# **Aviation codes and abbreviations**

## **METAR and TAF codes explained**

Below is an **abridged explanation** of METAR and TAF codes.

<u>METAR</u> - Meteorological Routine Aerodrome Report. It can also be referred to as an "Actual". A METAR is a coded weather bulletin of the observed weather at a specific location or Aerodrome and which is done at regular, routine times.

<u>SPECI</u> - Special Aeronautical Report. <u>This is coded exactly as a METAR, BUT is sent immediately whenever specific criteria has been</u> observed.

<u>TAF</u> - Terminal Aerodrome Forecast.

A TAF is a detailed forecast of expected weather elements at an aerodrome that significantly affects the movement of aircraft.

METAR Examples

TAF Examples

# METAR CODE FORMAT

**METAR** <u>CCCC</u> <u>YYGGggZ</u> (AUTO) <u>dddffKT</u> or <u>dddffGfmfmKT</u> <u>dndndnVdxdxdx</u> <u>VVVV or</u> <u>VnVnVnVnDv</u> <u>or CAVOK</u> (RD<sub>R</sub>D<sub>R</sub>/V<sub>R</sub>V<sub>R</sub>V<sub>R</sub>V<sub>R</sub>i) or (RD<sub>R</sub>D<sub>R</sub>/V<sub>R</sub>V<sub>R</sub>V<sub>R</sub>V<sub>R</sub>V<sub>R</sub>V<sub>R</sub>V<sub>R</sub>V<sub>R</sub>V<sub>R</sub>i) <u>ww</u> N<sub>s</sub>N<sub>s</sub>N<sub>s</sub>h<sub>s</sub>h<sub>s</sub>h<sub>s</sub> or VVh<sub>s</sub>h<sub>s</sub>h<sub>s</sub> or <u>NSC</u> <u>TT/T<sub>d</sub>T<sub>d</sub></u> <u>QP<sub>H</sub>P<sub>H</sub>P<sub>H</sub>P<sub>H</sub></u> <u>REww</u> <u>TTTTT=</u>

## **Explanation of METAR and TAF Terms**:

**CCCC Location or Place -** Four letter ICAO ID's designators are is used. (see: Locations)

#### YYGGggZ Date/time of observation or compilation

- YY Day
- GG Hour
- gg Minutes
- **Z** Time Zone, Z=Zulu or GMT or UTC.

<u>AUTO</u> Used when the observation is done without any human intervention.

dddffKT or dddffGf<sub>m</sub>f<sub>m</sub>KT or d<sub>n</sub>d<sub>n</sub>d<sub>n</sub>Vd<sub>x</sub>d<sub>x</sub>d<sub>x</sub> Wind

- ddd –Average Wind Direction in degrees (°) from True North within the preceding 10 minutes
- ff Average Wind Speed in Knots (KT) within the preceding 10 minutes
- **G** GUST
- $f_m f_{m-}$  Highest wind speed (gust) within the preceding 10 minutes
- KT Knots
- **D**<sub>n</sub>d<sub>n</sub>d<sub>n</sub>Vd<sub>x</sub>d<sub>x</sub>d<sub>x</sub> Used when the wind direction variation is greater than 60° but less than 180° (Direction being reported in a clockwise direction)

#### <u>NOTE</u>

a) VRB - Variable

Used when the windspeed is less than 3KT

Or during a violent thunderstorm when wind direction cannot be determined.

b) Gust is added only if the average wind speed is exceeded by 10KT or more of the mean wind speed for previous 10 minutes (1KT = 1.85 Km/h).

