AERODROME WEATHER REPORT – METAR AND SPECI DECODE

IDENTIFICATION GROUPS

Code	Meaning
METAR or SPECI	**METAR** – Aviation routine weather report code name **SPECI** – Aviation special weather report code name
COR	COR – Code word used as appropriate
CCCC	ICAO four-letter location indicator
YYGGggZ	In individual messages, day of the month and time of observation in hours and minutes UTC Indicator of UTC
NIL	NIL – Code word used as appropriate
AUTO	Fully automated observation indicator

SURFACE WIND

Code	Meaning
dddffGf$_m$f$_m$ KT or MPS	Mean wind direction in degrees true rounded off to nearest 10° (**VRB** = **V**a**R**ia**B**le when ff < 3 kt) Mean wind speed (10-min mean or since discontinuity) Indicator of **G**ust – if necessary Maximum wind speed (gust) – if necessary Wind speed units used 00000 = calm P99 KT (P49 MPS) mean ff or f$_m$f$_m$ = 100 KT (50 MPS) or more
d$_n$d$_n$d$_n$Vd$_x$d$_x$d$_x$	**Followed** when there is a variation in wind direction of 60° or more but less than 180° and wind speed ≥ 3 KT by group below: Extreme direction of wind Indicator of **V**ariability Other extreme direction of wind (measured clockwise)

PREVAILING VISIBILITY

Code	Meaning
VVVV	Prevailing visibility in metres or lowest visibility if visibility is not the same and fluctuating and the prevailing visibility cannot be determined 9999 = 10 km or more
V$_N$V$_N$V$_N$V$_N$ NDV	**Followed** when visibility is not the same and minimum visibility ≠ prevailing and visibility < 1 500 m or visibility < 50% of prevailing by the group below: Lowest visibility Abbreviation for no directional variations
V$_N$V$_N$V$_N$V$_N$D$_v$	**Followed by** Lowest visibility General direction of lowest visibility or most operationally significant if minimum visibility observed in more than one direction

RUNWAY VISUAL RANGE (RVR) WHERE REQUIRED, UP TO FOUR ACTIVE RUNWAYS

Code	Meaning
RD$_R$D$_R$/V$_R$V$_R$V$_R$V$_R$i	Indicator of **R**VR Runway designator – for parallel runways may have **LL**, **L**, **C**, **R** or **RR** appended (**L** = left; **C**=centre; **R** = right) RVR (10-min mean) at the touchdown zone P2000 = more than 2 000 m, M0050 = less than 50 m RVR tendency indicator over past 10 min, **U** = upward; **D** = downward; **N** = no distinct change. **Omitted** if impossible to determine
RD$_R$D$_R$/V$_R$V$_R$V$_R$V$_R$VV$_R$V$_R$V$_R$V$_R$i	**Replaced** when there are significant variations in RVR by the group below: Indicator of **R**VR Runway designator – for parallel runways may have **LL**, **L**, **C**, **R** or **RR** RVR in metres (1-min mean minimum value during last 10 min) RVR tendency indicator

Note:
25 m STEP if RVR < 400 m
50 m STEP if 400 ≤ RVR < 800 m
100 m STEP if RVR ≥ 800 m

PRESENT WEATHER

Code	Meaning
w'w'	Present weather (see table w'w')

CLOUDS[a]

Code	Meaning
N$_s$N$_s$N$_s$h$_s$h$_s$h$_s$(cc)	Cloud amount: **FEW** – **FEW** (1–2 oktas); **SCT** – **SC**a**T**tered (3–4 oktas); **BKN** – **B**ro**K**e**N** (5–7 oktas); **OVC** – **OV**er**C**ast (8 oktas) Height of base of clouds in units of 30 m (100 ft) Cloud type — only **CB** (cumulonimbus) or **TCU** (**T**owering **CU**mulus) indicated or /// if it cannot be observed by automatic system
VVh$_s$h$_s$h$_s$	**Replaced** when sky is obscured and information on vertical visibility is available by the group below: Vertical visibility in units of 30 m (100 ft) /// = vertical visibility unavailable Indicator of Vertical Visibility
NSC	**Replaced** when there are no such clouds, no restriction on vertical visibility and **CAVOK** is not appropriate by: **N**il **S**ignificant **C**loud
NCD	**Replaced** when automatic system is used and no cloud detected by: **N**o **C**loud **D**etected

