ft/min) and/or moderate turbulence is observed or forecast.

3.2.3.8 Severe and moderate icing (ICE) should refer to icing other than convective clouds. Freezing rain (FZRA) should refer to severe icing conditions caused by freezing rain.

3.2.3.9 Turbulence should not be used in connection with convective clouds.

3.2.3.10 Sandstorm/duststorm should be reported as-

- (i) Heavy whenever the visibility is below 200m, and the sky is obscured; and
- (ii) Moderate whenever the visibility is:
 - Below 200m and the sky is not obscured; or
 - Between 200m and 600m.

3.2.4 Issuance and validity of SIGMET Information

3.2.4.1 Period of validity. The period of validity of a SIGMET should not exceed four hours. In the special case of a SIGMET for volcanic ash cloud or tropical cyclones, period of validity shall be extended to six hours.

3.2.4.2 Issuance. SIGMETs relating to the expected occurrence of weather phenomena, except for the volcanic ash cloud and tropical cyclones, shall not be issued more than four hours before the expected time of occurrence of such phenomena. In order to provide advance warning of the existence of volcanic ash cloud and tropical cyclones, SIGMETs related to these phenomena shall be issued as soon as practicable but not more than twelve hours before the commencement of the period of validity.

3.2.4.3 Update. SIGMETs for volcanic ash cloud and tropical cyclones shall be updated at least every six hours. However, if the phenomenon were expected to persist beyond the end of the period of validity, the SIGMET shall be updated. The update should be timed during the period of validity of the previous SIGMET to coincide with the reception of new meteorological information by the MWO (e.g., satellite data, radar data, special air-reports, output from numerical weather prediction models) while complying

with the Civil Aviation (Meteorological Services for Air Navigation) Regulation, 2022 provision stipulating that SIGMETs are not to be issued more than four hours before the commencement of their period of validity.

- 3.2.4.4 SIGMET messages shall be cancelled by the MWO when the phenomena are no longer occurring or are no longer expected to occur in the area.
- 3.2.4.5 SIGMETs for tropical cyclones shall be issued by the MWO only when the tropical cyclone is affecting the weather phenomenon (CBs and thunderstorms) in the Entebbe FIR. Whenever a neighbouring FIR is influenced by cumulonimbus (CB) clouds and thunderstorms associated with the tropical cyclone, the MWO shall only issue a SIGMET for such phenomena like CBs, thunderstorms and not tropical cyclone.
- 3.2.4.6 It should be noted that information on volcanic ash cloud and associated volcanic activity is promulgated to users, including ATS units, by NOTAM or by ASHTAM. NOTAM and ASHTAM for volcanic ash should include, where necessary, information on diversions or air route closures, due to volcanic ash.

Example 1. SIGMET message and the corresponding cancellations

SIGMET	CANCELLATION OF SIGMET
HUEC SIGMET 1 VALID 101200/101600 HUEN- HUEC ENTEBBE FIR/UIR OBSC TS FCST S OF N54 AND E OF W012 TOP FL390 MOV E 20KT WKN	HUEC SIGMET 2 VALID 101345/101600 HUEN- HUEC ENTEBBE FIR/UIR CNL SIGMET 1 101200/101600

Example 2. SIGMET message for Tropical Cyclone

HUEC SIGMET 3 VALID 251600/252200 HUEN –
HUEC ENTEBBE FIR TC GLORIA PSN N2706 W07306 CB OBS AT 1600Z WI 250NM OF TC CENTRE TOP FL500
NC FCST AT 2200Z TC CENTRE PSN N2740 W07345

Meaning:

The third SIGMET message issued for the ENTEBBE* flight information region (identified by HUEC Entebbe area control centre) by the Entebbe International* meteorological watch office (HUEN) since 0001 UTC; the message is valid from 1600 UTC to 2200 UTC on the 25th of the month; tropical cyclone Gloria at 27 degrees 6 minutes north and 73 degrees 6 minutes west; cumulonimbus was observed at 1600 UTC within 250 nautical miles of the Centre of the tropical cyclone with top at flight level 500; no changes in intensity are expected; at 2200 UTC the Centre of the tropical cyclone is forecast to be located at 27 degrees 40 minutes north and 73 degrees 45 minutes west.

