

SIGMET

A SIGMET provides a concise description of the occurrence or expected occurrence of en-route weather phenomena that are potentially hazardous to aircraft, in areas over which meteorological watch is being maintained.

SIGMET phenomena

Code	Description
OBSC TS	Obscured thunderstorms
EMBD TS	Embedded thunderstorms
FRQ TS	Frequent thunderstorms
SQL TS	Squall line thunderstorms
OBSC TSGR	Obscured thunderstorms with hail
EMBD TSGR	Embedded thunderstorms with hail
FRQ TSGR	Frequent thunderstorms with hail
SQL TSGR	Squall line thunderstorms with hail
TC (+ TC name)	Tropical cyclone (+ TC name)
SEV TURB	Severe turbulence
SEV ICE	Severe icing
SEV ICE (FZRA)	Severe icing due to freezing rain
SEV MTW	Severe mountain wave
HVY DS	Heavy duststorm
HVY SS	Heavy sandstorm
VA ERUPTION (+ MT name)	Volcanic ash eruption (+ mountain name)
RDOACT CLD	Radioactive cloud

A SIGMET provides information on the location, extent, expected movement or forecast location, and change in intensity of the specified phenomenon.

SIGMET for thunderstorms are only issued when one of the following conditions is observed or expected:

- **Obscured (OBSC TS)** – thunderstorms that are obscured by haze or smoke.

- **Embedded (EMBD TS)** – thunderstorms that are embedded within cloud layers and cannot be readily recognised, with the exception of a thunderstorm concealed under its own cirrus anvil. The area affected would be of the order of at least 3,000 square nautical miles within the area covered by graphical area forecasts (GAF) and at least 7,200 square nautical miles over remaining areas.
- **Frequent (FRQ TS)** – an area of thunderstorms with little or no separation between adjacent storms and covering more than 75% of the affected area. The area affected would be of the order of at least 3,000 square nautical miles within the area covered by the GAF and at least 7,200 square nautical miles over remaining areas.
- **Squall-line thunderstorms (SQL TS)** – thunderstorms along a line of approximately 100 nautical miles or more in length, with little or no separation between the clouds.

SIGMET for thunderstorms do not include reference to cumulonimbus cloud or associated icing and turbulence, as their presence is implied.

SIGMET for tropical cyclones include reference to the height of cumulonimbus cloud tops but no reference is made to thunderstorms, icing and turbulence, as their presence is implied.

SIGMET for severe mountain waves are distinct from SIGMET for severe turbulence, and may extend to high levels of the atmosphere.

SIGMET for heavy duststorms or heavy sandstorms are issued when the visibility is observed, or expected to be reduced to, less than 200 metres.

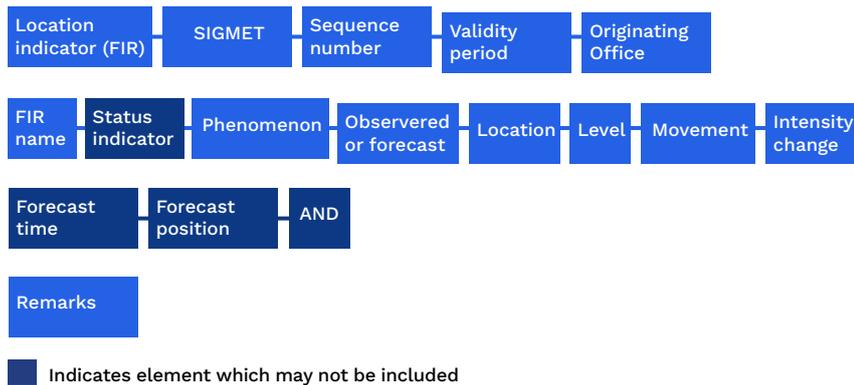
SIGMET coverage

SIGMET are issued for the Melbourne (YMMM) and Brisbane (YBBB) flight information regions (FIR).

Note:

- SIGMET for thunderstorms are issued north of 50°S
- SIGMET for turbulence or icing above 1,000 feet are issued north of 50°S, and south of 50°S on request
- SIGMET for phenomena at or below 10,000 feet (other than thundersorms, tropical cyclones and volcanic ash) are issued for the area covered by the GAF, and outside this area upon request.

