

Puerto Rico. The common EFAS frequency, 122.0 MHz, is established for pilots of aircraft flying between 5,000 feet AGL and 17,500 feet MSL.

### HAZARDOUS IN-FLIGHT WEATHER ADVISORY (HIWAS)

HIWAS is a national program for broadcasting hazardous weather information continuously over selected nav aids. The broadcasts include advisories such as **AIRMETS**, **SIGMETS**, **convective SIGMETS**, and **urgent PIREPs**. These broadcasts are only a summary of the information, and pilots should contact an FSS or EFAS for detailed information. Nav aids that have HIWAS capability are depicted on sectional charts with an “H” in the upper right corner of the identification box. [Figure 11-1]

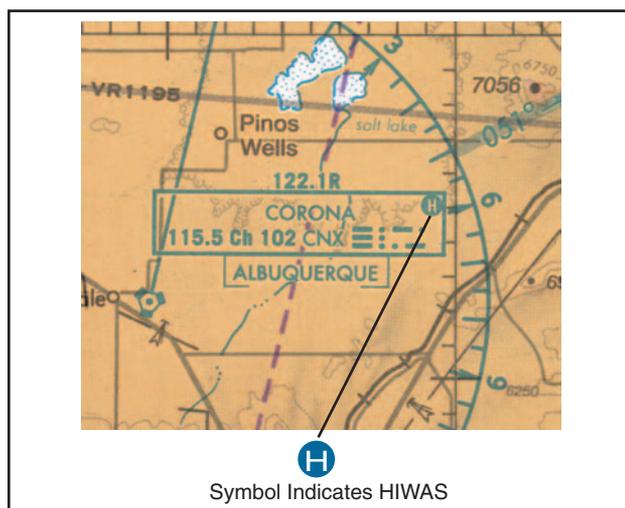


Figure 11-1. HIWAS availability is shown on sectional chart.

### TRANSCRIBED WEATHER BROADCAST (TWEB)

A transcribed weather broadcast is a weather report transmitted continuously over selected nav aids. On a sectional chart, a “T” in the upper right-hand corner of the navaid box indicates TWEB availability. TWEB weather usually consists of route-orientated data

**AIRMET**—In-flight weather advisory concerning moderate icing, moderate turbulence, sustained winds of 30 knots or more at the surface, and widespread areas of ceilings less than 1,000 feet and/or visibility less than 3 miles.

**SIGMET**—An in-flight weather advisory that is considered significant to all aircraft. SIGMET criteria include severe icing, severe and extreme turbulence, duststorms, sandstorms, volcanic eruptions, and volcanic ash that lower visibility to less than 3 miles.

**Convective SIGMET**—A weather advisory concerning convective weather significant to the safety of all aircraft. Convective SIGMETs are issued for tornadoes, lines of thunderstorms, thunderstorms over a wide area, embedded thunderstorms, wind gusts to 50 knots or greater, and/or hail  $\frac{3}{4}$  inch in diameter or greater.

**Urgent PIREP**—Any pilot report that contains any of the following weather phenomena: tornadoes, funnel clouds, or waterspouts; severe or extreme turbulence, including clear air turbulence; severe icing; hail; volcanic ash; or low-level wind shear.

including route forecasts, forecast outlook, winds aloft, and other selected weather reports for an area within 50 nautical miles (NM) of the FSS or for a 50-mile wide corridor along a specific route. A TWEB forecast is valid for 12 hours and is updated four times a day.

### WEATHER BRIEFINGS

Prior to every flight, pilots should gather all information vital to the nature of the flight. This includes an appropriate weather briefing obtained from a specialist at an FSS, AFSS, or NWS.

For weather specialists to provide an appropriate weather briefing, they need to know which of the three types of briefings is needed—a standard briefing, an abbreviated briefing, or an outlook briefing. Other helpful information is whether the flight is visual flight rule (VFR) or instrument flight rule (IFR), aircraft identification and type, departure point, estimated time of departure (ETD), flight altitude, route of flight, destination, and estimated time en route (ETE).

This information is recorded in the flight plan system, and a note is made regarding the type of weather briefing provided. If necessary, it can be referenced later to file or amend a flight plan. It is also used when an aircraft is overdue or is reported missing.