* Fictitious location

Example 3. SIGMET message for Volcanic Ash

HUEN SIGMET 2 VALID 211100/211700 HUEN –
HUEC ENTEBBE FIR/UIR VA ERUPTION MT ELGON PSN N0010 E03348 VA CLD OBS AT 1100Z APRX 50KM WID
LINE BTN N0010 E03348 – N0040 E03342 FL310/450 INTSF FCST AT 1700Z APRX 50KM WID LINE BTN N0006
E03305 – N0018 E03312 – N0212 E03430

Meaning:

The second SIGMET message issued for the ENTEBBE* flight information region (identified by HUEC Entebbe area control centre/upper flight information region) by the Entebbe/International* meteorological watch office (HUEN) since 0001 UTC; the message is valid from 1100 UTC to 1700 UTC on the 21st of the month; volcanic ash eruption of Mount Elgon* located

at 0 degrees 10 minutes North and 33 degrees 48 minutes east; volcanic ash cloud observed at 1100 UTC in an approximately 50 km wide line between 0 degrees 10 minutes north and 33 degrees 48 minutes east, and 0 degrees 40 minutes North and 33 degrees 42 minutes east; between flight levels 310 and 450, intensifying at 1700 UTC the volcanic ash cloud is forecast to be located in an approximate 50 km wide line between 0 degrees 6 minutes north and 33 degrees 5 minutes east, 0 degrees 18 minutes north and 33 degrees 12 minutes east, and 2 degrees 12 minutes north and 34 degrees 30 minutes east.

* Fictitious location and eruption

Example 4. SIGMET message for Severe Turbulence

HUEC SIGMET 5 VALID 221215/221600 HUEN –
HUEC ENTEBBE FIR SEV TURB OBS AT 1210Z N0320 E31005 FL250 INTSF FCST AT 1600Z S OF N0320 AND E OF E03150

Meaning:

The fifth SIGMET message issued for the ENTEBBE* flight information region (identified by HUEC Entebbe area control centre) by the Entebbe/International* meteorological watch office (HUEN) since 0001 UTC; the message is valid from 1215 UTC to 1600 UTC on the 22nd of the month; severe turbulence was observed at 1210 UTC 3 degrees 20 minutes north and 31 degrees 5 minutes east at flight level 250; the turbulence is expected to strengthen in intensity; at 1600 UTC the severe turbulence is forecast to be located south of 3 degrees 20 minutes north and east of 3 degrees 50 minutes west.

* Fictitious location and turbulence phenomena



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APPENDIX 1

TEMPLATE FOR SIGMET

Key: M = inclusion mandatory, part of every message;
 C = inclusion conditional, included whenever applicable;
 = = a double line indicates that the text following it should be placed on the subsequent line.

Element	Detailed content	SIGMET template	SIGMET message examples	
Location indicator of FIR/CTA (M)	ICAO location indicator of the ATS unit serving the FIR or CTA to which the SIGMET refers	nnnn	HUEC ¹	
Identification (M)	Message identification and sequence number ³	SIGMET [n][n]n	SIGMET 1 SIGMET 01 SIGMET A01	
Validity period (M)	Day-time groups indicating the period of validity in UTC	VALID nnnnnn/nnnnn	VALID 010000/010400 VALID 221215/221600 VALID 101520/101800 VALID 251600/252200 VALID 152000/160000 VALID 192300/200300	
Location indicator of MWO (M)	Location indicator of MWO originating the message with a separating hyphen	nnnn-	HUEN-	
Name of the FIR/CTA (M)	Location indicator and name of the FIR/CTA ⁴ for which the SIGMET is issued	nnnn nnnnnnnnnn FIR or UIR or FIR/UIR or nnnn nnnnnnnnnn CTA	HUEC Entebbe FIR FIR/UIR UIR FIR/UIR	HUEC Entebbe FIR
Cancellation of SIGMET (C)	Cancellation of SIGMET referring to its identification	CNL SIGMET [n][n]n nnnnnn/nnnnn or CNL SIGMET [n][n]n nnnnnn/nnnnn VA MOV TO nnnn FIR	CNL SIGMET 2 101200/101600 CNL SIGMET A13 251030/251430 VA MOV TO YUDO FIR ²	CNL AIRMET 05 151520/151800

