

GEN 3.5 METEOROLOGICAL SERVICES

1 RESPONSIBLE SERVICE

1.1 Civil Aviation Authority

1.1.1 The Civil Aviation Authority is the meteorological authority for New Zealand and is responsible for the provision of meteorological services, as defined in ICAO Annex 3, within the New Zealand and Auckland Oceanic FIRs.

Civil Aviation Authority
PO Box 3555
Wellington 6140
NEW ZEALAND

Tel +64 4 560 9400
Fax +64 4 569 2024
AFTN NZHOYAYX

Website www.caa.govt.nz

1.2 Meteorological Information Service Providers

1.2.1 Only organisations certificated under CAR Part 174, Meteorological Service Organisations, may provide meteorological information to civil aviation.

1.2.2 There are two meteorological information service providers in New Zealand. The service provided is in accordance with the provisions in the following ICAO documents:

- (a) Annex 3 — Meteorological Service for International Air Navigation
- (b) Doc 8896 — Manual of Aeronautical Meteorological Practice
- (c) Doc 7030 — Regional Supplementary Procedures
- (d) Doc 9673 — Air Navigation Plan Asia and Pacific Regions

Meteorological Service of New Zealand Limited (MetService)

1.2.3 The primary meteorological service provider for New Zealand is:

Meteorological Service of New Zealand Limited (MetService)
PO Box 722
Wellington 6140
NEW ZEALAND

Tel +64 4 470 0700
Fax +64 4 473 5231
AFTN NZKLYMYX

Website www.metservice.com

1.2.4 MetService is certificated to provide the following services:

- (a) a forecast service, to provide forecast meteorological information for a specific area or portion of airspace;
- (b) an information dissemination service, to collect and disseminate meteorological information;
- (c) a meteorological briefing service, to provide written and oral meteorological information on existing and expected meteorological conditions;
- (d) a meteorological reporting service, to provide routine meteorological reports;
- (e) a meteorological watch service, to maintain a watch over meteorological conditions affecting aircraft operations in a specific area; and
- (f) a climatology service, to develop and supply climatological information for a specific place or airspace.

Airways Corporation of New Zealand Limited (Airways)

1.2.5 The secondary meteorological service provider and the ATS component supplier for New Zealand is:

Airways Corporation of New Zealand Limited (Airways)
ATS Operations (Policy and Standards)
PO Box 14131
Christchurch Airport 8544
NEW ZEALAND

Tel (03) 358 1500

Fax (03) 358 6856

Website www.airways.co.nz

1.2.6 Airways provides the following meteorological services:

- (a) an information dissemination service, to collect and disseminate meteorological information; and
- (b) a meteorological reporting service, to supply routine meteorological reports.

2 AREA OF RESPONSIBILITY

2.1 New Zealand FIR and Auckland Oceanic FIR

2.1.1 The area of responsibility for the provision of aeronautical meteorological services set out in this publication covers the New Zealand FIR (NZZC) and the Auckland Oceanic FIR (NZZO) with the exception of the McMurdo, Samoa, Tonga and Cook sectors. An aeronautical meteorological watch service is provided to issue SIGMET for the New Zealand FIR and the Auckland Oceanic FIR.

3 METEOROLOGICAL INFORMATION

3.1 MET Terminology

3.1.1 A list of MET terminology including codes used in MET reports is included in Table GEN 3.5-1.

3.2 Aerodrome Observations and Reports

3.2.1 A detailed list of the aerodrome observations and reports provided for air navigation is provided in Table GEN 3.5-2.

3.3 Aerodrome Observing Systems

3.3.1 A detailed list of the aerodrome observing systems provided for air navigation is provided in Table GEN 3.5-3.

3.4 Amendment of Forecasts

3.4.1 All forecasts are kept under review and amended whenever significant changes occur or are forecast to occur. An amended forecast is identified by the letters AMD. Amendment criteria are listed in Table GEN 3.5-4.

3.5 Manual Observations (METAR and SPECI)

METAR

3.5.1 METAR are routine aerodrome reports, in METAR code, issued hourly. **ALL** reports issued **on the hour** are coded as **METAR** regardless of the weather reported.

3.5.2 Outside the hours of service of an ATS unit, a METAR AUTO report may be available from an Automatic Weather Station.

SPECI

3.5.3 SPECI are special aerodrome reports issued off the hour in METAR code. SPECI are prepared when the value of some weather element changes significantly, or passes a specified value as listed in Table GEN 3.5-5.

3.5.4 A SPECI reporting deterioration in conditions is disseminated immediately after the deterioration, and the time of the observation is coded to the nearest five minutes. A SPECI reporting an improvement in conditions is disseminated only after the improvement has persisted for 10 minutes.

3.5.5 If the weather conditions improve above the criteria listed in Table GEN 3.5-5, the words SPECI CONDX CEASE or SPECI CEASES will be included at the end of the SPECI or METAR as a remark. The next routine report in these circumstances will be a METAR on the hour unless conditions deteriorate again before the next routine report time is reached.

3.6 Automated Observations (METAR AUTO)

3.6.1 Automated observations are provided by Automatic Weather Stations (AWS).

3.6.2 At aerodromes where METAR AUTO are issued (apart from NZWP, NZOH and NZMF), **no** manual METAR and SPECI observations will be provided.

3.6.3 At aerodromes where METAR AUTO are issued, they will be produced every 30 minutes, on the hour and half hour, day and night.

3.6.4 No SPECI will be issued at METAR AUTO locations.

3.6.5 Lightning data from an independent lightning detection network will be added to METAR AUTO to provide additional observational data, and present weather and recent weather will also be included as appropriate.

3.6.6 METAR AUTO will not include directional visibility variations.

3.6.7 METAR AUTO will not include "vicinity" (VC) present weather, except for thunderstorms in the vicinity (VCTS), which will be included in the report. However, some additional "vicinity" (VC) present weather, such as precipitation and fog, may be included in reports from NZAA, NZWN and NZCH when identified by forecasters accessing airport webcams, and high resolution weather radar and satellite imagery.

3.6.8 METAR AUTO will not include cloud type (i.e. TCU and CB).

3.6.9 When the AWS present weather sensor is temporarily inoperative, two strokes (//) are inserted in the present weather field.

3.6.10 The abbreviation NCD (No Cloud Detected) is used when the AWS does not detect cloud;

- (a) below 10,000 ft at NZAA, NZWN and NZCH; or
- (b) at any level for all other domestic aerodromes.

NCD is used instead of the manual METAR code SKC (sky clear).

3.6.11 When cloud is detected by the AWS, three strokes (///) are placed at the end of each cloud layer group to indicate that the AWS could not identify TCU or CB.

Examples of METAR AUTO (aerodromes other than NZAA, NZWN, NZCH):

METAR NZXX 011400Z AUTO 35004KT 310V010 29KM -SHRA OVC048///¹
19/16 Q1021

METAR NZYY 021930Z AUTO 10014KT 46KM //² NCD³ 14/10 Q1015

METAR NZZZ 021400Z AUTO 13001KT 7000 DZ FEW015///¹ BKN026///¹
BKN180///¹ 16/15 Q1010 RERA

METAR NZXY 021730Z AUTO 23005KT ///⁴ //² ////⁵ 19/15 Q1017

Examples of METAR AUTO (NZAA, NZWN, NZCH only):

METAR NZAA 251930Z AUTO 03005KT 0600 R23L/0500D⁶ FG FEW003///¹
12/12 Q1021 BECMG 9999 BKN012

METAR NZWN 021400Z AUTO 35011G21KT 310V030 9999 //² NCD³ 16/10
Q0996 NOSIG

METAR NZCH 140400Z AUTO 23013KT 9999 -SHRA FEW020///¹
SCT030///¹ BKN050///¹ 05/M03 Q1016 TEMPO 6000 SHRASN

Notes:

- ¹ /// at the end of the cloud group indicates that the AWS cannot determine CB or TCU cloud types.
- ² // is reported in place of present weather when the present weather sensor is temporarily inoperative.
- ³ NCD indicates No Cloud Detected below 10,000 ft at NZAA, NZWN and NZCH, or at any level for all other domestic aerodromes.
- ⁴ //// indicates "visibility not reported" (probably due to a faulty sensor).
- ⁵ ////⁵ indicates "cloud not reported" (probably due to a faulty sensor).
- ⁶ Runway Visual Range (RVR) is reported at Auckland and Christchurch.

3.7 Attachment of TREND

3.7.1 TREND forecasts will be appended to METAR AUTO reports from NZAA, NZCH, NZWN and to METAR and SPECI reports from the military aerodromes at NZOH and NZWP.

