

STUDY UNIT SEVENTEEN

GRAPHICAL AIRMAN'S METEOROLOGICAL ADVISORY (G-AIRMET)

(10 pages of outline)

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17.1 PRODUCT DESCRIPTION

1. The Graphical-AIRMET (G-AIRMET) product is a decision-making tool based on weather “snapshots” displayed at short time intervals.
 - a. It identifies hazardous weather in space and time more precisely than text products, enabling pilots to maintain high safety margins while flying more efficient routes.
2. The goal of the NWS is to maximize aviation safety and airspace efficiency by providing the most accurate and timely weather information possible to enhance both preflight and inflight decision making.
 - a. For decades, the NWS has issued text-based AIRMETs that have provided broad-scale descriptions of hazardous weather.
 - b. Often referred to as a time “smear,” the text-based AIRMET requires meteorologists to describe hazardous weather over large geographical areas for 6-hour periods.
 - c. The G-AIRMET provides more precise and informative weather hazard depictions than the text-only AIRMET.
3. Aviation weather users have found that pictures are worth a thousand contractions.
 - a. G-AIRMETs provide a better path from the aviation meteorologist to the weather user by providing precise, interactive, and easy-to-understand graphical displays.
 - b. Meteorologists can put their energy into creating and updating G-AIRMET weather graphics, while the traditional text AIRMET is generated from G-AIRMET information.
4. G-AIRMETs are available for the conterminous U.S. and adjacent coastal waters only. They can be viewed on the Aviation Digital Data Service (ADDS) website using the G-AIRMET display tools at <http://aviationweather.gov/products/gairmet/>.

17.2 ISSUANCE

1. G-AIRMETs are issued by the Aviation Weather Center (AWC) every 6 hours and updated/amended as necessary, coincident with the text AIRMET products.

	1 st Scheduled Issuance (UTC)	2 nd Scheduled Issuance (UTC)	3 rd Scheduled Issuance (UTC)	4 th Scheduled Issuance (UTC)
CONUS	0255	0855	1455	2055

Table 17-1. G-AIRMET Issuance Schedule

2. G-AIRMET snapshots are valid at discrete times no more than 3 hours apart for a period of up to 12 hours into the future (00, 03, 06, 09 and 12 hours).
 - a. 00-hour represents the initial conditions, and the subsequent 3-hourly graphics depict the area affected by the particular hazard at that valid time.

17.3 FORMAT AND CONTENT

1. G-AIRMET snapshots are graphical forecasts of various en-route weather hazards.
 - a. Each hazard type corresponds to an overlay tab at the top of the product.
 - b. They may be viewed as static (single) images, combined together, and looped using the tools provided on the web page.
 - c. Each hazard overlay type is explained below along with a graphical depiction of the overlay as displayed in the product.
2. **Instrument Flight Rules (IFR) Conditions**
 - a. This overlay depicts:
 - 1) Areas of cloud ceilings with bases less than 1,000 feet above ground level (AGL)
 - 2) Areas of surface visibilities below 3 statute miles, including the weather causing the visibility restriction
 - a) The cause of the visibility restriction includes only precipitation (PCPN), smoke (FU), haze (HZ), mist (BR), fog (FG), and blowing snow (BLSN).