#### VVVV or V<sub>n</sub>V<sub>n</sub>V<sub>n</sub>V<sub>n</sub>D<sub>v</sub> or CAVOK Horizontal Visibility (see also: <u>RVR</u>)

**VVVV** In South Africa visibility is measured in meters.

The following increments are used:

- Between 0 and 799m round DOWN to the nearest 50m
- Between 800 and 4999m round DOWN to the nearest 100m
- Between 5000 and 9999m round DOWN to the nearest 1000m
- $\geq$  10km code as 9999

#### $V_n V_n V_n V_n D_v$

When the horizontal visibility is not the same in all directions, and **the minimum visibility is < 1500m, or < 50% of the prevailing visibility** a minimum and maximum visibility may be given followed by the direction.

- **D**<sub>v</sub> is reported as **the operationally lowest significant direction as** one of the eight points of the compass (N, NE, etc.), and consists of one or two letters only.
- Values for D are:

N - North, NE - Northeast, E - East, SE - Southeast, S - South, SW - Southwest, W - West, NW - Northwest.

#### CAVOK

Coded in place of the visibility, present weather and cloud groups when the following conditions <u>occur simultaneously</u> at the time of observation:

- No cloud of operational significance as defined in ICAO Annex 3. <u>Cloud of operational significance</u>: A cloud with the height of cloud base below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater, or a cumulonimbus cloud or a towering cumulus cloud at any height.
- Visibility is more than 10 km
- No significant weather phenomena is present

At aerodromes where instruments are used to measure visibility this group will be included in the METAR when significant.

**RD**<sub>R</sub>**D**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**i** Runway Visual Range when no variation in visibility has been observed.

- **RD**<sub>R</sub>**D**<sub>R</sub>**/** Runway designator/point where the visibility is measured, coded as two digits.
- **V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub> Measured visibility in meters.
- i Indicator for tendency in change in visibility
  - **U** upward
  - **D** downward
  - N no tendency

**RD**<sub>R</sub>**D**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>**V**<sub>R</sub>*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The fluctuation is considered significant when the visibility during the last 5 seconds changes by 50m or 20% of the mean visibility of the previous 10 minutes.

• **v** - Tendency for the visibility to change by 100m or more from the mean.

## ww Weather

Used to report significant weather. The table below shows the abbreviations.

Sign Present and Forecast Weather				
Qualifier		Weather Phenomena		
Intensity of Proximity 1	Descriptor 2	Precipitation 3	Obscuration 4	Other 5
- = Light	MI = Shallow	<b>DZ =</b> Drizzle	BR = Mist	<b>PO</b> = Dust/sand whirls
	BC= Patches	<b>RA</b> = Rain	FG= Fog	<b>SQ</b> = Squalls
Moderate	<b>PR</b> = Partial	SN= Snow	FU = Smoke	FC = Funnel Clouds
(no qualifier)	(Covering part of	SG = Snow Grains	VA = Volcanic Ash	(tornado or
	the aerodrome)	IC= Ice crystals	DU= Widespread	waterspout)
+ = Heavy	<b>DR</b> = Low Drifting	(diamond dust)	Dust	<b>SS</b> = Sandstorm
	BL = Blowing	<b>PE</b> = Pellets	<b>SA</b> = Sand	<b>DS</b> = Dust storm
VC = Vicinity	SH = Shower(s)	GR= Hail	<b>HZ =</b> Haze	
	> <b>TS</b> = Thunderstorm	<b>GS</b> = Small hail		
	FZ = Freezing	and/or		
	(super cooled)	snow pellets		

## N<sub>s</sub>N<sub>s</sub>N<sub>s</sub>h<sub>s</sub>h<sub>s</sub>h<sub>s</sub><u>or</u>VVh<sub>s</sub>h<sub>s</sub>h<sub>s</sub><u>or</u>NSC

N<sub>s</sub>N<sub>s</sub>N<sub>s</sub>h<sub>s</sub>h<sub>s</sub>h<sub>s</sub> Clouds (see also: <u>CAVOK</u>, <u>NSC</u>, Cloud Type, Cloud Atlas)

### N<sub>s</sub>N<sub>s</sub>N<sub>s</sub> Cloud amount

The following abbreviations are used:

- FEW 1 to 2 octas
- SCT 3 to 4 octas
- BKN 5 to 7 octas
- OVC 8 octas

### h<sub>s</sub>h<sub>s</sub>h<sub>s</sub> Cloud height in feet above ground level (AGL).

- Coded as three digits
- e.g. 200ft (002), 1000ft (010), 2500ft (025), 10000ft (100)

### NOTE:

The only 2 Cloud types used in a METAR and TAF (appended directly after the  $h_sh_sh_s$  section of the  $N_sN_sN_sh_sh_sh_sh_s$  code group) and on Sigwx Charts are:

• **CB** – Cumulonimbus

#### • **TCU** - Towering Cumulus

(see also note on Sigwx Charts)

## **VVhshshs** Vertical visibility

When the sky is obscured and instrumentation is available to measure vertical visibility,  $h_sh_sh_s$  is given in increments of 100ft and coded as one would code cloud height.

## **NSC** No Significant Cloud

Coded in place of the present weather and cloud groups when the following conditions <u>occur</u> <u>simultaneously</u> at the time of observation:

- No cloud
- No Cumulonimbus
- No cloud below 1 500 metres (5 000 ft) or below the highest minimum sector altitude, whichever is the greater.
- Visibility is less than 10 km
- Significant weather phenomena is present

#### TT/T<sub>d</sub>T<sub>d</sub> Temperatures

TT – Temperature in whole degrees Celsius (rounded to the nearest whole number)

**Td** – Dew Point Temperature in whole degrees Celsius. (Rounded to the nearest whole number)

### QP<sub>H</sub>P<sub>H</sub>P<sub>H</sub>P<sub>H</sub> QNH

Q - indicator for QNH

 $P_HP_HP_HP_H$  - Pressure reduced to sea level. Reported as a whole number (ignoring the tenth digit). Measured in hecto Pascal (HPa), 1 Hpa = 1 mB(millibar)

### **REww** Recent Significant Weather of operational significance (see also: ww)

- Up to <u>three groups</u> of information on recent weather can be given by the indicator RE followed immediately by the appropriate abbreviations
- To be reported <u>only if the following weather phenomena were observed during the period</u> <u>since the last routine report, or last hour</u>, whichever is shorter, but not at the time of observation:-

#### No intensity of the recent weather phenomena shall be indicated.

- Freezing precipitation
- Moderate or heavy drizzle, rain or snow
- Moderate or heavy ice pellets, hail, small hail and/or snow pellets
- Moderate or heavy blowing snow (including snowstorm)
- Sandstorm or duststorm
- Thunderstorm
- Funnel cloud(s) (tornado or water spout)

- Volcanic ash

- **<u>REw'w'</u>** shall only be included as recent weather **IF** the same phenomenon of the same or greater intensity is not reported as present weather.
  - e.g.1 A heavy rainshower 20 minutes before the time of observation, with moderate rain at the time of observation, shall be coded RERA.
  - e.g.2 Moderate rain 20 minutes before the time of observation, with a moderate rain shower at the time of observation, shall not be coded as **REw'w'**.

### TTTTT Trend Forecast

- This type of forecast is used to indicate significant changes in the weather expected within a <u>two hour period</u> from the time of issue of the METAR and need not be followed by a time.
- **Trends are** added to the METARs of locations where no forecaster is available to give trend forecast. It is omitted with Auto METARs and those from smaller locations.
- A TREND consists of either <u>dddffKT</u> / <u>dddffGfmfmKT</u> / <u>VVVV</u> / <u>CAVOK</u> / <u>ww</u> / <u>N<sub>s</sub>N<sub>s</sub>N<sub>s</sub>h<sub>s</sub>h<sub>s</sub>h<sub>s</sub> individually or in combinations thereof.</u>
- NOSIG A trend forecast signifying "No Significant Change."