SIGMET message structure



Location indicator is the International Civil Aviation Organization (ICAO) location indicator of the Australian flight information region (FIR). i.e. either YMMM (Melbourne FIR) or YBBB (Brisbane FIR).

SIGMET is the message identifier.

Sequence number is a 3-character number. The first character is a single alpha character that will be assigned to the SIGMET event (e.g. SEV ICE, TC etc) and will be used for any subsequent SIGMETs issued for that event within the FIR. Alpha characters are not necessarily assigned alphabetically. The second and third characters are a 2-digit number, giving a count of the number of SIGMETs issued for that specific event.

All SIGMETs with a sequence number 01 will be a new SIGMET, whereas any SIGMET with a sequence number greater than 01 will be an extension or cancellation of a previously issued SIGMET.

Validity period is given in the format DDHHMM/DDHHMM, where DD is the day of the month and HHMM is the time in hours and minutes UTC.

The period of validity cannot be more than 6 hours for VA and TC SIGMET, and not more than 4 hours for SIGMETs for other phenomena.

Originating office is either YBRF (Brisbane), YMRF (Melbourne) or YMMC (Melbourne, World MET Centre).

FIR name is the abbreviation and full name of the FIR (either YMMM or YBBB) for which the SIGMET is issued.

Status indicator is included for a test (TEST) or exercise (EXER), if required.

Phenomenon is a description of the phenomenon causing the issuance of the SIGMET, and consists of a qualifier and a phenomenon abbreviation.

Observed or forecast gives an indication of whether the phenomenon is observed or forecast, and is given in the format OBS [AT <HHMMZ>] or FCST [AT <HHMMZ>].

Location is described using a single point, a polygon (without repeating the first point), or a specified radius of a point, using coordinates (in degrees, or in degrees and minutes). The location gives the location at the beginning of the validity period.

Level is the vertical extent of the phenomenon in feet above mean sea level, using one of the following formats:

SIGMET abbreviations

ABV	Above
APRX	Approximate, approximately
BLW	Below
CB	Cumulonimbus
CLD	Cloud
CNL	Cancel, cancelled
DS	Duststorm
E	East or eastern longitude
EMBD	Embedded
ENE	East north-east
ESE	East south-east
EXER	Exercise
EXP	Expected
FCST	Forecast
FIR	Flight information region
FL	Flight level
FRQ	Frequent
FT	Feet
FZRA	Freezing rain
GR	Hail
HVY	Heavy
ICE	Icing
INTSF	Intensifying
KT	Knots
MOV	Moving
MT	Mount, mountain
MTW	Mountain waves
N	North or northern latitude
NC	No change
NE	North-east
NN	No name
NM	Nautical miles
NNE	North north-east
NNW	North north-west
NW	North-west
OBS	Observed, observation
OBSC	Obscured
PSN	Position
RDOACT	Radioactive
RMK	Remark
S	South or southern latitude
SE	South-east
SEV	Severe
SFC	Surface
SQL	Squall line
SS	Sandstorm
SSE	South south-east
SSW	South south-west
STNR	Stationary
SW	South-west
TC	Tropical cyclone
TEST	Test message
TOP	Top (height) of phenomenon
TS	Thunderstorm
TURB	Turbulence
VA	Volcanic ash
W	West or western longitude
WI	Within (area)
WKN	Weakening
WNW	West north-west
WSW	West south-west
Z	Zulu (coordinated universal time, UTC)

- [SFC/]FLnnn
- [SFC/][n]nnnnFT
- FLnnn/nnn
- TOP FLnnn
- [TOP] ABV FLnnn
- [TOP] ABV [n]nnnnFT
- [n]nnnn/[n]nnnnFT
- [n]nnnnFT/FLnnn
- TOP [ABV or BLW] FLnnn.

Movement or expected movement is indicated by a direction using one of the 16 compass radials and the speed in knots (KT), e.g. MOV NNE 25KT. Speed is given in 5 knot increments and 2 digits shall be used for speeds less than 10 knots.