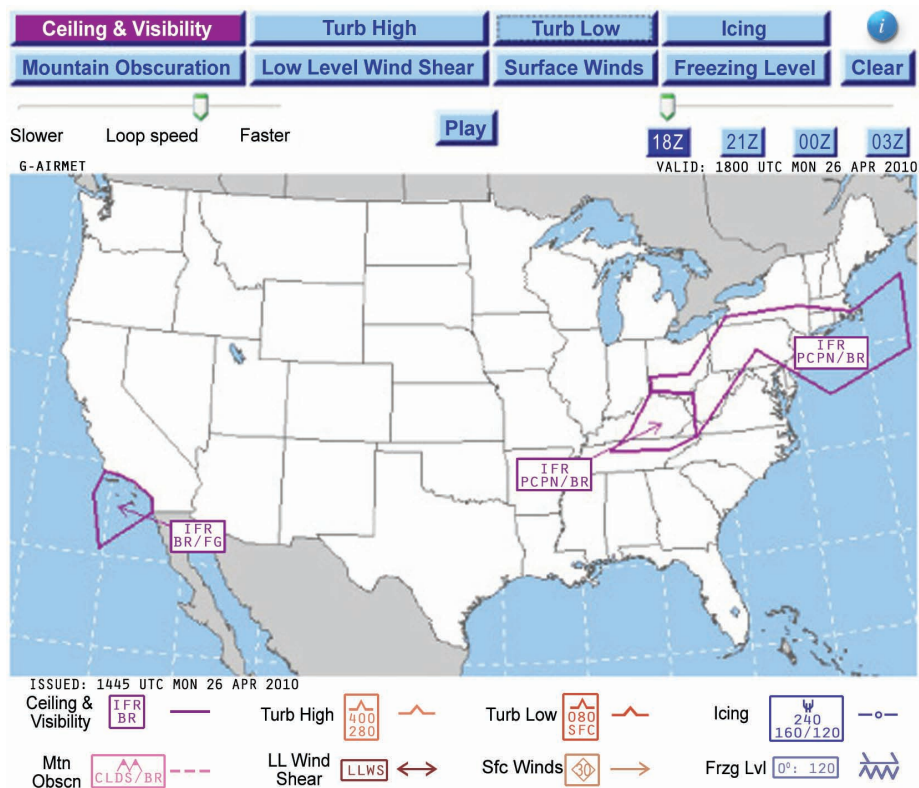


Figure 17-1. G-AIRMET – Ceiling and Visibility (IFR) Conditions Snapshot Example

3. High-Level Turbulence

- This overlay depicts areas of moderate turbulence (excluding turbulence caused by convection) from 24,000 feet MSL to 40,000 feet MSL.
- The vertical extent from base to top will also be depicted.

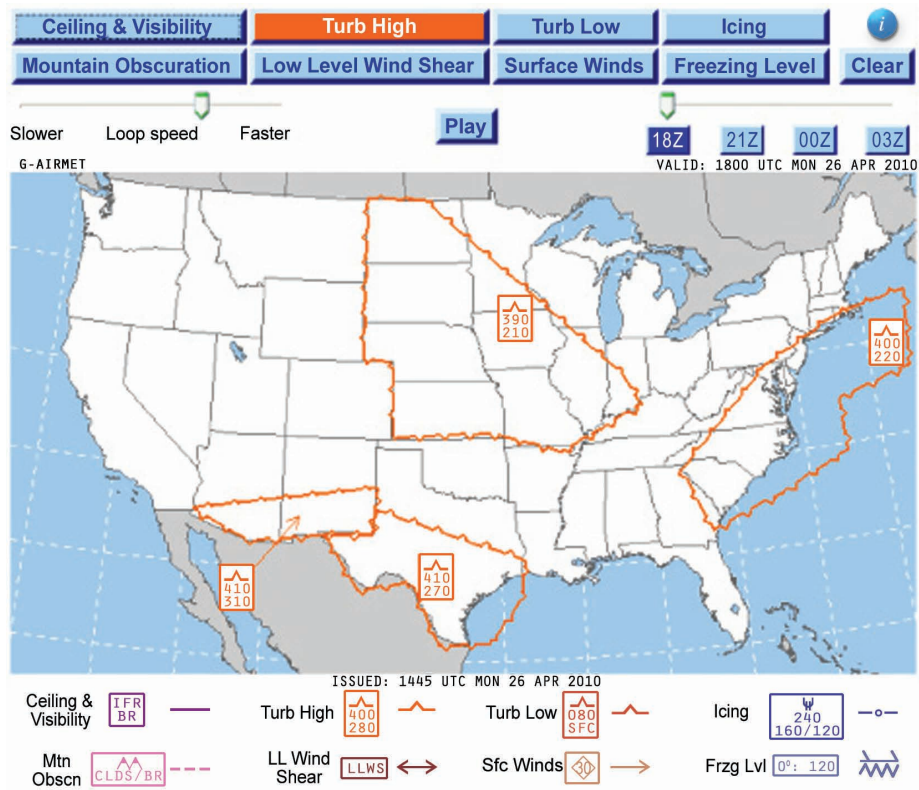


Figure 17-2. G-AIRMET – Turbulence-High Snapshot Example

4. Low-Level Turbulence

- This overlay depicts areas of moderate turbulence (excluding turbulence caused by convection) from the surface to 24,000 feet MSL.
- The vertical extent from base to top will also be depicted.