## SPECI Special METAR criteria

A **SPECI** is the same as a **METAR** but issued when the following criteria is met:

- 1) When the mean surface wind direction has changed by 60° or more from that given in the latest report, the mean speed before and/or after the change being (10 kt) or more
- 2) The mean surface wind speed has changed by 10Kt or more from that given in the latest report .
- 3) The variation from the mean surface wind speed (gusts) has changed by (10 kt) or more from that at the time of the latest report, the mean speed before and/or after the change being (15 kt) or more.
- 4) Visibility changes to or passes:
  - i. 800, 1 500 or 3 000 m (SPECI) 150, 350, 600, 800,1500, 3000m (TAF)
  - ii. 5000m where significant numbers of VFR flights are operating.
- 5) Runway visual range changes to or pass 150, 350, 600, 800m.
- 6) When the onset, cessation or change in intensity of any of the following weather phenomena occurs:
  - freezing precipitation
  - moderate or heavy precipitation (including showers thereof)
  - thunderstorm (with precipitation)
- 7) When the onset or cessation of any of the following weather phenomena occurs:
  - freezing fog
  - thunderstorm (without precipitation);
  - duststorm
  - sandstorm
  - funnel cloud (tornado or waterspout);
  - low drifting dust, sand or snow
  - blowing dust, sand or snow
  - squall
- 8) When any combination of weather in the significant weather table begins, ends or changes intensity.
- 9) Height of the base of the lowest cloud layer of BKN or OVC extent, changes to or passes:
  - i. 100, 200, 500 or 1000ft.

- ii. 1500ft where significant numbers of VFR flights are operating.
- 10) When the amount of cloud below 1500ft changes from:
  - i. from SCT or less to BKN or OVC
  - ii. from BKN or OVC to SCT or less
- 11) When the sky is obscured and vertical visibility changes to or passes:
  - i. 100, 200, 500, 1000ft.
- 12) Increase in temperature of 2 degrees Celsius or more.

# TAF CODE FORMAT



or or NSW or NSC **TTYYGGgg** CAVOK  $(TXT_FT_F/Y_FY_FG_FG_FZ TNT_FT_F/Y_FY_FG_FG_FZ)$ 

## **Explanation of TAF Terms**:

AMD Amended

Amendments or changes made to previous TAF.



Corrected

Correction/s was made to the TAF.

### CCCC

**Location or Place** - Four letter ICAO ID's designators are is used. (see: Locations)

## YYGGggZ Date/time of issue of TAF

- YY Day
- GG Hour
- gg Minutes
- Z Time Zone, Z=Zulu or GMT or UTC.

NIL Miss
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ing

If not available or not received.

## Y<sub>1</sub>Y<sub>1</sub>G<sub>1</sub>G<sub>1</sub>/Y<sub>2</sub>Y<sub>2</sub>G<sub>2</sub>G<sub>2</sub>

- Y<sup>1</sup>Y<sup>1</sup> Date of validity of the start of the TAF
- G<sup>1</sup>G<sup>1</sup> Time at start of TAF validity
- Y<sup>2</sup>Y<sup>2</sup> Date of validity of the end of the TAF
- G<sup>2</sup>G<sup>2</sup> Time at end of TAF validity

#### CNL Cancelled

TAF was cancelled. This may be due to the following reasons:

- 1. No observation (METAR) available.
- 2. TAF could not be kept under constant review.

#### dddffKT dddffGfmfmKT dndndnVdxdxdx Wind

• ddd – Average Wind Direction in degrees (°) from True North within the preceding 10 minutes

- **ff** Average Wind Speed in Knots (KT) within the preceding 10 minutes
- **G** GUST
- $f_m f_{m-}$  Highest wind speed (gust) within the preceding 10 minutes
- **KT** Knots

#### <u>NOTE</u>

a) VRB - Variable

Used when the windspeed is less than 3KT

Or during a violent thunderstorm when wind direction cannot be determined.

b) Gust is added only if the average wind speed is exceeded by 10KT or more of the mean wind speed for previous 10 minutes (1KT = 1.85 Km/h).

