



# Aircrew Quick Reference to the METAR and TAF Codes



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OPR: AFFSA/A3OF

Certified by: HQ USAF/A3O-B  
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Supersedes AFPAM 11-238, 1 Nov 05

Pages: 36

The Aircrew Quick Reference Guide to the METAR and TAF Codes helps aircrews quickly and clearly translate METAR and TAF codes into plain language. See [Attachment 1](#) for a list of source documents.

METAR reports are observed weather conditions while the TAF indicates forecast conditions. Both are lines of text made up of coded data groups separated by spaces. Some groups are not discussed because they are only intended for use by the weather community. Differences between military and civilian renderings of the code are discussed.

Aircrews should always check METAR and TAF reports thoroughly for all hazards to flight safety and other elements that may affect aircraft performance or mission accomplishment. When users have weather-related questions, they should contact a certified US military forecaster or MAJCOM-approved weather source for clarification. Weather briefing requirements for USAF Aircrews are spelled out in AFI 11-202, Volume 3, *General Flight Rules*.

Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, Recommendation for Change of Publication; route AF Form 847s from the field through the appropriate functional's chain of command. This publication may not be supplemented.

## ***SUMMARY OF CHANGES***

This document includes clarifications of METAR sector visibility and vertical visibility and removes references to runway surface conditions (now reported via NOTAMs). It also incorporates several changes to the TAF format, specifically: repositioning the AMD and COR modifiers for emphasis, adding a “prepared/disseminated” time group to military TAFs (already included in civilian TAFs), reformatting of the TAF valid time groups, noting that some civilian TAFs are valid for up to 30 hours, and adding a “T” before both maximum and minimum temperature groups in military TAFs.

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**What kind of report is this?**

KBLV 011657Z AUTO 25015G30KT 210V290  
3/8SM R32L/1000FT FG BKN005 01/M01 A2984  
RMK A02 SLP034

This report is a **METAR** (roughly translated from French as Aviation Routine Weather Report)—a **scheduled observation normally taken between 50-59 minutes past the hour** (also referred to as a routine **hourly** observation). A METAR can be distinguished from a TAF by its single date/time group.

**SPECI** KBLV 011715Z 25015G30KT 210V290 3SM  
BR BKN015 01/M01 A2984 RMK SLP034

**SPECI** (Aviation Selected Special Weather Report) refers to an **unscheduled** report taken when certain criteria have been met (such as a change from VFR to IFR) and may be **taken anytime**.

**How do I determine the location and the date and time of issuance?**

**PAAQ 011657Z** AUTO 25015G30KT 210V290  
3/8SM BKN005 03/M01 A2984 RMK A02 SLP034

**KCLK 291012Z** AUTO 08009KT 2SM -RA SCT005  
OVC009 M01/M01 A2999 RMK AO2

The 4-character ICAO identifier is the location; **PAAQ** (Palmer Municipal) and **KCLK** (Clinton Regional) are the locations/stations in these examples.

The 7-character group following the ICAO identifier is the date and time of issuance. The first two digits are the date; the last four digits are the coordinated universal time (UTC), sometimes called “zulu time.”

In the first example, **01** is the 1<sup>st</sup> day of the month, and **1657Z** is 1657 UTC. The second example takes place on the 29<sup>th</sup> day of the month at 1012 UTC.

When ICAO identifiers are not available or cannot be used, a 4-character identifier starting with KQ will be used. This practice is normally found in a contingency environment, where the location/identifier combination is often classified. Consult the local weather flight for more details.

**What does AUTO and/or COR mean, if included?**

Let's look at the meanings of AUTO and COR separately.

KBLV 011657Z **AUTO** 25015G30KT 210V290 3/8SM  
R32L/1000FT FG BKN005 01/M01 A2984 RMK **A02A**  
SLP034

**AUTO** refers to an **automated observation** with measurements taken by equipment such as the domestic Automated Weather Observing System (AWOS) or Automated Surface Observation System (ASOS), or the Air Force's Automated Meteorological Station (AMS), also known as AN/FMQ-19. AO1 denotes an observation taken by equipment lacking a precipitation type discriminator (rain vs. snow). AO2 denotes an observation taken by standard equipment with a full complement of sensors. **A02A** denotes an **automated observation augmented by a human observer**. Absence of these indicators denotes a manual report by a human observer.

KBLV 011657Z AUTO **COR** 25015G30KT 210V290  
3/8SM R32L/1000FT FG FU BKN005 01/M01 A2984  
RMK A02A SLP034 **COR 1725**

**COR** indicates a **corrected observation**. Disregard the previous transmission. **COR 1725** means that the **correction was transmitted at 1725Z**.

**How do I determine the wind speed and direction?**

```
KBLV 011657Z AUTO 25015G30KT 210V290  
3/8SM R32L/1000FT FG BKN005 01/M01 A2984  
RMK A02 SLP034
```

The data group followed by **KT** (knots) is the wind.

The first three digits are the true direction to the nearest 10 degrees from which the wind is blowing. The next two digits are the sustained speed. If gusts are present, the next two or three digits following the “G” are the “gust,” the maximum wind speed in the last ten minutes.

In this example, the **25015G30KT** group is the wind direction and speed. Here, the wind is blowing from 250 degrees (true) at a sustained speed of 15 knots, gusting up to 30 knots.

Calm wind is encoded as **000000KT**.

**How do I determine if the wind is varying between directions?**

KBLV 011657Z AUTO 25015G30KT **210V290**  
3/8SM R32L/1000FT FG BKN005 01/M01 A2984  
RMK A02 SLP034

A wind variability group will be reported if the wind is variable by 60 degrees or more and the speed is greater than 6 knots. This remark will contain the extremes of the wind directions, separated by “V.”

In the example above, **210V290** reads, “wind direction varying between 210 and 290.”

KBLV 011657Z AUTO **VRB03KT** 3/8SM  
R32L/1000FT FG BKN005 01/M01 A2984 RMK  
A02 SLP034

**VRB** is used (without direction extremes) when the wind speed is less than or equal to 6 knots. In the example above, **VRB03KT** reads, “wind direction is variable at 3 knots.”



**How do I determine the prevailing visibility?**

KBLV 011657Z 25015G30KT 210V290 **3/8SM**  
R32L/1000FT FG BKN005 01/M01 A2984 RMK SLP034

Visibility is measured in statute miles. In this example, **3/8SM** (3/8 of a statute mile) is the prevailing visibility. Prevailing visibility is the greatest horizontal visibility observed throughout at least half the horizon circle, not necessarily continuous. Surface visibility is measured at a point six feet above ground level.

Sector visibility may be reported in the remarks section if it differs from the prevailing visibility and is less than 3 miles, or otherwise considered operationally significant. For sector visibility format, see VIS remarks in Figure 2 on page 18.