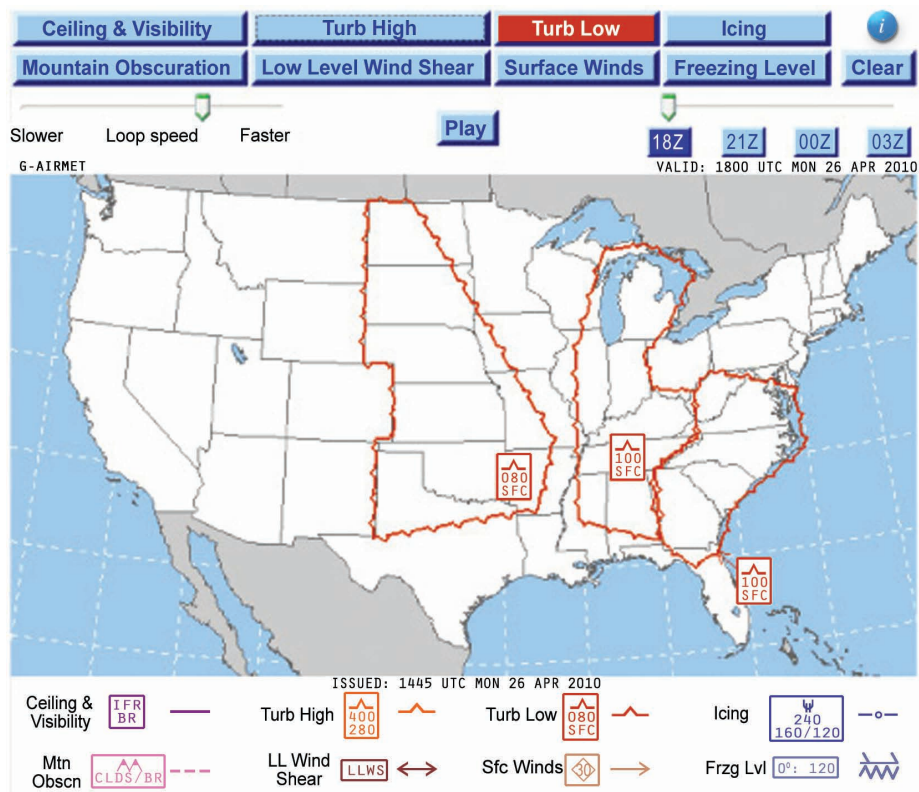


Figure 17-3. G-AIRMET – Turbulence-Low Snapshot Example

5. Icing

- a. This overlay depicts areas of moderate icing (excluding icing caused by convection) between the surface and 45,000 feet MSL, including the vertical extent (base and top).
 - 1) Altitude variations in the base of icing layers will be denoted if they exist. For example, "080 / 060" indicates the altitude varies between 6,000 and 8,000 feet MSL.

