12. AERODROME WEATHER AND FORECAST DECODE COMPOSITION

12.1 Identifier

a. The identifier METAR is used to identify all observations made routinely either on the hour or half hour UTC. SPECI is used to identify all other observations and is also used to identify observations recorded 10 minutes following an improvement above SPECI conditions;
b. The identifier TTF/METAR or TTF/SPECI is used to identify METAR and SPECI to which a three hour trend is appended. The use of this identifier is restricted to those locations which issue Trend-Type Forecasts;
c. The identifier TAF or TAF AMD is used to identify an aerodrome forecast or an amended aerodrome forecast. If the forecast is provisional, the abbreviation PROV becomes the first element of the identifier.

12.2 **Location.** The location is indicated by either the ICAO location indicator, the place name, or the approved abbreviation.

12.3 **Origination Time.** The origination time of a TAF is expressed in a six figure group, followed by the abbreviation “Z”.

12.4 **Validity Time(s).**The time of an aerodrome weather report is expressed in a four figure group followed by the abbreviation “Z”. The period of validity of an aerodrome forecast is expressed as a four figure group, hour UTC to hour UTC.

12.5 Wind Information

12.5.1 Wind direction is given in three figures relating to True North.

12.5.2 When the wind is calm, it is encoded as “00000KT”.

12.5.3 Wind speeds from 1 to 9KT inclusive are given in two figures; eg, 5KT is given as 05KT.

12.5.4 Variable wind direction is given as “VRB” and is used when the reporting of a mean wind direction is not possible, such as:

a. in light wind conditions (3KT or less);
b. when the wind is veering or backing by 180˚ or more (eg, passage of a thunderstorm, or localised wind effect); or
c. when to forecast a single direction with strong winds is not possible (eg, with a tropical cyclone VRB60KT).

12.5.5 Maximum wind speed is given only when it is 10KT or more greater than the mean wind speed. The term “MAX” is not included; the letter “G” followed by the maximum wind speed is used; eg, 280˚ mean speed 20KT, maximum speed 35KT, is given as 28020G35KT.

12.6 **Visibility**

12.6.1 In METAR/SPECI or TAF, the minimum visibility observed or forecast is always given.

12.6.2 In METAR/SPECI, if the minimum visibility covers more than half the aerodrome, or when visibility is fluctuating rapidly and significant directional variations cannot be given, the minimum visibility is the only visibility information reported.

12.6.3 METAR/SPECI visibility will have a directional variation indicated when the minimum visibility is less than 5,000M and the visibility in another direction, covering more than half the aerodrome, is at least 50% greater. Under these conditions, the minimum visibility will be given first, with the direction indicated by one of the eight points of the compass, followed by the higher visibility, without a compass point.

12.6.4 9999 indicates visibility of 10KM and above.

12.7 **Weather**

12.7.1 Weather is given using the codes listed at Section **13.** One or more (to a maximum of four) of the codes may be grouped; eg, TS or TSGR, SH, SHRA or +TSRASNGS.

12.7.2 There is an option to describe the intensity of the weather which is only used with the precipitation codes DZ, RA, SN, SH or TS. In these cases, the weather group is prefixed by (–) for light, and (+) for heavy. Moderate intensity has no prefix.

12.7.3 METAR/SPECI may provide an indication of weather in the vicinity. If this is included, one or more of the weather groups at para 14 may be used, preceded by the abbreviation “VC”.

12.8 **Cloud**

12.8.1 Cloud height is always given as a three figure group in hundreds of feet, with the last two digits omitted; eg, cloud at 700 feet is shown as 007.

12.8.2 Amount of cloud is indicated by the following abbreviations:

SKC or, if appropriate, CAVOK	no cloud
FEW	1 to 2 OKTAS
SCT	3 to 4 OKTAS
BKN	5 to 7 OKTAS
OVC	8 OKTAS

12.8.3 Cloud information is reported from the lowest to the highest layer or mass in accordance with the following:

a. the lowest layer or mass, regardless of amount, as FEW, SCT, BKN or OVC as appropriate;
b. the next layer or mass, covering more than 2/8, as SCT, BKN or OVC as appropriate;
c. the next higher layer or mass, covering more than 4/8, as BKN or OVC as appropriate; and
d. cumulonimbus and/or towering cumulus clouds, whenever observed, and not reported in **a.**, **b.** or **c.** above.

