

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: Bridgeport Sikorsky 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 ¹ . In this case, you would report "Airport BDR (Bravo Delta Romeo)" or "Bridgeport Sikorsky"
Time of Observation: 1355 UTC	The time of the weather observation in UTC (Zulu). In this case, you would report "Time 1355Z"
Wind Direction and Speed: 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"). If winds are reported as "light and variable" or "calm", give the wind direction and speed as "0 degrees at 0 knots". In this case, you would report "Winds 300 at 8"
Visibility: 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

¹ Technically speaking, the airport identifier is four characters, with a leading K for all airports in the US (e.g., KBDR, KBOS).

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	<p>measurement.</p> <p>In this case, you would report "Visibility 5 miles"</p>
<p>Cloud Layer: Sky condition 1200 scattered, 9000 overcast</p>	<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> <p>In this case, you would report "Cloud Layer 1200 scattered, 9000 overcast"</p>
<p>Temperature: 15</p>	<p>In the U.S., airport temperatures are given in degrees CELSIUS, not Fahrenheit.</p> <p>In this case, you would report "Temperature 15"</p>
<p>Dewpoint: 8</p>	<p>In the U.S., airport temperatures are given in degrees CELSIUS, not Fahrenheit.</p> <p>In this case, you would report "Dewpoint 8"</p>
<p>Altimeter Setting (a/k/a Barometric Pressure): 2987</p>	<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 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> <p>In this case you would report "Altimeter 2987"</p>

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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.
 - 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/.
 - 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. **If you're within 50 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 at https://www.faa.gov/air_traffic/weather/asos/. As of Sept 8, 2019 the list of approved weather stations in CT is as follows:

Weather stations

ID	Location	County	State	Frequency	Phone	Type
KBDR	Bridgeport	Fairfield	CT	ATIS - 119.15	(203) 381-9453	ASOS
KDXR	Danbury	Fairfield	CT	ATIS - 127.75	(203) 791-8227	ASOS
KLZD	Danielson	Windham	CT	119.125	(860) 779-7251	AWOS III
CT41	GE Corp Headquarters	New London	CT	124.175	(203) 373-2553	AWOS III
KGON	Groton	New London	CT	ATIS - 127.0	(860) 449-8921	ASOS
KHFD	Hartford	Hartford	CT	ATIS - 126.45	(860) 527-5837	ASOS
KMMK	Meriden	New Haven	CT	134.925	(203) 639-9405	ASOS
KHVN	New Haven	New Haven	CT	ATIS - 133.65	(203) 466-6205	ASOS
KOXC	Oxford - Waterbury	New Haven	CT	132.975	(203) 262-1190	AWOS IIIP/T
KIJD	Willimantic - Windham Arpt	Windham	CT	133.675	(860) 456-8839	ASOS
KBDL	Windsor Locks - Bradley Int'l	Hartford	CT	ATIS - 118.15	(860) 386-3480	ASOS
KSNC	Winthrop	Middlesex	CT	118.325	(860) 526-1551	AWOS III

Please note that frequencies and phone numbers may change over time.