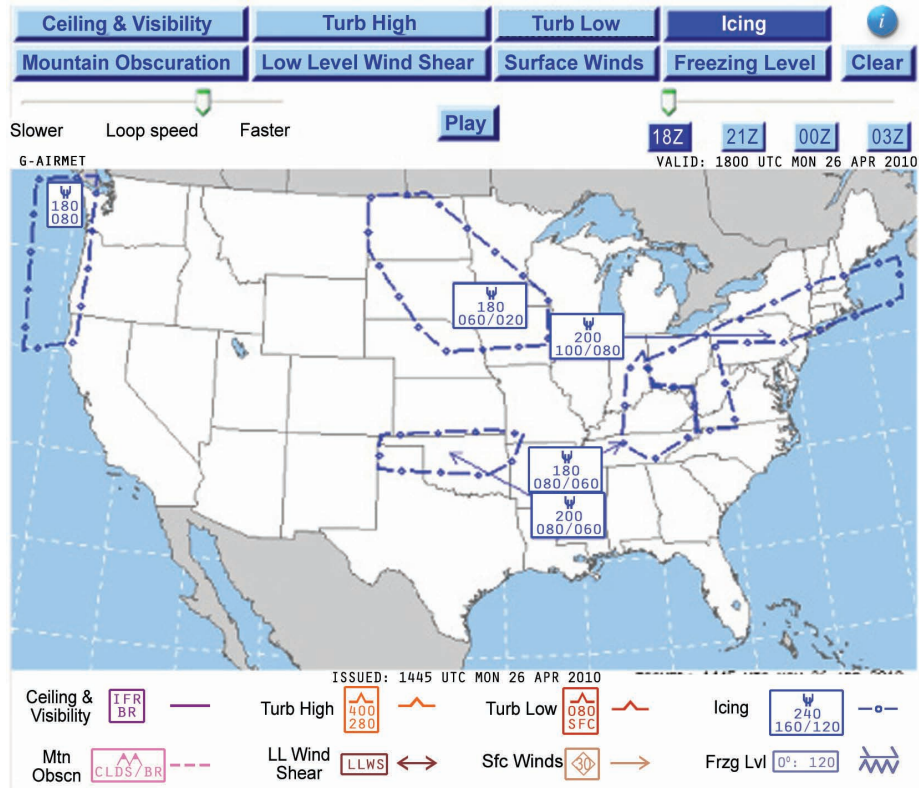


Figure 17-4. G-AIRMET – Icing Snapshot Example

6. Mountain Obscuration

- This overlay depicts areas of widespread mountain obscuration where visual meteorological conditions (VMC) cannot be maintained, including the weather causing the obscuration.
- The weather causing the obscuration includes only clouds (CLDS), precipitation (PCPN), smoke (FU), haze (HZ), mist (BR), fog (FG).

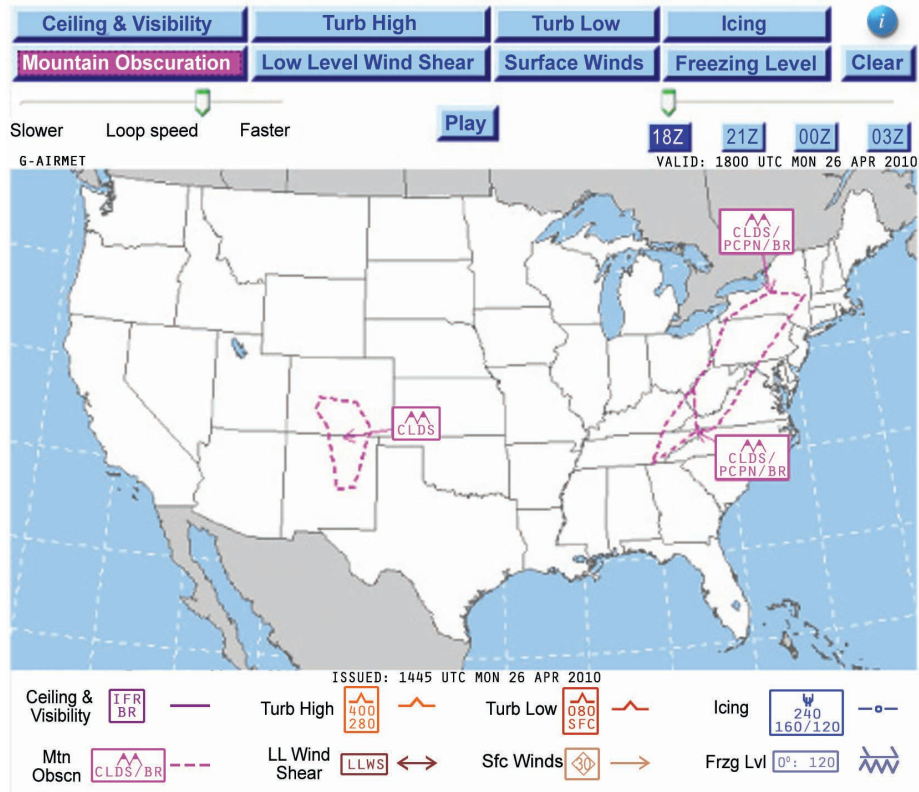


Figure 17-5. G-AIRMET – Mountain Obscuration Snapshot Example

7. Low-Level Wind Shear (LLWS)

- LLWS is defined as wind shear below 2,000 feet AGL (excluding LLWS caused by convection) exceeding ± 10 knots per 100 feet.
- This overlay depicts a general area where these conditions are likely.