3.7.2 A list of MET terminology including codes used in TREND forecasts is included in Table GEN 3.5-1.

Example of SPECI

3.7.3 The following is an example of a SPECI coded message:

```
SPECI NZWP 010025Z 03022G34KT 010V080 2000 -DZRA FEW003  
BKN006 22/21 Q0997 RERA WS R03
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Decode of SPECI

3.7.4 The following is the decode, using information listed in Table GEN 3.5-1, of the message in paragraph 3.7.3:

- (a) Special Meteorological Aerodrome Report for Whenuapai aerodrome, issued at 0025 UTC on the 1st of the month.
- (b) Surface wind: 030 degrees true, 22 knots gusting to 34 knots. Wind direction varying between 010 degrees true and 080 degrees true.
- (c) Prevailing visibility: 2000 metres.
- (d) Weather: Light drizzle and rain.
- (e) Cloud: Few oktas cloud (1-2) with a base at 300 feet above aerodrome level, and broken cloud (5-7 oktas) with a base at 600 feet above aerodrome level.
- (f) Temperature: 22 degrees Celsius
Dew Point: 21 degrees Celsius
- (g) QNH: 997 hectopascals
- (h) Recent weather: Moderate or heavy rain has been observed at the aerodrome since the last routine report.
- (i) Wind shear: Wind shear reported by pilots or the control tower along the take-off and/or approach path to runway 03 between runway level and 1600 feet AGL.

3.8 Corrections to METAR/SPECI

3.8.1 If an error is detected in an issued METAR/SPECI, the METAR/SPECI will be re-sent immediately with the error corrected, and with the letters COR entered after the METAR/SPECI (e.g. METAR COR or SPECI COR).

3.9 Wind Shear

3.9.1 Information about observed wind shear on the approach or take-off paths is included, when appropriate, in METAR and SPECI reports. Information about expected wind shear on approach and take-off paths is not provided.

3.10 Take-off and Landing Reports

3.10.1 Reports of MET conditions at attended aerodromes are prepared by the ATS unit immediately prior to a take-off or landing. These reports normally contain:

- (a) wind direction in degrees magnetic;
- (b) wind speed in knots;
- (c) visibility, including significant directional variations (if available RVR will be used when visibility is less than 1500 m);
- (d) present weather, if significant;
- (e) low cloud, if significant (cloud height/base in feet above aerodrome level);
- (f) temperature;
- (g) dew point;
- (h) QNH;
- (i) additional items, such as reported turbulence; and
- (j) reported or forecast wind at 2000 ft.

3.10.2 These reports are contained within an ATIS broadcast at most attended aerodromes. Active ATIS broadcasts are also available on IFIS (www.ifis.airways.co.nz).

3.10.3 Active ATIS broadcasts will include the following additional data:

- (a) name of aerodrome;
- (b) ATIS code letter;
- (c) issue time;
- (d) runway-in-use (or "preferred runway" if AFIS aerodrome); and
- (e) operational information.

3.10.4 Refer Table GEN 3.5-4 for source of reported 2000 ft wind.

3.11 Basic Weather Reports (BWR)

3.11.1 BWR are provided at some aerodromes. BWR are verbal comment on actual weather conditions at a particular aerodrome or place. BWR activity is intended to include only:

- (a) verbal provision of a BWR to incoming aircraft at aerodromes; and
- (b) verbal comment on present weather conditions passed between aircraft and other aeronautically associated parties.

3.11.2 Particular examples of basic weather reports are —

- (a) an aircraft operator's ground staff passing a basic weather report, as part of their landing report, to their incoming aircraft at an unattended aerodrome.
- (b) an individual, normally working outside aviation, conveying basic weather information to an aircraft operator or aircrew, by any means of communication.
- (c) a pilot advising another pilot about weather conditions observed or experienced.

3.11.3 BWR are not an alternative to the meteorological information, particularly meteorological reports that are required for the normal planning and conduct of flights.

3.11.4 A supplier of a BWR does not require certification under CAR Part 174, but must be trained to provide basic weather reports. People providing BWR using equipment to measure meteorological parameters are required to ensure such equipment is properly calibrated and maintained.

3.11.5 The elements allowable in BWR are restricted and may comprise only:

- (a) wind direction (degrees magnetic) and strength;
- (b) mean sea level air pressure (QFF);
- (c) air temperature; and
- (d) weather conditions and cloud cover.

3.12 Runway Visual Range (RVR)

3.12.1 Instrumented Runway Visual Range (IRVR) equipment has been installed at Auckland International airport on RWY 05R/23L and Christchurch International Airport on RWY 02/20. The equipment consists of three transmissometers located adjacent to the Touchdown zone (TDZ), the runway Mid-point (MID) and the runway Stop-end (END). This enables ATC to issue runway visual range (RVR) visibility values based on the use of this equipment.

Visibility reporting using RVR

3.12.2 RVR will be used to report visibility values less than 1500 m in the following steps:

- (a) 0 to 400 m in 25 m steps
- (b) 400 to 800 m in 50 m steps
- (c) 800 to 1500 m in 100 m steps

Any observed value that does not fit the reporting scale will be rounded down to the nearest step lower in the scale.

3.12.3 RVR is broadcast on the ATIS and is advised directly to the pilot by TOWER, or on pilot request by Approach CONTROL. Whenever the observed RVR values are less than 1500 m, all three RVR values will be reported.

3.12.4 Touchdown zone RVR only is included in Auckland and Christchurch METAR AUTO reports. The Touchdown zone RVR will be reported whenever the observed value is less than 1500 m.

ATIS broadcast of RVR

3.12.5 Where only the Touchdown RVR value is broadcast on the ATIS, the location of the value is not included, e.g. "RVR: 650". When two or three RVR values are broadcast, the ATIS will always include the location of each RVR value, e.g. "RVR: Touchdown 650 – Mid-point 500 – Stop-end 550"

ATC transmission of RVR to aircraft

3.12.6 RVR values will be passed to aircraft by TOWER at the beginning of each approach to land and prior to take-off, or on pilot request by Approach CONTROL. Changes to observed RVR values will be passed to aircraft throughout the approach.

3.12.7 When all three positions are being reported, they are passed as three separate numbers relating to Touchdown, Mid-point and Stop-end respectively, e.g.

“RVR 650 – 500 – 550”

If only two values are being reported they are individually identified, e.g.

“Touchdown 650 – Stop-end 550”

System Unserviceability

3.12.8 If a single transmissometer fails and the remainder of the IRVR system is still serviceable, the remaining values are reported, e.g.

“RVR: Touchdown not available – Mid-point 600 – Stop-end 500”

3.12.9 If two transmissometers fail, the RVR value for the remaining instrument is reported.

3.12.10 When RVR information is not available, pilots should use the visibility reported on the ATIS or advised by ATC.

4 TYPES OF SERVICES

4.1 Disclaimer

4.1.1 Meteorological service suppliers endeavour to obtain and supply the best available information but shall have no responsibility or liability for any consequential loss or any damage directly or indirectly suffered by the user or any third party as a result of the user or any third party placing reliance on information, services, or advice supplied.

4.2 Services to International Aviation

4.2.1 MetService provides an English language H24 service from the Wellington Meteorological Office (MO) and the Wellington MET Watch Office (MWO) which is co-located with the Wellington MO and serves the national RCC, Auckland Oceanic ACC/FIC, and the New Zealand ACC/FIC.

4.2.2 Meteorological information available from the Wellington MO for aircraft departing New Zealand includes:

- (i) Surface synoptic charts
- (ii) Forecast upper level wind and temperature charts
- (iii) Satellite imagery
- (iv) Significant weather charts
- (v) Route forecasts
- (vi) Freezing level charts
- (vii) Grid point forecasts (wind, temperature, humidity, CB cloud, icing and turbulence)
- (viii) OPMET (TAF, METAR/SPECI, METAR AUTO, SIGMET, VAA)

Refer to 4.3 for more detail.

4.3 Types of Service Available

4.3.1 The following services are available from/for New Zealand:

- (a) 6-hourly surface synoptic charts.
- (b) Aerodrome reports in the METAR and SPECI code or the METAR AUTO code for selected New Zealand and international aerodromes.
- (c) SIGMET: Information concerning the occurrence of potentially hazardous weather conditions for New Zealand and adjacent FIR.

Note: SIGMET are issued in text and graphical formats.

- (d) GRAFOR: Graphic for domestic VFR and IFR operations showing forecast weather and cloud at or below 10,000 ft (examples of this product can be viewed at www.caa.govt.nz/meteorology/examples-wx-products/).
- (e) GNZSIGWX: Three graphical maps showing forecast turbulence, icing, CBs, and mountain waves as follows:
 - SFC to 10,000 ft
 - SFC to FL250 and
 - SFC to FL410(Examples of this product can be viewed at www.caa.govt.nz/meteorology/examples-wx-products/).
- (f) AAW: Area text wind forecasts for domestic VFR and IFR operations below 10,000 ft.
(Examples of this product can be viewed at www.caa.govt.nz/meteorology/examples-wx-products/).
- (g) Aerodrome forecasts in the TAF code for selected New Zealand and international aerodromes.
- (h) AD QNH forecast: A forecast of the maximum and minimum QNH values, provided as a guide to the range of pressure expected during the validity period. Their main purpose is as a check on the actual QNH passed to an aircraft, to ensure that any errors in transmission do not result in an incorrect altimeter setting. AD QNH forecasts should not be used as an altimeter setting. These forecasts are available for selected New Zealand aerodromes.
- (i) TREND forecasts for selected New Zealand and international aerodromes. TREND indicate when significant changes (expressed as a trend for the conditions described) are likely to occur during the next two hours. The TREND replaces the TAF during the two-hour validity period of the TREND.
- (j) ROFOR: Wind, temperature and significant weather information covering selected routes and levels.
- (k) High level SIGWX (significant weather forecasts) for the airspace between FL250 and FL630: these are issued in chart form and are available for most areas in the world. They are issued with stated valid times of 0000, 0600, 1200, and 1800 UTC. Each chart has a validity of +/- 3 hours of the stated times.
- (l) Medium level SIGWX for the airspace between FL100 and FL250: these are issued in chart form and are available for selected areas in the world. They are issued with stated valid times of 0000, 0600, 1200, and 1800 UTC. Each chart has a validity of +/- 3 hours of the stated times.

- (m) BWR.
- (n) Take-off and landing reports.
- (o) Volcanic Ash Advisories (VAA and VAG): Information about ash in the atmosphere resulting from volcanic eruption is issued in both text (VAA) and graphical (VAG) formats (examples of these products can be viewed at www.caa.govt.nz/meteorology/examples-wx-products/).
- (p) ATIS: Aerodrome take-off and landing reports provided on discrete frequencies at selected aerodromes.
- (q) VOLMET: Routine broadcasts of selected operational MET information including the notification of current SIGMET, aerodrome reports and trend forecasts where available, and TAF. Broadcasts are made from Auckland using discrete HF ground-to-air frequencies as detailed in Table GEN 3.5-6.
- (r) Upper Air wind and temperature forecasts are available for 5000 ft, 8000 ft, 10,000 ft and FL140, 180, 210, 240, 270, 300, 320, 340, 360, 390, 410, 450, 480 and 530. These forecasts can be provided for flight planning systems and also displayed on charts with wind direction and speed indicated at selected points by wind arrows with feathers and shaded pennants, and spot temperatures shown circled. The area covered by charts is the same as for SIGWX charts. The charts are issued with stated valid times of 0000, 0600, 1200, and 1800 UTC. Each chart has a validity of +/- 3 hours of the stated times.
- (s) Upper air humidity forecasts are available for 5000 ft, 8000 ft, 10,000 ft and FL140 and 180 and are provided only for flight planning systems.
- (t) Satellite pictures for selected areas of the world.
- (u) Freezing level charts.
- (v) EDTO Total Air Temperature (TAT) charts.
- (w) Part 174 providers may supply tailored or customised reports or forecasts not listed above.
- (x) Customised services: packages of the above and other services tailored and delivered to meet an operator's individual requirements are available. It is likely that these will be the subject of a contractual agreement between the operator and the meteorological service provider.

4.4 Graphical Aviation Forecasts (GRAFOR, AAW and GNZSIGWX)

4.4.1 GRAFOR (Graphical Aviation Forecast) and GNZSIGWX (Graphical NZ Significant Weather) are low-level (surface – 10,000 ft) forecasts, available in graphical form, for planning and use by registered IFR and VFR users. These forecasts show the weather elements affecting New Zealand in a graphical format and replace the former text ARFOR weather forecasts.

4.4.2 Aviation Area Wind (AAW) forecasts are low-level (surface – 10,000 ft) area wind forecasts available in text form for planning purposes and use by registered IFR and VFR users.

4.4.3 Information provided in GRAFOR comprises:

- (a) visibility;
- (b) significant weather (including ISOL CB);
- (c) cloud cover (with heights in feet AMSL); and
- (d) freezing level.

4.4.4 Information provided in Graphical NZ SIGWX comprises:

- (a) horizontal and vertical extent of moderate turbulence;
- (b) horizontal and vertical extent of moderate icing;
- (c) horizontal and vertical extent of mountain waves;
- (d) horizontal and vertical extent of EMBD, OCNL and FRQ CBs (Note: ISOL CBs are to be depicted on the GRAFOR);
- (e) volcanic activity, either notification of the presence of volcanic ash (and its source if the source is in the NZZC) or a volcano at alert level 2 within the NZZC; and
- (f) radioactive cloud and its source (if the source is in the NZZC). Phenomena that are or may become severe can either be described by referring to a current SIGMET or indicating one may be possible.

4.4.5 Information provided in Aviation Area Winds comprises:

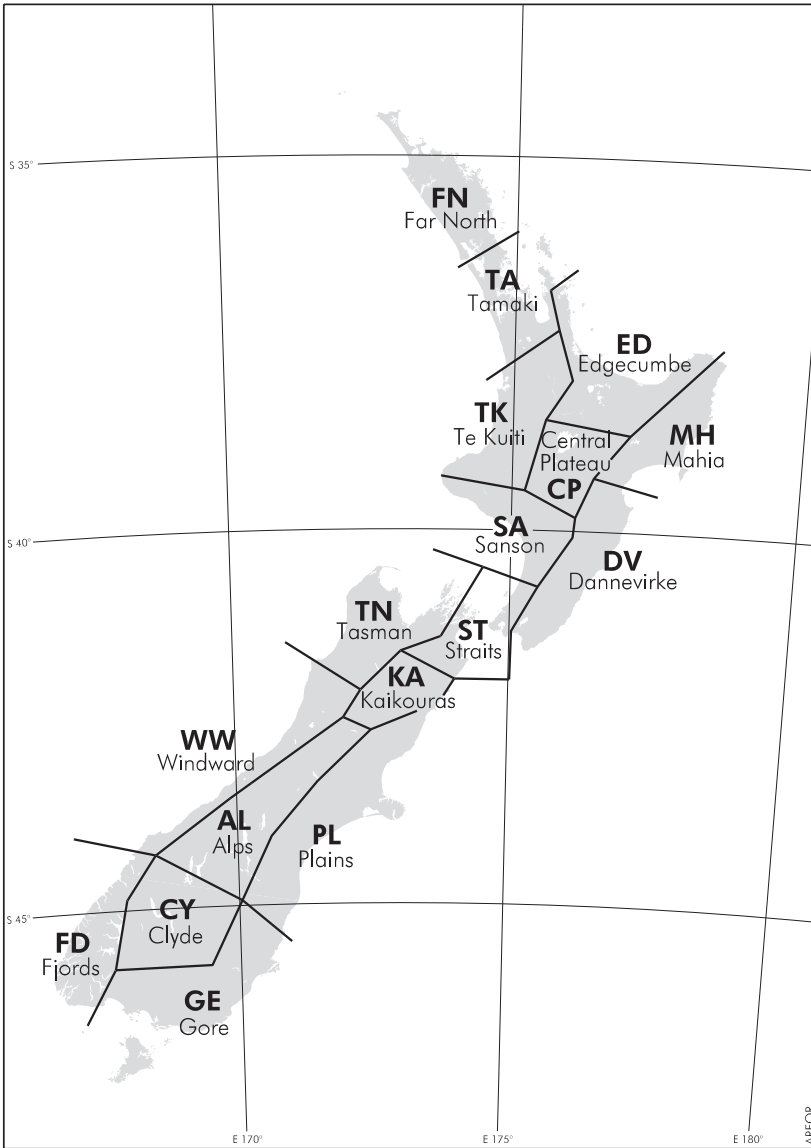
- (a) forecast winds at 1000 ft, 3000 ft, 5000 ft, 7000 ft, and 10,000 ft for each of the 17 AAW areas as defined in Figure GEN 3.5-1 (Page GEN 3.5 – 16).
- (b) Temperatures at 5000 ft, 7000 ft and 10,000 ft.

4.4.6 GRAFOR are issued twice daily;
Issue 1 at 1100Z with validities of 18Z, 00Z and 06Z.
Issue 2 at 2100Z with validities of 00Z, 06Z, and 12Z.

4.4.7 AAW are issued twice daily;
Issue 1 at 1100Z, valid from 12Z – 06Z.
Issue 2 at 2100Z, valid from 21Z – 12Z.

4.4.8 GNZSIGWX charts are issued three times daily;
Issue 1 at 1400Z, valid from 15Z – 06Z.
Issue 2 at 2000Z, valid from 21Z – 12Z.
Issue 3 at 0200Z, valid from 03Z – 18Z.

**Figure GEN 3.5-1
Aviation Area Winds**



4.5 Aerodrome Forecasts (TAF)

4.5.1 TAF are aerodrome forecasts in coded format.

4.5.2 TAF for domestic aerodromes (i.e. those other than Auckland, Wellington and Christchurch aerodromes) are issued between 1430 and 1630 and between 2130 and 2215 UTC daily. There is a further TAF issued between 0200 and 0245 UTC for a limited number of aerodromes to meet the requirements of overnight operations.

4.5.3 Issue times are advanced one hour when daylight saving is in force.

4.5.4 TAF for Auckland, Wellington and Christchurch international aerodromes are valid for 24 hours commencing at 0000, 0600, 1200 and 1800 UTC daily. Each TAF is issued within 1 hour before the start of the validity period.

4.5.5 There may be times when TAF for some domestic aerodromes are not supported by METAR/SPECI or equivalent observations, particularly at the beginning and end of the day. TAF at these times may have a lower standard of accuracy than at times when observations are available. TAF amendments are issued as required but amendments may not be made once three hours have elapsed since the last observation.

4.5.6 As noted in 4.3.1(g), when TREND forecasts are issued for selected aerodromes in New Zealand, the TREND supersedes the TAF during the two hour validity of the TREND.

4.5.7 The list of locations for which TAF are available is provided in Table GEN 3.5-2.

Example of TAF

4.5.8 The following is an example of a domestic TAF coded message intended for domestic operations:

```
TAF NZRO 192053Z 1921/2012 01015G28KT 30KM -SHRA SCT020  
BKN035 TEMPO 1923/2004 5000 +TSRAGS BKN010CB  
2000FT WIND 36020KT
```

Decode of TAF

4.5.9 The following is the decode, using the information listed in Table GEN 3.5-2, of the message in paragraph 4.5.8:

- (a) Aerodrome forecast for Rotorua, issued at 2053 UTC on the 19th of the month, valid from 2100 UTC on the 19th to 1200 UTC on the 20th of the month.
- (b) Surface wind: 010 degrees true, 15 knots gusts 28 knots.
- (c) Prevailing visibility: 30 kilometres.
- (d) Weather: Light shower of rain at the time of observation.
- (e) Cloud: scattered cloud with a base at 2000 feet above aerodrome level, broken cloud with a base at 3500 feet above aerodrome level.
- (f) Temporarily, between 2300 UTC on the 19th and 0400 UTC on the 20th, visibility will reduce to 5000 metres in heavy thunderstorms with rain and small hail pellets, and broken cumulonimbus cloud at 1000 feet above aerodrome level.
- (g) Wind at 2000 feet 360 degrees true at 20 knots (this is not included in TAF in the international format).

4.5.10 The following is an example of an international TAF coded message intended for international operations at NZAA, NZWN and NZCH aerodromes:

```
TAF NZCH 192305Z 2000/2100 06008KT 9999 SCT020
PROB30 2014/2022 0100 FG
```

Decode of TAF

4.5.11 The following is the decode, using the information listed in Table GEN 3.5-2, of the message in paragraph 4.5.10:

- (a) Aerodrome forecast for Christchurch, issued at 2305 UTC on the 19th of the month, valid from 0000 UTC on the 20th to 0000 UTC on the 21st of the month.
- (b) Surface wind: 060 degrees true, 8 knots.
- (c) Prevailing visibility: 10 kilometres or greater.
- (d) Cloud: scattered cloud with a base at 2000 feet above aerodrome level.
- (e) Change of conditions: 30% probability of a visibility of 100 metres in fog occurring between 1400 UTC on the 20th of the month and 2200 UTC on the 20th of the month.

4.6 Route Forecasts (ROFOR)

4.6.1 ROFOR are provided for domestic and international IFR operations.

4.6.2 ROFOR, which are issued in a self-evident plain language form, with an issue time and validity period to suit individual aircraft operators.

4.7 Product Packages

4.7.1 MetService supplies information product packages tailored to meet customer requirements. Customers should contact MetService regarding the products they require. Examples of MetService products can be viewed at www.caa.govt.nz/meteorology/examples-wx-products/.

Pre-flight Domestic MET Packages

4.7.2 Pre-flight domestic MET packages can include a selection of the following:

- (a) SIGMET (in graphical or textual format);
- (b) latest observations in METAR/SPECI or METAR AUTO code;
- (c) forecasts for aerodromes in TAF code;
- (d) route forecasts;
- (e) upper wind and temperature and significant weather charts and GNZSIGWX (surface to 41,000 ft);
- (f) low level (surface to 10,000 ft) GRAFOR, AAW; and
- (g) other information.

Pre-flight International MET Packages

4.7.3 Pre-flight international MET packages can include a selection of the following:

- (a) route forecasts;
- (b) SIGWX charts;
- (c) wind and temperature charts;
- (d) latest observations in METAR/SPECI or METAR AUTO code;
- (e) aerodrome forecasts in TAF code;
- (f) SIGMET;
- (g) satellite pictures; and
- (h) other information.

4.7.4 MET information is normally delivered by facsimile, the Internet, or computer-to-computer transfer. MET information is also available through websites maintained by the meteorological service providers.

4.8 In-flight Services

4.8.1 Unless otherwise indicated, non-graphical meteorological information is available on request — refer Table GEN 3.3-3 for detail. This information can be obtained via RTF from any ATS sector or unit. This information should, as far as possible, be limited to:

- (a) information not available at the aerodrome of departure prior to take-off;
- (b) more recent reports or forecasts than those previously supplied; and
- (c) additional information and advice required when the weather encountered is different from that forecast.

4.8.2 ATS sectors will advise aircraft of SIGMET messages, SPECI (on unattended aerodromes and for international flights), amended TAF, and wind shear reports on aerodromes:

- (a) within their area of responsibility; and
- (b) outside their area of responsibility which are the destination and alternative aerodromes of regular air transport aircraft using their airspace.

4.8.3 To reduce RTF clutter the pilot may be directed to receive the information from another unit or sector, e.g. Flight Information.

4.8.4 MET forecasts and reports obtained by ATS will be passed on as received with no interpretation.

ATIS

4.8.5 ATIS provides aerodrome take-off and landing reports on discrete frequencies for selected units. Details of frequencies and hours of operation are in Table GEN 3.7-1.

VOLMET

4.8.6 VOLMET provides published MET information for oceanic flights on selected frequencies. Details of VOLMET broadcasts are provided in Table GEN 3.5-6.

5 NOTIFICATION REQUIRED FROM OPERATORS

5.1 Pre-flight Information from MetService

Contact Information

5.1.1 Pre-flight information from MetService is provided by the Wellington Meteorological Office, which can be contacted as follows:

Wellington Meteorological Office
30 Salamanca Road
Kelburn
Wellington 6012
NEW ZEALAND

Postal Address:

PO Box 722
Wellington 6140
NEW ZEALAND

Telephone:

| | |
|------------------------------------|-------------------------------------|
| Manager, Aviation Weather Services | +64 4 470 0731 |
| Help Desk | +64 4 470 0717 or +64 4 470 0775 |
| Duty Forecaster | +64 4 470 0808 |
| General Manager New Zealand Sales | +64 4 470 0739 |

Fax:

| | |
|---------------|----------------|
| All enquiries | +64 4 471 2078 |
|---------------|----------------|

| | |
|------|----------|
| AFTN | NZKLYMYX |
|------|----------|

| | |
|----------|------------------------------------------------------------|
| Website: | www.metservice.com |
|----------|------------------------------------------------------------|

Domestic Scheduled Operations

5.1.2 Meteorological information for scheduled air transport operations is provided by prior arrangement. MetService requires up-to-date schedules and notification of changes.

Domestic Non-scheduled Flights

5.1.3 Requests for forecasts for non-scheduled flights should be accompanied by the following information:

- (a) name and address of the aircraft operator;
- (b) aircraft registration and type;
- (c) date and time forecast required;
- (d) route, including intermediate stops;
- (e) alternates required;
- (f) altitudes or flight levels;
- (g) ETD and ETA;
- (h) VFR or IFR; and
- (i) the location at which the product package is to be made available.

Scheduled International Services

5.1.4 Provided up-to-date schedules are provided to MetService, notification of individual flights is not required. Changes to scheduled operation should be notified, if possible, at least 24 hours before ETD.

Non-scheduled International Flights

5.1.5 Requests for MET information should be made not less than 24 hours before ETD. The following information is required:

- (a) name and address of the aircraft operator;
- (b) aircraft registration and type;
- (c) date and time forecast required;
- (d) route, including intermediate stops;
- (e) alternates required;
- (f) flight levels;
- (g) ETD and ETA;
- (h) VFR or IFR; and
- (i) the location at which the product package is to be made available.

5.1.6 Information provided to non-scheduled air transport and other operations currently consists of routine issues of forecasts.

5.2 Pre-flight Information from Aeropath

5.2.1 Pre-flight information (NOTAM and ATIS) can be obtained by:

- (a) Email or Fax from the National Briefing Office (NBO). Information will be returned following a verbal request.
- (b) Phone NBO operators
- (c) Internet by accessing the Airways Internet Flight Information Service website: www.ifis.airways.co.nz
- (d) AFTN. Those having access to the AFTN can interrogate the aeronautical database, or make a verbal request to have the information sent to an AFTN printer.
- (e) Personal visit to an Airways ATS unit.

6 AIRCRAFT REPORTS

6.1 AIREP

6.1.1 AIREP are required to be made and transmitted at the compulsory MET reporting points (regardless of the nature of prevailing meteorological conditions), and at other reporting points by agreement between the operator and the meteorological service provider. This applies to CPDLC equipped aircraft only.

6.2 AIREP Special

6.2.1 An AIREP Special should be made by all aircraft immediately to the nearest ATS unit when hazardous meteorological conditions are encountered or observed which, in the opinion of the pilot are, or may become severe enough to warrant a SIGMET, regardless of any reports from other aircraft and regardless of any SIGMET issued.

6.2.2 Hazardous meteorological conditions prompting an AIREP Special are:

- (a) Moderate or severe turbulence;
- (b) Moderate or severe icing;
- (c) Severe mountain wave;
- (d) Thunderstorms without hail, that are obscured, embedded, widespread or in squall lines;
- (e) Thunderstorms with hail, that are obscured, embedded, widespread or in squall lines;
- (f) Heavy dust/sandstorm;
- (g) Volcanic ash cloud;
- (h) Pre-eruption volcanic activity or volcanic eruption.

6.3 Reporting

6.3.1 AIREP and AIREP Special should be completed in accordance with the AIREP Format in Table ENR 1.1-2, except that AIREP are not required to include section 3 (MET) data if using voice communications.

6.3.2 As set out in Table ENR 1.1-2, the minimum information required in an AIREP Special is:

- (a) aircraft identification;
- (b) aircraft position;
- (c) time of report;
- (d) flight level or altitude; and
- (e) the nature of the meteorological phenomena being experienced or observed.

6.3.3 In New Zealand domestic aviation an abbreviated AIREP Special report, as set out in 6.3.2, is known as a Pilot Report or PIREP. Such reports are accorded equal priority and significance to AIREP Special.

Wind Shear

6.3.4 Wind shear in the vicinity of an attended aerodrome should be reported to the ATS unit, regardless of any previous reports from other aircraft. The report should include as much information as possible on the following aspects:

- (a) a simple warning of the presence of wind shear;
- (b) the altitudes at which it was encountered;
- (c) details of the effect on the aircraft, such as speed changes, vertical speed tendencies and changes in drift; and
- (d) the size of any associated temperature inversion.

6.3.5 Wind shear encountered elsewhere should be reported to an ATS unit and at unattended aerodromes should be included in the normal radio calls.

Turbulence and Icing

6.3.6 Turbulence and icing and, in particular, severe turbulence and icing should be reported to the nearest ATS unit, regardless of any previous reports from other aircraft.