CAVOK

Ceiling **A**nd **V**isibility **OK. Replaces** visibility RVR, present weather and cloud if: (1) Visibility is 10 km or more; (2) No cumulonimbus cloud, no towering cumulus and no cloud below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater; and (3) No significant present weather (see table w'w')

TEMP. AND DEW-POINT

Code	Meaning
T'T'/T'$_d$T'$_d$	Temperature in whole degrees Celsius (if below 0 °C preceded by **M**) Dewpoint temperature in whole degrees Celsius (if below 0 °C preceded by **M**)

PRESSURE

Code	Meaning
QP$_H$P$_H$P$_H$P$_H$	Indicator of **Q**NH in hectopascals. If Q = **A** then QNH is in inches QNH rounded down to the whole nearest hectopascal or to tenths and hundredths of an inch, depending on indicator

SUPPLEMENTARY INFORMATION

Group	Code	Meaning
RECENT WEATHER	REw'w'	Indicator of **RE**cent weather **RE**cent weather since previous report (intensity NOT to be reported)
WIND SHEAR	WS RD$_R$D$_R$	**W**ind **S**hear **R**UNWAY Runway designator – for parallel runways may have **LL**, **L**, **C**, **R** or **RR** appended (**L** = left; **C** = centre; **R** = right) **Replaced** when all runways are affected by wind shear by: **WS ALL RWY**
SEA-SURFACE TEMPERATURE (STATE OF THE SEA)	(WT$_s$T$_s$/SS')	Group indicator letter Temperature in whole degrees Celsius **S** indicator of state of the sea S' state of the water surface (see code S')
SEA-SURFACE TEMPERATURE (SIGNIFICANT WAVE HEIGHT)	(WT$_s$T$_s$/HH$_s$H$_s$H$_s$)	Group indicator letter Temperature in whole degrees Celsius **H** indicator of the significant wave height Significant wave height, in decimetres

TREND FORECAST

TWO HOURS FROM TIME OF OBSERVATION

Group	Code	Meaning
CHANGE INDICATORS	TTTTT or NOSIG	**BECMG** = **BEC**o**M**in**G** or **TEMPO** = **TEMPO**rary – see Table: Aerodrome Forecast – **TAF** decode for definitions **NOSIG** = **NO SIG**nificant change
CHANGE AND TIME	TTGGgg	Can be **AT** or **FM** = **F**ro**M** or **TL** = **T**i**L** Time group in hours and minutes UTC
FORECAST WIND	dddffGf$_m$f$_m$ KT or MPS	Forecast mean wind direction in degrees true, rounded to nearest 10° (**VRB** = **V**a**R**ia**B**le) Forecast mean wind speed Indicator of **G**ust Forecast maximum wind speed (gust) Wind speed units 00000 = calm
FORECAST VISIBILITY	VVVV	Forecast prevailing visibility in metres 9999 = 10 km or more
FORECAST WEATHER	w'w'	Forecast significant weather (see table) **Replaced** when significant weather ends by: **NSW** – **N**il **S**ignificant **W**eather
FORECAST CLOUDS OF OPERATIONAL SIGNIFICANCE OR VERTICAL VISIBILITY	N$_s$N$_s$N$_s$h$_s$h$_s$h$_s$(cc)	Forecast cloud amount Forecast height of base of cloud Cloud type – only **CB** **Replaced** when sky expected to be obscured and vertical visibility forecasts are undertaken by: **VVh$_s$h$_s$h$_s$** – Indicator of Vertical Visibility; Vertical visibility in units of 30 m (100 ft) **Replaced** when no **CB** and no cloud below 1 500 m (5 000 ft) or highest minimum sector altitude, whichever is greater, are forecast and **CAVOK** is not appropriate by: **NSC** – **N**il **S**ignificant **C**loud
	RMK	Information included by national decision but not disseminated internationally