#### VVVV or CAVOK Horizontal Visibility (see also: <u>RVR</u>)

VVVV In South Africa visibility is measured in meters.

The following increments are used:

- Between 0 and 799m round DOWN to the nearest 50m
- Between 800 and 4999m round DOWN to the nearest 100m
- Between 5000 and 9999m round DOWN to the nearest 1000m
- $\geq$  10km code as 9999

## CAVOK

Coded in place of the visibility, present weather and cloud groups when the following conditions <u>occur simultaneously</u> at the time of observation:

- No cloud of operational significance as defined in ICAO Annex 3. <u>Cloud of operational significance</u>: A cloud with the height of cloud base below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater, or a cumulonimbus cloud or a towering cumulus cloud at any height.
- Visibility is more than 10 km
- No significant weather phenomena is present

### N<sub>s</sub>N<sub>s</sub>N<sub>s</sub>h<sub>s</sub>h<sub>s</sub>h<sub>s</sub> <u>or</u> VVh<sub>s</sub>h<sub>s</sub>h<sub>s</sub> <u>or</u> NSC

N<sub>s</sub>N<sub>s</sub>N<sub>s</sub>h<sub>s</sub>h<sub>s</sub>h<sub>s</sub> Clouds (see also: <u>CAVOK</u>, <u>NSC</u>, <mark>Cloud Type</mark>, Cloud Atlas)

#### N<sub>s</sub>N<sub>s</sub>N<sub>s</sub> Cloud amount

The following abbreviations are used:

- FEW 1 to 2 octas
- SCT 3 to 4 octas
- BKN 5 to 7 octas

• OVC - 8 octas

h<sub>s</sub>h<sub>s</sub>h<sub>s</sub> Cloud height in feet above ground level (AGL).

- Coded as three digits
- e.g. 200ft (002), 1000ft (010), 2500ft (025), 10000ft (100)

## NOTE:

The only 2 Cloud types used in a METAR and TAF (appended directly after the  $h_sh_sh_s$  section of the  $N_sN_sh_sh_sh_sh_sh_s$  code group) and on Sigwx Charts are:

- **CB** Cumulonimbus
- **TCU** Towering Cumulus

(see also note on Sigwx Charts)

## VVh<sub>s</sub>h<sub>s</sub>h<sub>s</sub> Vertical visibility

When the sky is obscured and instrumentation is available to measure vertical visibility,  $h_sh_sh_s$  is given in increments of 100ft and coded as one would code cloud height (see  $h_sh_sh_s$  above).

## **NSC** No Significant Cloud

Coded in place of the present weather and cloud groups when the following conditions <u>occur</u> <u>simultaneously</u> at the time of observation:

- No cloud
- No Cumulonimbus
- No cloud below 1 500 metres (5 000 ft) or below the highest minimum sector altitude, whichever is the greater.
- Visibility is less than 10 km
- Significant weather phenomena is present

#### w<sup>l</sup>w<sup>l</sup> Forecast weather which are deemed significant to the aircraft operations

Using the appropriate abbreviations (see <u>ww</u>), forecast weather is restricted to the occurrence of one or more, up to a maximum of three, of the following weather phenomena, together with their characteristics:

- Freezing (FZ) precipitation;
- Freezing fog;
- Moderate or heavy precipitation (including showers –SH);
- Low drifting (DR) dust, sand or snow;- Duststorm (DS);
- Sandstorm (SS);
- Thunderstorms (TS);
- Squall (SQ);
- Funnel cloud (tornado or waterspout –FC);

• Other weather phenomena given in code table 4678 which are expected to cause a significant change in visibility.

# PROBC<sub>2</sub>C<sub>2</sub> PROBC<sub>2</sub>C<sub>2</sub> TTTTT PROB % - Probability

% - percentage, only 30 or 40 is used. If a higher probability is expected (50) the PROB group is omitted and only TEMPO is used.