Volcanic Activity Reports

6.3.7 Volcanic activity reports should be made by the pilot of an aircraft whenever volcanic activity is observed, regardless of any previous reports from other aircraft.

6.3.8 Volcanic activity reports should be submitted to the nearest ATS unit and contain as much of the following information as possible:

- (a) callsign;
- (b) position;
- (c) time;
- (d) flight level or altitude;
- (e) location of volcanic activity observed;
- (f) air temperature;
- (g) spot wind; and
- (h) a brief description of the vertical and lateral extent of any ash cloud.

6.4 Occurrence Reports Required

6.4.1 The following should be reported to the CAA using a CAA Form CA005:

- (a) significant discrepancies or gross inaccuracies in any meteorological information supplied by a CAR Part 174 certificate holder; and
- (b) any problems in relation to BWR.

7 VOLMET

7.1 VOLMET Broadcasts

7.1.1 VOLMET broadcasts are made in plain language from Auckland as detailed in Table GEN 3.5-5. The broadcasts are prefixed by the designator AUCKLAND VOLMET and contain:

- (a) notification of current SIGMET information;
- (b) aerodrome reports and trend forecasts, where available; and
- (c) TAF.

7.1.2 VOLMET broadcasts will not exceed five minutes. Cloud types, except CB will not be included. Temperature and QNH information will not be included in VOLMET TAF. Reference to the need to amend the current TAF will not be included in VOLMET trend-type landing forecast. As a result of automation, the VOLMET will not include METAR remarks or recent weather.

8 SIGMET

8.1 SIGMET Service

8.1.1 Details of the SIGMET service are provided in Table GEN 3.5-6.

8.1.2 A SIGMET is issued whenever any one of the following phenomena is expected to occur, or has actually been observed and reported.

- (a) Thunderstorms: obscured, embedded, frequent or in a squall line, with or without hail
- (b) Severe turbulence
- (c) Volcanic ash cloud and volcanic ejecta
- (d) Tropical cyclone
- (e) Severe icing — in cloud or due to freezing rain
- (f) Severe mountain waves
- (g) Heavy sandstorms or dust storms

Note: Limited information is available on volcanic ash cloud and volcanic ejecta for Volcanic Ash SIGMET within the Auckland Oceanic FIR north of 25S.

8.1.3 When a phenomenon that is the subject of a current SIGMET either ceases or is no longer expected to occur, a SIGMET cancellation message is issued.

8.1.4 SIGMET information is passed to ATS units and notification is included in Auckland VOLMET broadcasts.

Example of a SIGMET

8.1.5 The following is an example of a SIGMET:

NZZC SIGMET 3 VALID 170028/170428 NZKL-
 NZZC NEW ZEALAND FIR SEV ICE OBS AT 0016Z S4120 E17448
 9000FT/FL120 WKN FCST SEV ICE 0428Z WI S3927 E17540 - S4118
 E17313 - S4329 E17232 - S4137 E17517 - S3927 E17540 -
 7000FT/FL180=

Decode of SIGMET

8.1.6 The following is the decode of the SIGMET shown in paragraph 8.1.5:

- | | | |
|-----|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) | NZZC | Issued for the Christchurch Flight Information Centre |
| (b) | SIGMET | SIGNificant METeorological information for pilots |
| (c) | 3 | The 3 rd SIGMET issued today since 0000 UTC |
| (d) | VALID | Between 0028 and 0428 UTC on the 17 th of the month |
| (e) | NZKL- | Issued by the Wellington Area Forecast Centre, Kelburn, Wellington |
| (f) | NZZC NEW ZEALAND FIR | Issued for the New Zealand Flight Information Region |
| (g) | Text | Severe ICE observed (OBS) at 0016 UTC on the 17 th of the month at latitude south 41 degrees 20 minutes, longitude east 174 degrees 48 minutes, between 9000 feet and flight level 120, intensity expected to weaken (WKN). Forecast of severe ICE at 0428 UTC on the 17 th of the month, within (WI) the area bounded by the following points of latitude and longitude (shown in degrees and minutes); S3927 E17540 - S4118 E17313 - S4329 E17232 - S4137 E17517 - S3927 E17540 The area of severe ICE is expected to affect the airspace between 7000 feet and flight level 180. |
| (h) | = | End of message character (=) |

8.1.7 Heights given in SIGMET are expressed in feet above mean sea level up to 10,000 feet, and in flight levels at and above FL100.

8.1.8 Graphical representations of text SIGMETs are also available in a product called Graphical SIGMET Monitor (GSM). This product is effectively a monitoring product intended for situational awareness, and the text SIGMET should be used for precise flight planning purposes.

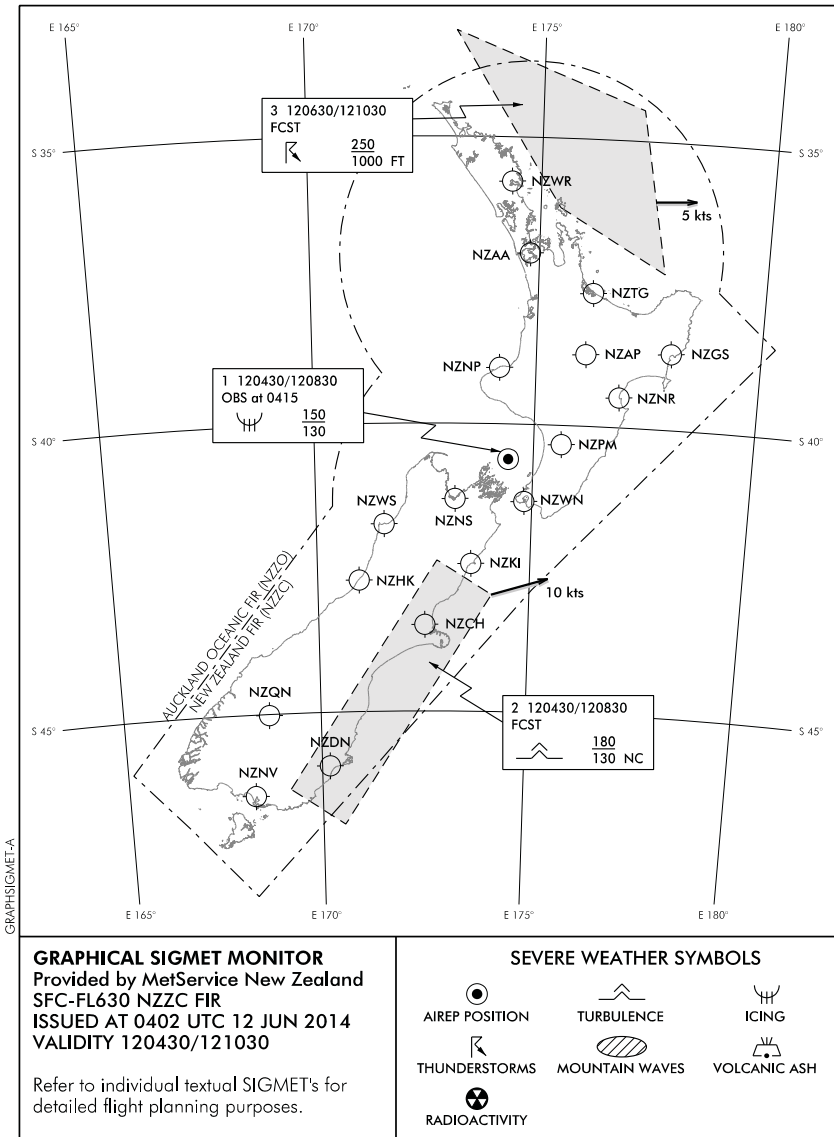
8.1.9 A separate GSM is provided for the New Zealand FIR (NZZC) and the Auckland Oceanic FIR (NZZO). For each of the FIRs, a single graphic will show the position of all current SIGMET in the FIR. It will be updated as new SIGMET are issued or cancelled.

8.1.10 The GSM includes hazardous weather phenomena displayed in areas (polygons) using established meteorological symbols and movement (direction arrows and speed). Each SIGMET area (polygon) also has its associated validity times shown. The SIGMET information for each SIGMET polygon is included in an "information box" (refer to the example at 8.1.11).

8.1.11 An example of a GSM for the NZZC FIR is provided below and an explanation and decode of the information displayed is given below the example. The numbering in the explanation and decode will be the same as the numbering of each SIGMET displayed in the GSM.

8.1.12 Additional examples of GSM for the NZZC FIR and also examples of GSM for the NZZO FIR are available at:
http://www.caa.govt.nz/assets/legacy/Meteorology/GSM_User_Guide.pdf

**Figure GEN 3.5-2
Graphical SIGMET**












GRAPHICAL SIGMET MONITOR
 Provided by MetService New Zealand
 SFC-FL630 NZZC FIR
 ISSUED AT 0402 UTC 12 JUN 2014
 VALIDITY 120430/121030

Refer to individual textual SIGMET's for detailed flight planning purposes.

SEVERE WEATHER SYMBOLS

- | | | |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |
| AIREP POSITION | TURBULENCE | ICING |
|  |  |  |
| THUNDERSTORMS | MOUNTAIN WAVES | VOLCANIC ASH |
|  | | |
| RADIOACTIVITY | | |

Notes:

| Information or symbol | Description |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| 1. 120430/120830 | SIGMET number 1, valid from 0430 to 0830 UTC on the 12 th day of the month |
| OBS at 0415 | An observation (OBS) (air report) made at 0415 UTC, on the 12 th day of the month |
|  | Severe icing observed (severe icing symbol) |
| $\frac{150}{130}$ | The top of the severe icing was observed at FL150 and the base at FL130 |
|  | This shows the location (position) of the severe icing observed |
|  | A "zaggy" arrow points from the information box to the location of the severe icing |
| Information or symbol | Description |
| 2. 120430/120830 | SIGMET number 2, valid from 0430 to 0830 UTC on the 12 th day of the month |
| FCST | A forecast (FCST) SIGMET |
|  | Severe turbulence forecast (severe turbulence symbol) |
| $\frac{180}{130}$ | Top of the severe turbulence is expected to be FL180 and the base at FL130 |
| NC | No change (NC) in intensity is expected during the validity period of the SIGMET |
|  | A "zaggy" arrow points from the information box to the area (polygon) of forecast severe turbulence |
|  10 kts | The area (polygon) of severe turbulence is forecast to move northeastwards (NE) at 10 knots during the validity of the SIGMET |
| Information or symbol | Description |
| 3. 120630/121030 | SIGMET number 3, valid from 0630 to 1030 UTC on the 12 th day of the month |
| FCST | A forecast (FCST) SIGMET |
|  | Thunderstorms forecast (thunderstorm symbol) |
| $\frac{250}{1000 \text{ FT}}$ | The top of the thunderstorms is expected to be FL250 and the base at 1000 feet |
|  | A "zaggy" arrow points from the information box to the area (polygon) of the forecast thunderstorms |
|  5 kts | The area (polygon) of thunderstorms is forecast to move eastwards (E) at 5 knots during the validity of the SIGMET |

Decode of Graphical SIGMET Monitor Information Box (bottom left of the GSM example)

| Information or symbol | Description |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFC-FL630 NZCC FIR | The GSM includes SIGMET information for the airspace from the surface to FL630 for the New Zealand FIR (NZCC) |
| ISSUED AT 0420 UTC 12 JUN 2014 | The GSM was issued at 0420 UTC on 12 June 2014 |
| VALIDITY 120430/121030 | The validity of the GSM is from 0430 to 1030 UTC on 12 June 2014. This indicates the earliest commencement time for a SIGMET in the GSM and the latest end time for a SIGMET in the GSM |

**Table GEN 3.5-1
Meteorological Terminology**

| Wind | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Speed | METAR/METAR AUTO SPECI TREND TAF VOLMET AAW Take-off and landing reports ATIS | Measured in knots, with gusts indicated where they exceed the mean wind speed by 10 knots or more. Gust information follows mean wind speed separated by the letter G e.g. 24015G30KT Calm is indicated by 00000KT |
| Direction | METAR/METAR AUTO SPECI TREND TAF VOLMET AAW | Degrees true VRB indicates variable e.g. VRB02KT |
| | Take-off and landing reports ATIS | Degrees magnetic |
| Direction Variability | METAR/METAR AUTO SPECI | When the direction varies by 60 degrees or more, the extreme directions are given, separated by the letter V e.g. 260V330 |
| Visibility (for Auckland, Wellington and Christchurch aerodromes only) | | |
| Prevailing Visibility is defined as the maximum visibility covering at least half of the total horizon (note: the sections of the horizon do not have to be adjoining) | METAR AUTO | Prevailing visibility of <u>less than</u> 10 kilometres is reported in metres. Prevailing visibilities of 10 kilometres or greater are reported as 9999. |