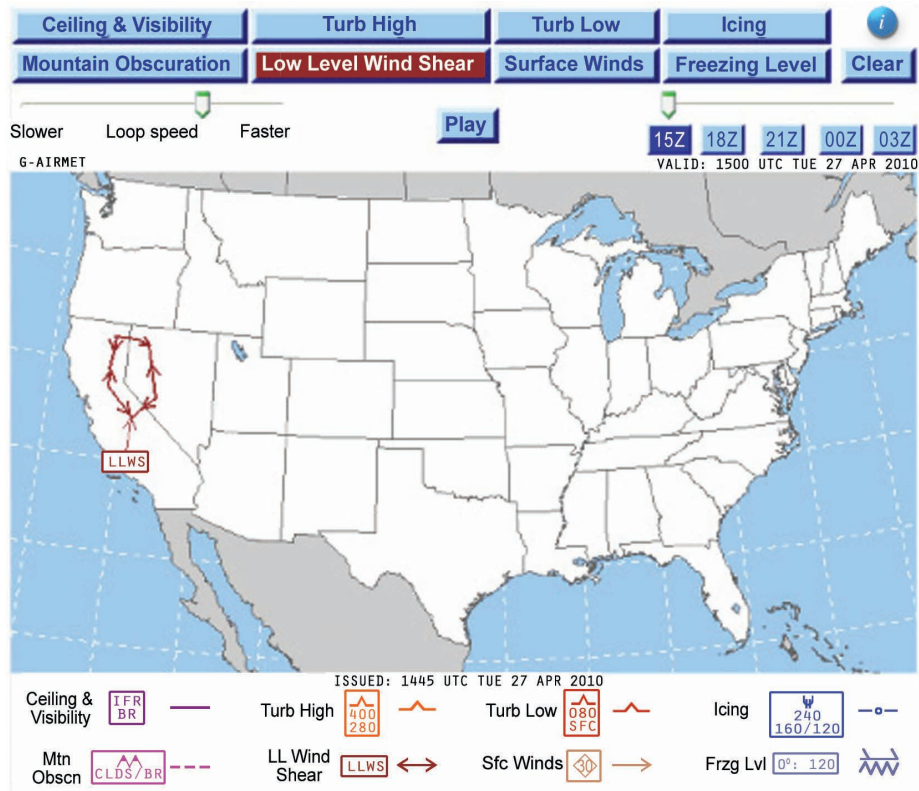


Figure 17-6. G-AIRMET – Low-Level Wind Shear (LLWS) Snapshot Example

8. Strong Surface Winds

- This overlay depicts areas of sustained surface winds greater than 30 knots.
- The direction and speed of winds are not depicted; only the area where sustained surface winds greater than 30 knots will occur.

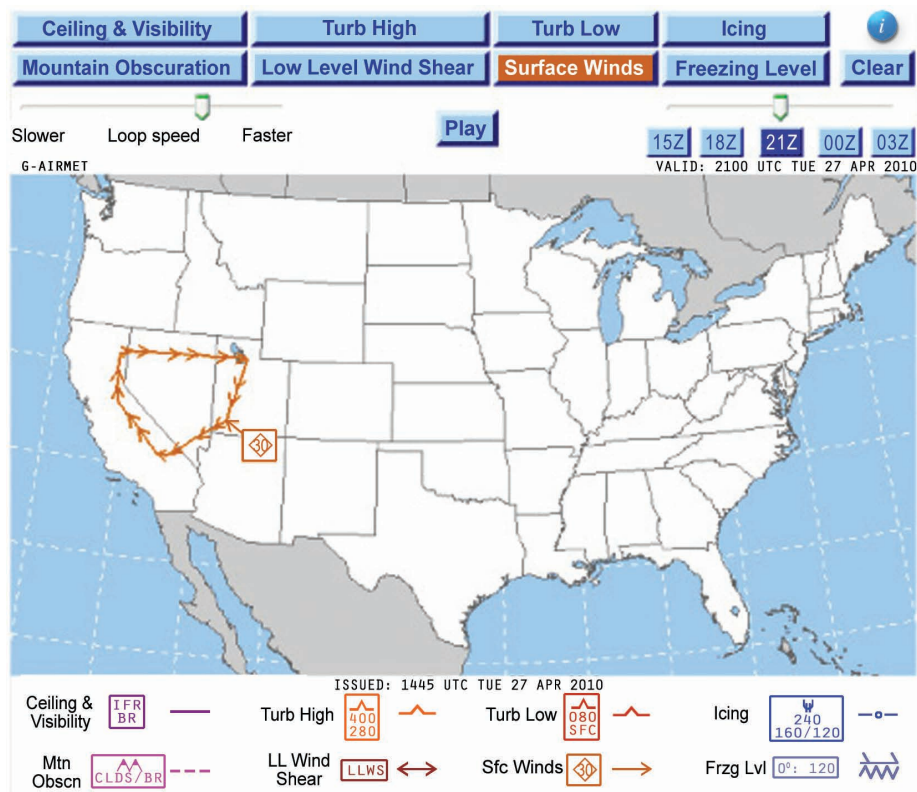


Figure 17-7. G-AIRMET – Strong Surface Winds Snapshot Example

9. Freezing Level

- a. Freezing level is defined as the lowest altitude (or the SFC as appropriate) where the ambient air temperature is at or forecast to be at the freezing point (32° F, 0° C).
- b. This overlay depicts freezing levels above the ground in intervals of 4,000 feet above mean sea level (e.g., SFC; 4,000 ft. MSL; 8,000 ft. MSL; 12,000 ft. MSL; 16,000 ft. MSL).
 - 1) Areas with multiple freezing levels are delineated, including the vertical extent from base to top.