EDDF 071320Z 22008KT **9999** SCT036 SCT090  
BKN280 19/10 Q1011 NOSIG

Most overseas locations report visibility in meters and omit the SM identifier. The largest reportable metric value is **9999**. This value represents a **visibility greater than 9000 meters** (7 SM or more). The contraction CAVOK (ceiling and visibility OK) may be used when there is no significant weather, the visibility is 10 km or greater, and the ceilings are greater than 5,000 ft. To convert visibility values from meters to statute miles see Attachment 3 or the Flight Information Handbook conversion tables.

**What if there is a group that begins with the letter “R?”**

KBLV 011657Z AUTO 25015G30KT 210V290 3/8SM  
**R32L/1000FT** FG BKN005 01/M01 A2984 RMK A02  
SLP034

Runway Visual Range (RVR) follows the visibility and begins with the letter “R.” The runway heading will follow the “R,” and in this example, “32L” represents runway 32-Left (C-Center, R-Right). The last four digits report the visibility in feet.

In this example, **R32L/1000FT** reads, “runway visual range for runway 32 Left is 1,000 ft.”

Most overseas locations report visibility in meters and omit the FT identifier from the RVR group. The same RVR at an overseas location would appear as R32L/0300 and read, “runway visual range for 32 Left is 300 meters.”

**How would I decode the formats M0600FT or P6000FT or R06L2000V4000FT (not in example above)?**

|                        |  |
|------------------------|--|
| <b>M0600FT</b>         | Reads, “RVR is less than 600 feet.” ( <b>M</b> = less than)  |
| <b>P6000FT</b>         | Reads, “RVR is greater than 6,000 feet.” ( <b>P</b> = greater than)  |
| <b>R06L2000V4000FT</b> | Reads, “RVR for 6 Left is variable between 2,000 and 4,000 feet.”<br>“ <b>V</b> ” indicates that the RVR is variable between two thresholds. |

For RVR conversion charts, see [Attachment 4](#) or the front section of any Instrument Approach Procedures (IAP) booklet.

**How do I determine if there is any weather?**

KBLV 011657Z AUTO 25015G30KT 210V290  
3/8SM R32L/1000FT **FG** BKN005 01/M01 A2984  
RMK A02 SLP034

If a weather element (precipitation or obstruction to visibility) is observed, it will be found in the data group following the visibility. The absence of a weather element group indicates that no precipitation or obstruction to visibility is occurring at the time of the observation. In this example, “**FG**” represents “Fog.”

To methodically decode a weather group, look for six key elements (*depending on the phenomena, one or more may be omitted*). In order, these elements are: **Intensity** (symbol preceding the code), **Proximity**, **Descriptor**, **Precipitation Description**, **Obscuration** (other than precipitation), and **Other**.

For a complete table of weather group elements and examples, see [Figure 1 on page 12](#), or reference Section C “METAR and TAF Code” of the Flight Information Handbook.

**Figure 1. Weather/Obscuration Table**

| Phenomenon Qualifiers  |  |  |
|--|--|--|
| Element 1: Intensity   | Element 2: Proximity                   | Element 3: Description                       |
| - Light  | <i>none</i> On station                 | <b>BC</b> Patches                            |
| <i>none</i> Moderate   | <b>VC</b> In the vicinity (5-10 miles) | <b>BL</b> Blowing                            |
|  | <b>DSNT</b> > 10 miles                 |  |
| + Heavy  |  | <b>DR</b> Low Drifting                       |
| <i>Note: + can also mean a well-developed dust storm, sandstorm, whirl, dust devil, tornado, or waterspout</i> |  | <b>FZ</b> Freezing                           |
|  |  | <b>MI</b> Shallow                            |
|  |  | <b>PR</b> Partial (covering part of the sky) |
|  |  | <b>SH</b> Shower(s)                          |
|  |  | <b>TS</b> Thunderstorm                       |

| Types of Weather Phenomenon                             |   |   |
|---|---|---|
| Element 4: Precipitation                                | Element 5: Obscuration                              | Element 6: Other  |
| <b>DZ</b> Drizzle                                       | <b>BR</b> Mist, vis. $\geq$ 5/8SM (or $\geq$ 1000m) | <b>DS</b> Dust Storm  |
| <b>GR</b> Hail, diam. $\geq$ 5mm (.25")                 |   | <b>FC</b> Funnel cloud(s)<br>e.g., tornado<br>or waterspout |
| <b>GS</b> Small Hail / Snow Pellets, diam. < 5mm (.25") | <b>DU</b> Widespread Dust                           | <b>PO</b> Well-developed dust/sand whirls                   |
| <b>IC</b> Ice Crystals                                  | <b>FG</b> Fog, vis. < 5/8SM (or $\geq$ 1000m)       |   |
| <b>PL</b> Ice Pellets                                   | <b>FU</b> Smoke                                     | <b>SQ</b> Squalls   |
| <b>RA</b> Rain  | <b>HZ</b> Haze                                      |   |
| <b>SG</b> Snow Grains                                   | <b>PY</b> Spray                                     | <b>SS</b> Sandstorm   |
| <b>SN</b> Snow  | <b>SA</b> Sand                                      |   |
| <b>UP</b> Unknown Precipitation (Automated only)        | <b>VA</b> Volcanic Ash                              |   |

### Examples:

**+SHRASNPL** heavy rain showers, snow, ice pellets

**TSRAGS** thunderstorm, moderate rain, small hail

**BR HZ** mist (vis.  $\geq$  5/8SM), haze

**BCFG** patchy fog (vis. < 5/8SM)

**PRFG** partial fog (sector vis. < 5/8SM)

**+DRSN** heavy snow, drifting

**VCSH** showers in vicinity

**FZDZ** freezing drizzle

**BLPY** blowing spray

**+DS** heavy dust storm

A similar table can be found in Section C of the Flight Information Handbook.

## How do I determine the layers of clouds?

KBLV 011657Z AUTO 25015G30KT 210V290 3/8SM  
R32L/1000FT FG **BKN005** 01/M01 A2984 RMK A02  
SLP034

Each observed cloud layer is encoded in a cloud group with sky coverage, altitude of the cloud base above ground level (AGL), and sometimes cloud type. The first three letters of each cloud group denote sky coverage as in the table below. In this example, **BKN** indicates **broken cloud coverage**. To interpret the reported cloud base, append two zeros to the value given. In this example, **005** represents the value **500 feet AGL**. Finally, in augmented or manual observations, codes for convective cloud types may be appended. CB stands for cumulonimbus; TCU stands for towering cumulus.

If surface-based obscurations (e.g., clouds, smoke, haze) are reported, and the lowest broken or overcast cloud base cannot be determined, then vertical visibility in hundreds of feet determines the ceiling. For example, VV002 represents a vertical visibility of 200 feet.

### Sky coverage in eighths:

|            |                       |
|------------|-----------------------|
| SKC or CLR | Sky clear             |
| FEW        | Few (Trace – 2/8)     |
| SCT        | Scattered (3/8 – 4/8) |
| BKN        | * Broken (5/8 – 7/8)  |
| OVC        | * Overcast (8/8)      |

\* The lowest layer reported as broken or overcast constitutes a “ceiling”

A similar table can be found in Section C, “METAR and TAF Code”, of the Flight Information Handbook.