## TTTTT TAF TREND

- **TEMPO TEMPORARY** Used when temporary fluctuations are expected of less than one hour and less than half the period in aggregate between the period of expected fluctuation.
- **BECMG BECOMING** Used when a gradual change in some of the forecast elements is expected a two hour time period is given in which this gradual change is predicted.

## YYGG/Y<sub>e</sub>Y<sub>e</sub>G<sub>e</sub>G<sub>e</sub>

YY is the date and GG time of start of expected change YeYe is the date and GeGe time of end of expected change

## **NSW** No significant Weather

If no significant weather, as defined above is expected to occur, the group is omitted. However, after a change group, if the weather ceases to be significant, the weather group **w'w'** is represented by **NSW** (abbreviation for **Nil S**ignificant **W**eather).

### TTYYGGgg

**TT** = **FM** = Expected change expected **FROM** a specific time

- **YY** = Date of expected change
- **GG** = Time in hours of expected change
- gg = Time in minutes of expected change

### TXT<sub>F</sub>T<sub>F</sub>/Y<sub>F</sub>Y<sub>F</sub>G<sub>F</sub>G<sub>F</sub>Z

**TX** = Forecast maximum temperature to follow

T<sub>f</sub>T<sub>f</sub> = Forecasted maximum temperature in ° Celcius

Y<sub>f</sub>Y<sub>f</sub> = Date of forecasted maximum temperature

**G**<sub>f</sub>**G**<sub>f</sub>**Z**= Hour in UTC of forecasted maximum temperature

### TNT<sub>F</sub>T<sub>F</sub>/Y<sub>F</sub>Y<sub>F</sub>G<sub>F</sub>G<sub>F</sub>Z

**TN** = Forecast minimum temperature to follow

T<sub>f</sub>T<sub>f</sub> = Forecasted minimum temperature in ° Celcius

Y<sub>f</sub>Y<sub>f</sub> = Date of forecasted minimum temperature

**G**<sub>f</sub>**G**<sub>f</sub>**Z** = Hour in UTC of forecasted minimum temperature

#### **Sigwx Charts** The only other cloud abbreviations used in Sigwx charts besides CB and TCU:

- ST Stratus
- SC Stratocumulus
- CU Cumulus
- NS Nimbostratus
- AC Altocumulus
- AS Altostratus

<u>Cloud types not significant to aviation and are not in any aviation forecasts:</u>

Ci – Cirrus Cs – Cirrostratus Cc – Cirrocumulus

#### **METAR Examples**

#### METAR FALE 271130Z 19017KT 9999 SCT025 BKN045 26/20 Q1015 NOSIG=

Explanation:	
Report for station FALE:	King Shaka Intl Airport, South Africa 29.3652S 031.0711E
Observation time:	[Day: 27] [Time: 11:30 GMT or 13:30 SAST]
Wind speed:	17kt (8.7 m/s)
Wind direction:	190°
Visibility:	10km or more
Clouds:	Scattered Clouds (3 to 4 oktas) 2500ft agl
Clouds:	Broken Clouds (5 to 7 oktas) 4500ft agl
Air Temperature:	26° C
Dew-Point Temperature:	20° C

SPECI FAOR 081340Z 190	13G29KT 160V220 3000 -TSRA BR FEW014 SCT036CB 13/12 Q1020
TEMPO 1500 BKN010=	
Explanation:	
Forecast for station FAOR	: O R Tambo Intl, South Africa 26.09S 028.1348E
Observation time:	[Day: 08] [Time: 13:40 GMT or 15:40 SAST]
Wind speed:	13kt (6.5 m/s)
Wind direction:	190°
Wind direction variation:	varying between 160° and 220°
Visibility:	3km
Present Weather:	Light Thundershower with rain; mist
Clouds:	Few Clouds (1 to 2 oktas) 1400ft agl
Clouds:	Scattered Clouds (3 to 4 oktas) 3600ft agl ; Cumulonimbus clouds
Air Temperature:	13° C
Dew-Point Temperature:	12° C
Observed QNH:	1020 hPa
TREND	A temporary change with the visibility being reduced to 1500m and
	broken clouds (5-7octas) 1000ft agl is expected in the next two hours.

