

# Providing A Weather Observation to MARS

## For Ham Radio Operators

Many airports broadcast their surface weather observations in the VHF aviation band and also provide it by telephone. These broadcasts go by a variety of names (e.g., ATIS, ASOS, AWSS)) depending on exactly what information they include and don't include, but all contain the basic weather observations that are needed by MARS. This document describes what to listen for in an airport's surface weather observation for joint ARES/MARS exercises.

A typical airport surface weather observation broadcast might say:

Bridgeport Sikorsky Airport, information Bravo. Time 1355 Zulu. Winds 300 at 8. Visibility 5 miles in haze. Sky condition 1200 scattered, 9000 overcast. Temperature 15. Dew point 8. Altimeter 2987. Landing and departing runway 29. Notice to airmen, taxiway Gulf out of service between Juliet and Kilo. On initial contact, advise you have information Bravo.

The information needed for MARS is highlighted above, and consists of the following:

| Information Needed                          | How To Report It  |
|---|---|
| Location:<br>Bridgeport Sikorsky<br>Airport | Provide either the name of the airport or the airport code, or both. The airport code is the three letter code you see on luggage tags, such as BDR for Bridgeport or BOS for Boston <sup>1</sup> .<br><br>If the reading you're giving us is not from an airport, give a description of the location (e.g., ARRL headquarters, Newington CT)   |
| Time of Observation:<br>1355 UTC            | The time of the weather observation in UTC (Zulu)   |
| Wind Direction and<br>Speed:<br>300 at 8    | In the U.S., wind direction is given in degrees to the nearest 10 degrees. Speed is given in KNOTS. There might be a single wind speed (e.g., "250 degrees at 10 knots") or gust information may be included (e.g., "250 degrees at 10 knots, gusts to 25 knots").<br><br>If you get a reading giving the wind speed in Miles Per Hour (MPH) and you don't know how to convert it, just give us the reading and tell us that it's in MPH and not knots.<br><br>If winds are reported as "light and variable" or "calm", give the wind direction and speed as "0 degrees at 0 knots" (or just tell us "light and variable" or "calm" and we'll take care of it). |

<sup>1</sup> The airport code (e.g., BDR for Bridgeport) may have the letter K in front of it (e.g., KBDR, KBOS). Technically speaking, the airport is four characters, with a leading K for all airports in the US.

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| Visibility:<br>5 miles  | In the U.S., visibility is usually given in Statute Miles (e.g., “5 miles”), but may be given in some other measure if it’s particularly bad (e.g., “100 yards”). Give us both the number AND the unit of measurement.   |
| Cloud Layer:<br>Sky condition 1200<br>scattered, 9000<br>overcast | <p>Cloud layers are described by their height above ground (in feet) plus the amount of sky cover (typically using words like “Scattered”, “Broken”, “Overcast”). The report may give only one cloud layer (e.g., “5000 Broken”) or it might have multiple cloud layers (e.g., “1500 Scattered, 5000 Broken, 9000 Overcast”). If there are multiple layers, please provide the different layers listed.</p> <p>Occasionally, the cloud layer may say something like “sky obscured” or “vertical visibility” or “clear” without any height. Just give us those words and we’ll handle it.</p>   |
| Temperature:<br>15  | In the U.S., airport temperatures are given in degrees CELSIUS, not Fahrenheit. If you obtain a Fahrenheit reading, tell us that you’re giving the temperature in Fahrenheit and we’ll convert it.   |
| Dewpoint:<br>8  | In the U.S., airport temperatures are given in degrees CELSIUS, not Fahrenheit. If you obtain a Fahrenheit reading, tell us that you’re giving the temperature in Fahrenheit and we’ll convert it.   |
| Altimeter Setting (a/k/a<br>Barometric Pressure):<br>2987         | <p>In the U.S., the barometric pressure is given in inches of mercury (e.g., “29.92 inches”). The altimeter setting is just the barometric pressure without the decimal point (e.g., “2992”).</p> <p>Typical readings range from about 28 inches (2800) to about 33 inches (3300). If you’re getting numbers that are much smaller or much larger than that, you could be mishearing the broadcast (although barometric pressure might go down as low as 25 or 26 inches in the middle of a hurricane). You may see the abbreviation “HG”, which stands for “inches of mercury”.</p> <p>It is unlikely, but possible, that you’ll be get the reading in millibars (e.g., 1013 millibars). Typical readings range from about 950 to about 1100. If they give the reading in millibars, tell us the reading as stated and make sure that you tell us it’s millibars and not inches of mercury.</p> |

MARS exercises simulate a situation in which there are widespread landline phone, cell phone, and internet outages. Therefore, MARS needs for you to collect the information in one of three ways:

1. By copying it over the air as transmitted from the airport’s surface weather observation broadcasts.

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- a. Airport surface weather observations are broadcast in **AM** in the VHF aviation band. For most airports, they cannot be heard at ground level more than about 10 miles from the airport unless the terrain is very flat.
  - b. Lists of airports that broadcast these weather reports are available at [http://www.faa.gov/air\\_traffic/weather/asos/](http://www.faa.gov/air_traffic/weather/asos/).
  - c. Some of these broadcasts are also transmitted over aviation navigation aids such as VORs. It is acceptable to obtain the information from a VOR broadcast.
2. By traveling close enough to the airport to receive the surface weather observation in the VHF aviation band.
  3. By visiting the airport and getting the information from airport operations.
  4. Even in widespread phone outages, it is possible that some local telephone service may be in operation. If you're within 20-30 miles of the airport, you may call the airport for purposes of MARS exercises. Phone numbers are included in the list of airports that broadcast weather reports (see above, item 1.c).