**How do I determine the current **temperature** and **dewpoint**?**

KBLV 011657Z AUTO 25015G30KT 210V290  
3/8SM R32L/1000FT FG BKN005 **01/M01** A2984  
RMK A02 SLP034

The group following the sky condition is the temperature and dewpoint information in degrees Celsius. To convert temperatures from Celsius to Fahrenheit see Attachment 2 or the Flight Information Handbook conversion tables.

In this example, **01** is the temperature in degrees Celsius ( $1^{\circ}\text{C}$ ), and **M01** is the dewpoint in degrees Celsius ( $-1^{\circ}\text{C}$ ). An “M” in the temperature or dewpoint field means “minus” (below zero).

**How do I determine the current altimeter setting?**

KBLV 011657Z AUTO 25015G30KT 210V290  
3/8SM R32L/1000FT FG BKN005 01/M01 **A2984**  
RMK A02 SLP034

The 5-character group beginning with A, following the temperature/dewpoint group is the altimeter setting in inches and hundredths of an inch of mercury (inches Hg), used in the United States and at US airfields overseas. In this example, **A2984** represents a **current altimeter setting of 29.84 inches Hg**.

EDDF 071320Z 22008KT 9999 SCT036 SCT090  
BKN280 19/10 **Q1011** NOSIG

The 5-character group beginning with Q, following the temperature/dewpoint group is the altimeter setting in hectopascals (hPa), used at most overseas locations. A hectopascal is equivalent to a millibar (mb). In this example, **Q1011** represents a **current altimeter setting of 1011 hPa or 1011 mb**.

To convert altimeter settings from mb (or hPa) to inches Hg, see [Attachment 5](#) or the Flight Information Handbook conversion tables.

**What is RMK?**

KBLV 011657Z AUTO 25015G30KT 210V290 3/8SM  
R32L/1000FT FG BKN005 01/M01 A2984 **RMK** A02  
**SLP034**

In METAR reports from the United States and from overseas US military airfields, **RMK** indicates the start of the **Remarks** section. Remarks contain any pertinent information beyond the standard fields provided and can be either encoded or spelled out in plain language. For a partial listing of possible METAR remarks, see [Figure 2 on page 18](#). Additional abbreviations are constructed in accordance with FAA Order 7340.1, *Contractions*.

In this example, the remark, **SLP034**, is the sea level pressure in millibars (or hectopascals) to the nearest tenth. To decode, place a “10” or “9” before the first digit (use a 9 if the 3-digit value is 500 or more), and place a decimal point before the last digit. The sea level pressure remark in the above example would read “**current sea level pressure of 1003.4 millibars.**”

**Caution:** Do not confuse the **METAR** remarks “5#####” group or “6#####” group with the **TAF** “5#####” (turbulence) group or the **TAF** “6#####” (icing) group. Unlike TAF code usage, METAR “5” and “6” group codes indicate pressure tendency and cumulative precipitation amounts--if you need these values, contact your weather provider for decoding instructions. See [pages 28 and 29](#) for more info on decoding TAF icing and turbulence forecasts.



### What is supplemental information?

Overseas (except at US military installations), METAR remarks are called “supplemental information.” Supplemental information follows the altimeter setting and uses remark codes like US remarks, as in [Figure 2 on page 18](#), but is not preceded by RMK.

Supplemental information can also include:

- Recent weather elements, coded with a leading RE
- Sea surface temperature in °C and sea state 0-9, coded W##/S#
- Runway state, coded as an 8-digit numerical group
- A 2-hour forecast trend as described below

EDDF 071320Z 22008KT 9999 SCT036 SCT090 BKN280  
19/10 Q1011 **NOSIG**

Overseas METAR forecast trend groups either start with BECMG or TEMPO, consistent with TAF coding conventions, or they consist entirely of **NOSIG**, which indicates that **no significant changes** in reportable weather elements **are expected during the 2 hours following the reported observation**.

METARs issued by North Atlantic Treaty Organization (NATO) observers have, as the last data group, a color code for ceiling and visibility data:

**NATO Airfield Weather Color Code.** source: AFMAN 15-111 USAFESUP1

| Color Code | Color  | * Ceiling at or above:   | Visibility at or above: |
|------------|--------|--|-------------------------|
| BLU        | blue   | 2500 feet  | 8000 meters             |
| WHT        | white  | 1500 feet  | 5000 meters             |
| GRN        | green  | 700 feet   | 3700 meters             |
| YLO        | yellow | 300 feet   | 1600 meters             |
| AMB        | amber  | 200 feet   | 0800 meters             |
| RED        | red    | < 200 feet   | < 0800 meters           |
| BLACK      | black  | <i>Airfield not useable for reasons other than ceiling or visibility</i> |                         |

\* Belgium, France, Netherlands, and United Kingdom use scattered clouds instead of ceiling