APPENDIX II

COMMONLY USED ICAO ABBREVIATIONS IN METEOROLOGICAL MESSAGES

(Extract from the Procedures for Air Navigation Services - ICAO Abbreviations and Codes (PANS-ABC, Doc 8400))

A

AAA	<i>(or AAB, AAC ... etc., in sequence)</i> Amended meteorological message <i>(message type designator)</i>
ABV	Above
ADS-C‡	Automatic dependent surveillance — contract
AFTN‡	Aeronautical fixed telecommunication network
AIREP†	Air-report
AIRMET†	Information concerning en-route weather phenomena which may affect the safety of low-level aircraft operations
ALT	Altitude
AMD	Amend <i>or</i> amended <i>(used to indicate amended meteorological message; message type designator)</i>
APCH	Approach
ASHTAM.	A special series NOTAM notifying, by means of a specific format, changes in activity of a volcano, a volcanic eruption and/or volcanic ash cloud that is of significance to aircraft operations
AT...	At <i>(followed by time at which weather change is forecast to occur)</i>
ATS	Air traffic services

B

BCFG	Fog patches
BECMG	Becoming
BKN	Broken
BL ...	Blowing <i>(followed by DU = dust, SA = sand or SN = snow)</i>
BLW	Below ...
BR	Mist
BTN	Between
BUFR	Binary universal form for the representation of meteorological data

C

... C	Centre <i>(preceded by runway designation number to identify a parallel runway)</i>
C	Degrees Celsius <i>(Centigrade)</i>
CALM	Calm
CAT	Clear air turbulence
CAVOK†	<i>(to be pronounced "KAV-OH-KAY")</i> Visibility, cloud and present weather better than prescribed values or conditions
CB‡	<i>(to be pronounced "CEE BEE")</i> Cumulonimbus

CCA	<i>(or CCB, CCC ... etc., in sequence)</i> Corrected meteorological message <i>(message type designator)</i>
CLD	Cloud
CLIMB-OUT	Climb-out area
COR	Correct <i>or</i> correction <i>or</i> corrected <i>(used to indicate corrected meteorological message; message type designator)</i>
CPDLC‡	Controller-pilot data link communications
CTA	Control area
CU	Cumulus

D

D	Downward <i>(tendency in RVR during previous 10 minutes)</i>
DEG	Degrees
DEPO	Deposition
DIF	Diffuse
DP	Dew point temperature
DR...	Low drifting <i>(followed by DU = dust, SA = sand or SN = snow)</i>
DS	Duststorm
DU	Dust
D-VOLMET	Data link VOLMET
DZ	Drizzle

E

E	East <i>or</i> eastern longitude
EMBD	Embedded in a layer <i>(to indicate cumulonimbus embedded in layers of other clouds)</i>
END	Stop-end <i>(related to RVR)</i>
EQN	Equatorial latitudes northern hemisphere
EQS	Equatorial latitudes southern hemisphere
EXER	Exercises <i>or</i> exercising <i>or</i> to exercise

F

FBL	Light <i>(used to indicate the intensity of weather phenomena, interference or static reports, e.g. FBL RA = light rain)</i>
FC	Funnel cloud <i>(tornado or water spout)</i>
FCST	Forecast
FEW	Few
FG	Fog
FIR‡	Flight information region
FL	Flight level
FLUC	Fluctuating <i>or</i> fluctuation <i>or</i> fluctuated
FM ...	From <i>(followed by time weather change is forecast to begin)</i>
FRONT‡	Front <i>(relating to weather)</i>
FT	Feet <i>(dimensional unit)</i>
FU	Smoke
FZ	Freezing
FZDZ	Freezing drizzle
FZFG	Freezing fog