## **TAF Examples**

# TAF FAUT 270900Z 2710/2718 21010KT 9999 SCT012 BKN025 TEMPO 2710/2715 5000 RA BKN010 TX23/2712ZTN20/2718Z=

Explanation:

Forecast for station FAU	T: K. D. Matanzima Airport, South Africa 31.32S 028.40E
Observation time:	[Day 27 09:00 UCT or 11:00 SAST]
Forecast start time:	[Day 27 10:00 UCT or 12:00 SAST] Until time: [Day 27 18:00 UCT or
	20:00 SAST]
Wind direction:	210°
Wind speed:	5.1 m/s (10kt)
Visibility:	10km or more
Scattered Clouds	(3 to 4 oktas) at 360 meters (1200ft) AGL

Broken Clouds	(5 to 7 oktas) at 750 meters (2500ft) AGL
Temporary	Time: [Day 27 10:00 UCT or 12:00 SAST] Until time: [Day 27 15:00
	UCI or 17:00 SAST]
Horizontal visibility:	5000 metres
Weather:	Moderate Rain
Broken Clouds	(5 to 7 oktas) at 300 meters (1000ft) AGL
Maximum Temperature	23 at Day 27 12:00 UCT or 14:00 SAST
Minimum Temperature	20 at Day 27 18:00 UCT or 20:00 SAST

#### TAF FAOR 271000Z 2712/2818 34010KT 9999 SCT040

BECMG 2714/2716 22018KT TEMPO 2714/2719 5000 TSRA FEW035CB BKN080 BECMG 2718/2720 09013KT SCT020 PROB40 TEMPO 2800/2807 5000 BR BKN008 BKN020 PROB30 TEMPO 2800/2805 4000 SHRA BR BKN005 BECMG 2809/2811 34008KT SCT040 PROB40 TEMPO 2811/2818 -TSRA FEW035CB BECMG 2814/2816 03008KT PROB30 TEMPO 2814/2817 5000 TSRA SCT030CB TX26/2813ZTN15/2803Z=

#### Explanation:

Forecast for station FAOR: O R Tambo Intl, South Africa 26.09S 028.1348E

Observation time:	[Day 27 10:00 UCT or 12:00 SAST]
Forecast start time:	[Day 27 12:00 UCT or 14:00 SAST] Until time: [Day 28 18:00 UCT or
	20:00 SAST]
Wind direction:	340°
Wind speed:	5.1 m/s (10kt)
Visibility:	10km or more
Scattered Clouds	(3 to 4 oktas) at 1200 meters (4000ft) AGL
Becoming time:	[Day 27 14:00 UCT or 16:00 SAST] Until time: [Day 27 16:00 UCT or
	18:00 SAST]
Wind direction:	220°
Wind speed:	9.3 m/s (18kt)
Temporary	Time: [Day 27 14:00 UCT or 16:00 SAST] Until time: [Day 27 19:00
	UCT]
Horizontal visibility:	5000 metres
Weather:	Moderate Thunderstorm with Rain