Figure 2. Remarks Decode Table

|  |  |
|--|--|
| <p><b>A01</b> – Reported by automated observation equipment that <b>CANNOT</b> distinguish between rain and snow</p> <p><b>A02</b> – Reported by automated observation equipment that <b>CAN</b> distinguish between rain and snow</p> <p><b>ACC W</b> – <b>AltoCumulus Castellanus</b> clouds <b>West</b></p> <p><b>ACSL SW-S</b> – <b>AltoCumulus Standing</b> Lenticular clouds <b>SouthWest</b> through <b>South</b></p> <p><b>ALSTG/SLP ESTMD</b>– <b>Estimated Pressure</b>. Primary airfield sensors are suspect or inoperative; backup equipment is being used.</p> <p><b>CB W MOV E</b> – <b>Cumulonimbus</b> clouds <b>West MOVing East</b></p> <p><b>CBMAM DSNT S</b> – <b>Cumulonimbus MAM</b>matus clouds to the <b>DiStaNT</b> <b>South</b></p> <p><b>CCSL OVR MTE</b> – <b>CirroCumulus Standing</b> Lenticular clouds <b>OVeR</b> <b>MounTain(s)</b> to the <b>East</b></p> <p><b>CONS LTGCA</b> – <b>CONTinuous</b> (more than 6 flashes per minute) <b>LighTninG, Cloud to Air</b></p> <p><b>FROPA</b> – ... due to <b>FRON</b>tal <b>Pa</b>ssage</p> <p><b>FRQ</b> – <b>FRe</b>quent (1-6 flashes per minute for lightning)</p> <p><b>LTGCA</b> – <b>LighTninG, Cloud to Air</b></p> <p><b>LTGCC</b> – <b>LighTninG, Cloud to Cloud</b></p> <p><b>LTGCG</b> – <b>LighTninG, Cloud to Ground</b></p> <p><b>LTGIC</b> – <b>LighTninG, In-Cloud</b></p> <p><b>OCNL</b> – <b>OCcassioNaL</b> (less than 1 flash per minute for lightning)</p> <p><b>PK WND 28045/1955</b> – <b>PeaK WiND</b> <b>280</b> at <b>45</b> knots occurred at <b>1955Z</b></p> | <p><b>PK WND 34050/38</b> – <b>PeaK WiND 340</b> at <b>50</b> knots occurred at <b>38</b> minutes past the hour</p> <p><b>PRESRR / PRESFR</b> – <b>PRES</b>sure <b>Rising Rapidly / PRES</b>sure <b>Falling Rapidly</b></p> <p><b>RAB20SNB20E55</b> – <b>RA</b>in and <b>SN</b>ow <b>Began</b> at <b>20</b> minutes past the hour, <b>Ended</b> at <b>55</b> min past</p> <p><b>RVRNO</b> – <b>RVR</b>-equipped, but <b>NO</b> report</p> <p><b>SFC VIS 2 1/2</b> – <b>SurFaCe VIS</b>ibility is <b>2 1/2</b> statute miles; remarked when (lower) tower visibility is reported in METAR body</p> <p><b>SLP015</b> – <b>Sea Level Pressure</b> is <b>1001.5</b> millibars</p> <p><b>TCU OHD</b> – <b>Towering CU</b>mulus clouds <b>OverHead</b></p> <p><b>TCU W</b> – <b>Towering CU</b>mulus clouds to the <b>West</b></p> <p><b>TSB05E30</b> – <b>ThunderStorm Began</b> at <b>05</b> minutes past the hour and <b>Ended</b> at <b>30</b> min past</p> <p><b>TWR VIS 1</b> – <b>ToWeR VIS</b>ibility is <b>1</b> statute mile; remarked when (lower) surface visibility is reported in METAR body</p> <p><b>VIRGA</b> – <b>VIRGA</b> at the station; precipitation observed but not reaching the ground</p> <p><b>VIRGA DSNT NE</b> – <b>VIRGA</b> to the <b>DiStaNT</b> <b>NorthEast</b></p> <p><b>VIRGA SW</b> – <b>VIRGA</b> to the <b>SouthWest</b></p> <p><b>VIS 1V2</b> – <b>VIS</b>ibility is <b>Variable</b> between <b>1</b> and <b>2</b> miles</p> <p><b>VIS 2 RWY 11</b> – <b>VIS</b>ibility is <b>2</b> statute miles at <b>RunWaY 11</b></p> <p><b>VIS N 2</b> – <b>VIS</b>ibility in the <b>Northern</b> sector is <b>2</b> statute miles</p> <p><b>WND DATA ESTMD</b> – <b>Estimated Wind</b>. Primary airfield sensors are suspect or inoperative; backup equipment is being used.</p> <p><b>WSHFT45</b> – <b>Wind SHIFT</b> at <b>45</b> minutes past the hour</p> |
|--|--|

**What type of report is this?**

KBLV 051151Z 0512/0612 14005KT 8000 BR FEW030  
WS010/18040KT QNH2960INS  
BECMG 0513/0514 16010KT 3200 -SHRA OVC020 QNH2959INS  
TEMPO 0514/0516 21015G30KT 1600 TSRA BKN008CB OVC020  
BECMG 0518/0519 31012G22KT 9999 NSW SCT040 WSCONDS  
520004 QNH2952INS  
BECMG 0520/0521 30008KT CAVOK QNH2950INS T08/0518Z  
TM01/0611Z

This report is a **TAF** (**Terminal Aerodrome Forecast**)—a weather forecast at an airport or military base for a specific period. A TAF is distinguished from a METAR by its multiple date/time groups.

**AMD** KBLV 051820Z 0518/0612 21015KT 0800 TSRA BKN008CB  
QNH2958INS  
BECMG 0518/0519 29008KT 1600 -RA OVC030 QNH2958INS  
BECMG 0520/0521 30008KT CAVOK QNH2950INS T08/18Z  
TM01/11Z **AMD 1820**

**AMD** (**Amended Aerodrome Forecast**) is issued because the previous version is no longer representative of the current or expected weather. The amended TAF supersedes the previous TAF. In the above example, **AMD 1820** indicates that the forecast was **amended at 1820Z**. Always refer to the date/time group at the end of the TAF to determine the most current forecast.

**AMD** KBLV 051925Z 0518/0612 21015KT 0800 TSRA BKN008CB  
QNH2958INS  
BECMG 0518/0519 29008KT 1600 -RA OVC030 QNH2958INS  
BECMG 0520/0521 18015KT CAVOK QNH2950INS T08/18Z  
TM01/11Z **COR 1925**

**AMD** is also used with **COR** (**Corrected Aerodrome Forecast**) to indicate that a TAF has been corrected. When a corrected TAF is issued, disregard previous TAFs. In the above example, **COR 1925** indicates that the amended forecast was **corrected at 1925Z**. Always refer to the date/time group at the end of the TAF for the most current forecast.

## How do I determine the **location**?

**PAAQ** 041419Z 0414/0512 VRB03KT 6SM BR OVC003  
TEMPO 0414/0418 5SM BR  
FM042000 34005KT P6SM FEW008 SCT070

**KCLK** 081126Z 0812/0912 07009KT 3SM -SN BR OVC003  
FM082100 05008KT 1SM -SN BR OVC001

The 4-character ICAO identifier is the location. **PAAQ** (Palmer Municipal) and **KCLK** (Clinton Regional) are the locations/stations in these examples.

When ICAO identifiers are not available or cannot be used, a 4-character identifier starting with KQ will be used. This is usually in a contingency environment, and the location/identifier combination is often classified. Consult the local weather flight for more details.

**How do I determine the date and valid times of the forecast?**

KBLV **051151Z 0512/0612** 14005KT 8000 BR FEW030  
WS010/18040KT QNH2960INS  
BECMG 0513/0514 16010KT 3200 -SHRA OVC020 QNH2959INS  
TEMPO 0514/0516 21015G30KT 1600 TSRA BKN008CB OVC020  
BECMG 0516/0517 29008KT 3200 -RA OVC030 620304  
QNH2958INS  
BECMG 0518/0519 31012G22KT 9999 NSW SCT040 WSCONDS  
520004 QNH2952INS  
BECMG 0520/0521 30008KT CAVOK QNH2950INS T08/0518Z  
TM01/0611Z

KPVU 081123Z **0812/0906** 32009KT P6SM OVC050  
TEMPO 0812/0816 SCT050  
FM081600 VRB04KT P6SM SCT200

KSLC 081123Z **0812/0918** 35007KT P6SM BKN120  
FM090400 15005KT P6SM SCT200  
FM090900 14004KT P6SM SCT120 BKN200

The next two groups that follow the ICAO identifier show the preparation/dissemination time of the TAF and the valid time of the forecast. In the KBLV (Scott AFB) example, **051151Z** shows that the TAF was prepared/disseminated on the **5<sup>th</sup> day of the month at 1151Z**. The valid time of the forecast follows as **0512/0612** and indicates that the forecast valid time is **from 1200Z on the 5<sup>th</sup> day of the month to 1200Z on the 6<sup>th</sup> day**.

