NAMIBIA CIVIL AVIATION AUTHORITY

NAMIBIAN CIVIL AVIATION AUTHORITY

Advisory Pamphlet (AP)

ANSSO-MET-AP174/07 07/2020

SIGMET PREPARATION AND ISSUANCE

1. **Explanation of Advisory Pamphlets (AP) system. The Namibian Civil Aviation Authority (NCAA) issues advisory pamphlets to inform the aviation public in a systematic way of non-regulatory material. Unless incorporated into a regulation by reference, the contents of an advisory circular are not binding on the public. Advisory pamphlets are issued in a numbered-subject system corresponding to the subject areas of the Namibian Civil Aviation Regulations (NAMCARs).**

2. **Advisory Pamphlets are intended to provide information and guidance to illustrate a means but not necessarily the only means of complying with the Regulations, or to explain certain Regulatory requirements by providing interpretative and explanatory material. Where an AP is referred to in a 'Note' below the regulation, the AP remains as guidance material.**

   APs should always be read in conjunction with the referenced regulations

3. **Reproduction of Advisory Pamphlets. Advisory pamphlets may be reproduced in their entirety or in part without permission from the Civil Aviation Authority.**

Effective date: _____

NAMIBIA CIVIL AVIATION AUTHORITY
NCAA
31 JUL 2020
PRIVATE BAG 12003
AUSSPANNPLATZ
WINDHOEK
OFFICE OF THE EXECUTIVE DIRECTOR

Reinhard Gärtner (Mr.)
Interim Executive Director of Civil Aviation

SIGMET PREPARATION AND ISSUANCE

1. Purpose

1.1 This Advisory Pamphlet (AP) provides information and guidance for standardization and harmonization of the procedures and formats related to the preparation and issuance of aeronautical meteorological information pertaining to specified en-route hazardous weather phenomena, known as **SIGMET**.

1.2 The AP is primarily intended to assist meteorological watch offices (MWOs) in preparing and disseminating SIGMET information in conformance with the format prescribed in NAMCARs Part 174.

2. Background

2.1 SIGMET messages provide information on hazardous meteorological phenomena; hence they are considered a high priority among other types of meteorological information provided to the aviation users.

2.2 The primary purpose of SIGMET is to provide relevant information for in-flight service, which requires timely transmission of the SIGMET messages to pilots by the ATS units and/or through VOLMET and D-VOLMET.

2.3 Airlines are the main users of the SIGMET information. They contribute to the effectiveness of the SIGMET service through issuance of special air-reports reported by pilots to the ATS units. Special air-reports are among the most valuable sources of information for the MWOs in the preparation of SIGMET. The ATS units receiving special air-reports may forward them to their associated MWOs without delay.

2.4 In view of the foregoing (2.3), it may be well understood that the effectiveness of the SIGMET service depends strongly on the level of collaboration between the MWOs, ATS units, pilots, TCACs, VAACs and State volcano observatories. That is why, close coordination between these parties, as well as mutual understanding of their needs and responsibilities are essential for the successful implementation of the SIGMET service.

2.5 For the special cases of SIGMET for volcanic ash and tropical cyclones, the MWOs are provided with advisories from VAACs and TCACs respectively, as designated in the AFI regional ANP.

2.6 SIGMET is also used for flight planning. This requires global dissemination of SIGMET through the AFI regional OPMET data banks (RODBs), the aeronautical fixed service (AFS) satellite distribution system (SADIS 2G) and the Internet-based Secure SADIS FTP service.

2.7 SIGMET may also be distributed to the World Area Forecast Centres (WAFCs) London and Washington for use in the preparation of the significant weather (SIGWX) forecasts

3. Extracts from NAMCARs, PART 174

174.09.1 SIGMET information

The meteorological watch office must ensure that significant meteorological (SIGMET) information is issued in accordance with the standards set out in Document NAM-CATS-MET.

4. Extracts from NAM-CATS-MET

174.09.1 SIGMET information

1.1 SIGMET information must be issued by meteorological watch office and must give a concise description in abbreviated plain language concerning the occurrence and/or expected occurrence of specified en-route weather and other phenomena in the atmosphere that may affect the safety of aircraft operations, and of the development of those phenomena in time and space.

1.2 SIGMET information must be cancelled when the phenomena are no longer occurring or are no longer expected to occur in the area.

1.3 The period of validity of a SIGMET message must be not more than 4 hours. In the special case of SIGMET messages for volcanic ash cloud and tropical cyclones, the period of validity must be extended up to 6 hours.

1.4 SIGMET messages concerning volcanic ash cloud and tropical cyclones must be based on advisory information provided by VAACs and TCACs, respectively.

1.5 A MET service provider must ensure close coordination is maintained between meteorological watch office and the associated area control centre/flight information centre to ensure that information on volcanic ash included in SIGMET and NOTAM messages is consistent.

1.6 SIGMET messages must be issued not more than 4 hours before the commencement of the period of validity. In the special case of SIGMET messages for volcanic ash cloud and tropical cyclones, these messages must be issued as soon as practicable but not more than 12 hours before the commencement of the period of validity. SIGMET messages for volcanic ash and tropical cyclones must be updated at least every 6 hours.

PROCEDURES FOR PREPARATION OF SIGMET INFORMATION

1. General

1.1 SIGMET is intended for transmission to aircraft in flight either by ATC or by VOLMET or D-VOLMET, and therefore, SIGMET messages may be kept concise.

1.2 The increasing use of automated systems for handling the aeronautical meteorological information by the users makes it essential that all types of OPMET information, including SIGMET messages, are prepared and issued in the prescribed standardized format. Therefore, the format of the SIGMET message, as specified in NAM-CATS-A-MET Appendices, Appendix 6, may be strictly followed by the MWOs.

1.3 The MWO may maintain watch over the evolution of the phenomenon for which a SIGMET has been issued. If the phenomenon persists or is expected to persist beyond the period of validity of the SIGMET, another SIGMET message for a further period of validity may be issued with updated information.

1.4 SIGMETs for volcanic ash and tropical cyclone may be updated at least every 6 hours, while SIGMET for all other phenomena may be updated at least every 4 hours.

1.5 SIGMET may be promptly cancelled when the phenomenon is no longer occurring or no longer expected to occur in the MWO's area of responsibility

2. Table 1 SIGMET phenomena

SIGMET shall only be issued for the phenomena listed in Table 1 below and only using the abbreviations as indicated.

Phenomena Abbreviation	Description
OBSC TS	Thunderstorms that are obscured by haze or smoke or cannot be readily seen due to darkness.
EMBD TS	Thunderstorms that are embedded within cloud layers and cannot be readily recognized.
FRQ TS	Frequent thunderstorms where, within the area of thunderstorms, there is little no separation between adjacent thunderstorms with a maximum spatial coverage greater than 75%.
SQL TS	A squall line indicating that a line of thunderstorms with little or no space between clouds.
OBSC TSGR	Thunderstorms with hail that are obscured by haze or smoke or cannot be readily seen due to darkness.
EMBD TSGR	Thunderstorms that are embedded within cloud layers and cannot be readily recognized.
FRQ TSGR	Frequent thunderstorms with hail, within the area of thunderstorms, there is little or no separation between

	adjacent thunderstorms with a maximum spatial coverage greater than 75%.
SQL TSGR	A squall line indicating that a line of thunderstorms with hail with little or no space between clouds.
TC	A tropical cyclone with a 10-minute mean surface wind speed of 17m/s (34 kt) or more.
SEV TURB	Severe turbulence referring to: • low-level turbulence associated with strong surface winds; • rotor streaming; or • clear air turbulence, whether in cloud or not in cloud. *Note. — Turbulence may not be used in connection with convective clouds. Severe turbulence shall be considered whenever the peak value of the cube root of EDR exceeds 0.7.*
SEV ICE	Severe icing not associated with convective cloud.
SEV ICE (FZRA)	Severe icing caused by freezing rain and not associated with convective cloud.
SEV MTW	Severe mountain wave the accompanying downdraft is 3 m/s (600 ft/min) or more or when severe turbulence is observed or forecast.
HVY DS	Heavy duststorm where the visibility is below 200 m and the sky is obscured.
HVY SS	Heavy sandstorm where the visibility is below 200 m and the sky is obscured.
VA	Volcanic ash
RDOACT CLD	Radioactive cloud

3. Table 2: SIGMET phenomena abbreviations and descriptions. Abbreviations that can be used in the meteorological section of SIGMET include are given in Table 1 above and in Table 2 below

Abbreviation	Signification
ABV	Above
APRX	Approximate or approximately
AT	At (followed by time)
BLW	Below
BTN	Between
CB	Cumulonimbus cloud
CLD	Cloud
CNL	Cancel or cancelled
CTA	Control Area
E	East or eastern longitude
ENE	East-north-east
ESE	East-south-east

Abbreviation	Signification
NE	North-east
NNE	North-north-east
NNW	North-north-west
NM	Nautical miles
NO	No
NW	North-west
OBS	Observe or observed or observation
PSN	Position
S	South or southern latitude
SE	South-east
SFC	Surface
SSE	South-south-east

EXP	Expect or expected or expecting
FCST	Forecast
FIR	Flight information region
FL	Flight level
FT	Feet
INTSF	Intensify or intensifying
KM	Kilometres
KT	Knots
LCA	Location
M	Metres
MOV	Move or moving or movement
MT	Mountain
N	North or northern latitude
NC	No change

SSW	South-south-west
STNR	Stationary
SW	South-west
TO	To
TOP	Cumulonimbus cloud top (height)
UIR	Upper Flight information region
W	West or western longitude
WI	Within (area)
WID	Width or wide
WKN	Weaken or weakening
WNW	West-north-west
WSW	West-south-west
Z	Coordinated Universal Time

4. SIGMET structure

4.1 A SIGMET message consists of:

- ***WMO Abbreviated Heading Line (WMO AHL)*** – all SIGMETs are preceded by an appropriate WMO AHL;
- ***First line***, containing location indicators of the respective ATS unit and MWO, sequential number and period of validity;
- ***SIGMET main body***, containing information concerning the observed or forecast weather phenomenon for which the SIGMET is issued together with its expected evolution within the period of validity;

4.2 The first two parts of the SIGMET message are common for all types of SIGMET. The format and content of the third part are different; that is why, in the following paragraphs the meteorological part of the SIGMET message is described separately for the three types of SIGMET.