### STANDARD BRIEFING

A standard briefing is the most complete report and provides the overall weather picture. This type of briefing should be obtained prior to the departure of any flight and should be used during flight planning. A standard briefing provides the following information in sequential order if it is applicable to the route of flight.

1. **Adverse Conditions**—This includes information about adverse conditions that may influence a decision to cancel or alter the route of flight. Adverse conditions includes significant weather, such as thunderstorms or aircraft icing, or other important items such as airport closings.
2. **VFR Flight NOT RECOMMENDED**—If the weather for the route of flight is below VFR minimums, or if it is doubtful the flight could be made under VFR conditions due to the forecast weather, the briefer may state that VFR is not recommended. It is the pilot's decision whether or not to continue the flight under VFR, but this advisory should be weighed carefully.
3. **Synopsis**—The synopsis is an overview of the larger weather picture. Fronts and major weather systems that affect the general area are provided.

4. **Current Conditions**—This portion of the briefing contains the current ceilings, visibility, winds, and temperatures. If the departure time is more than 2 hours away, current conditions will not be included in the briefing.
5. **En Route Forecast**—The en route forecast is a summary of the weather forecast for the proposed route of flight.
6. **Destination Forecast**—The destination forecast is a summary of the expected weather for the destination airport at the estimated time of arrival (ETA).
7. **Winds and Temperatures Aloft**—Winds and temperatures aloft is a report of the winds at specific altitudes for the route of flight. However, the temperature information is provided only on request.
8. **Notices to Airmen**—This portion supplies NOTAM information pertinent to the route of flight which has not been published in the Notice to Airmen publication. Published NOTAM information is provided during the briefing only when requested.
9. **ATC Delays**—This is an advisory of any known air traffic control (ATC) delays that may affect the flight.
10. **Other Information**—At the end of the standard briefing, the FSS specialist will provide the radio frequencies needed to open a flight plan and to contact en route flight advisory service (EFAS). Any additional information requested is also provided at this time.

### ABBREVIATED BRIEFING

An abbreviated briefing is a shortened version of the standard briefing. It should be requested when a departure has been delayed or when specific weather information is needed to update the previous briefing. When this is the case, the weather specialist needs to know the time and source of the previous briefing so the necessary weather information will not be omitted inadvertently.

### OUTLOOK BRIEFING

An outlook briefing should be requested when a planned departure is 6 or more hours away. It provides initial forecast information that is limited in scope due to the timeframe of the planned flight. This type of briefing is a good source of flight planning information that can influence decisions regarding route of flight, altitude, and ultimately the go, no-go decision. A

follow-up briefing prior to departure is advisable since an outlook briefing generally only contains information based on weather trends and existing weather in geographical areas at or near the departure airport.

## AVIATION WEATHER REPORTS

Aviation weather reports are designed to give accurate depictions of current weather conditions. Each report provides current information that is updated at different times. Some typical reports are aviation routine weather reports (METAR), pilot weather reports (PIREPs), and radar weather reports (SDs).

### AVIATION ROUTINE WEATHER REPORT (METAR)

An aviation routine weather report, or METAR, is an observation of current surface weather reported in a standard international format. While the METAR code has been adopted worldwide, each country is allowed to make modifications to the code. Normally, these differences are minor but necessary to accommodate local procedures or particular units of measure. This discussion of METAR will cover elements used in the United States.

#### Example:

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METAR KGGG 161753Z AUTO 14021G26 3/4SM
+TSRA BR BKN008 OVC012CB 18/17 A2970 RMK
PRESFR
```

A typical METAR report contains the following information in sequential order:

1. **Type of Report**—There are two types of METAR reports. The first is the routine METAR report that is transmitted every hour. The second is the aviation selected special weather report (SPECI). This is a special report that can be given at any time to update the **METAR** for rapidly changing weather conditions, aircraft mishaps, or other critical information.
2. **Station Identifier**—Each station is identified by a four-letter code as established by the International Civil Aviation Organization (ICAO). In the 48 contiguous states, a unique three-letter identifier is preceded by the letter “K.” For example, Gregg County Airport in Longview, Texas, is identified by the letters “KGGG,” K being the country designation and GGG being the airport identifier. In other regions of the world, including Alaska and Hawaii, the first two letters of the four-letter ICAO identifier indicate the region, country,