FZRA Freezing rain

G

G ... Variations from the mean wind speed (gusts) *(followed by figures in METAR/SPECI and TAF)*
GAIN Airspeed or headwind gain
GAMET Area forecast for low-level flights
GR Hail
GRIB Processed meteorological data in the form of grid point values expressed in binary form *(meteorological code)*
GS Small hail and/or snow pellets

H

H High pressure area *or* the centre of high pressure
HNH High latitudes northern hemisphere
HPA Hectopascal
HR Hours
HSH High latitudes southern hemisphere
HURCN Hurricane
HVY Heavy *(used to indicate the intensity of weather phenomena, e.g. HVY RA = heavy rain)*
HZ Haze

I

IAVW International airways volcano watch
ICE Icing
INC In cloud
INTSF Intensify *or* intensifying
ISOL Isolated

K

KM Kilometres
KMH Kilometres per hour
KT Knots

L

L Low pressure area *or* the centre of low pressure
LAT Latitude
LCA Local *or* locally *or* location *or* located
LINE Line *(used in SIGMET)*
LONG Longitude
LOSS Airspeed or headwind loss
LTD Limited
LVL Level
LYR Layer *or* layered

M

... M Metres *(preceded by figures)*
M ... Minimum value of runway visual range *(followed by figures in METAR/SPECI)*

MAX	Maximum
MBST	Microburst
MET†	Meteorological <i>or</i> meteorology
METAR†	Aerodrome routine meteorological report (<i>in meteorological code</i>)
MET	REPORT Local routine meteorological report (<i>in abbreviated plain language</i>)
MID	Mid-point (<i>related to RVR</i>)
MIFG	Shallow fog
MNH	Middle latitudes northern hemisphere
MNM	Minimum
MOD	Moderate (<i>used to indicate the intensity of weather phenomena, interference or static reports, e.g. MODRA = moderate rain</i>)
MOV	Move <i>or</i> moving <i>or</i> movement
MS	Minus
MSH	Middle latitudes southern hemisphere
MSL	Mean Sea level
MT	Mountain
MTW	Mountain waves
MWO	Meteorological watch office

N

N	No distinct tendency (<i>in RVR during previous 10 minutes</i>)
N	North <i>or</i> northern latitude
NC	No change
NE	North-east
NIL*†	None <i>or</i> I have nothing to send to you
NM	Nautical miles
NOSIG†	No significant change (<i>used in trend-type landing forecasts</i>)
NOTAM†	A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations
NR	Number
NSC	Nil significant cloud
NSW	Nil significant weather
NW	North-west
NXT	Next

O

OBS	Observe <i>or</i> observed <i>or</i> observation
OBSC	Obscure <i>or</i> obscured <i>or</i> obscuring
OCNL	Occasional <i>or</i> occasionally
OPMET†	Operational meteorological (<i>information</i>)
OVC	Overcast

P

P ...	Maximum value of wind speed or runway visual range (<i>followed by figures in METAR/SPECI and TAF</i>)
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PL	Ice pellets
PO	Dust/sand whirls (<i>dust devils</i>)
PRFG	Aerodrome partially covered by fog
PROB†	Probability
PS	Plus
PSN	Position
PSYS	Pressure system(s)

Q

QFE‡	Atmospheric pressure at aerodrome elevation (<i>or at runway threshold</i>)
QNH‡	Altimeter sub-scale setting to obtain elevation when on the ground

R

R ...	Runway (<i>followed by figures in METAR/SPECI</i>)
RA	Rain
RAG	Ragged
RE	Recent (<i>used to qualify weather phenomena, e.g. RERA = recent rain</i>)
RNAV†	(<i>to be pronounced "AR-NAV"</i>) Area navigation
ROBEX†	Regional OPMET bulletin exchange (<i>scheme</i>)
RPLC	Replace <i>or</i> replaced
RRA	(<i>or RRB, RRC ... etc., in sequence</i>) Delayed meteorological message (<i>message type designator</i>)
RTD	Delayed (<i>used to indicate delayed meteorological message; message type designator</i>)
RVR‡	Runway visual range
RWY	Runway