4.3 Inclusion of more than one instance of a phenomenon in a SIGMET.
Footnote 21 to Table A6-1 permits the inclusion of more than one instance of a phenomenon within a single SIGMET, but footnote 26 to Table A6-1 restricts the use of the conjunction 'AND' to volcanic ash and tropical cyclone SIGMETs only. In both these cases only two 'instances' are permitted. As such, some States have determined that multiple instances of the same phenomena for SIGMET other than for volcanic ash and tropical cyclones may not be used.

5. SIGMET format

Compliance Note. — In the following text, square brackets - [ ] - are used to indicate an optional or conditional element, and angled brackets - < > - for symbolic representation of a variable element, which in a real SIGMET accepts a discrete numerical value.

a. WMO header

T1T2A1A2ii CCCC YYGGgg [BBB]

i. The group T1T2A1A2ii is the bulletin identification (WMO AHL) for the SIGMET message. It is constructed in the following way:

T_1T_2	Data type designator	**WS** – for SIGMET for meteorological phenomena other than volcanic ash cloud or tropical cyclone **WC** – for SIGMET for tropical cyclone **WV** – for SIGMET for volcanic ash
A_1A_2	Country or territory designators	Assigned according to Table C1, Part II of *Manual on the Global Telecommunication System*, Volume I – *Global Aspects* (WMO Publication No. 386)
ii	Bulletin number	Assigned on national level according to p 2.3.2.2, Part II of *Manual on the Global Telecommunication System*, Volume I – *Global Aspects* (WMO Publication No. 386)

Table 3: Specification of the WMO Abbreviated Header Line for SIGMET

ii. CCCC is the ICAO location indicator of the communication centre disseminating the message (this may be the same as the MWO location indicator).

iii. YYGGgg is the date/time group; where YY is the day of the month and GGgg is the time of transmission of the SIGMET in hours and minutes UTC (normally this time is assigned by the disseminating (AFTN) centre).

b. First line of SIGMET

CCCC SIGMET [nn]n VALID YYGGgg/YYGGgg CCCC-

i. The meaning of the groups in the first line of the SIGMET is as follows:

CCCC	ICAO location indicator of the ATS unit serving the FIR or CTA to which the SIGMET refers
SIGMET	Message identifier
[nn]n	Daily sequence number (see 3.5.2.2)
VALID	Period of validity indicator
YYGGgg/YYGGgg	Validity period of the SIGMET given by date/time group of the beginning and date/time group of the end of the period (see 3.5.2.3)
CCCC	ICAO location indicator of the issuing MWO
-	Mandatory **hyphen** to separate the preamble from the text

Table 4: Elements making up the first line of SIGMET

ii. The numbering of SIGMETs starts every day at 0001 UTC. The sequence number may consist of up to three symbols and may be a combination of letters and numbers, such as:
   - **1, 2, ...**
   - **01, 02, ...**
   - **A01, A02, ...**

6. **Examples:**

GOOO SIGMET 3 VALID 121100/121700 GOOY-
FSSS SIGMET A04 VALID 202230/210430 FSIA-

Compliance Note 1. No other combinations may be used, like "CHARLIE 05" or "NR7".

Compliance Note 2. Correct numbering of SIGMET is very important since the number is used for reference in communication between ATC and pilots and in VOLMET and D-VOLMET.

Compliance Note 3 In accordance with NAMCARs Part 2 – Units of Measurement to be Used in Air and Ground Operations, when the validity period ends at midnight, YY may be set for the following day and GGgg may e '0000'. i.e. SIGMET validity ending at midnight on the 23rd day of the month may be expressed as '240000'.

6.1 The following regulations apply when determining the validity period:

- The period of validity of a WS SIGMET may be not more than 4 hours;
- The period of validity of a WC or WV SIGMET may not be more than 6 hours;
- In case of a SIGMET for an observed phenomenon, the filing time (date/time group in the WMO header) may be the same or very close to the time in the date/time group indicating the start of the SIGMET validity period;
- When the SIGMET is issued for a forecast phenomenon:
  - the beginning of validity period may be the time of the expected commencement (occurrence) of the phenomenon in the MWO area of responsibility;
  - the time of issuance of a WS SIGMET may be not more than 4 hours before the start of validity period (i.e., expected time of occurrence of the phenomenon); and for WC (tropical cyclone) and WV (volcanic ash) SIGMET the lead time may be not more than 12 hours.

6.2 The period of validity is that period during which the SIGMET information is valid for transmission to aircraft in flight.

Examples:

1) First two lines of a SIGMET for an observed phenomenon:

WSUG31 HUEN 241120
HUEC SIGMET 3 VALID 241120/241500 HUEN–

2) First two lines of a SIGMET for a forecast phenomenon (expected time of occurrence 1530)

WSNR31 DRRN 311130
DRRR SIGMET 1 VALID 311530/311930 DRRN-

7. Structure of the meteorological part of SIGMET for weather phenomena other than for volcanic ash and tropical cyclone

7.1 The meteorological part of a SIGMET for weather phenomena consists of elements as shown in the table below.

Start of the second line of the message

1	2	3	4	5	6	7	8
Name of the FIR/UIR or CTA	Description of the phenomenon	Observed or forecast	Location	Level	Movement or expected movement	Changes in intensity	Forecast position
See 3.5.3.2	See 3.5.3.3	See 3.5.3.4	See 3.5.3.5	See 3.5.3.6	See 3.5.3.7	See 3.5.3.8	See 3.5.3.9

Table 5: Elements making up the meteorological part of SIGMET

7.2 Name of the FIR/UIR or CTA

CCCC <name> FIR[/UIR]
or
CCCC <name> CTA

The ICAO location indicator and the name of the FIR/CTA are given followed by the appropriate abbreviation: FIR, FIR/UIR or CTA. The name may consist of up to 10 characters.

Example:
HKNA NAIROBI FIR

7.3 Phenomenon

The phenomenon description consists of a qualifier and a phenomenon abbreviation. SIGMET may be issued only for the following phenomena observed or forecast at cruising levels (irrespective of altitude):

- thunderstorms – if they are **OBSC**, **EMBD**, **FRQ** or **SQL** with or without hail **(GR)**;
- turbulence – only **SEV**
- icing – only **SEV** with or without **FZRA**
- mountain waves – only **SEV**
- dust storm – only **HVY**
- sand storm – only **HVY**
- radioactive cloud – **RDOACT CLD**

The appropriate abbreviations and combinations, and their meaning are given in Table 1.

7.4 Indication whether the phenomenon is observed or forecast

OBS
or
OBS AT GGggZ

or
FCST
or
FCST AT GGggZ

The indication whether the phenomenon is observed, or forecast is given by using the abbreviations OBS or FCST. OBS AT and FCST AT may be used, in which case they are followed by a time group in the form GGggZ. If the phenomenon is observed, GGgg is the time of the observation in hours and minutes UTC. If the exact time of the observation is not known the time is not included. When the phenomenon is based on a forecast without a reported observation, the time given for GGggZ represents the time of commencement of the phenomenon.

Examples:

OBS

OBS AT 0140Z

FCST

FCST AT 0200Z

7.5 Location of the phenomenon

The location of the phenomenon is given with reference to geographical coordinates (latitude and longitude). Latitude and longitude may be reported in degrees, or in degrees and minutes. When reporting in degrees the format will be **Nnn** or **Snn** for latitude, and **Ennn** or **Wnnn** for longitude. When reporting in degrees and minutes the format will be **Nnnnn** or **Snnnn** for latitude, and **Ennnnn** or **Wnnnnn** for longitude. The MWOs may try to be as specific as possible in reporting the location of the phenomenon and, at the same time, to avoid overwhelming the SIGMET with too many coordinates, which may be difficult to process or follow when transmitted by voice radio.

The following are the possible ways to describe the location of the phenomenon:

1) An area of the FIR defined by a polygon. Minimum 4 coordinates (Including the last point as a repeat of the first point to explicitly close the polygon), and not normally more than 7 coordinates. This is the format preferred operationally by users.

Symbolically, this is indicated as:

WI <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>
- <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>
- <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>
- <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>
- <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>
- <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>
- <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>

For example:

WI N6030 E02550 – N6055 E02500 – N6050 E02630 – N6030 E02550

WI N60 E025 – N62 E27 - N58 E030 - N59 E26 - N60 E025

Compliance Note. — The points of a polygon may be provided in a clockwise order, and the end point may be a repeat of the start point.