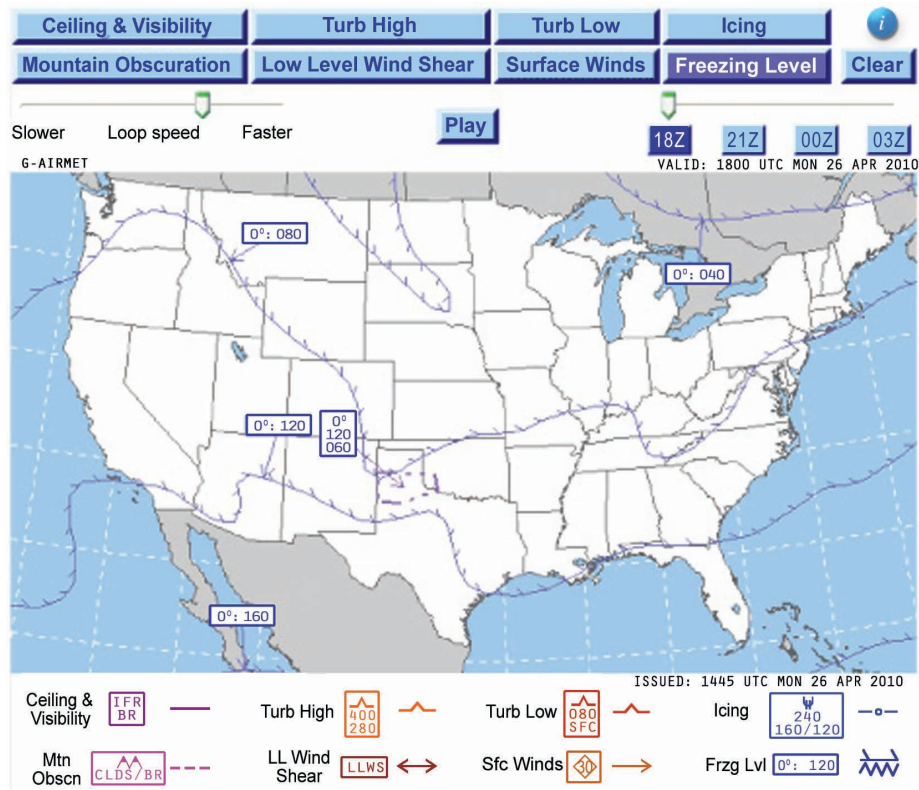


Figure 17-8. G-AIRMET – Freezing Level Snapshot Example

17.4 USING THE PRODUCT

1. The G-AIRMET is a great asset to pilots during their preflight weather analysis and flight planning.
 - a. The product provides pilots with a visual representation of the information covered in a traditional text AIRMET. The visual element removes the complexity and added effort of trying to construct the bounds of the conditions forecast in a traditional text AIRMET.
 - b. Rather than providing conditions for a 12-hour period (as the traditional text AIRMET does), the G-AIRMET provides 3-hour snapshots of various conditions along the 12-hour forecast period.
 - 1) This level of specificity makes the product more useful and more accurate.

2. As with any weather product, be aware of the issue time of the product when you use it. You should also know when the next scheduled issuance is so you can determine if waiting for the next release is warranted given the conditions.
 - a. If there is some doubt about the validity of the forecast and a scheduled update is due soon, it would be wise to wait on the next release to see if the information has been updated.
3. To augment the G-AIRMET, make use of PIREPs, TAFs, and Area Forecasts (FAs). Doing so ensures you have a big-picture perspective using multiple weather products.
 - a. Because the issuance times are all slightly different, you have access to continually updated information (especially in the case of PIREPs).
 - b. Using multiple products can also help you isolate contradictory information and provide areas for more detailed emphasis during your weather planning.

END OF STUDY UNIT