S

S	South <i>or</i> southern latitude
S ...	State of the sea (<i>followed by figures in METAR/SPECI</i>)
SA	Sand
SCT	Scattered
SE	South-east
SEA	Sea (<i>used in connection with sea-surface temperature and state of the sea</i>)
SECN	Section
SEV	Severe (<i>used e.g. to qualify icing and turbulence reports</i>)
SFC	Surface
SG	Snow grains
SH ...	Shower (<i>followed by RA = rain, SN = snow, PL = ice pellets, GR = hail, GS = small hail and/or snow pellets or combinations thereof, e.g. SHRASN = showers of rain and snow</i>)
SIG	Significant
SIGMET†	Information concerning en-route weather and other phenomena in the atmosphere which may affect the safety of aircraft operations
SN	Snow
SNOCLO	Aerodrome closed due to snow (<i>used in METAR/SPECI</i>)
SPECI†	Aerodrome special meteorological report (<i>in meteorological code</i>)
SPECIAL†	Local special meteorological report (<i>in abbreviated plain language</i>)

SQ	Squall
SQL	Squall line
SS	Sandstorm
STNR	Stationary
SW	South-west
SWX	Space weather
SWXC	Space weather centre

T

T	Temperature
TAF†	Aerodrome forecast (<i>in meteorological code</i>)
TC	Tropical cyclone
TCAC	Tropical cyclone advisory centre
TCU	Towering cumulus
TDO	Tornado
TEMPO‡	Temporary <i>or</i> temporarily
TL ...	Till (<i>followed by time by which weather change is forecast to end</i>)
TN ...	Minimum temperature (<i>followed by figures in TAF</i>)
TO	To ... (<i>place</i>)
TOP‡	Cloud top
TREND‡	Trend forecast
TS	Thunderstorm (<i>in aerodrome reports and forecasts, TS used alone means thunder heard but no precipitation at the aerodrome</i>)
TS ...	Thunderstorm (<i>followed by RA = RAIN, SN = snow, PL = ice pellets, GR = hail, GS = small hail and/or snow pellets or combinations thereof, e.g. TSRASN = thunderstorm with rain and snow</i>)
TURB	Turbulence
TX ...	Maximum temperature (<i>followed by figures in TAF</i>)

U

U	Upward (<i>tendency in RVR during previous 10 minutes</i>)
UIR‡	Upper flight information region
UTC‡	Coordinated Universal Time

V

...V...	Variations from the mean wind direction (<i>preceded and followed by figures in METAR/SPECI, e.g. 350V070</i>)
VA	Volcanic ash
VAAC	Volcanic ash advisory centre
VC	Vicinity of the aerodrome (<i>followed by FG = fog, FC = funnel cloud, SH = shower, PO = dust/sand whirls, BLDU = blowing dust, BLSA = blowing sand, BLSN = blowing snow, DS = duststorm, SS = sandstorm, TS = thunderstorm or VA = volcanic ash, e.g. VCFG = vicinity fog</i>)
VER	Vertical
VHF‡	Very high frequency [30 MHz to 300 MHz]
VIS	Visibility
VOLMET†	Meteorological information for aircraft in flight

VRB Variable
VV... Vertical visibility (*followed by figures in METAR/SPECI and TAF*)

W

W West *or* western longitude
W... Sea-surface temperature (*followed by figures in METAR/SPECI*)
WAFC World area forecast centre
WAFS World area forecast system
WI Within
WID Wide
WIND Wind
WKN Weaken *or* weakening
WRNG Warning
WS Wind shear
WSPD Wind speed
WX Weather

Z

Z Coordinated Universal Time (*in meteorological messages*)

NOTE

- † When radiotelephony is used, the abbreviations and terms are transmitted as spoken words.
- ‡ When radiotelephony is used, the abbreviations and terms are transmitted using the individual letters in non-phonetic form.
- * Signal is also available for use in communicating with stations of the maritime mobile service.