| | TREND TAF VOLMET | Visibility is forecast in metres up to a maximum of 9999 metres. Visibilities of 10 km or greater are forecast as 9999. |
| | Take-off and landing reports ATIS | Reported in metres when the visibility is less than 5000 metres e.g. 3000 m. Visibilities of 5000 metres or more are reported in kilometres e.g. 5 km |

| Visibility (for domestic aerodromes other than NZAA, NZWN and NZCH) | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Prevailing Visibility is defined as the maximum visibility covering at least half of the total horizon (note: the sections of the horizon do not have to be adjoining)</p> | METAR/METAR AUTO | Up to 9999 metres, prevailing visibility is reported in metres e.g. 3000. Prevailing visibility above 9999 metres is reported in kilometres e.g. 10 km, 20 km etc. |
| | METAR SPECI | Where there is a marked variation in the visibility, the minimum visibility is added with a direction given e.g. 7000 1200SW (where the prevailing visibility is 7000 metres). |
| | TREND TAF GRAFOR | Up to 9999 metres, visibility is forecast in metres e.g. 7000. Above 9999 metres, visibility is forecast in kilometres e.g. 20 km |
| | Take-off and landing reports ATIS | Reported in metres when the visibility is less than 5000 metres e.g. 3000 m. Visibilities of 5000 metres or more are reported in kilometres e.g. 5 km |
| Runway Visual Range (only reported at Auckland and Christchurch aerodromes) | | |
| | METAR AUTO | Reported when Runway Visual Range (RVR) or visibility is less than 1500 m. RVR is reported for the touchdown zone (TDZ) of the runway(s) in use. The runway designator is reported followed by the RVR, e.g. R05/1400. If the RVR during the 10 minutes before the observation time shows a distinct upward or downward tendency, "U" for upward or "D" for downward is added. When it is not possible to determine the tendency "N" is used. When the RVR exceeds 2000 m it is reported as P2000 and when it is less than 50 m it is reported as M0050. |
| | Take-off and landing reports ATIS | Refer GEN 3.5 Meteorological Services section, 3.12 Runway Visual Range (RVR) |

| Code for significant present and forecast weather at the aerodrome (weather within 8 km of the aerodrome reference point) | | | | |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------|---------------------------|---------------------------------------------------------------|
| Qualifier | | Weather Phenomena | | |
| <i>Intensity or Proximity</i> | <i>Descriptor</i> | <i>Precipitation</i> | <i>Obscuration</i> | <i>Other</i> |
| - Light | SH Shower(s) | DZ Drizzle | BR Mist | SQ Squall |
| Moderate (no qualifier) | TS Thunderstorm | RA Rain | FG Fog | FC Funnel cloud(s) (<i>Tornadoes or Waterspouts</i>) |
| + Heavy | MI Shallow | GS Small Hail and/or snow pellets | HZ Haze | PO Dust/sand whirls (<i>Dust Devils</i>) |
| VC In the vicinity | BC Patches | GR Hail | VA Volcanic Ash | SS Sandstorm |
| | PR Partial (<i>covering part of the aerodrome</i>) | SN Snow | DU Widespread Dust | DS Duststorm |
| | DR Low Drifting | SG Snow Grains | SA Sand | |
| | BL Blowing | PL Ice Pellets | | |
| | FZ Freezing (<i>Super-cooled</i>) | | | |

Notes:

- The weather groups described above are primarily set out in such a way that by following simple rules (as set out in Notes 3 to 8 below), the most appropriate description(s) of the present weather entered into an encoded METAR or SPECI message can be decoded.
- Any of the groups or combinations of groups described above, with the exception of the term VC, may be used to forecast weather phenomena in TREND, TAF, VOLMET and GRAFOR products.

The following notes apply exclusively to the way that present weather is encoded in METAR and SPECI reports.

- The weather group(s) are coded by combining appropriate abbreviations from each column working from left to right e.g. a heavy shower of rain is encoded as: +SHRA.
- If there is more than one weather phenomenon, up to 3 separate groups are encoded in the same order as the columns in the table e.g. light drizzle and fog is encoded as: -DZ FG.
- An exception to the above rule is that the groups for more than one form of precipitation are joined together with the dominant type first e.g. SNRA indicates moderate snow and rain (sleet), with snow the dominant precipitation.
- GS signifies that the largest hailstones are less than 5 mm in diameter, otherwise GR is used.
- VC (in the vicinity) denotes "between 8 km and 16 km from the aerodrome reference point", and is used to indicate only the following significant weather phenomena observed in the vicinity of the aerodrome: TS, DS, SS, FG, FC, SH, PO, BLDU, BLSA, BLSN and VA. The abbreviation VCFG is used to report any type of fog observed in the vicinity of the aerodrome.
- In the absence of any precipitation:
 - FG (fog) is used when visibility is less than 1000 m.
 - BR (mist) is used when visibility is between 1000 m and 5000 m.
 - HZ (haze) is used when visibility is less than 5000 m, and the reduction is caused by something other than water droplets or ice crystals.

| Cloud | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Cloud Type and Abbreviation | METAR SPECI TAF TREND Take-off and landing reports ATIS VOLMET GRAFOR GNZSIGWX | Cumulonimbus* Towering Cumulus* | CB TCU |
| | | * Not reported in METAR AUTO | |
| Cloud Amount | METAR/METAR AUTO SPECI TREND TAF VOLMET GRAFOR Take-off and landing reports ATIS | SKC FEW SCT BKN OVC | Sky clear (no cloud at all)* 1–2 oktas 3–4 oktas 5–7 oktas 8 oktas * Not reported in METAR AUTO |
| Cloud Height | METAR/METAR AUTO SPECI TREND TAF VOLMET | Hundreds of feet above aerodrome level | |
| | GRAFOR | Hundreds of feet above mean sea level (AMSL) | |
| | Take-off and landing reports ATIS | Hundreds of feet above aerodrome level | |
| Notes: | | | |
| (1) When the sky is obscured, or forecast to be obscured (e.g. because of fog), the cloud group will be entered as VV/// (vertical visibility unavailable). | | | |
| (2) When an AWS does not detect cloud below 10,000 ft, at NZAA, NZWN and NZCH, or at any level for all other domestic aerodromes, NCD (No Cloud Detected) is reported in METAR AUTO. | | | |
| Additional METAR/SPECI Terminology | | | |
| METAR and SPECI | COR | Corrected: as in SPECI COR This implies that the text of the SPECI and/or the text of the appended TREND has been corrected | |

| Forecast Terminology | | |
|----------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TAF | AMD | Amended: as in TAF AMD |
| | COR | Corrected: as in TAF COR |
| | BECMG 0522/0601 | Used to describe changes where the meteorological conditions are expected to reach or pass through specified threshold values at a regular or irregular rate and at an unspecified time within the period 2200 UTC on the 5 th to 0100 UTC on the 6 th |
| | FM052200 | Used when one set of prevailing weather conditions is expected to change significantly and more or less completely to a different set of conditions, with the change expected to occur at 2200 UTC on the 5 th |
| | TEMPO 0502/0507 | Used to describe expected frequent or infrequent temporary fluctuations in the meteorological conditions, which reach or pass specified threshold values and last for a period of less than one hour in each instance, with the temporary fluctuations expected to occur between 0200 and 0700 UTC on the 5 th . Such fluctuations take place sufficiently infrequently for the prevailing conditions to remain those originally forecast |
| | PROB30 | Used to indicate the probability of the occurrence of an alternative forecast element over a specified time frame e.g. PROB30 0517/0521 0500 FG indicates that there is a 30% chance of visibility reducing to 500 m in fog between 1700 and 2100 UTC on the 5 th |
| | PROB40 TEMPO 0517/0522 | Used to indicate the probability of the temporary occurrence of an alternative forecast element over a specified time frame e.g. PROB40 TEMPO 0517/0522 3000 +TSRA BKN018CB indicates that there is a 40% chance that temporarily, between 1700 and 2200 UTC on the 5 th , the visibility will reduce to 3000 m in heavy thunderstorms and rain, with broken Cumulonimbus cloud at 1800 ft above aerodrome level |
| TREND | NOSIG | No Significant Change to the conditions reported in the METAR or SPECI Note: If the trend "NOSIG" is appended to a SPECI reporting poor visibility and/or low cloud, the conditions at that aerodrome are forecast not to change during the 2 hours following the issue time of the SPECI |
| | BECMG | Used to describe changes where the meteorological conditions are expected to reach or pass through specified threshold values at a regular or irregular rate, with such changes expected to occur throughout the 2-hour validity of the TREND |

| Forecast Terminology cont | | |
|----------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TREND (cont) | BECMG FM0530 | Used to describe changes where the meteorological conditions are expected to reach or pass through specified threshold values at a regular or irregular rate, with such changes expected to commence occurring from 0530 UTC |
| | BECMG TL0600 | Used to describe changes where the meteorological conditions are expected to reach or pass through specified threshold values at a regular or irregular rate, with such changes already occurring, but expected to be complete by 0600 UTC |
| | BECMG AT2130 | Used to describe changes where the meteorological conditions are expected to reach or pass through specified threshold values, with the change expected to occur at 2130 UTC |
| | TEMPO | Used to describe expected frequent or infrequent temporary fluctuations in the meteorological conditions, which reach or pass specified threshold values and last for a period of less than one hour in each instance. Such fluctuations are expected to occur during the 2 hours following the issue time of the METAR or SPECI, and to take place sufficiently infrequently for the prevailing conditions to remain those originally reported in the METAR or SPECI |