12.8.4 The type of cloud is identified only for cumulonimbus and towering cumulus when observed at or near the aerodrome. These will be given as “CB” and “TCU” respectively. When an individual layer (mass) or cloud is composed of cumulonimbus and towering cumulus with a common cloud base, the type of cloud is reported as cumulonimbus only.

12.8.5 Cloud details will be written as one word for each layer being reported; eg, 8/8ths of stratus at 500FT will be given as “OVC005” and not “OVC 005”.

12.8.6 Whenever cumulonimbus cloud is forecast, the degree of associated thunderstorm activity or probability of occurrence is included.

12.8.7 Cloud information is not included if the sky is clear. When the sky is obscured, the group is omitted in a report and included in a forecast only if cloud is forecast. Vertical visibility is never included.

12.9 **Significant Variation**

12.9.1 Aerodrome forecasts may include an indicator of significant variation if changes or variations in one or more of the elements of wind, visibility, weather or cloud, which would satisfy the

amendment criteria, are expected. These relate to improvements as well as deteriorations.

12.9.2 The terms TEMPO and INTER are used to indicate significant variations of a temporary or intermittent nature. The term FM is used to indicate changes which are more lasting in nature. The indicator is the beginning of a self-contained forecast or trend.

12.9.3 When reduced visibility due to fog, mist or dust is forecast, but the probability is assessed at between 30% and 40%, the term PROB (percent) is used. The term may also be attached to TEMPO and INTER conditions.

12.9.4 The terms WX NIL, NO SIG WX, NSW and SKC may be included following a significant variation indicator, to indicate significant improvements expected.

12.9.5 If a TAF or TTF includes a forecast of turbulence, its commencement will be indicated by the word “FM”, and its cessation within the forecast coverage will be indicated by the word “TILL”.

12.10 **Supplementary Information**

12.10.1 In METAR/SPECI, supplementary information is used to provide reported wind shear information on a take-off or landing runway. Additionally, weather observed since the time of the last report, but which is not evident at the time of observation, is reported using one or more of the groups at para 14, preceded by the abbreviation “RE”.

12.11 **Temperature**

12.11.1 Aerodrome weather reports contain both temperature and dewpoint.

12.11.2 Negative values are indicated by the letter “M” before the numeral.

12.11.3 Up to four (4) forecast values of air temperature are given, valid at three (3) hourly intervals commencing at the beginning of the validity period of the forecast. The temperature groups are prefixed by the letter “T”.

12.12 **QNH**

12.12.1 QNH is given as a whole number of Hectopascals, with observed intermediate values being rounded-off downward. QNH is always given using four figures, prefixed by the letter “Q”; eg, Q0997.

12.12.2 Up to four (4) forecast values of QNH are given, valid at three (3) hourly intervals commencing at the beginning of the validity period of the forecast.

12.13 **Use of the Term CAVOK**

12.13.1 "CAVOK" is included in the report or forecast when the following conditions are observed or forecast to occur simultaneously:

a. visibility 10KM or more;
b. no cloud below 5,000FT or below the highest minimum sector altitude, whichever is the greater, and no cumulonimbus; and
c. no precipitation, thunderstorm, shallow fog, low drifting snow or dust devils.

12.13.2 Whenever a total of BKN (ie, more than 4/8) low or middle cloud cover is present at or above 5,000FT, and CAVOK has been used, cloud amount and base are given as supplementary information.

12.14 **Automatic Weather Stations Reporting Rainfall**

12.14.1 The remarks section of the report may include figures to indicate rainfall recorded by automatic rain gauge.

12.14.2 The information is in the form RF00.0/000.0 where the first three digits after the letters RF will indicate the rainfall recorded in the ten minutes prior to the observation time, and the next four digits indicate the total rainfall recorded since 0900 local mean time up to the time of the observation time. Both amounts are expressed in millimetres to the nearest 0.2mm.

Note: In situations of fine droplet precipitation, such as very light drizzle or fine mist situations, there may not be sufficient precipitation recorded to indicate any rainfall in the last ten minutes. Therefore, pilots should regard automated reports of rainfall as guidance material.

12.15 **Automatic Weather Stations with Ceiling and Visibility Information**

12.15.1 Automated cloud and visibility elements of an AWS will not be included in the body of METAR and SPECI, but will be included in the remarks section of the report.

12.15.2 Cloud will be reported as BKN, SCT or OVC for amount, whilst visibility is a measure of the average visibility for a small area.

Pilots should regard automated cloud and visibility information as guidance material.

12.16 **Elements of Report not Available**

12.16.1 In cases where some elements of a report are not available; eg, visibility or cloud in an automatic weather station report, the indicator "////" will be used.