7.6 Use of polygons with complex FIR boundaries.

NAMCARs Part 174 specifies that the points of a polygon '... may be kept to a minimum and may not normally exceed seven'. However, some FIR boundaries are complex, and it would be unrealistic to expect that a polygon would be defined that followed such boundaries exactly. As such, some States have determined that the polygon points be chosen in relation to the complex boundary such that the FIR boundary approximates, but is wholly encompassed by, the polygon, and that any additional area beyond the FIR boundary be the minimum that can be reasonably and practically described. Caution may however be exercised in those instances where international aerodromes are located in close proximity to such a complex FIR boundary.

7.6.1 In a sector of the FIR defined relative to a specified line joining two points on the FIR boundary {or so close to the FIR boundary so as to leave no doubt that the intent is for the line to connect to the FIR boundary at that point (this is to allow for some small margin of error when judging the coordinates where the specified line would intersect the FIR boundary)}.

Symbolically this is indicated as:

<N OF> or <NE OF> or <E OF> or <SE OF> or <S OF> or <SW OF> or <W OF> or <NW OF> LINE <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> - <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>

For example:

NE OF LINE N2500 W08700 – N2000 W08300

W OF LINE N20 E042 – N35 E045

7.6.2 In a sector of the FIR defined relative to a line of latitude and a line of longitude (effectively a quadrant);

Symbolically this is indicated as:

<N OF> or <S OF> or <Nnn[nn]> or <Snn[nn]> AND <E OF> or <W OF> <Wnnn[nn]> or <Ennn[nn]>

For example:

N OF N1200 AND E OF W02530

S OF N60 W OF E120

7.6.3 In a sector of the FIR defined relative to a line of latitude or longitude (effectively a segment), where a coordinate of latitude (or longitude) defines a line, and the preceding descriptor defines on which side of the line the phenomena is expected

Symbolically, this is indicated as:

<N OF> or <S OF> <Nnn[nn]> or <Snn[nn]> or <E OF> or <W OF> <Wnnn[nn]> or <Ennn[nn]>

For example:

N OF S2230

W OF E080

7.6.4 At a specific point within the FIR, indicated by a single coordinate of latitude and longitude.

Symbolically, this is indicated as:

<Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> - <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>

For example:

N5530 W02230

S23 E107

8. Flight level

Symbolically, the options permitted are:

FLnnn
or
SFC/FLnnn
or
SFC/nnnnM
or
SFC/nnnnFT
or
FLnnn/nnn
or
TOP FLnnn
or
ABV FLnnn
or
TOP ABV FLnnn

In more detail, the location or extent of the phenomenon in the vertical is given by one or more of the above methods, as follows:

8.1 reporting at a single flight level

For example: **FL320**

8.2 reporting a layer extending from the surface to a given height in meters or feet

For example: **SFC/3000M or SFC/9900FT**

8.3 reporting a layer extending from a given FL to a higher flight level

For example: **FL250/FL290**

8.4 reporting a layer where the base is unknown, but the top is given:

For example: **TOP FL350**

8.5 reporting a layer where the top is unknown, but the base is given:

For example: **ABV FL350**

Additional examples:

EMBD TS ... TOP ABV FL340
SEV TURB ... FL180/210
SEV ICE ... SFC/FL150
SEV MTW ... FL090

9. Movement

9.1 Rate of movement is indicated in the following way:

MOV <direction> <speed> KT

or

STNR

9.2 Direction of movement is given with reference to one of the sixteen (16) points of compass (N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW, WSW, W, WNW, NW, NNW). Speed is given in KT. The abbreviation STNR is used if no significant movement is expected.

Examples:

MOV E 25KT

STNR

Compliance Note. — When also including a forecast position, care may be taken to ensure that the rate of movement and forecast position are consistent.

10. Expected changes in intensity

The expected evolution of the phenomenon's intensity is indicated by one of the following abbreviations:

INTSF

or

WKN

or

NC

11. Forecast position of the hazardous phenomena at the end of the validity period of the SIGMET message

Compliance Note. — NAMCARs Part 174 enables SIGMET to contain explicit forecast position information relating to hazardous phenomena other than volcanic ash or tropical cyclone.

FCST <GGgg>Z

11.1 FCST is mandatory for this section. The **GGggZ** group may indicate the end of validity period as given in the first line of the SIGMET message.

Note. — In accordance with NAMCARs Part 2 – Units of Measurement to be Used in Air and Ground Operations, when the validity period ends at midnight, YY may be set for the following day and GGgg may be '0000'. i.e. SIGMET validity ending at midnight on the 23rd day of the month may be expressed as '240000'.

11.2 The forecast position of the phenomenon is given with reference to geographical coordinates (latitude and longitude). Latitude and longitude may be reported in degrees, or in degrees and minutes. When reporting in degrees the format will be **Nnn** or **Snn** for latitude, and **Ennn** or **Wnnn** for longitude. When reporting in degrees and minutes the format will be **Nnnnn** or **Snnnn** for latitude, and **Ennnnn** or **Wnnnnn** for longitude. The MWOs may try to be as specific as possible in reporting the location of the phenomenon and, at the same time, to avoid overwhelming the SIGMET with too many coordinates, which may be difficult to process or follow when transmitted via voice radio.

11.3 The following are the possible ways to describe the forecast position of the phenomenon:

a) An area of the FIR defined by a polygon. Minimum 43 coordinates, and not normally more than 7 coordinates. This is the format preferred operationally by users.

Symbolically, this is indicated as:

WI <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> -
<Nnn[nn]> or<Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> -
<Nnn[nn]> or<Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> -
<Nnn[nn]> or<Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> -
<Nnn[nn]> or<Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>
<Nnn[nn]> or<Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>
<Nnn[nn]> or<Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>

For example:

WI N6030 E02550 – N6055 E02500 – N6050 E02630 – N6030 E02550

WI N60 E025 – N62 E27 - N58 E030 - N59 E26 - N60 E025

Compliance Note. — The points of a polygon may be provided in a clockwise order, and the end point may be a repeat of the start point.

b) In a sector of the FIR defined relative to specified line joining two points on the FIR boundary4.

Symbolically, this is indicated as:

<N OF> or <NE OF> or <E OF> or <SE OF> or <S OF> or <SW OF> or <W OF> or <NW OF> LINE <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>

For example:

NE OF LINE N2500 W08700 – N2000 W08300

W OF LINE N20 E042 – N35 E045

c) In a sector of the FIR defined relative to a line of latitude and a line of longitude (effectively a quadrant);

Symbolically this is indicated as:

<N OF> or <S OF> or <Nnn[nn]> or <Snn[nn]> AND <E OF> or <W OF> <Wnnn[nn]> or <Ennn[nn]>

For example:

N OF N1200 AND E OF W02530

S OF N60 W OF E120

d) In a sector of the FIR defined relative to a line of latitude or longitude (effectively a segment), where a coordinate of latitude (or longitude) defines a line, and the preceding descriptor defines on which side of the line the phenomena is expected

Symbolically, this is indicated as:

<N OF> or <S OF> <Nnn[nn]> or <Snn[nn]> or
<E OF> or <W OF> <Wnnn[nn]> or <Ennn[nn]>

For example:

N OF S2230

W OF E080

e) At a specific point within the FIR, indicated by a single coordinate of latitude and longitude.

Symbolically this is indicated as:

<Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> - <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>

For example:

N5530 W02230

S23 E107

Compliance Note. — Currently, there is no provision for indicating changes to the levels affected by phenomena between the initial position and the forecast position. As such, and as per footnote 31 to Table A6-1 of NAM-CATS Part 174 MET Appendices, it may be assumed that the levels affected remain the same for both initial and forecast positions.

12. Structure of the meteorological part of SIGMET for volcanic ash

12.1 The general structure of the meteorological part of the SIGMET message for volcanic ash is given in the table below.

1	2	3	4	5	6	7	8
Name of the FIR/UIR or CTA	Name and location of the volcano and/or indicator for VA cloud	Time of observation or forecast	Location	Level and extent of the volcanic ash cloud	Movement or expected movement	Changes in intensity	Forecast position
See 3.5.4.2	See 3.5.4.3	See 3.5.4.4	See 3.5.4.5	See 3.5.4.6	See 3.5.4.7	See 3.5.4.8	See 3.5.4.9

Table 6: Elements making up the meteorological part of VA SIGMET

12.2 Name of the FIR/UIR or CTA

CCCC <name> FIR[/UIR]
or
CCCC <name> CTA

The ICAO location indicator and the name of the FIR/CTA are given followed by the appropriate abbreviation: FIR, FIR/UIR or CTA. The name may consist of up to 10 characters.

Examples:

HAAA ADDIS ABABA FIR

12.3 Name and location of the volcano and/or indicator for VA cloud

There are three combinations that may be used in this section.

a) If the location of the eruption is known but is un-named then the following format is appropriate:

VA ERUPTION PSN <lat,lon> VA CLD

Where 'VA ERUPTION' is mandatory. 'PSN' is an abbreviation for 'position', followed by the latitude and longitude, followed by the mandatory 'VA CLD'.

b) If the erupting volcano is known and named then the following format is appropriate:

VA ERUPTION MT <NAME> PSN <lat,lon> VA CLD

Where 'VA ERUPTION' is mandatory. 'MT' is an abbreviation for 'mountain' to be followed by the volcano's name. 'PSN' is an abbreviation for 'position', followed by the latitude and longitude, followed by the mandatory 'VA CLD'.

c) If the source of the volcanic ash is uncertain, then the following format is appropriate:

VA CLD

The location (latitude and longitude) of the volcano, when known and reported, may be reported in degrees, or in degrees and minutes. When reporting in degrees the format will be **Nnn** or **Snn** for latitude, and **Ennn** or **Wnnn** for longitude. When reporting in degrees and minutes the format will be **Nnnnn** or **Snnnn** for latitude, and **Ennnnn** or **Wnnnnn** for longitude.