| | TEMPO FM0530 | As for TEMPO above, except that such temporary fluctuations are expected to commence occurring from 0530 UTC |
| | TEMPO TL0600 | As for TEMPO above, except that such temporary fluctuations are already occurring and are expected to cease from 0600 UTC |
| TAF TREND GRAFOR | NSW | Nil Significant Weather |
| | FZL | Freezing level in hundreds of feet above mean sea level |
| | WX | Forecast weather |
| GRAPHICAL NZ SIGWX | TURB | Turbulence |
| | MTW | Mountain waves |
| | ICE | Icing |
| GRAPHICAL NZ SIGWX | FREQ | Frequent |
| | EMBD | Embedded |
| GRAPHICAL NZ SIGWX GRAFOR | OCNL | Occasional |
| AAW | PS | Plus e.g. PS06 is plus 6 degrees Celsius |
| | MS | Minus e.g. MS03 is minus 3 degrees Celsius |

| Additional terminology applicable only to Auckland, Wellington and Christchurch aerodromes | | |
|---------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TREND and TAF | NSC | <p>NSC — No Significant Cloud and no CB or TCU at all.</p> <p>NSC will be used if there is no cloud with a base below 5000 ft or the highest minimum sector altitude:</p> <ul style="list-style-type: none"> (a) 5000 ft at NZAA (b) 6500 ft at NZWN and (c) 7000 ft at NZCH |
| | CAVOK | <p>CAVOK — Cloud and visibility OK</p> <p>CAVOK will be used to replace visibility, weather and cloud if the following conditions occur simultaneously:</p> <ol style="list-style-type: none"> 1. Visibility is 10 km or greater, and... 2. there is no cloud with a base below; <ul style="list-style-type: none"> (a) 5000 ft at NZAA (b) 6500 ft at NZWN and (c) 7000 ft at NZCH or CB or TCU at any height, and... 3. there is no significant weather. |

Table GEN 3.5-2
Aerodrome Meteorological Information
Available Pre-Flight from MetService
(Aerodrome Meteorological Information Available
In-Flight from ATS is listed in Table GEN 3.3-3)

| Aerodrome | Location Indicator | METAR/SPECI | METAR AUTO³ | TAF | TREND |
|--------------------|---------------------------|--------------------|-------------------------------|------------|--------------|
| Alexandra | NZLX | | AVBL ⁴ | AVBL | |
| Auckland | NZAA | | AVBL | AVBL | AVBL |
| Chatham Is | NZCI | | AVBL | AVBL | |
| Christchurch | NZCH | | AVBL | AVBL | AVBL |
| Dunedin | NZDN | | AVBL | AVBL | |
| Gisborne | NZGS | | AVBL | AVBL | |
| Hamilton | NZHN | | AVBL | AVBL | |
| Hokitika | NZHK | | AVBL | AVBL | |
| Invercargill | NZNV | | AVBL | AVBL | |
| Kaikoura | NZKI | | AVBL ² | | |
| Kaitaia | NZKT | | AVBL ⁴ | AVBL | |
| Kerikeri/Bay of Is | NZKK | | AVBL | AVBL | |
| Masterton | NZMS | | AVBL | AVBL | |
| Milford Sound | NZMF | AVBL ¹ | | AVBL | |
| Mount Cook | NZMC | | AVBL ⁴ | AVBL | |
| Napier | NZNR | | AVBL | AVBL | |
| Nelson | NZNS | | AVBL | AVBL | |
| New Plymouth | NZNP | | AVBL | AVBL | |
| Oamaru | NZOU | | AVBL | AVBL | |
| Ohakea | NZOH | AVBL ¹ | | AVBL | AVBL |
| Palmerston North | NZPM | | AVBL | AVBL | |
| Paraparaumu | NZPP | | AVBL | AVBL | |
| Pukaki | NZUK | | AVBL | | |
| Queenstown | NZQN | | AVBL | AVBL | |
| Rotorua | NZRO | | AVBL | AVBL | |
| Taupo | NZAP | | AVBL | AVBL | |
| Tauranga | NZTG | | AVBL | AVBL | |
| Te Anau/Manapouri | NZMO | | AVBL | AVBL | |
| Timaru | NZTU | | AVBL | AVBL | |
| Wanaka | NZWF | | AVBL | AVBL | |
| Wellington | NZWN | | AVBL | AVBL | AVBL |
| Westport | NZWS | | AVBL | AVBL | |
| Whakatane | NZWK | | AVBL | AVBL | |
| Whanganui | NZWU | | AVBL | AVBL | |

| Aerodrome | Location Indicator | METAR/SPECI | METAR AUTO ³ | TAF | TREND |
|------------|--------------------|-------------------|-------------------------|------|-------|
| Whangarei | NZWR | | AVBL | AVBL | |
| Whenuapai | NZWP | AVBL ¹ | | AVBL | AVBL |
| Woodbourne | NZWB | | AVBL | AVBL | |

Notes:

- METAR/SPECI are available only during the hours of service of ATS. See SUP and NOTAM for ATS Hours of Service.
- Observations are from a site 8 km to the east of the airfield.
- METAR AUTO includes the surface wind, visibility (but with no directional visibility variations), touchdown runway visual range (Auckland and Christchurch aerodromes only), present weather, cloud, temperature, dew point, and QNH. Users should be aware that the observations of visibility and cloud give conditions at and above the sensors and may not be representative of conditions over other parts of the aerodrome or within an 8 km radius of the perimeter. Lightning data from an independent lightning detection network will be added to METAR AUTO to indicate the presence of thunderstorms (TS), and recent (RE) weather will also be included as appropriate.

METAR AUTO will not include "vicinity" (VC) present weather, except for thunderstorms in the vicinity (VCTS), which will be included in the report. However, some additional "vicinity" (VC) present weather, such as precipitation and fog, may be included in reports from NZAA, NZWN and NZCH when identified by forecasters accessing airport webcams, and high resolution weather radar and satellite imagery. METAR AUTO reports are provided at 30-minute intervals (on the hour and half hour). SPECI AUTO reports are not provided.

- Abbreviated METAR AUTO from an automatic weather station are available from a number of small aerodromes around New Zealand. These provide information that is generally limited to the surface wind, temperature, dew point and pressure (QNH). These reports may be included in MetFlight-Commercial.

**Table GEN 3.5-3
Aerodrome Observing Systems**

| Aerodrome | Location Indicator | Wind Measurement | Cloud Measurement | Present Weather and Visibility Measurement |
|-----------------------|--------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------|
| Alexandra | NZLXA | AWS anemometer 300 m E of main apron | — | — |
| Ardmore | NZARA | AWS anemometer on TWR roof | — | — |
| Ashburton | NZASA | AWS anemometer 60 m E of intersection of RWYs 06/24 and 02/20 | — | — |
| Auckland | NZAAA | ATC anemometers adjacent to GP antennas for RWY 05R/23L AWS anemometer 275 m S of THR RWY 23L | AWS ceilometer 285 m S of THR RWY 23L | AWS, RVR |
| Chatham Islands/Tuuta | NZCI | AWS anemometer 350 m SW of THR RWY 05 | AWS ceilometer 350 m SW of THR RWY 05 | AWS |
| Christchurch | NZCH | ATC anemometers adjacent to THR of RWYs 02/20 and 11/29 AWS anemometer 380 m W of intersection of main RWYs | AWS ceilometer 250 m W of intersection of main RWYs | AWS, RVR |
| Culverden | NZCUA | AWS anemometer 100 m W of southern end of strip | — | — |
| Dunedin | NZDND | ATC anemometers at either end of RWY on eastern side of aerodrome AWS anemometer 225 m S of RFS station | AWS ceilometer 225 m S of RFS station | AWS |

| Aerodrome | Location Indicator | Wind Measurement | Cloud Measurement | Present Weather and Visibility Measurement |
|--------------|--------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------|
| Galatea | NZGAX | AWS anemometer 100 m SE of THR RWY 01 | — | — |
| Gisborne | NZGS | ATC anemometer 280 m W of intersection of RWYs 14/32 and 03/21 AWS anemometer 430 m NE of TWR | AWS ceilometer 430 m NE of TWR | AWS |
| Flat Hills | NZFLX | AWS anemometer adjacent to northern windsock | — | — |
| Hamilton | NZHN | AWS anemometer 515 m NE of TWR | AWS ceilometer 515 m NE of TWR | AWS |
| Hokitika | NZHK | AWS anemometer 135 m NW of Terminal | AWS ceilometer 235 m NW of Terminal | AWS |
| Invercargill | NZNV | AWS anemometer 560 m NW of TWR | AWS ceilometer 560 m NW of TWR | AWS |
| Kaikoura | NZKIX | AWS anemometer on Kaikoura Peninsula, 8 km E of AD | AWS ceilometer 8 km E of AD at elevation 332 ft | AWS |
| Kaitiaki | NZKTA | AWS anemometer 170 m SE of Terminal | — | — |
| Kerikeri | NZKK | AWS anemometer 200 m W of THR RWY 33 | AWS ceilometer 200 m W of THR RWY 33 | AWS |
| Masterton | NZMS | AWS anemometer 450 m S of Terminal | AWS ceilometer 450 m S of Terminal | AWS |

| Aerodrome | Location Indicator | Wind Measurement | Cloud Measurement | Present Weather and Visibility Measurement |
|------------------|--------------------|--------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------|
| Milford Sound | NZMF | Anemometer on top of TWR | Manual | Manual |
| Mount Cook | NZMCA | AWS anemometer 180 m NW of Terminal | — | — |
| Napier | NZNR | AWS anemometer 700 m SW of TWR | AWS anemometer 700 m SW of TWR | AWS |
| Nelson | NZNS | AWS anemometer 250 m W of THR RWY 02 | AWS anemometer 250 m W of THR RWY 02 | AWS |
| New Plymouth | NZNP | AWS anemometer 300 m NE of TWR | AWS anemometer 300 m NE of TWR | AWS |
| Oamaru | NZOU | AWS anemometer 230 m E of THR RWY 36 | AWS anemometer 230 m E of THR RWY 36 | AWS |
| Ohakea | NZOH | ATC anemometers adjacent to each RWY threshold AWS anemometer adjacent THR RWY 09 | Manual AWS Ceilometer in base area 500 m N of TWR | Manual, AWS |
| Palmerston North | NZPM | ATC anemometer 500 m N of TWR AWS anemometer 500 m N of TWR | AWS ceilometer 500 m N of TWR | AWS |
| Paraparaumu | NZPP | AWS anemometer 350 m S of Terminal | AWS ceilometer 300 m S of Terminal | AWS |
| Pukaki | NZUK | AWS anemometer 350 m SW of THR RWY 33 | AWS ceilometer 350 m SW of THR RWY 33 | AWS |

D

D

| Aerodrome | Location Indicator | Wind Measurement | Cloud Measurement | Present Weather and Visibility Measurement |
|-------------------|--------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------------|
| Queenstown | NZQN | ATC anemometers 430 m E of THR RWY 05 and 310 m W of THR RWY 23 AWS anemometer 450 m N of Terminal | AWS ceilometer 450 m N of Terminal | AWS |
| Rotorua | NZRO | AWS anemometer 300 m N of VOR | AWS ceilometer 300 m N of VOR | AWS |