Few Clouds	(1 to 2 oktas) at 1050 meters (3500ft) AGL is Cumulonimbus Cloud
Broken Clouds	(5 to 7 oktas) at 2400 meters (8000ft) AGL
Becoming time:	[Day 27 18:00 UCT or 20:00 SAST] Until time: [Day 27 20:00 UCT or
	22:00 SAST]
Wind direction:	090°
Wind speed:	6.7 m/s (13kt)
Scattered Clouds	(3 to 4 oktas) at 600 meters (2000ft)
Probability 40%	
Temporary	Time: [Day 28 00:00 UCT or 02:00 SAST] Until time: [Day 28 07:00
	UCT or 09:00 SAST]
Horizontal visibility:	5000 metres
Weather:	Mist
Broken Clouds	(5 to 7 oktas) at 240 meters (800ft) AGL
Broken Clouds	(5 to 7 oktas) at 600 meters (2000ft) AGL
Probability 30%	
Temporary	Time: [Day 28 00:00 UCT or 02:00 SAST] Until time: [Day 28 05:00
	UCT or 07:00 SAST]
Horizontal visibility:	4000 metres
Weather:	Moderate Showers of Rain; Mist
Broken Clouds	(5 to 7 oktas) at 150 meters (500ft) AGL
Becoming time:	[Day 28 09:00 UCT or 11:00 SAST] Until time: [Day 28 11:00 UCT or
	13:00 SAST]
Wind direction:	340°
Wind speed:	4.1 m/s ((8kt)
Scattered Clouds	(3 to 4 oktas) at 1200 meters (4000ft) AGL
Probability 40%	
Temporary	Time: [Day 28 11:00 UCT or 13:00 SAST] Until time: [Day 28 18:00
Weather:	Light Thunderstorm with Rain
Few Clouds	(1 to 2 oktas) at 1050 meters (3500ft) AGL is Cumulonimbus Cloud
Becoming time:	[Day 28 14:00 UCT or 16:00 SAST] Until time: [Day 28 16:00 UCT or 18:00 SAST]
Wind direction:	030°
Wind speed:	4.1 m/s (8kt)
Probability 30%	
Temporary	Time: [Day 28 14:00 UCT or 16:00 SAST] Until time: [Day 28 17:00
	UCT or 19:00 SAST]
Horizontal visibility:	5000 metres
Weather:	Moderate Thunderstorm with Rain
Scattered Clouds	(3 to 4 oktas) at 900 meters (3000ft) AGL is Cumulonimbus Cloud

# TAF AMD FAEL 271038Z 2710/2719 20010KT 9999 BKN010 TEMPO 2710/2715 3000 DZ BR BKN007 BECMG 2710/2712 16006KT TX24/2712ZTN21/2719Z=

Explanation:

Forecast for station FAEL:	East London Airport, South Africa 33.0208S 027.4933E
Observation time:	[Day 27 10:38 UTC or 12:38 SAST]
Forecast start time:	[Day 27 10:00 UTC or 12:00 SAST] Until time: [Day 27 19:00 UTC or
	21:00 SAST]
Wind direction:	200°
Wind speed:	5.1 m/s (10kt)
Visibility:	10km or more
Broken Clouds	(5 to 7 oktas) at 300 meters (1000ft) AGL
Temporary	Time: [Day 27 10:00 UTC or 12:00 SAST] Until time: [Day 27 15:00
	UTC or 17:00 SAST]
Horizontal visibility:	3000 metres
Weather:	Drizzle; Mist
Broken Clouds	(5 to 7 oktas) at 210 meters (700ft) AGL
Becoming time:	[Day 27 10:00 UTC or 12:00 SAST] Until time: [Day 27 12:00 UTC or
	14:00 SAST]
Wind direction:	160°
Wind speed:	3.1 m/s (6kt)
Maximum Temperature	24 at Day 27 12:00 UTC or 14:00 SAST
Minimum Temperature	21 at Day 27 19:00 UTC or 21:00 SAST

#### TAF FAOR 110900Z 1110/1121 CNL=

Location O.R. Tambo International Airport, issued on the 11th at 09:00, would be valid for the 11th from 10:00 UTC or 12:00 SAST until 21:00 UTC or 23:00 SAST, but *cancelled*.

The South African Weather Service uses ICAO codes for all aviation forecasts. Familiarize yourself with these codes in order to understand the forecasts better.