For example:

VA ERUPTION PSN N27 W017 VA CLD

VA ERUPTION MT NYAMURAGIRA PSN S0124 E2960VA CLD

d) Time of observation or forecast

OBS AT <GGgg>Z
or
FCST AT <GGgg>Z

The time of observation is taken from the source of the observation – satellite image, special air- report, report from a volcano observing station, etc. If the VA cloud is not yet observed over the FIR but the volcanic ash advisory received from the responsible VAAC indicates that the cloud is going to affect the FIR within the next 12 hrs, SIGMET may be issued according as above and the abbreviation **FCST AT <GGgg>Z** may be used.

Examples:

OBS AT 0100Z

FCST AT 1200Z

e) Location of the phenomenon

The location of the phenomenon is given with reference to geographical coordinates (latitude and longitude). Latitude and longitude may be reported in degrees, or in

degrees and minutes. When reporting in degrees the format will be **Nnn** or **Snn** for latitude, and **Ennn** or **Wnnn** for longitude. When reporting in degrees and minutes the format will be Nnnnn or Snnnn for latitude, and **Ennnnn** or **Wnnnnn** for longitude. The MWOs may try to be as specific as possible in reporting the location of the phenomenon and, at the same time, to avoid overwhelming the SIGMET with too many coordinates, which may be difficult to process or follow when transmitted by voice communication.

The following are the possible ways to describe the location of the VA phenomenon:

a) An area of the FIR defined by a polygon. Minimum 4 coordinates (Including the last point as a repeat of the first point to explicitly close the polygon), and not normally more than 7 coordinates. This is the format preferred operationally by users.

Symbolically, this is indicated as:

WI <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> -
<Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> -
<Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> -
<Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> -
<Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> -
<Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> -
<Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>

For example:

WI N6030 E02550 – N6055 E02500 – N6050 E02630 – N6030 E02550

WI N60 E025 – N62 E27 - N58 E030 - N59 E26 - N60 E025

Compliance Note. — The points of a polygon may be provided in a clockwise order, and the end point may be a repeat of the start point.

Use of polygons with complex FIR boundaries.

NAMCARs Part 174 specifies that the points of a polygon '... may be kept to a minimum and may not normally exceed seven'. However, some FIR boundaries are complex, and it would be unrealistic to expect that a polygon would be defined that followed such boundaries exactly. As such, some States have determined that the polygon points be chosen in relation to the complex boundary such that the FIR boundary approximates, but is wholly encompassed by, the polygon, and that any additional area beyond the FIR boundary be the minimum that can be reasonably and practically described. Caution may however be exercised in those instances where international aerodromes are located in close proximity to such a complex FIR boundary.

b) Covering the entire FIR or CTA (this is only permitted for volcanic ash)

ENTIRE FIR
or
ENTIRE CTA

For describing an area of volcanic ash by reference to a zone defined by line of specified width, see the 'Level and extent' section that follows.

f) Level and extent of the volcanic ash cloud

When the Location of volcanic ash is described using the available descriptors in the 'Location section', the Level of the volcanic ash may be described using descriptors used for other phenomena, i.e.

FLnnn
or
SFC/FLnnn
or
SFC/nnnnM
or
SFC/nnnnFT
or
FLnnn/nnn
or
TOP FLnnn
or
ABV FLnnn
or
TOP ABV FLnnn

In more detail, the location or extent of the phenomenon in the vertical is given by one or more of the above methods, as follows:

a) reporting at a single flight level

For example:

FL320

b) reporting a layer extending from the surface to a given height in meters or feet

For example:

SFC/3000M

SFC/9900FT

c) reporting a layer extending from a given FL to a higher flight level

For example:

FL250/FL290

d) reporting a layer where the base is unknown, but the top is given:

For example:

TOP FL350

e) reporting a layer where the top is unknown, but the base is given:

For example:

ABV FL350

Where it is preferred to describe the area affected by volcanic ash by describing a zone defined by a line of specified width (rather than a polygon), the following level/extent combination may be used:

FL<nnn/nnn> <nnn>KM WID LINE BTN [<(lat,lon)P1 - (lat,lon)P2 - ... >]
or
FL<nnn/nnn> <nnn>NM WID LINE BTN [<(lat,lon)P1 - (lat,lon)P2 - ... >]

Example:

FL150/210 50KM WID LINE BTN S0530 E09300 – N0100 E09530 – N1215 E11045 – N1530 E01330

If the VA cloud spreads over more than one FIR, separate SIGMETs may be issued by all MWOs whose FIRs are affected. In such a case, the description of the volcanic ash cloud by each MWO may encompass the part of the cloud, which lies over the MWO's area of responsibility. The MWOs may try and keep the description of the volcanic ash clouds consistent by checking the SIGMET messages received from the neighbouring MWOs.

g) Movement or expected movement of the VA cloud

MOV <direction> <speed> KT
or
STNR

The direction of movement is given by the abbreviation MOV (moving), followed by one of the sixteen points of compass: N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW, WSW, W, WNW, NW and NNW. The speed of movement is given in KT.

Examples:

MOV SSW 20KT
STNR

Compliance Note. — When also including a forecast position, care may be taken to ensure that the rate of movement and forecast position are consistent

h) Expected changes in intensity

The expected evolution of the phenomenon's intensity is indicated by one of the following abbreviations:

INTSF
or
WKN
or
NC

i) Forecast position of the Volcanic Ash cloud at the end of the validity period of the SIGMET message

The area affected by a volcanic ash cloud at the end of the validity period can be described in the following ways.

As a polygon, using the following format:

FCST <GGgg>Z VA CLD APRX <(lat,lon)^{P1} - (lat,lon)^{P2} - … >

Example:

FCST 1800Z VA CLD APRX N6300 W02000 – N6030 W01700 – N5815 W02230 – N6100 W02400 – N6300 W02000...

or, as a line of ash (of specified width in KM) defined by a sequence of coordinates

FCST <GGgg>Z VA CLD APRX nnKM WID LINE BTN <(lat,lon)P1 - (lat,lon)P2 - … >

Example:

FCST 1800Z VA CLD APRX 90KM WID LINE BTN S4000 W09000 – S4300 W08500 – S3800 W07500 - S4500 W06000...

or, as a line of ash (of specified width in NM) defined by a sequence of coordinates

FCST <GGgg>Z VA CLD APRX nnNM WID LINE BTN <(lat,lon)P1 - (lat,lon)P2 - … >

Example:

FCST 1800Z VA CLD APRX 55NM WID LINE BTN S4000 W09000 – S4300 W08500 – S3800 W07500 - S4500 W06000...

The **GGggZ** group may indicate the end of validity period as given in the first line of the SIGMET message. The description of the expected position of the volcanic ash cloud is given by a number of points forming a simplified geometrical approximation of the cloud.

Compliance Note. — Currently, there is no provision for indicating changes to the levels affected by volcanic ash between the initial position and the forecast position. As such, as per footnote 31 to Table A6-1 of NAM-CATS Part 174 MET Appendices, it may be assumed that the levels affected remain the same for both initial and forecast positions.

Inclusion of multiple instances of volcanic ash phenomena.

Footnote 26 of Table A6-1 permits the word 'AND' in the 'Forecast position' section "To be used for [describing] two volcanic ash clouds or two centres of tropical cyclones simultaneously affecting the FIR concerned".

13. Structure of the meteorological part of SIGMET for tropical cyclone

13.1 The general structure of the meteorological part of the SIGMET messages for tropical cyclone is given in the table below.

1	2	3	4	5	6	7	8
Name of the FIR/UIR or CTA	Name of the tropical cyclone	Time of observation or forecast	Location of the TC centre	Vertical and horizontal extent of the CB cloud formation around TC centre	Movement or expected movement	Changes in intensity	Forecast position
See 3.5.5.2	See 3.5.5.3	See 3.5.5.4	See 3.5.5.55	See 3.5.5.6	See 3.5.5.7	See 3.5.5.8	See 3.5.5.9

Table 7: Elements making up the meteorological part of TC SIGMET

13.2 Name of the FIR/UIR or CTA

CCCC <name> FIR[/UIR]
or
CCCC <name> CTA

The ICAO location indicator and the name of the FIR/CTA are given followed by the appropriate abbreviation: FIR, FIR/UIR or CTA. The name may consist of up to 10 characters.

Example:

FQEB MAPUTO FIR

13.3 Name of the tropical cyclone

TC <name> (up to 10 characters, or 'NN' if not named)

The description of the tropical cyclone consists of the abbreviation TC followed by the international name of the tropical cyclone given by the corresponding WMO RSMC. If disturbance is expected to become a TC but is not named at the time the forecast is issued, 'NN' is used for the TC name.

Examples:

TC GLORIA

TC 04B

TC NN

13.4 Time of observation or forecast

OBS AT <GGgg>Z
or
FCST AT <GGgg>Z

The time in UTC is given in hours and minutes, followed by the indicator Z. Normally, time is taken from the MWO's own observations or from a TC advisory received from the responsible TCAC. If the TC is not yet observed in the FIR but the tropical cyclone advisory received from the responsible TCAC, or any other TC forecast used by the MWO, indicates that the TC is going to affect the FIR within the next 12 hrs, SIGMET may be issued and the abbreviation **FCST AT <GGgg>Z** may be used.