Although most TAFs are forecasted for a 24-hour period, the valid times may vary, up to a maximum of 30 hours. For example, the TAF at KPVU (Provo Municipal) is only valid **from 1200Z on the 8<sup>th</sup> day until 0600Z on the 9<sup>th</sup> day**, while the TAF at KSLC (Salt Lake City International) is valid **from 1200Z on the 8<sup>th</sup> day until 1800Z on the 9<sup>th</sup> day**.

# **TAF** *Time and Type of Change Expected*

## **How do I determine the time and type of changes that will occur?**

KSTL 051130Z 0512/0612 14008KT 5SM BR BKN030  
WS010/18025KT

**TEMPO 0513/0516** 1 1/2SM BR

**FM051600** 16010KT P6SM NSW SKC

**BECMG 0522/0524** 20013G20KT 4SM SHRA OVC020

**PROB40 0600/0606** 2SM TSRA OVC008CB

**BECMG 0606/0608** 21015KT P6SM NSW SCT040

Civilian and military forecasters alike encode the time and type of change expected with TEMPO, FM, and BECMG groups.

TEMPO represents a temporary condition. In this example, **TEMPO 0513/0516** 1 1/2SM BR reads, “Temporary condition between 1300Z and 1600Z on the 5<sup>th</sup> day of 1 1/2 statute mile visibility in mist.” Only the temporary changing conditions are included in TEMPO groups.

FM means “from” and indicates a rapid weather change where all data groups in the previous line are superseded. In this example, **FM051600** reads, “From 1600Z on the 5<sup>th</sup> day...”.

BECMG means “becoming” or a “gradual change” in meteorological conditions and becomes the predominant group by the end time listed. In this example, **BECMG 0522/0524** reads “Becoming from 2200Z to 2400Z on the 5<sup>th</sup> day.”

PROB40 (civilian use only) represents a 40% probability or chance of conditions occurring along with associated weather conditions (wind, visibility, sky conditions).

In this example, **PROB40 0600/0606** 2SM TSRA 0VCO08CB reads, “40% chance between 0000Z and 0600Z on the 6<sup>th</sup> day of visibility 2 statute miles in moderate thunderstorms, 800 overcast cumulonimbus clouds.”

## How do I determine the **wind speed and direction**?

```
KBLV 051151Z 0512/0612 14005KT 8000 BR FEW030  
WS010/18040KT QNH2960INS  
BECMG 0513/0514 16010KT 3200 -SHRA OVC020 QNH2959INS  
TEMPO 0514/0516 21015G30KT 1600 TSRA BKN008CB OVC020  
BECMG 0516/0517 29008KT 3200 -RA OVC030 620304  
QNH2958INS  
BECMG 0518/0519 31012G22KT 9999 NSW SCT040 WSCONDS  
520004 QNH2952INS  
BECMG 0520/0521 30008KT CAVOK QNH2950INS T08/0518Z  
TM01/0611Z
```

The data group after the valid time and followed by KT (knots) is the forecast wind speed.

The first three digits within a wind group are the true direction to the nearest 10 degrees from which the wind will blow. The next two digits are the sustained speed. If gusts are forecasted, the next two or three digits following the “G” are the “gust,” the maximum wind speed in a ten-minute window.

In this example, **14005KT**, 16010KT, **21015G30KT**, 29008KT, 31012G22KT, and 30008KT are the wind direction and speed groups.

In the first wind group, the wind is forecasted to blow from 140 degrees (true) at a sustained speed of 05 knots. No gust is forecasted.

In the third wind group, the wind is forecasted to blow from 210 degrees (true) at a sustained speed of 15 knots, gusting up to 30 knots.

**How do I determine the forecast visibility?**

KBLV 051151Z 0512/0612 14005KT **8000** BR FEW030  
WS010/18040KT QNH2960INS  
BECMG 0513/0514 16010KT **3200** -SHRA OVC020 QNH2959INS  
TEMPO 0514/0516 21015G30KT **1600** TSRA BKN008CB OVC020  
BECMG 0516/0517 29008KT **3200** -RA OVC030 620304  
QNH2958INS  
BECMG 0518/0519 31012G22KT **9999** NSW SCT040 WSCONDS  
520004 QNH2952INS  
BECMG 0520/0521 30008KT **CAVOK** QNH2950INS T08/0518Z  
TM01/0611Z

In the military and at most overseas locations, visibility is forecasted in meters. The 4-character group following the wind is the forecast visibility. In the KBLV example, **8000**, **3200**, **1600**, **3200**, and **9999** are the **forecast visibilities in meters**. 9999 is the greatest value forecasted. A value of 9999 indicates a forecast visibility of greater than 9000 meters (7 statute miles or greater). To convert visibility values from meters to statute miles, see Attachment 3 or the Flight Information Handbook conversion tables.

Overseas locations may use the contraction “**CAVOK**” (ceiling and visibility OK) when there is **no significant weather, the visibility is 10 km or greater, and the ceilings are greater than 5,000 ft**.

KSTL 051130Z 0512/0612 14008KT 5SM BR BKN030  
WS010/18025KT  
TEMPO 0513/0516 1 1/2SM BR  
FM051600 16010KT **P6SM** NSW SKC  
BECMG 0522/0524 20013G20KT 4SM SHRA OVC020  
PROB40 0600/0606 2SM TSRA OVC008CB  
BECOMG 0606/0608 21015KT P6SM NSW SCT040

In the CONUS, civilian TAFS forecast visibility in statute miles up to 6 statute miles, beyond which **P6SM** is used to indicate **forecast visibility greater than 6 statute miles**.



**How do I determine if there is any forecast weather?**

KBLV 051151Z 0512/0612 14005KT 8000 **BR** FEW030  
WS010/18040KT QNH2960INS  
BECMG 0513/0514 16010KT 3200 **-SHRA** OVC020 QNH2959INS  
TEMPO 0514/0516 21015G30KT 1600 **TSRA** BKN008CB OVC020  
BECMG 0516/0517 29008KT 3200 **-RA** OVC030 620304  
QNH2958INS  
BECMG 0518/0519 31012G22KT 9999 **NSW** SCT040 WSCONDS  
520004 QNH2952INS  
BECMG 0520/0521 30008KT CAVOK QNH2950INS T08/0518Z  
TM01/0611Z

The weather data group (forecast precipitation or obstruction to visibility) follows the visibility data group.

In this example, **BR** means “mist,” **-SHRA** means “light rain showers,” **TSRA** means a “thunderstorm with moderate rain,” and **-RA** means “light rain.” **NSW** (no significant weather) is used to indicate that the weather or obscuration listed in the previous group is no longer expected to occur. Absence of a weather or obscuration group means that no weather or obscuration is expected during the forecast period.

To methodically decode a weather group, look for six key elements (depending on the phenomena, one or more may be omitted). In order, these elements are: **Intensity** (symbol preceding the code), **Proximity**, **Descriptor**, **Precipitation Description**, **Obscuration** (other than precipitation) and **Other**.

For a complete table of weather group elements and examples, see Figure 1 on page 12, or reference Section C, “METAR and TAF Code”, of the Flight Information Handbook.