| Roxburgh | NZRXX | AWS anemometer 70 m W of THR RWY 34 | — | — |
| Taupo | NZAP | AWS anemometer 280 m S of Terminal | AWS ceilometer 260 m S of Terminal | AWS |
| Tauranga | NZTG | ATC anemometer 550 m SE of TWR AWS anemometer adjacent to TWR | AWS ceilometer adjacent to TWR | AWS |
| Te Anau/Manapouri | NZMO | AWS anemometer 100 m W of main apron | AWS ceilometer 100 m W of main apron | AWS |
| Timaru | NZTU | AWS anemometer 220 m S of THR RWY 02 | AWS ceilometer 220 m S of THR RWY 02 | AWS |

| Aerodrome | Location Indicator | Wind Measurement | Cloud Measurement | Present Weather and Visibility Measurement |
|------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------|
| Wairoa | NZWOA | AWS anemometer 140 m SW of THR RWY 34 | — | — |
| Wanaka | NZWF | AWS anemometer 150 m W of RWY/TWY intersection | AWS ceilometer 150 m W of RWY/TWY intersection | AWS |
| Wellington | NZWN | ATC anemometers adjacent to GP antennas for RWY 16/34 AWS anemometer 400 m N of THR RWY 34 on SW side at a non-standard height of 6 m | AWS ceilometer 400 m N of THR RWY 34 | AWS |
| Westport | NZWS | AWS anemometer 500 m NW of Terminal | AWS ceilometer 150 m SE of Terminal | AWS |
| Whakatane | NZWK | AWS anemometer 70 m E of Terminal | AWS ceilometer 70 m E of Terminal | AWS |
| Whanganui | NZWU | AWS anemometer 250 m NE of main apron | AWS ceilometer | AWS |
| Whangarei | NZWR | AWS anemometer 65 m NE of Terminal | AWS ceilometer 50 m N of RFS building | AWS |
| Whenuapai | NZWP | ATC anemometers adjacent to GP antennas for RWY 03/21 AWS anemometer adjacent to GP antenna for RWY 21 | Manual AWS ceilometer adjacent to VORTAC | Manual, AWS |
| Woodbourne | NZWB | ATC anemometer 60 m SE of TWR AWS anemometer 650 m W of TWR | AWS ceilometer | AWS |

Notes:

1. Wind data from an anemometer located on a tower on Sugar Loaf is appended to METAR AUTO reports from Christchurch Airport (NZCH) as a remark (RMK). The Sugar Loaf anemometer is located at S43 36 E172 39, approximately 16.5 km SE of Christchurch Airport at an elevation of 2027 ft.
2. Wind data from an anemometer located on a pole on top of Swampy Summit is appended to METAR AUTO reports from Dunedin Airport (NZDN) as a remark (RMK). The Swampy Summit anemometer is located at S45 48 E170 29, approximately 26 km NE of Dunedin Airport at an elevation of 2374 ft.
3. Wind data from an anemometer located on a tower on top of Mt Kaukau is appended to METAR AUTO reports from Wellington Airport (NZWN) as a remark (RMK). The Mt Kaukau anemometer is located at S41 14 E174 46, approximately 10 km NNW of Wellington Airport at an elevation of 1844 ft.
4. Visibility and cloud information provided by AWS is not necessarily representative of the conditions in the vicinity of the runway due to the siting of the AWS and area of scan. It should also be noted that due to the limitations of the sensors used, cloud and visibility information may not be available on occasions.
5. Cloud base is measured using a reflected laser diode ceilometer. Visibility is measured by a forward scatter meter. Present weather is determined from visibility, precipitation and other AWS sensor measurements. Thunderstorm information in METAR AUTO is derived from a national lightning detection network.
6. AWS (METAR AUTO) Clouds — when the cloud type cannot be observed, “///” will be added to each cloud group. When no clouds are detected by the cloud sensor below 10,000 ft, at NZAA, NZWN and NZCH, or at any level for all other domestic aerodromes, the abbreviation “NCD” (no cloud detected) will be used.
7. AWS (METAR AUTO) Present Weather — when the type of precipitation cannot be identified, the letters UP (unidentified precipitation) will be reported for the present weather group.
8. RVR information available from Auckland and Christchurch aerodromes. The RVR equipment is installed adjacent to the TDZ, MID and END of Auckland RWY 05R/23L and Christchurch RWY 02/20.
9. 5-letter location indicators are shown for aerodromes that do not have METAR AUTO programmes. Observations from these locations are available in some MetService aviation products.

Table GEN 3.5-4
Amendment Criteria for Meteorological Forecasts
and Issuing Criteria for SPECI

| Product | MET Element | | Amendment Criteria |
|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AAW | Wind: | Direction | Change of 30° or more where the speed is 30 kt or more before and/or after the change |
| | | Speed | Change of 20 kt or more |
| AAW | Temperature: | | Change of 5° or more |
| GRAFOR | Cloud: | Amount | Change of category from SCT to BKN (or OVC), or from BKN (or OVC) to SCT, when the height of the base is below 1500 ft |
| | | Height of base | Change to or through the values of 5000, 3000, 1000, and 500 ft AMSL, the amount being BKN or OVC |
| GRAFOR GNZSIGWX | Significant Weather: | Thunderstorms, hail, squalls, marked mountainwaves | New expectation or no longer expected |
| | | Turbulence and/or icing | New expectation. Intensity increasing to moderate or severe. Intensity decreasing from severe to light, or from moderate to nil |
| | | Timing | When the time of the forecast change is expected to vary by more than two hours |
| SIGWX Route Forecasts (ROFORs) | Wind: | Direction | Change of 30° or more where the speed is 30 kt or more before and/or after the change |
| | | Speed | Change of 20 kt or more |
| | Temperature: | | Change of 5° or more |
| | Significant Weather: | Turbulence and/or icing | Newly expected occurrence; error in expected position of phenomena; intensity increasing; intensity decreasing from severe to light or nil, or from moderate to nil |
| | | Timing | When the time of the forecast change is expected to vary by more than two hours |
| | Other significant enroute weather phenomena: | | Newly expected occurrence, or no longer expected |

| Product | MET Element | | Amendment Criteria |
|------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TAF | QNH Forecasts: | | When the QNH is expected to fall outside the range previously forecast |
| | 2000ft wind: | Direction Speed | A forecast change of 60° or more provided the mean speed is 10 kt or more before and/or after the forecast change An expected change of 10 kt or more |
| TAF TREND | Wind: | Direction | A forecast change of 60° or more provided the mean speed is 10 kt or more before and/or after the forecast change |
| | | Speed | An expected change of 10 kt or more |
| | Visibility: | | When the visibility is forecast to deteriorate or improve, with forecast changes to or passing through 8000 m, 5000 m, 3000 m, 1500 m, and 800 m |
| | Cloud: | Amount | Provided the forecast height of the cloud base is at or below 1500 ft, when the amount is forecast to change from SCT, FEW, or SKC to BKN or OVC, or from BKN or OVC to SCT, FEW, or SKC |
| Height of base | | Provided the amount of cloud before and/or after the change is BKN or OVC, when the height of the base of the cloud layer lowers or lifts, and changes to or passes through 1500 ft, 1000 ft, or 500 ft AGL (and 200 ft at NZAA and NZCH only) | |
| Type | | When CB are forecast to develop or dissipate | |

| Product | MET Element | | Amendment Criteria |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TAF TREND (continued) | Weather Phenomena: | | <p>When any of the following weather phenomena or combinations thereof are forecast to begin or end or change in intensity:</p> <ul style="list-style-type: none"> (a) freezing precipitation (b) freezing fog (c) moderate or heavy precipitation (including showers thereof) (d) thunderstorm (e) duststorm (f) sandstorm <p>When any of the following weather phenomena or combinations thereof are forecast to begin or end:</p> <ul style="list-style-type: none"> (a) low drifting dust, sand, or snow (b) blowing dust, sand or snow (c) squall (d) funnel cloud (tornado or waterspout) |
| SPECI | Wind: | Direction | Change of 60° or more since the last report provided the mean speed is 10 kt or more before and/or after the change |
| | | Speed | A change by 10 kt or more since the last report |
| Gustiness | An increase of 10 kt or more since the last report provided mean wind speed is 15 kt or more before and/or after the change | Visibility: | |
| When the visibility is deteriorating or improving and changes to or passes through 5000 m, 3000 m, 1500 m, and 800 m | | | |

**Table GEN 3.5-5
VOLMET Service**

| Name of Station | Callsign Ident (EM) | FREQ (kHz) | Broadcast Period | Hours of service | Aerodromes Included | Contents and Format of REP and FCST |
|-----------------|---------------------|-----------------------|------------------|------------------|----------------------------------------------------------------------------------------------|-------------------------------------|
| Auckland | | 6679 8828 13282 | H+20-25 | H24 | Auckland Wellington Christchurch Nadi Faleolo* Noumea Rarotonga* Tahiti | METAR**, SPECI, TREND |
| | | | | | Nadi Noumea | TAF |
| Auckland | | 6679 8828 13282 | H+50-55 | H24 | Auckland Wellington Christchurch Nadi Faleolo* Noumea Pago Pago* Tahiti | METAR**, SPECI, TREND |
| | | | | | Auckland Christchurch | TAF |

* No TREND

** METAR AUTO reports — Auckland, Wellington, Christchurch and Noumea

**Table GEN 3.5-6
SIGMET Service**

| Name of MWO | Hours of Service | FIR Served | Type of SIGMET and Validity | Specific procedures | ATS Units served |
|-------------|------------------|---------------|-----------------------------|---------------------|------------------------------|
| Wellington | H24 | NZZC, NZZO | SIGMET/4 HR | Nil | All New Zealand ATS units |

Notes:

- SIGMET service includes Cook, Samoa, Tonga and McMurdo sectors.
- SIGMET issued for volcanic ash or tropical cyclones have a validity of 6 hours.