Examples:

OBS AT 2330Z
FCST AT 0900Z

13.5 Location of the TC centre

<location>

The location of the TC centre is given by its lat/long coordinates in degrees or degrees and minutes.

Example:

N1535 E14230

13.6 Vertical and horizontal extent of the CB cloud formation around TC centre

CB TOP [ABV or BLW] <FLnnn> WI <nnnKM or nnnNM> OF CENTRE

Examples:

CB TOP ABV FL450 WI 200NM OF CENTRE

CB TOP FL500 WI 250KM OF CENTRE

CB TOP BLW FL550 WI 250NM OF CENTRE

13.7 Movement or expected movement

MOV <direction> <speed>KMH[KT]
or
STNR

The direction of movement is given by the abbreviation MOV (moving), followed by one of the sixteen points of compass: N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW, WSW, W, WNW, NW, and NNW. The speed of movement is given in KMH or KT.

Examples:

MOV NNW 30KMH

MOV E 25KT

13.8 Intensity change

The expected change of the intensity of the tropical cyclone is indicated by one of the following abbreviations:

INTSF

or

WKN

or

NC

13.9 Forecast Position of the TC centre at the end of the validity period of the SIGMET message

FCST <GGgg>Z TC CENTRE <location>

The time given by GGggZ may be the same as the end of validity period indicated in the first line of the SIGMET message. Since the period of validity is up to 6 hours (normally, 6 hours), this is a 6- hour forecast of the position of the TC centre.

The forecast position of the TC centre is given by its lat/long coordinates following the general rules of reporting lat/long information.

Example:

FCST 1200Z TC CENTRE N1430 E12800

Inclusion of multiple instances of Tropical Cyclone phenomena.

Footnote 26 of Table A6-1 of NAM-CATS Part 174 MET Appendices permits the word 'AND' in the 'Forecast position' section "To be used for [describing] two volcanic ash clouds or two centres of tropical cyclones simultaneously affecting the FIR concerned".

14. Cancellation of SIGMET

14.1 NAMCARs Part 174 (174.09.1) requires that "SIGMET information shall be cancelled when the phenomena are no longer occurring or are no longer expected to occur in the area".

14.2 As such, it is mandatory for an MWO to cancel any SIGMET that is currently valid but for which the specified phenomena no longer exist or is expected not to exist.

14.3 The cancellation is done by issuing the same type of SIGMET i.e. WS, WV or WC with the following structure:

- WMO heading with the same data type designator;
- First line that contains as period of validity the remaining time of the original period of validity;
- Second line, which contains the name of the FIR or CTA, the combination CNL SIGMET, followed by the sequence number of the original SIGMET and its original validity period.

14.4 A cancellation SIGMET may have a unique sequence number and may follow the format below.

For a SIGMET that is cancelled during its period of validity, the cancellation SIGMET will be of the form:

As an example, an original SIGMET of:

DGAC SIGMET A01 VALID 260300/260700 DGAA- DGAC ACCRA FIR EMBD TS FCST WI 120NM OF S1542 E9530 TOP FL450 MOV SW 5KT INTSF=

If it were to be cancelled early i.e. prior to 0700 UTC, then the following would be appropriate:

DGAC SIGMET A02 VALID 260600/260700 DGAA-
DGAC ACCRA FIR CNL SIGMET A01 260300/260700=

Where:

- the sequence number will be the next incrementing, unique sequence number.
- the validity time will be the time remaining between issuance and the end time of the original SIGMET.
- the sequence number of the original (and to be cancelled) SIGMET shall follow 'CNL SIGMET '.
- the original validity time of the original (and to be cancelled) SIGMET shall be included in the message after the reference to the original SIGMET's sequence number.

For SIGMET for volcanic ash only, the following is permitted:
WSCD31 FTTJ 202155
FTTT SIGMET E03 VALID 202155/210000 FTTJ-
FTTT NDJAMENA FIR CNL SIGMET E01 202000/210000 VA MOV TO WXYX FIR=

Where the FIR (FTTT in the example) into which the volcanic ash has moved is indicated.

15. Amendment of SIGMET

15.1 If it is known that an existing SIGMET no longer accurately describes the existing or expected future evolution of the phenomenon, a new SIGMET, correctly describing the hazard may be issued, followed immediately by a cancellation of the original, erroneous SIGMET. The new SIGMET may be issued before the cancellation in order to ensure there is always a SIGMET in force and that the cancellation is not

mistakenly understood to mean that the hazard has completely dissipated.

15.2 Originally issued SIGMET, later determined to no longer be accurate (bold text identifies points that will be changed):

WSCG21 FCBB 201855
FCCC SIGMET E01 VALID 202000/210000 FCBB-
FCCC BRAZZAVILLE FIR SEV TURB FCST WI S1530 E13700
- S1900 E13730 –
S2000 E13130 - S1600 E13500 - S1530 E13700 SFC/FL120
MOV SE 12KT WKN=

15.3 Updated SIGMET (bold text identifies points that have been changed):

WSCG21 FCBB 202155
FCCC SIGMET E02 VALID 202200/210000 FCBB –
FCCC BRAZZAVILLE FIR SEV TURB FCST WI S1530 E13700
- S2000 E13750–
S2045 E13245 - S1600 E13500 - S1530 E13700 SFC/FL120
MOV SE 12KT WKN=

15.4 Cancellation SIGMET (this cancels the original SIGMET):

WSCG21 FCBB 202155
FCCC SIGMET E03 VALID 202155/210000 FCBB –
FCCC BRAZZAVILLE FIR CNL SIGMET E01 202000/210000=

16. Dissemination of SIGMET

16.1 SIGMET is part of operational meteorological (OPMET) information. According to NAMCARs Part 174, the telecommunication facilities used for the exchange of the operational meteorological information may be the aeronautical fixed service (AFS).

16.2 The AFS consists of a terrestrial segment, AFTN/AMHS or ATN, and a satellite segment which comprises the SADIS provided by WAFC London, as well as the Internet-based Secure SADIS FTP and WIFS services provided by WAFC London and WAFC Washington respectively. Note that SIGMET priority indicator is FF for flight safety messages (NAMCARs Part 171, 171.05.2 refers).

16.3 Currently, AFTN links may be used by the MWOs to send the SIGMET, as follows:

- to the adjacent MWOs and ACCs (For this dissemination it is required that SIGMET is available at the ACCs for transmission to aircraft in flight for the route ahead up to a distance corresponding to two hours flying time) using direct AFTN addressing;

- when required for VOLMET or D-VOLMET, SIGMET may be sent to the relevant centre providing the VOLMET service;

- SIGMET may be sent to both Dakar and Pretoria AFI OPMET Data Banks (RODBs);
- SIGMET may be relayed to the SADIS providers for satellite/public internet dissemination, as well as to the WAFCs London and Washington, through the AMBEX scheme, via AFI Interregional OPMET Gateways (IROGs).
- SIGMET for volcanic ash may be disseminated to the responsible VAAC (Toulouse).

16.4 Through SADIS, SIGMET is disseminated to all authorised users. In this way, SIGMET is available on a global basis, meeting the aeronautical requirements.

17. AFI REGIONAL SIGMET TEST PROCEDURES

CHAPTER I REGIONAL SIGMET TEST PROCEDURES

1. Introduction

1.1 The Meteorology Divisional Meeting (2002) formulated Recommendation **1/12 b)**, Implementation of SIGMET requirements, which called, inter alia, for the AFI planning and implementation regional group (APIRG) to conduct periodic tests of the issuance and reception of SIGMET messages, especially those for volcanic ash.

1.2 This pamphlet describes the procedures for conducting regional SIGMET tests as described in this pamphlet. The test procedures encompass all the three types of SIGMET, as follows:

SIGMET for volcanic ash (WV SIGMET); SIGMET for tropical cyclone (WC SIGMET); and SIGMET for other weather phenomena (WS SIGMET).

1.3 The requirements for dissemination of SIGMET are specified in NAM-CATS Part 174 MET Appendices, Appendix 6, 1.2 and in paragraph 16 to this SIGMET pamphlet.

1.4 Tropical cyclone and volcanic ash cloud SIGMETs will be referred to hereafter as WC SIGMET (due to the T1T2 section of the WMO AHL being set to WC) and WV SIGMET (due to the T1T2 section of the WMO AHL being set to WV) respectively. All other SIGMET types will be referred to by WS (due to the T1T2 section of the WMO AHL being set to WS).

2. Purpose and scope of regional SIGMET tests

2.1 The purpose of the regional SIGMET tests is to check the awareness of participating MWOs of the ICAO requirements for the issuance of SIGMET and the compliance of the States' procedures for preparation and dissemination of SIGMET bulletins with the relevant ICAO Standards and Recommended Practices (SARPs) and regional procedures.

Compliance Note, an MWO is at liberty to issue SIGMET test messages for local reasons (i.e. testing of local systems/routing etc.). Whilst such tests may not involve other MWOs or agencies directly, it is recommended that the general principles of this guide be followed with regard to local, ad hoc testing.

2.2 Hereafter, references to 'SIGMET tests' or 'tests' may be understood to refer to regional SIGMET tests.

2.3 The scope of the tests is to check also the interaction (where appropriate, depending on regional requirements) between the tropical cyclone advisory centres (TCAC) and volcanic ash advisory centres (VAAC), and the MWOs in their areas of responsibility. Therefore, where the issuance of WC and WV

SIGMET is being tested, the TEST SIGMET messages initiated by the MWO may normally be triggered by a test advisory issued by the respective TCAC or VAAC.