## How do I determine the layers of forecast clouds?

KBLV 051151Z 0512/0612 14005KT 8000 BR **FEW030**  
 WS010/18040KT QNH2960INS  
 TEMPO 0514/0516 21015G30KT 1600 TSRA **BKN008CB OVC020**  
 BECMG 0520/0521 30008KT 9999 **SKC** QNH2950INS T08/0518Z  
 TM01/0611Z

Cloud height is forecasted in hundreds of feet. Add two zeros to the end of the value given. In this example, **FEW030**, **BKN008CB**, **OVC020**, and **SKC** represent the values **3,000 few**, **800 broken cumulonimbus**, **2,000 overcast**, and **sky clear**. Overseas locations may use the contraction CAVOK (ceiling and visibility OK) when there is no significant weather, the visibility is 10 km or greater, and the ceilings are greater than 5,000 ft.

In place of cloud layers, vertical visibility in hundreds of feet will appear in a TAF cloud group when the sky is forecast to be totally obscured. For example, VV002 represents a vertical visibility of 200 feet. Vertical visibility in a TAF represents the forecast ceiling.

When a surface-based partial obscuration is forecasted, it will be encoded as FEW000, SCT000, or BKN000 in the cloud layer area. A remark will appear after the altimeter that will describe the phenomena responsible. For example, FG SCT000 would indicate the weather element causing the obscuration is caused by fog and the layer amount is SCT. Surface-based partial obscurations will not be considered a ceiling.

### Sky coverage (eighths):

|            |                       |
|------------|-----------------------|
| SKC or CLR | Sky clear             |
| FEW        | Few (Trace – 2/8)     |
| SCT        | Scattered (3/8 – 4/8) |
| BKN        | * Broken (5/8 – 7/8)  |
| OVC        | * Overcast (8/8)      |

\* The lowest layer reported as broken or overcast constitutes a “ceiling”

A similar table can be found in Section C, “METAR and TAF Code”, of the Flight Information Handbook.

## How do I determine if **wind shear** is in the forecast?

```
KBLV 051151Z 0512/0612 14005KT 8000 BR FEW030  
WS010/18040KT QNH2960INS  
BECMG 0513/0514 16010KT 3200 -SHRA OVC020 QNH2959INS  
TEMPO 0514/0516 21015G30KT 1600 TSRA BKN008CB OVC020  
BECMG 0516/0517 29008KT 3200 -RA OVC030 620304  
QNH2958INS  
BECMG 0518/0519 31012G22KT 9999 NSW SCT040 WSCONDS  
520004 QNH2952INS  
BECMG 0520/0521 30008KT CAVOK QNH2950INS T08/0518Z  
TM01/0611Z
```

A wind shear group is included if non-convective low-level winds (up to 2,000 feet) will change in speed and/or direction and result in a shearing action. WS indicates forecast wind shear and is followed by a 3-digit height in hundreds of feet AGL, a slant character, “/,” and forecast wind at the height indicated. **WS010/18040KT** reads, “forecast wind shear at 1,000 feet above the station; wind at 1,000 feet is from 180 degrees (true) at 40 knots.”

The remark **WSCONDS** is used to indicate the potential for wind shear when there is **not enough information available to reliably predict the height, direction and speed** of the wind shear. WSCONDS is normally used beyond the first 6 hours of the TAF.

For some locations, the wind shear group will follow the minimum altimeter setting group (in the TAF remarks) instead of following the cloud group.

## How do I determine forecast icing conditions?

KBLV 051153Z 0512/0612 14005KT 8000 BR FEW030  
 WS010/18040KT QNH2960INS  
 BECMG 0516/0517 29008KT 3200 -RA OVC030 **620304**  
 QNH2958INS T08/0518Z TM01/0611Z

If forecasted, the icing group will be prefixed by the number 6, and follows the cloud group. To decode, follow these instructions:

1. Find the icing designator “6” following the cloud group (**620304**).
2. The next digit gives icing type and intensity (**620304**). See [Figure 3](#).
3. The next three digits give the base of the icing layer in hundreds of feet (**620304**).
4. The last digit provides the icing layer depth in thousands of feet (**620304**), so add this value to the base height to determine the top limit of the icing conditions.

In the above example, the icing forecast will read, “**light rime icing (in cloud) from 3,000 to 7,000 feet.**”

**Figure 3. Icing Intensity Decode Table**

| CODE   | DECODE                                |
|--|---------------------------------------|
| 0  | Trace Icing or None (see note)        |
| 1  | Light Mixed Icing                     |
| 2  | Light Rime Icing In Cloud             |
| 3  | Light Clear Icing In Precipitation    |
| 4  | Moderate Mixed Icing                  |
| 5  | Moderate Rime Icing In Cloud          |
| 6  | Moderate Clear Icing In Precipitation |
| 7  | Severe Mixed Icing                    |
| 8  | Severe Rime Icing In Cloud            |
| 9  | Severe Clear Icing In Precipitation   |
| <b>Note:</b> Air Force code “0” means a trace of icing,<br>World Meteorological Organization code “0” means no icing |                                       |

### How do I determine forecast turbulence conditions?

KBLV 051153Z 0512/0612 14005KT 8000 FEW030 QNH2960INS  
 BECMG 0518/0519 31012G22KT 9999 NSW SCT040 **520004**  
 QNH2952INS T08/0518Z TM01/0611Z

If forecasted, the turbulence code will be prefixed by the number 5, and will follow the cloud or icing group. To decode, follow these instructions:

1. Look for the turbulence designator “5” that follows the cloud or icing group (520004).
2. The next digit will determine the intensity (5**2**0004). See [Figure 4](#).
3. The next three digits will determine the base limit of the turbulence layer in hundreds of feet AGL (52**000**4).
4. The last digit will determine the turbulence layer depth in thousands of feet (5200**04**), so add this value to the base height to determine the top limit of the turbulence conditions.

In the above example, the turbulence forecast will read, “**occasional moderate turbulence in clear air from the surface to 4,000 feet.**”

**Figure 4. Turbulence Intensity Decode Table**

| CODE         | DECODE   |
|--------------|--|
| 0            | None   |
| 1            | Light turbulence   |
| 2            | Moderate turbulence in clear air, occasional                 |
| 3            | Moderate turbulence in clear air, frequent                   |
| 4            | Moderate turbulence in cloud, occasional                     |
| 5            | Moderate turbulence in cloud, frequent                       |
| 6            | Severe turbulence in clear air, occasional                   |
| 7            | Severe turbulence in clear air, frequent                     |
| 8            | Severe turbulence in cloud, occasional                       |
| 9            | Severe turbulence in cloud, frequent                         |
| X            | Extreme turbulence   |
| <b>Note:</b> | Occasional is defined as occurring less than 1/3 of the time |

**How do I determine the forecast lowest altimeter setting?**

KBLV 051151Z 0512/0612 14005KT 8000 BR FEW030  
WS010/18040KT **QNH2960INS**  
BECMG 0513/0514 16010KT 3200 -SHRA OVC020 **QNH2959INS**  
TEMPO 0514/0516 21015G30KT 1600 TSRA BKN008CB OVC020  
BECMG 0516/0517 29008KT 3200 -RA OVC030 620304  
**QNH2958INS**  
BECMG 0518/0519 31012G22KT 9999 NSW SCT040 WSCONDS  
520004 **QNH2952INS**  
BECMG 0520/0521 30008KT CAVOK **QNH2950INS** T08/0518Z  
TM01/0611Z

Forecast minimum altimeter settings are only found in military forecasts. These are near the end of the line, beginning with QNH (minimum) and ending with INS (inches). To convert altimeter settings from inches Hg to hectopascals (millibars), use [Attachment 4](#) or the Flight Information Handbook conversion tables.