12.17 **Remarks**

12.17.1 Any other significant weather conditions, such as an approaching front, visible bushfires, etc, are appended as a remark.

12.18 **Trend-Type Forecasts (TTF)**

12.18.1 At major aerodromes, a statement of trend valid for three (3) hours from the time of the observation is appended to the observation. See Section **16.** for details of TREND.

12.19 **Examples**

Aerodrome Weather Reports

a. SPECI YMML 2000Z 22012KT 6000 DZ FEW002 SCT006 15/12 Q1020 RMK RF00.0/000.0
b. METAR YBRK 0100Z 03012KT 9999 FEW025 SCT035TCU 26/20 Q1003 RMK RF00.0/000.0
c. METAR YPPH 1130Z 28012KT 9999 FEW005 SCT035TCU 26/17 Q1007 RETS RMK RF00.0/000.0
d. SPECI YBCS 1745Z 23014G29KT 1200NE 6000 TSRA FEW030CB BKN100 26/22 Q1003 RMK RF00.0/000.0
e. SPECI YSSY 1900Z 26001KT 3000 HZ VCFG FEW030 18/17 Q1018 RMK RF00.0/000.0
f. SPECI YMML 2000Z 22012KT 6000 DZ FEW002 SCT006 15/12 Q1020 RMK RF00.0/000.0

Trend–Type Forecasts

a. TTF SPECI YPAD 2200Z 00000KT 9999 DZ OVC005 14/14 Q1025 RMK RF00.0/000.0
   FM2200 00000KT 9999 NSW BKN008
   FM2300 03005KT 9999 NSW SCT020
b. TTF SPECI YMML 0200Z 05008KT 4000 DZ BKN005 OVC100 16/15 Q1017 RMK RF00.0/000.0 NOSIG
c. TTF METAR YPPH 0500Z 36015KT CAVOK 32/08 Q1014 RMK RF00.0/000.0
   FM0630 28025KT 9999 NO SIG WX BKN030
   INTER 0530/0730 5000 SHRA BKN008
d. TTF METAR YBTL 0730Z 35006KT 9999 FEW050TCU 31/21 Q1005
   RMK RF00.0/000.0 DISTANT THUNDER NOSIG
e. TTF SPECI YBTL 0800Z 03010KT 4000 TSRA BKN030CB SCT120 27/24 Q1008 RMK RF00.0/000.0
   FM0830 03005KT 9999 SHRA BKN035
   INTER 0830/1100 4000 TSRA SCT010 SCT030CB
f. TTF METAR YBAS 1400Z 02015KT 9999 SCT040 BKN120 22/08 Q1008
   RMK RF00.0/000.0 DISTANT LIGHTNING TO NW
   FM1630 34018G35KT 6000 SHRA BKN030 BKN120
   INTER 1630/1700 3000 TSRA SCT010 BKN030CB
   USE TAF FOR ARRIVALS AFTER 1500Z

Terminal Aerodrome Forecasts

a. TAF YCOM 070635Z 0820 18015KT 9999 FEW005 BKN020
TEMPO 1014 2000 –SHSN BKN005 SCT020
T 03 00 M02 M04 Q 1008 1007 1006 1006

b. TAF YSSY 010435Z 0606 31005KT CAVOK
FM14 16015KT 8000 SHRA BKN008 SCT030
FM23 23010KT 9999 NO SIG WX SCT030
T 25 21 18 15 Q 1012 1013 1014 1014

c. TAF YSCB 270648Z 0820 33015G28KT 3000 +RA BKN010 OVC100
FM14 16015KT 8000 SHRA FEW010 SCT040 SCT100
INTER 1015 1000 +TSRA BKN005 SCT040CB
FM08 MOD TURB BLW 5000FT TILL 1530
T 14 13 13 11 Q 1016 1015 1013 1016

d. TAF YMHB 100645Z 0820 14001KT 3500 DZ OVC005
FM12 14001KT 0300 FG
T 12 11 10 10 Q 1018 1019 1020 1019

e. TAF YMML 291645Z 1818 36007KT CAVOK
FM0230 18015KT 9999 –SHRA FEW015 SCT025
FM10 15005KT 5000 HZ BKN020
PROB30 1418 0500 FG
T 15 23 18 17 Q 1020 1021 1019 1018