2.4 Dakar and Pretoria regional OPMET data banks (RODB) will monitor the dissemination by filing all TEST SIGMETs and advisories and the corresponding reception times. The monitoring results for WC, WV and WS SIGMET will be provided in the form of summaries to the SIGMET test focal points given in section 7 with a copy to the ICAO Regional Office Dakar and Nairobi.

2.5 A consolidated summary report will be prepared by both the SIGMET test focal points and submitted to the ICAO regional office Dakar and Nairobi. The report will include recommendations for improvement of the SIGMET exchange and availability. The results of the tests may be reported to the AFI Infrastructure and Information Management Sub-Group (IIM/SG) meetings.

2.6 Participating States, for which discrepancies of the procedures or other findings are identified by the tests, will be advised by the ICAO Regional Office and requested to take necessary corrective action.

3. SIGMET test procedures

3.1 Procedures for WC and WV SIGMET tests

3.1.1 Participating units

3.1.1.1 AFI Tropical Cyclone Advisory Centre (TCAC): La Réunion

3.1.1.2 AFI Volcanic Ash Advisory Centre (VAAC): Toulouse

3.1.1.3 AFI Regional OPMET Data Banks (RODB): Dakar and Pretoria

3.1.1.4 AFI Meteorological Watch Offices (MWO): AFI FASID Table MET 1B

3.1.2 WV/WC SIGMET test messages

3.1.2.1 On the specified date for the test Time (UTC) to be agreed by ICAO Dakar and Nairobi regional Offices, the participating VAAC and/or TCAC may issue a TEST VA and/or TC advisory. The structure of the TEST advisories may follow the standard format given in NAMCARs Part 174 with indication that it is a test message.

3.1.2.2 MWOs, upon receipt of the TEST VA or TC advisory, may issue a TEST SIGMET for volcanic ash (WV) or tropical cyclone (WC), respectively, and send it to all participating RODBs. The WMO AHL, the first line

of the SIGMET, and the FIR reference in the second line of the SIGMET may be valid entries. The remainder of the body of the message may contain only the specified text informing recipients in plain language that the message is a test. TEST SIGMETs may normally have short validity periods (10 minutes), but where appropriate TEST SIGMET may be issued with validity periods up to the maximum allowed (4 hours for WS, 6 hours for WC and WV').

3.1.2.3 If the MWO does not receive the TEST VA or TC advisory within 30 minutes of the commencement time of the test, then they may still issue a TEST SIGMET indicating that the VAA or TCA was not received.

3.1.2.4 To avoid over-writing of a valid SIGMET, a TEST SIGMET for VA or TC may not be sent in the case where there is a valid SIGMET of the same type for the MWO's area of responsibility.

3.1.2.5 However, in this case the responsible MWO may notify the WV/WC SIGMET test focal point as given in **ATTACHMENT C-2** so that they can be excluded from the analysis.

3.2 Procedures for WS SIGMET tests

Compliance Note. — The WS SIGMET is initiated by the Pretoria RODB for the trigger designated time. It is not initiated by an advisory as in the WC and WV SIGMET tests.

3.2.1 Participating units

3.2.1.1 AFI Regional OPMET Data Banks (RODB): Dakar and Pretoria

3.2.1.2 AFI Meteorological Watch Offices (MWO)

3.2.2 WS SIGMET Test Message

3.2.2.1 The MWOs may issue a TEST SIGMET during the 10-minute period between Time (UTC) to be agreed with the Pretoria RODB.

3.2.2.2 The WMO AHL, the first line of the SIGMET, and the FIR reference in the second line of the SIGMET may be valid. The remainder of the body of the message may contain only the specified text informing recipients in plain language that the message is a test. TEST SIGMETs may normally have short validity periods (10 minutes), but where appropriate TEST SIGMET may be issued with validity

periods up to the maximum allowed (4 hours for WS, 6 hours for WC and WV'.

3.3 Common procedures

3.3.1 Special procedure to avoid overwriting of a valid WV/WC/WS SIGMET

3.3.1.1 It is vital to ensure that TEST SIGMET is unique so that it is not confused with operational SIGMET and avoid overwriting a valid operational SIGMET in an automated system. In order to prevent this, it is suggested that Test SIGMETs will:

a. use the next normally available sequence number for test SIGMET messages or the first available sequence number of any pre-defined letter assigned to test SIGMETs for those States identifying SIGMETs using an alphanumerical sequence number (ex: T1 or Z99); and
b. include a line with the word "TEST" twelve (12) times at the end of the SIGMET test message.

For example, a SIGMET test is scheduled for 0200 UTC on the 29th. The TEST SIGMET is issued as follows:

WSSG31 GOOY 290200 GOOO SIGMET Z99
VALID 290200/290210 GOOY- GOOO DAKAR
FIR TEST SIGMET PLEASE DISREGARD=

3.3.2 The test date and time

3.3.2.1 ICAO Dakar and Nairobi Regional Offices will set a date and time for each SIGMET test after consultation with the participating VAAC, TCAC and RODBs. The information about the agreed date and time will be sent to all States concerned by a State letter and copied to the States' SIGMET Tests Focal Points.

3.3.2.2 Tests for different types of SIGMET may preferably be conducted on separate dates.

3.3.2.3 SIGMET tests for WC, WV and WS may be conducted at least yearly.

3.4 Dissemination of test SIGMETs and advisories

3.4.1 All TEST TC/VA advisories may be sent by the La reunion TCAC and Toulouse VAAC to the participating units, as specified in the AFI Regional Air Navigation

Plan. The relevant AFTN addresses are listed in Attachment C-1 to this Annex C.

3.4.2 All TEST SIGMETs may be sent by the MWOs to the participating units, as specified in the AFI Regional Air Navigation Plan. The relevant AFTN addresses are listed in Attachment C-1 to this Annex C.

3.4.3 Dakar and Pretoria RODBs nominated as AFI IROGs will relay the test bulletins to their corresponding IROG.

3.4.4 SIGMET tests may be terminated within two (2) hours of the test start time. Exceptionally, where the test requires SIGMETs to be valid for up to 4 hours, then tests may be extended to a maximum of 4 hours for WS SIGMET and 6 hours for WC and WV SIGMET.

3.5 Coordination with the ATS units

3.5.1 MWOs may inform the associated ATS units of the forthcoming SIGMET tests by a suitable advanced notice.

3.5.2 Processing of the test messages and results

3.5.2.1 The RODBs may file all incoming TEST advisories and SIGMETs and perform an analysis of the availability, timeliness of arrival and the correctness of the WMO bulletin headings. A SIGMET TEST Summary Table, as shown in Chapter II to this Appendix, may be prepared by each RODB and sent to the regional SIGMET test focal point given in section 3.5.2.3, with a copy to the ICAO Regional Office.

3.5.2.2 The SIGMET test focal points may prepare the final report of the test and present to the ICAO Regional Office. A summary report may be submitted to the next AFI Infrastructure and Information Management Sub-Group (IIM/SG) meetings.

3.5.2.3 The current SIGMET test focal points for the AFI Region are listed in Attachment C-2 to this Appendix C

ATTACHMENT 1 TO APPENDIX C: SIGMET TEST PROCEDURES

Format of TEST Advisories and SIGMETs

1. Format of TEST Volcanic Ash Advisory

VA ADVISORY
DTG: YYYYMMDD/0200Z
VAAC: <<NAME OF VAAC>>
VOLCANO: TEST
PSN: UNKNOWN
AREA: <<NAME OF VAAC>> VAAC AREA
SUMMIT ELEV: UNKNOWN
ADVISORY NR: YYYY/nn
INFO SOURCE: NIL
AVIATION COLOUR CODE: NIL
ERUPTION DETAILS: NIL
OBS VA DTG: DD/GGggZ
OBS VA CLD: ASH NOT IDENTIFIABLE FROM SATELLITE DATA
FCST VA CLD +6 HR: DD/0800Z SFC/FL600 NO ASH EXP
FCST VA CLD +12 HR: DD/1400Z SFC/FL600 NO ASH EXP
FCST VA CLD +18 HR: DD/2000Z SFC/FL600 NO ASH EXP
RMK: THIS IS A TEST VA ADVISORY. MWO SHOULD NOW ISSUE A TEST SIGMET FOR VA.
PLEASE REFER TO THE LETTER FROM <<REGION>> REGIONAL OFFICE DATED xxxxxxxxxx.
NXT ADVISORY: NO FURTHER ADVISORIES=

2. Format of TEST Tropical Cyclone Advisory

TC ADVISORY
DTG: YYYYMMDD/0200Z
TCAC: <<NAME OF TCAC>>
TC: TEST
NR: nn (actual number)
PSN: NIL
MOV: NIL
C: NIL
MAX WIND: NIL
FCST PSN +06HR: NIL
FCST MAX WIND +06HR: NIL
FCST PSN +12HR: NIL
FCST MAX WIND +12HR: NIL
FCST PSN +18HR: NIL
FCST MAX WIND +18HR: NIL
FCST PSN +24HR: NIL
FCST MAX WIND +24HR: NIL
RMK: THIS IS A TEST TC ADVISORY. MWO SHOULD NOW ISSUE A TEST SIGMET FOR TC.
PLEASE REFER TO THE LETTER FROM <<REGION>> REGIONAL OFFICE DATED xxxxxxxxxx.