In the example shown above, **QNH2960INS**, **QNH2959INS**, **QNH2958INS**, **QNH2952INS**, and **QNH2950INS** are read as minimum altimeter settings of 29.60, 29.59, 29.58, 29.52, and 29.50 inches of mercury, respectively.

**How do I determine the forecast temperatures?**

```
KBLV 051151Z 0512/0612 14005KT 8000 BR FEW030  
WS010/18040KT QNH2960INS  
BECMG 0513/0514 16010KT 3200 -SHRA OVC020 QNH2959INS  
TEMPO 0514/0516 21015G30KT 1600 TSRA BKN008CB OVC020  
BECMG 0516/0517 29008KT 3200 -RA OVC030 620304  
QNH2958INS  
BECMG 0518/0519 31012G22KT 9999 NSW SCT040 WSCONDS  
520004 QNH2952INS  
BECMG 0520/0521 30008KT CAVOK QNH2950INS T08/0518Z  
TM01/0611Z
```

Forecast temperatures for the forecast period are routinely found only in military TAFs. They are found on the last line, following the minimum altimeter, beginning with the designator “T,” maximum temperature first. To convert temperature units from Celsius to Fahrenheit, use [Attachment 2](#) or the Flight Information Handbook conversion tables.

In this example, **T08/0518Z** indicates a forecast maximum temperature of 8°C on the 5<sup>th</sup> day at 1800Z, and **TM01/0611Z** indicates a forecast minimum temperature of -1°C on the 6<sup>th</sup> day at 1100Z.

HERBERT J. CARLISLE, Lt Gen, USAF  
DCS, Operations, Plans, and Requirements

## **GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION**

### ***References***

AFMAN 15-111, *Surface Weather Observations*

AFMAN 15-124, *Meteorological Codes*

ICAO Document 8896AN/893/4, *Manual of Aeronautical Meteorological Practice*, ISBN 92-9194-345-2

AFMAN 15-111 USAFESUP1, *United States Air Forces in Europe Supplement to Surface Weather Observations*

FAA Order 7340.1, *Contractions*

### ***Abbreviations and Acronyms***

**AGL**—Above Ground Level

**FAA**—Federal Aviation Administration

**ICAO**—International Civil Aviation Organization

**METAR**—Aviation Routine Weather Report

**NATO**—North Atlantic Treaty Organization

**RVR**—Runway Visual Range

**SPECI**—Aviation Selected Special Weather Report

**TAF**—Terminal Aerodrome Forecast

**UTC**—Coordinated Universal Time, sometimes called “zulu time”



# Attachment 2

## TEMPERATURE CONVERSION Degrees Fahrenheit to Degrees Celsius

| °F    |       |    | °F   |      |    | °F   |      |     | °F    |       |     |
|-------|-------|----|------|------|----|------|------|-----|-------|-------|-----|
| From  | To    | °C | From | To   | °C | From | To   | °C  | From  | To    | °C  |
| 128.3 | 130.0 | 54 | 83.3 | 85.0 | 29 | 38.3 | 40.0 | 04  | -4.8  | -3.1  | M20 |
| 126.5 | 128.2 | 53 | 81.5 | 83.2 | 28 | 36.3 | 38.2 | 03  | -6.6  | -4.9  | M21 |
| 124.7 | 126.4 | 52 | 79.7 | 81.4 | 27 | 34.7 | 36.2 | 02  | -8.4  | -6.7  | M22 |
| 122.9 | 124.6 | 51 | 77.9 | 79.6 | 26 | 32.9 | 34.6 | 01  | -10.2 | -8.5  | M23 |
| 121.1 | 122.8 | 50 | 76.1 | 77.8 | 25 | 32.0 | 32.8 | 00  | -12.0 | -10.3 | M24 |
| 119.3 | 121.0 | 49 | 74.3 | 76.0 | 24 | 31.2 | 31.9 | M00 | -13.8 | -12.1 | M25 |
| 117.5 | 119.2 | 48 | 72.5 | 74.2 | 23 | 29.4 | 31.1 | M01 | -15.6 | -13.9 | M26 |
| 115.7 | 117.4 | 47 | 70.7 | 72.4 | 22 | 27.6 | 29.3 | M02 | -17.4 | -15.7 | M27 |
| 113.9 | 115.6 | 46 | 68.9 | 70.6 | 21 | 25.8 | 27.5 | M03 | -19.2 | -17.5 | M28 |
| 112.1 | 113.8 | 45 | 67.1 | 68.8 | 20 | 24.0 | 25.7 | M04 | -21.0 | -19.3 | M29 |
| 110.3 | 112.0 | 44 | 65.3 | 67.0 | 19 | 22.2 | 23.9 | M05 | -22.8 | -21.1 | M30 |
| 108.5 | 110.2 | 43 | 63.5 | 65.2 | 18 | 20.4 | 22.1 | M06 | -24.6 | -22.9 | M31 |
| 106.7 | 108.4 | 42 | 61.7 | 63.4 | 17 | 18.6 | 20.3 | M07 | -26.4 | -24.7 | M32 |
| 104.9 | 106.6 | 41 | 59.9 | 61.6 | 16 | 16.8 | 18.5 | M08 | -28.2 | -26.5 | M33 |
| 103.1 | 104.8 | 40 | 58.1 | 59.8 | 15 | 15.0 | 16.7 | M09 | -30.0 | -28.3 | M34 |
| 101.3 | 103.0 | 39 | 56.3 | 58.0 | 14 | 13.2 | 14.9 | M10 | -31.8 | -30.1 | M35 |
| 99.5  | 101.2 | 38 | 54.5 | 56.2 | 13 | 11.4 | 13.1 | M11 | -33.6 | -31.9 | M36 |
| 97.7  | 99.4  | 37 | 52.7 | 54.4 | 12 | 9.6  | 11.3 | M12 | -35.4 | -33.7 | M37 |
| 95.9  | 97.6  | 36 | 50.9 | 52.6 | 11 | 7.8  | 9.5  | M13 | -37.2 | -35.5 | M38 |
| 94.1  | 95.8  | 35 | 49.1 | 50.8 | 10 | 6.0  | 7.7  | M14 | -39.0 | -37.3 | M39 |
| 92.3  | 94.0  | 34 | 47.3 | 49.0 | 09 | 4.2  | 5.9  | M15 | -40.8 | -39.1 | M40 |
| 90.5  | 92.2  | 33 | 45.5 | 47.2 | 08 | 2.4  | 4.1  | M16 | -42.6 | -40.9 | M41 |
| 88.7  | 90.4  | 32 | 43.7 | 45.4 | 07 | 0.6  | 2.3  | M17 | -44.4 | -42.7 | M42 |
| 86.9  | 88.6  | 31 | 41.9 | 43.6 | 06 | -1.2 | +0.5 | M18 | -46.2 | -44.5 | M43 |
| 85.1  | 86.8  | 30 | 40.1 | 41.8 | 05 | -3.0 | -1.3 | M19 | -48.0 | -46.5 | M44 |