w'w' – SIGNIFICANT PRESENT, FORECAST AND RECENT WEATHER

QUALIFIER: INTENSITY OR PROXIMITY (1)	QUALIFIER: DESCRIPTOR (2)	WEATHER PHENOMENA: PRECIPITATION (3)	WEATHER PHENOMENA: OBSCURATION (4)	WEATHER PHENOMENA: OTHER (5)
– Light	**MI** Shallow	**DZ** Drizzle	**BR** Mist	**PO** Dust/sand whirls (dust devils)
Moderate (no qualifier)	**BC** Patches	**RA** Rain	**FG** Fog	**SQ** Squalls
+ Heavy or well-developed in the case of **PO** and **FC**	**PR** Partial (covering part of the aerodrome)	**SN** Snow	**FU** Smoke	**FC** Funnel cloud(s) (tornado or waterspout)
VC In the vicinity	**DR** Low drifting	**SG** Snow grains	**VA** Volcanic ash	**SS** Sandstorm
	BL Blowing	**PL** Ice pellets	**DU** Widespread dust	**DS** Duststorm
	SH Shower(s)	**GR** Hail	**SA** Sand	
	TS Thunderstorm	**GS** Small hail and/or snow pellets	**HZ** Haze	
	FZ Freezing (supercooled)	**UP** Unknown precipitation		

S' Code figure	STATE OF THE SEA Descriptive terms
0	Calm (glassy)
1	Calm (rippled)
2	Smooth (wavelets)
3	Slight
4	Moderate
5	Rough
6	Very rough
7	High
8	Very high
9	Phenomenal

Notes:
1. The w'w' groups are constructed by considering columns 1 to 5 in the table above in sequence, that is, intensity, followed by description, followed by weather phenomena. An example could be: +SHRA (heavy shower(s) of rain).
2. A precipitation combination has dominant type first.
3. **DR** (low drifting) less than 2 m above the ground, **BL** (blowing) 2 m or more above the ground.
4. **GR** is used when hailstone diameter is 5 mm or more. When less than 5 mm, **GS** is used.
5. **BR** – visibility at least 1 000 m but not more than 5 000 m. **FG** – visibility less than 1 000 m.
6. **VC** – between 8 and 16 km of the aerodrome reference point.

[a] Clouds of operational significance (i.e. below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater, and **CB** or **TCU**).

Abbreviated decode of **METAR** and **SPECI**
For details of codes, see *Manual on Codes,* (WMO-No. 306).

World Meteorological Organization
Weather · Climate · Water

January 2022

AERODROME FORECAST – TAF DECODE

IDENTIFICATION GROUPS

Code	Meaning
TAF or TAF AMD or TAF COR	Code names for aerodrome forecast, amended aerodrome forecast and corrected aerodrome forecast, respectively
CCCC	ICAO four-letter location indicator
YYGGggZ	Date and time of issue of forecast in UTC Indicator of UTC
NIL	Indicator of missing forecast
Y$_1$Y$_1$G$_1$G$_1$/Y$_2$Y$_2$G$_2$G$_2$	Period of validity, beginning on Y$_1$Y$_1$ day of month at G$_1$G$_1$ (UTC) and ending on Y$_2$Y$_2$ day of month at G$_2$G$_2$ (UTC)
CNL	Indicator of cancelled forecast

FORECAST SURFACE WIND

Code	Meaning
dddffGf$_m$f$_m$ KT or MPS	Mean wind direction in degrees true rounded to nearest 10° (**VRB** = **V**a**R**ia**B**le when ff < 3 kt) Mean wind speed Indicator of **G**ust Maximum wind speed (gust) Wind speed units used 00000 = calm P99 KT (P49 MPS) mean f$_m$f$_m$ = 100 KT (50 MPS) or more

FORECAST PREVAILING VISIBILITY

Code	Meaning
VVVV	Prevailing visibility in metres 9999 = 10 km or more

FORECAST SIGNIFICANT WEATHER

Code	Meaning
w'w'	Forecast significant weather (see table w'w' for **METAR/SPECI** decode)
NSW	**Replaced** when significant weather phenomenon forecast to end by: **N**il **S**ignificant **W**eather