NXT MSG: NIL=

3. Format of TEST SIGMET for Volcanic Ash

WVXXii CCCC YYGGgg
CCCC SIGMET Z99 VALID YYGGgg/YYGGgg CCCC-
CCCC <<NAME>> FIR THIS IS A TEST SIGMET, PLEASE DISREGARD.
TEST VA ADVISORY NUMBER xx RECEIVED AT YYGGggZ=

or

WVXXii CCCC YYGGgg
CCCC SIGMET Z99 VALID YYGGgg/YYGGgg CCCC-
CCCC <<NAME>> FIR THIS IS A TEST SIGMET, PLEASE DISREGARD.
TEST VA ADVISORY NOT RECIEVED=

Examples:

WVJP31 RJTD 170205
RJJJ SIGMET Z99 VALID 170205/170215 RJTD-
RJJJ FUKUOKA FIR THIS IS A TEST SIGMET, PLEASE DISREGARD.
TEST VA ADVISORY NUMBER 1 RECEIVED AT 170200Z=

WVJP31 RJTD 170205
RJJJ SIGMET Z99 VALID 170205/170215 RJTD-
RJJJ FUKUOKA FIR THIS IS A TEST SIGMET, PLEASE DISREGARD.
TEST VA ADVISORY NOT RECEIVED=

4. Format of TEST SIGMET for Tropical Cyclone

WCXXii CCCC YYGGgg
CCCC SIGMET Z99 VALID YYGGgg/YYGGgg CCCC-
CCCC <<NAME>> FIR THIS IS A TEST SIGMET, PLEASE DISREGARD.
TEST TC ADVISORY NUMBER xx RECEIVED AT YYGGggZ=

WCXXii CCCC YYGGgg
CCCC SIGMET Z99 VALID YYGGgg/YYGGgg CCCC-
CCCC <<NAME>> FIR THIS IS A TEST SIGMET, PLEASE DISREGARD.
TEST TC ADVISORY NOT RECEIVED=

Example:
WCJP31 RJTD 100205
RJJJ SIGMET Z99 VALID 100205/100215 RJTD-
RJJJ FUKUOKA FIR THIS IS A TEST SIGMET, PLEASE DISREGARD.
TEST TC ADVISORY NUMBER 1 RECEIVER AT 180200Z=

WCJP31 RJTD 100205
RJJJ SIGMET Z99 VALID 100205/100215 RJTD-
RJJJ FUKUOKA FIR THIS IS A TEST SIGMET, PLEASE DISREGARD.
TEST TC ADVISORY NOT RECEVED=

5. Format of TEST SIGMET for other weather phenomena

WSXXii CCCC YYGGgg
CCCC SIGMET Z99 VALID YYGGgg/YYGGgg CCCC-
CCCC <<NAME>> FIR THIS IS A TEST SIGMET, PLEASE DISREGARD=

Example:
WSJP31 RJTD 240205
RJJJ SIGMET Z99 VALID 240205/240215 RJTD-
RJJJ FUKUOKA FIR THIS IS A TEST SIGMET, PLEASE DISREGARD=

CHAPTER II

SAMPLE TABLE TO USED BY REGIONAL OPMET DATA BANKS

Name of RODB Tokyo
Date of Test 2011/11/17
Target (VA or TC) VA

VA Advisories (FV)

TTAAii	*CCCC*	*YYGGgg*	*Received Time(UTC)*	*Comments/Remarks*
FVAK23	PAWU	170159	01:59:29	
FVAU01	ADRM	170201	02:01:53	
FVFE01	RJTD	170200	02:00:09	
FVPS01	NZKL	170207	02:08:27	
FVXX02	LFPW	170202	02:02:41	
FVXX25	KNES	170200	02:02:01	

VA SIGMET (WV)

TTAAii	*CCCC*	*YYGGgg*	*MWO*	*FIR*	*Received Time(UTC)*	*Comments/Remarks*
WVAK01	PAWU	170200	PAWU	PAZA	02:00:11	
WVAU01	ADRM	170201	YDRM	YBBB	02:02:04	
WVCI31	RCTP	170205	RCTP	RCAA	02:04:58	
WVCI33	ZBAA	170205	ZBAA	ZBPE	02:05:26	
WVCI34	ZSSS	170205	ZSSS	ZSHA	02:02:34	
WVCI35	ZJHK	170201	ZJHK	ZJSA	02:03:34	
WVCI36	ZUUU	170205	ZUUU	ZPKM	02:11:04	
WVCI37	ZLXY	170205	ZLXY	ZLHW	02:07:44	
WVCI38	ZYTX	170205	ZYTX	ZYSH	02:01:50	
WVCI39	ZWWW	170202	ZWWW	ZWUQ	02:02:40	
WVCI45	ZHHH	170204	ZHHH	ZHWH	02:08:52	
WVFJ01	NFFN	170000	NFFN	NFFF	02:15:46	
WVIN31	VOMM	170201	VOMM	VOMF	02:09:57	
WVJP31	RJTD	170205	RJTD	RJJJ	02:06:24	
WVKP31	ZUUU	170206	ZUUU	VDPP	02:12:23	
WVLA31	VLVT	170200	VLVT	VLVT	02:01:03	
WVMS31	WMKK	170205	WMKK	WBFC	02:04:28	
WVPA01	PHFO	170201	PHFO	KZAK	02:02:09	
WVPH31	RPLL	170210	RPLL	RPHI	02:08:43	
WVPN01	KKCI	170200	KKCI	KZAK	02:00:11	
WVRA31	RUCH	170205	RUCH	UIAA	02:08:01	
WVRA31	RUHB	170206	RUHB	UHHH	02:07:57	
WVRA31	RUMG	170205	RUMG	UHMM	02:08:59	
WVRA31	RUPV	170200	RUPV	UHMP	02:09:13	
WVRA31	RUSH	170205	RUSH	UHSS	02:04:22	
WVRA31	RUVV	170202	RUVV	UHWW	02:03:13	
WVRA32	RUPV	170200	RUPV	UHMA	02:06:01	
WVRA32	RUYK	170207	RUYK	UELL	02:07:28	
WVRA33	RUHB	170202	RUHB	UHBB	02:02:49	
WVSR20	WSSS	170205	WSSS	WSJC	02:05:38	
WVSS20	VHHH	170202	VHHH	VHHK	02:03:05	
WVTH31	VTBS	170211	VTBS	VTBB	02:13:53	
WVVS31	VVGL	170200	VVGL	VVNB	02:05:06	
WVVS31	VVGL	170208	VVGL	VVTS	02:14:38	

ATTACHMENT C-1: MWO AFTN ADDRESSES

MWO,RODB,VAAC,TCAC AND ACC/FIC Location	ICAO location indicator	AFTN Address /Adresse RSFTA			FIR/ACC SERVED	Confirmation Date/Date de confirmation
		MWO/CVM	ACC/CCR	FIC/CIV	ICAO location indicator	
1	2	3	4	5	6	7
ANGOLA 4 de Fevereiro	FNLU	**FNLUYMYX**	**FNANZAZX**	**FNANZQZX**	FNAN	02/05/2008
BOTSWANA Gaborone/Sir Seretse Khama Int	FBSK	**FBSKYMYX**	**FBGRZRZK**	**FBGRZRZX**	FBGR	18/03/2008
BURUNDI BUNJUMBURA	HBBA	**HBBAYMYX**	**HBBAZQZX**	**HBBAZQZX**	HBBA	
CHAD N'Djamena/Hassan Djamous International	FTTJ	**FTTJYMYX**	**FTTTZQZX** **FTTTZRZX** **FTTTZUZX** **FTTTZFZX**	**FTTTZIZX** **FTTTZFZX** **FTTTZQZX**	FTTT	15/04/2009. Fax N° 2009/000119/ASECNA/DEED/DEETT
CONGO BRAZZAVILLE/Maya-Maya	FCBB	**FCBBYMYX**	**FCCCZQZX** **FCCCZRZX** **FCCCZUZX** **FCCCZFZX**	**FCCCZQZX** **FCCCZFZX** **FCCCZIZX**	FCCC	15/04/2009. Fax N° 2009/000119/ASECNA/DEED/DEETT
D.R. CONGO KINSHASA/N'Djili	FZAA	**FZAAYMYX**	**FZAAZQZX**	**FZAAZQZX**	FZAA	18/01/2008. Email from ASECNA HQ (Sougué)
ERITREA ASMARA	HHAS	**HHASYMYX**	**HHASZQZX**	**HHASZQZX**	HHAA	
ETHIOPIA ADDIS ABABA/Bole Int	HAAB	**HAABYMYX**	**HAAAZQZX**	**HAAZQZX**	HAAA	07/03/2008
GHANA ACCRA/Kotoka International Airport	DGAA	**DGAAYMYX**	**DGACZQZX**	**DGACZQZX**	DGAC	24/12/2007. Email at 09:12 from Juati Ayilari-Naa
KENYA NAIROBI/Jomo Kenyatta	HKJK	**HKJKYMYX**	**HKNAZQZX**	**HKNAZQZX**	HKNA	10/03/2008
LIBERIA MONROVIA/Roberts International Airport	GLRB	**GLRBYMYX**	**GLRBZQZX**	**GLRBZQZX**	GLRB	
MADAGASCAR ANTANANARIVO/Ivato	FMMI	**FMMIYMYX**	**FMMIZTZX**	**FMMIZQZX**	FMMM	14/03/2008
MALAWI LILONGWE/Kamuzu Int.	FWKI	**FWKIYMYX**	**FWLLZQZX**	**FWLLZQZX**	FWLL	
MAURITIUS MAURITIUS/Seewoosagur Ramgoolam Int.	FIMP	**FIMPYMYX**	**FIMMZQZX**	**FIMMZQZX**	FIMM	17/03/2008
MOZAMBIQUE MAPUTO/Maputo Int	FQMA	**FQMAYMYX**	**FQBEZQZX**	**FQBEZIZX**	FQBE	07/03/2008
NAMIBIA WINDHOEK/Hosea Kutako	FYWH	**FYWHYMYX**	**FYNMZQZX**	**FYNMZQZX**	FYNM	06/03/2008
NIGER NIAMEY/Diori Hmani International Airport	DRRN	**DRRNYMYX**	**DRRRZQZX** **DRRRZRZX** **DRRRZUZX** **DRRRZFZX**	**DRRRZIZX** **DRRRZQZX** **DRRRZFZX**	DRRR	15/04/2009. Fax N° 2009/000119/ASECNA/DEED/DEETT
NIGERIA KANO/Mallam Aminu Kano International Airport	DNKN	**DNKNYMYX**	**DNKNZQZX**	**DNKNZQZX**	DNKK	07/01/2008. Email at 14:08 from Rahim Adewara
RWANDA KIGALI/Gregoire Kayibanda	HRYR	**HRYRYMYX**	**HRYRZQZX**	**HRYRZQZX**	HRYR	
SENEGAL DAKAR/ Leopold Sedar Sengor	GOOY	**GOOYYMYX**	**GOOOZQZX** **GOOOZRZX** **GOOOZUZX** **GOOOZFZX**	**GOOOZIZX** **GOOOZFZX** **GOOOZQZX** **GOOOZOZX**	GOOO	15/04/2009. Fax N° 2009/000119/ASECNA/DEED/DEETT
SEYCHELLES MAHE/Seychelles Intl.	FSIA	**FSIAYMYX**	**FSSSZQZX**	**FSSSZQZX**	FSSS	06/03/2008