Aviation AWS Output

a. The following example represents a METAR which has not had cloud and visibility observations provided by a human observer. The information provided from the automated sensors is included in the remarks section of the message:
METAR YSBK 1800Z 10015KT //// //// 14/06 Q1020
RMK: RF00.0/000.0 CLD:SCT042 BKN110 VIS:9999

b. The ceilometer will only detect cloud to 12,500FT. If there is no cloud detected below this level, and the detected visibility is greater than 1,000M, the report of cloud will be as follows:
CLD: CLR BLW 125

c. If no cloud is detected and the detected visibility is less than, or equal to, 1,000M, the report will indicate:
CLD:SKY MAYBE OBSC

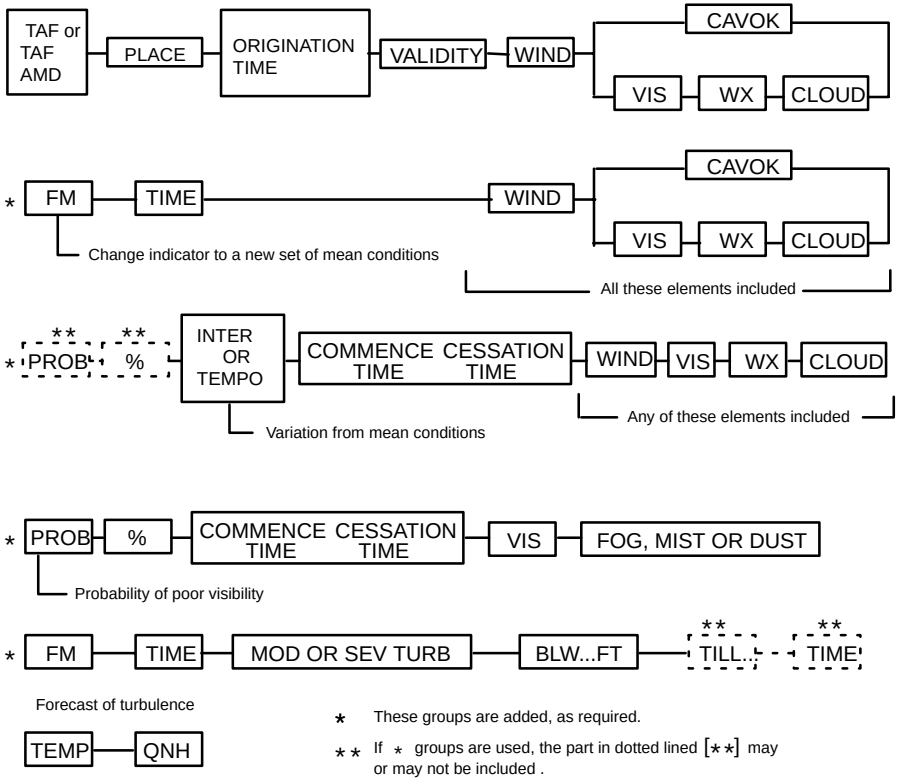
13. WEATHER CODE AND TRANSLATION

CODE	TRANSLATION
	WEATHER DESCRIPTORS
BC	PATCHES (or PATCHES OF)
BL	BLOWING
DR	DRIFTING
FZ	FREEZING
MI	SHALLOW
SH	SHOWERS (or SHOWERS OF)
TS	THUNDERSTORMS (or THUNDERSTORMS WITH)
PR	AERODROME PARTIALLY COVERED BY FOG
	PHENOMENA
BR	MIST
DU	DUST
DS	DUST STORM
DZ	DRIZZLE
FC	FUNNEL CLOUDS
FG	FOG
FU	SMOKE
GR	HAIL
GS	SMALL HAIL PELLETS
HZ	HAZE
IC	ICE CRYSTALS (VERY SMALL ICE CRYSTALS IN SUSPENSION, ALSO KNOWN AS DIAMOND DUST)
PL	ICE PELLETS
PO	DUST DEVILS
RA	RAIN
SA	SAND
SG	SNOW GRAINS
SN	SNOW
SQ	SQUALLS
SS	SAND STORM
VA	VOLCANIC ASH

Note 1: There is an option for intensity to be described when used with the abbreviations DZ, RA, SN, SH or TS. In these cases, the weather group is prefixed by (–) for light, and (+) for heavy. Moderate intensity has no prefix.

Note 2: METAR/SPECI may provide an indication of weather in the vicinity. If this is included, one or more of the weather groups above may be used, preceded by the abbreviation "VC".

14. TAF – AERODROME FORECAST



*Note: Flight planning requirements for TAF can be found at ENR 1.10 para **1.3**.*