FORECAST CLOUD AMOUNT AND HEIGHT[a]

Code	Meaning
N$_s$N$_s$N$_s$h$_s$h$_s$h$_s$(cc)	Cloud amount: **FEW** – **FEW** (1–2 oktas); **SCT** – **SC**a**T**tered (3–4 oktas); **BKN** – **B**ro**K**e**N** (5–7 oktas); **OVC** – **OV**er**C**ast (8 oktas) Height of base of cloud in units of 30 m (100 ft) Cloud type — only **CB** (cumulonimbus) and **TCU** (towering cumulus) are indicated
VVh$_s$h$_s$h$_s$	**Replaced** when sky is expected to be obscured and information on vertical visibility is available by: Indicator of Vertical Visibility Vertical visibility in units of 30 m (100 ft)
NSC	**Replaced** when no **CB**, no **TCU** and no cloud below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater, is forecast and **CAVOK** is not appropriate by: **N**il **S**ignificant **C**loud

CAVOK

Ceiling **A**nd **V**isibility **OK. Replaces** visibility, weather and cloud if:
(1) Visibility is forecast to be 10 km or more
(2) No cumulonimbus cloud, no towering cumulus and no other cloud forecast below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater, and
(3) No significant weather forecast (see Table: Aerodrome Weather Report – **METAR** and **SPECI**)

SIGNIFICANT CHANGES IN FORECAST CONDITIONS INDICATED BY:

Group	Code	Meaning
PROBABILITY	PROBC$_2$C$_2$	**PROB**ability Only 30 or 40 used, indicating 30% or 40% Probability is used to indicate the probability of occurence of: (a) an alternative element or elements (b) temporary fluctuations
DATE AND TIME	YYGG/Y$_e$Y$_e$G$_e$G$_e$	Beginning day and time (UTC) YYGG and end day and time (UTC) Y$_e$Y$_e$G$_e$G$_e$ of forecast period
CHANGE	TTTTT	Type of significant changes: **BECMG** – **BEC**o**M**in**G**, used where changes are expected to reach or pass through specified values at a regular or irregular rate **TEMPO** – **TEMPO**rary fluctuations of less than one hour and in aggregate less than half the period indicated by YYGG/Y$_e$Y$_e$G$_e$G$_e$
DATE AND TIME	YYGG/Y$_e$Y$_e$G$_e$G$_e$	Beginning day and time (UTC) YYGG and end day and time (UTC) Y$_e$Y$_e$G$_e$G$_e$ of forecast period

OR

If one set of weather conditions is expected to change more or less completely to a different set of conditions, thus indicating the beginning of another self-contained part of the forecast, by:

TTYYGGgg

This takes the form **FM**YYGGgg where **FM** is the abbreviation for **F**ro**M** and YYGGgg is the time in hours and minutes UTC. All forecast conditions before this group are superseded by conditions indicated after the group.

BY REGIONAL AGREEMENT

FORECAST TEMPERATURE	Meaning
(TXYYT$_F$T$_F$/Y$_F$Y$_F$G$_F$G$_F$Z TNYYT$_F$T$_F$/Y$_F$Y$_F$G$_F$G$_F$Z)	**TX, TN** Indicators of maximum and minimum forecast temperatures, respectively YYT$_F$T$_F$ Date and forecast temperatures at G$_F$G$_F$ Temperatures below 0 °C preceded by **M** Y$_F$Y$_F$G$_F$G$_F$ Date and time UTC to which forecast temperature refers **Z** Indicator of UTC

[a] Clouds of operational significance (i.e. below 1 500 m (5 000 ft) or below highest minimum sector altitude, whichever is greater, and **CB** or **TCU**).

Note: Meteorological offices to issue 30-h **TAF**s are determined by regional air navigation agreement.

Abbreviated decode of **TAF**
For details of codes, see *Manual on Codes,* (WMO–No. 306).

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