SOMALIA MOGADISHU/Mogadishu	HCMM	HCMMYMYX	HCSMZQZX	HCSMZQZX	HCSM	
SOUTH AFRICA JOHANNESBURG/O.R. Tambo Int	FAOR	FAPRYMYX	FAJAZQZZ	FAJAZQZZ	FAJA FACA FAJO	26/09/2013
SUDAN KHARTOUM	HSSS	HSSSYMYX	HSSSZQZX	HSSSZQZX	HSSS	
TUNISIA TUNIS/Carthage	DTTA	DTTAYMYX	DTTCRZX	DTTCZRZX	DTTC	24/04/2009. Fax N° 01391 du 27 avril 2009
UGANDA ENTEBBE/Entebbe Int	HUEN	HUENYMYX	HUECZQZX	HUECZQZX	HUEC	
	HTDA	HTDAYMYX	HTDCZQZX	HTDCZQZX	HTDC	
ZAMBIA LUSAKA/Kenneth Kaunda	FLKK	FLKKYMYX	FLFIZQZX	FLFIZQZX	FLFI	25/03/2008
ZIMBABWE HARARE/Harare	FVHA	FVHAYMYX	FVHAZQZX	FVHAZQZX	FVHA	
RODB/BRDO Dakar DAKAR/Leopold Sedar Sengor		GOOYYZYZ	GOOYYZYZ	GOOYYZYZ		15/04/2009. N° 2009/000119/ASECNA/DEED/DEETT
RODB/ Pretoria RODB Pretoria		FAPRYMYX	FAPRYMYX	FAPRYMYX		
VAAC Toulouse ,France		LFPWYMYX				
TCAC La Reunion, France		FMEEYMYX	FMEEYAYX	FMEEYAYX	FMEE	

ATTACHMENT C-2: SIGMET TEST FOCAL POINTS
(It was not developed; we may use OPMET/AMBEX focal points)

OPMET FOCAL POINTS/LISTE DES POINTS DE CONTACT
(Updated July/Mise à jour 2015)

	State/*Etat/* Organisation	Name/*Nom et Prénom*	Address/*Adresse*	E-mail	Fax	Telephone
1	**Cameroon**	ABONDO Cyrille	Chef de Service de la Météorologie Aéronautique	abondocyrille@yahoo.com	+237 22 30 33 62	+ 237 22 30 30 90
2	**Congo**	**OLEMBE Alexis Laurence**	B.P. 218 Brazzaville Aéroport CONGO	aolembe@yahoo.fr	+242 282 00 51	+242 972 16 77 / +242 411 48 95
4	**Ethiopia**					
5	**Kenya**	Winstone Gicheru	Kenya Civil Aviation Authority, Box 30163 Nairobi	Wgicheru @kcaa.or.ke	+25420822300	+254 20 827470-5
6	**France**	Patrick SIMON	Météo-France, DSI/D/MSI, 42 avenue Coriolis, 31057 Toulouse cedex, FRANCE	Patrick.simon@meteo.fr	+261 202 258 115	+ 261 33 12 108 05 10 Morocco
7	**Liberia**					
8	**Madagascar**	RAKOTONDRIANA Jérôme **RABENASOLO**	Direction Générale de la Météo, BP 1254 Antananarivo	madagascarmto@asecna.org; jerome@asecna.mg mamyalain6@yahoo.fr	+261 202 258 115 +261 20 22 581 15	+ 261 33 12 108 05 +261 3410 034 54

		Mamitiana Alain	B.P. 46 Ivato Aéroport MADAGASCAR			
9	**Niger**	**YERIMA Ladan**	B.P. 1096 Niamey Aéroport NIGER	E-mail : yeriladan@yahoo.fr	+227 20 73 55 12	+227 94 85 22 27
10	**Nigeria**	IKEKHUA O. Felix Mrs. M. O. Iso	NIMET	felix_ikekhua@yahoo.com maryottuiso@yahoo.com	+234 9 4130710 +234 9 4130711	+234 1 477 16 62 +234 9 4130709 + 234 9 4130710
11	**Senegal (Rapporteur)**	DIEME Saïdou	ASECNA Sénégal B.P. 8132 Dakar Aéroport Yoff SENEGAL	saidoudieme@yahoo.fr saidoudieme@yahoo.fr	+221 33 820 06 00 +221 33 820 02 72/ +221 33 820 06 00	+221 33 869 22 03 : +221 77 652 53 87
12	**South Africa**	Albert Moloto	South African Weather Service	albert.moloto@weathersa.co.za		+27 11 390 9333
13	**United Kingdom (RU)**					
14	**ASECNA**	NGOUAKA Dieudonné	ASECNA DG BP 3144 Dakar, Sénégal	ngouakadie@asecna.org	+221 33 8234654	+221 33 8695714
15	**IATA**					
16	**Dakar RODB**	DI EME Saidou	ASECNA Sénégal	saidoudieme@yahoo.fr	+221 33 820 06 00	+221 33 869 22 03
17	**Pretoria RODB**	Albert Moloto	South African Weather Service	albert.moloto@weathersa.co.za		+27 11 390 9333
17	**WMO/OMM**	Mr Seylla Siliayo,	WMO Scientific Officer, Aeronautical Meteorological Division Weather and Disaster Risk Reduction Services Department	ssillavo@wmo	+ 41.22.730.81.28	: + 41.22.730.84.08
18	**EUR DMG**	Patrick SIMON	Météo-France, DSI/D/MSI, 42 avenue Coriolis, 31057 Toulouse cedex, FRANCE	Patrick.simon@meteo.fr	+261 202 258 115	+ 261 33 12 108 05 10 Morocco
19	**IROG Toulouse**	Patrick SIMON	Météo-France, DSI/D/MSI, 42 avenue Coriolis, 31057 Toulouse cedex, FRANCE	Patrick.simon@meteo.fr	+261 202 258 115	+ 261 33 12 108 05 10 Morocco
20	**ASIA/PAC/MTSF**					

— END —

file

NAMIBIA CIVIL AVIATION AUTHORITY

CIRCULATION LIST

DATE: 30th July 2020

SUBJECT: SIGMET PREPARATION AND ISSUANCE ADVISORY PAMPHLET

POST	SIGNATURE	DATE
1. Mrs. Sarafina Maxwanu **Senior Manager: ANSSO**		Namibia Civil Aviation Authority NCAA 30 JUL 2020 ANSSO SECTION
2. Mrs. L. Stols **Advisor to the IED**		
3. Mr. Reinhard Gärtner **Interim Executive Director of Civil Aviation**		31/07/2020

Back to: ANSSO
: Abiatar Hauwanga, +264 832352386, hauwangaa@ncaa.com.na

NCAA
NAMIBIA CIVIL AVIATION AUTHORITY

CIRCULATION LIST

DATE: 26th May 2020

SUBJECT: ANSSO A-MET Advisory Pamphlets (ANSSO-MET-AP174)

POST	SIGNATURE	DATE
1. Mrs. Sarafina Maxwanu **Senior Manager: ANSSO**		Namibia Civil Aviation Authority NCAA 26 MAY 2020 ANSSO SECTION
2. Mrs. L. Stols **Advisor to the IED**		27/5/20
3. Mr. Reinhard Gärtner **Interim Executive Director of Civil Aviation**		28/5/20

Back to: ANSSO
: Abiatar Hauwanga, +264 832352386, hauwangaa@ncaa.com.na