The abbreviation STNR (stationary) is used if no significant movement is expected.

Intensity change is the expected evolution of the phenomenon’s intensity and is indicated by one of the following abbreviations:

- INTSF: intensifying
- WKN: weakening
- NC: no change.

Forecast time and **Forecast position** can be used instead of movement or expected movement.

AND may be used when multiple volcanic ash clouds (VA SIGMET) or cumulonimbus clouds associated with a tropical cyclone (TC SIGMET) are simultaneously affecting the FIR concerned. In this situation the “forecast time” and “forecast position” elements may be repeated.

Cancelling a SIGMET

If during the validity period of a SIGMET the phenomenon is no longer occurring or is no longer expected, the SIGMET is cancelled by issuing a SIGMET with the abbreviation CNL.

Remarks

The remarks (RMK) line includes the following information:

- a **location designator** which provides a quick reference on the general location of the phenomenon, e.g. RMK:BN
- **reference** to any SIGMET in the adjoining FIR (YBBB or YMMM) that is current for the same event. e.g. RMK: BN SEE ALSO YMMM.

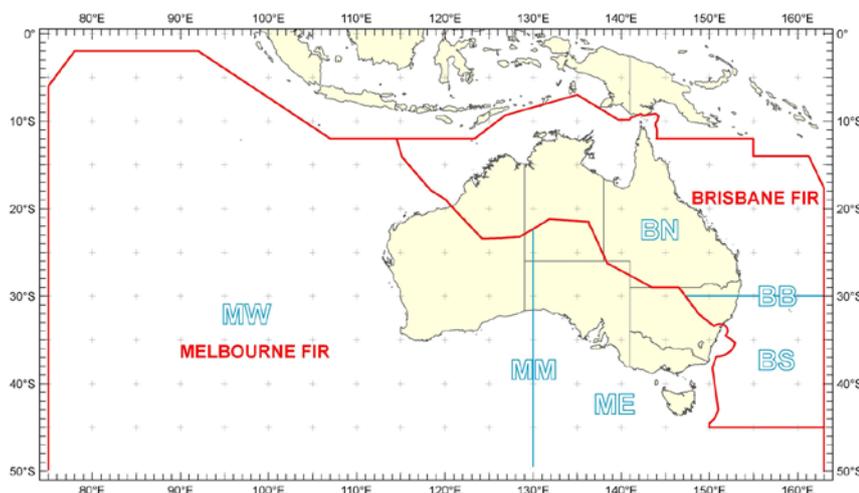
Graphical SIGMET

The Bureau of Meteorology issues a graphical representation of the Australian SIGMETs to improve situational awareness. Users are to consider the product as being valid only for the issue time. The text SIGMET should be used for flight planning purposes.

There will be multiple SIGMETs displayed for the one phenomenon when:

- an extended SIGMET is first issued and the previous SIGMET (for the same phenomenon) is yet to expire
- a new SIGMET is first issued in response to a significant change to an event given in a previous SIGMET, and the previous SIGMET is yet to be cancelled
- a SIGMET contains both observed and forecast positions (as in VA SIGMETs)
- 2 SIGMETs are issued when a phenomenon crosses the FIR boundary, one for YBBB FIR and one for YMMM FIR.