# Attachment 3

## REPORTABLE VISIBILITY CONVERSION

Statute Miles (SM) to Meters (m)

| STATUTE MILES | METERS | STATUTE MILES | METERS | STATUTE MILES | METERS |
|---------------|--------|---------------|--------|---------------|--------|
| <b>0</b>      | 0000   | <b>1-1/8</b>  | 1800   | <b>2-3/4</b>  | 4400   |
| -             | 0050   | -             | 1900   | -             | 4500   |
| <b>1/16</b>   | 0100   | <b>1-1/4</b>  | 2000   | -             | 4600   |
| -             | 0150   | -             | 2100   | -             | 4700   |
| <b>1/8</b>    | 0200   | <b>1-3/8</b>  | 2200   | <b>3</b>      | 4800   |
| -             | 0250   | -             | 2300   | -             | 4900   |
| <b>3/16</b>   | 0300   | <b>1-1/2</b>  | 2400   | -             | 5000   |
| -             | 0350   | -             | 2500   | <b>4</b>      | 6000   |
| <b>1/4</b>    | 0400   | <b>1-5/8</b>  | 2600   | -             | 7000   |
| -             | 0450   | -             | 2700   | <b>5</b>      | 8000   |
| <b>5/16</b>   | 0500   | <b>1-3/4</b>  | 2800   | <b>6</b>      | 9000   |
| -             | 0550   | -             | 2900   | <b>7</b>      | 9999   |
| <b>3/8</b>    | 0600   | <b>1-7/8</b>  | 3000   | <b>8</b>      | 9999   |
| -             | 0650   | -             | 3100   | <b>9</b>      | 9999   |
| -             | 0700   | <b>2</b>      | 3200   | <b>10</b>     | 9999   |
| -             | 0750   | -             | 3300   | <b>11</b>     | 9999   |
| <b>1/2</b>    | 0800   | -             | 3400   | <b>12</b>     | 9999   |
| -             | 0900   | -             | 3500   | <b>13</b>     | 9999   |
| <b>5/8</b>    | 1000   | <b>2-1/4</b>  | 3600   | <b>14</b>     | 9999   |
| -             | 1100   | -             | 3700   | <b>15</b>     | 9999   |
| <b>3/4</b>    | 1200   | -             | 3800   | <b>20</b>     | 9999   |
| -             | 1300   | -             | 3900   | <b>25</b>     | 9999   |
| <b>7/8</b>    | 1400   | <b>2-1/2</b>  | 4000   | <b>30</b>     | 9999   |
| -             | 1500   | -             | 4100   | <b>35</b>     | 9999   |
| <b>1</b>      | 1600   | -             | 4200   | <b>40</b>     | 9999   |
| -             | 1700   | -             | 4300   | <b>Etc.</b>   | 9999   |

Double underline marks a change in increment

## *Attachment 4*

### **RUNWAY VISIBILITY CONVERSION**

| <b>RVR IN<br/>HUNDREDS<br/>OF FEET</b> | <b>STATUTE<br/>MILES</b> | <b>NAUTICAL<br/>MILES</b> | <b>METERS</b> | <b>KILO<br/>METERS</b> |
|--|--------------------------|---------------------------|---------------|------------------------|
| <b>12</b>                              | 1/4 *                    | 2/10                      | 370           | .4                     |
| <b>16</b>                              | 1/4                      | 2/10                      | 490           | .5                     |
| <b>20</b>                              | 3/8                      | 3/10                      | 610           | .6                     |
| <b>24</b>                              | 1/2                      | 4/10                      | 730           | .7                     |
| <b>32</b>                              | 5/8                      | 6/10                      | 970           | 1.0                    |
| <b>40</b>                              | 3/4                      | 7/10                      | 1220          | 1.2                    |
| <b>45</b>                              | 7/8                      | 8/10                      | 1370          | 1.4                    |
| <b>50</b>                              | 1                        | 9/10                      | 1520          | 1.5                    |
| <b>60</b>                              | 1-1/4                    | 1-1/10                    | 1830          | 1.8                    |

\* Helicopter Only

# Attachment 5

## PRESSURE CONVERSION

Millibars (mb)\* to Inches of Mercury (inches Hg)

|      | __0   | __1   | __2   | __3   | __4   | __5   | __6   | __7   | __8   | __9   |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 094_ | 27.76 | 27.79 | 27.82 | 27.85 | 27.88 | 27.91 | 27.94 | 27.96 | 27.99 | 28.02 |
| 095_ | 28.05 | 28.08 | 28.11 | 28.14 | 28.17 | 28.20 | 28.23 | 28.26 | 28.29 | 28.32 |
| 096_ | 28.35 | 28.38 | 28.41 | 28.44 | 28.47 | 28.50 | 28.53 | 28.56 | 28.59 | 28.61 |
| 097_ | 28.64 | 28.67 | 28.70 | 28.73 | 28.76 | 28.79 | 28.82 | 28.85 | 28.88 | 28.91 |
| 098_ | 28.94 | 28.97 | 29.00 | 29.03 | 29.06 | 29.09 | 29.12 | 29.15 | 29.18 | 29.21 |
| 099_ | 29.23 | 29.26 | 29.29 | 29.32 | 29.35 | 29.38 | 29.41 | 29.44 | 29.47 | 29.50 |
| 100_ | 29.53 | 29.56 | 29.59 | 29.62 | 29.65 | 29.68 | 29.71 | 29.74 | 29.77 | 29.80 |
| 101_ | 29.83 | 29.85 | 29.88 | 29.91 | 29.94 | 29.97 | 30.00 | 30.03 | 30.06 | 30.09 |
| 102_ | 30.12 | 30.15 | 30.18 | 30.21 | 30.24 | 30.27 | 30.30 | 30.33 | 30.36 | 30.39 |
| 103_ | 30.42 | 30.45 | 30.47 | 30.50 | 30.53 | 30.56 | 30.59 | 30.62 | 30.65 | 30.68 |
| 104_ | 30.71 | 30.74 | 30.77 | 30.80 | 30.83 | 30.86 | 30.89 | 30.92 | 30.95 | 30.98 |
| 105_ | 31.01 | 31.04 | 31.07 | 31.10 | 31.12 | 31.15 | 31.18 | 31.21 | 31.24 | 31.27 |

\* A millibar (mb) is equal to a hectopascal (hPa)