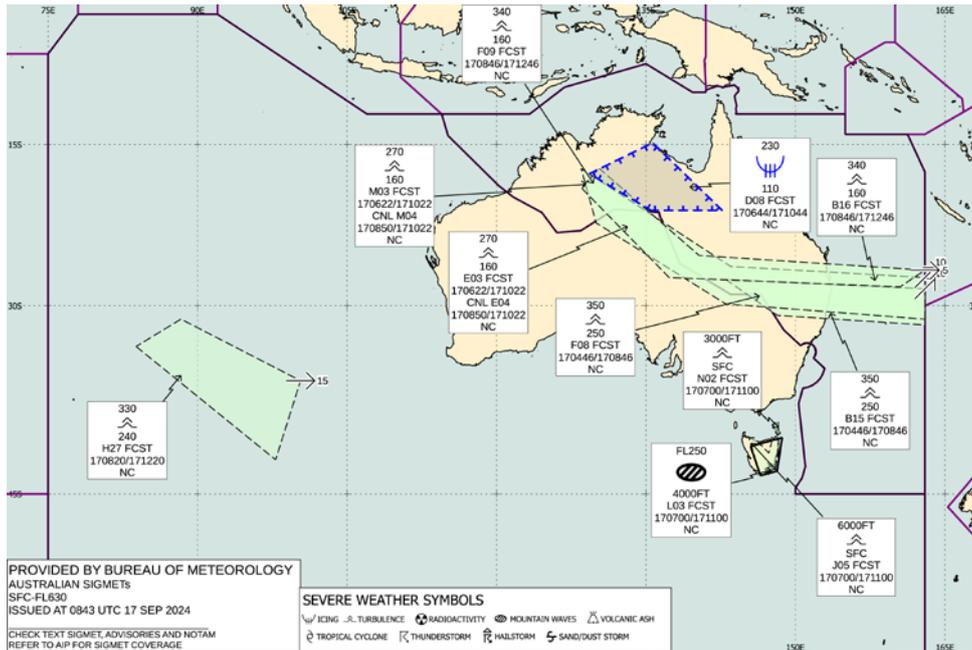
Each polygon describing the horizontal extent of the event will be accompanied by a box giving other information contained in the text product. If a text SIGMET cannot be rendered graphically, it will be displayed in text format on the graphic. The graphical SIGMET product will be issued every 10 minutes and whenever a text SIGMET is issued. Images will be issued even if there is no SIGMET current.



Location designator

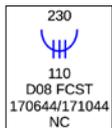
MW	Melbourne FIR to the west of 130°E
MM	Melbourne FIR that cross 130°E
ME	Melbourne FIR east of 130°E
BN	Brisbane FIR north of 30°S
BB	Brisbane FIR that cross 30°S
BS	Brisbane FIR south of 30°S

SIGMET examples

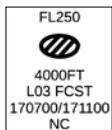


Graphical SIGMET symbols

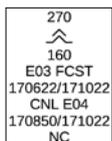
	Thunderstorm
	Thunderstorm with hail
	Tropical cyclone
	Severe turbulence
	Severe icing
	Severe mountain waves
	Heavy sand/duststorm
	Volcanic eruption
	Radioactive cloud



YBBB SIGMET D08 VALID 170644/171044 YMMC-
YBBB BRISBANE FIR SEV ICE FCST WI S1750 E12920 - S1450 E13540 - S2120 E14240 - S2120 E13530 FL110/230 STNR NC
RMK: BN=

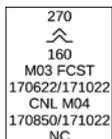


YMMM SIGMET L03 VALID 170700/171100 YMRF-
YMMM MELBOURNE FIR SEV MTW FCST WI S4340 E14630 - S4130 E14530 - S4050 E14840 - S4320 E14810 4000FT/FL250 STNR NC
RMK: ME=



YBBB SIGMET E03 VALID 170622/171022 YMMC-
YBBB BRISBANE FIR SEV TURB FCST WI S2820 E16030 - S2730 E13720 - S1910 E12830 - S1720 E13020 - S2530 E14020 - S2650 E16300 FL160/270 MOV E 05KT NC

RMK: BN SEE ALSO YMMM M03=
YBBB SIGMET E04 VALID 170850/171022 YMMC-
YBBB BRISBANE FIR CNL SIGMET E03 170622/171022
RMK: BN=



YMMM SIGMET M03 VALID 170622/171022 YMMC-
YMMM MELBOURNE FIR SEV TURB FCST WI S2820 E16030 - S2730 E13720 - S1910 E12830 - S1720 E13020 - S2530 E14020 - S2650 E16300 FL160/270 MOV E 05KT NC
RMK: ME SEE ALSO YBBB E03=

YMMM SIGMET M04 VALID 170850/171022 YMMC-
YMMM MELBOURNE FIR CNL SIGMET M03 170622/171022
RMK: ME=

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| A vertical line in the margin indicates a change or addition since last update.

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