



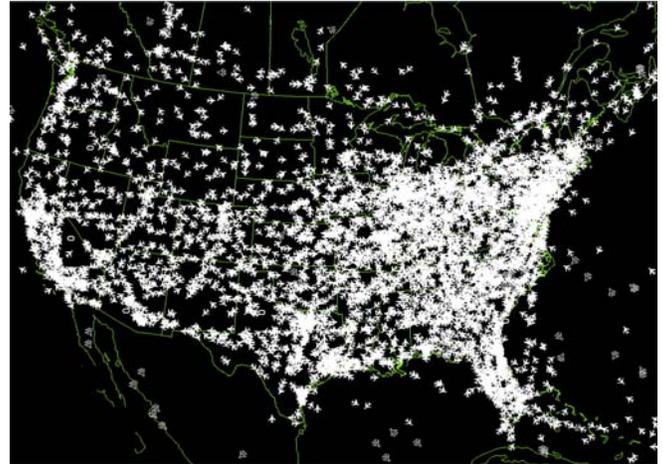
# Air Traffic Control Center Weather Services

## NOAA's National Weather Service Aviation Weather Services Program



The National Airspace System (NAS) is comprised of an intricate system of air traffic control centers working around the clock, 365 days a year, moving the country's travelers around the United States.

- ✚ On an average day, 87,000 flights transit the NAS.
- ✚ Flights include general aviation, commercial air carrier, air taxi, military, and cargo flights.
- ✚ Each flight spends varying lengths of time in the NAS.
- ✚ Depending on the length of time in flight and the destination each flight will encounter various meteorological conditions.

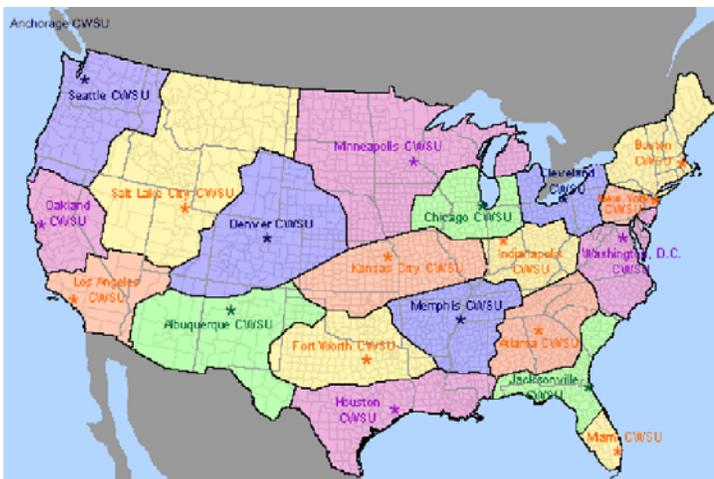


*Figure 1. A typical afternoon over the United States. On average, at any given moment approximately 5,000 aircraft are airborne*

Since the 1930s, the Federal Aviation Administration has provided air traffic control services to pilots as a method of increasing safety and efficiency when transiting the NAS.

- ✚ Controllers are in over 500 different locations throughout the United States and its territories.

The National Weather Service Aviation Weather Services Program plays a key role in supporting air traffic controllers by providing various products and services. The Center Weather Service Unit Program provides air traffic controllers with the most up-to-date and accurate weather necessary to keep air traffic flying.



*Figure 2. Graphical depiction ARTCCs and Center Weather Service*

- ✚ There are 21 Air Route Traffic Control Centers (ARTCC) located in the United States.
- ✚ Each ARTCC is staffed with a Center Weather Service Unit (CWSU)
- ✚ Each CWSU provides an onsite National Oceanic and Atmospheric Administration (NOAA) National Weather Services (NWS) meteorologist for standup briefings.

The CWSU, located at the ARTCC, is in a small set apart section of the air traffic controller's radar room.

✚ Contained within the CWSU are two separate weather monitor systems.

- ☁ AWIPS or Advanced Weather Information Processing System
- ☁ WARP or Weather and Radar Processor



Figure 3. Meteorologist at his workstation in the CWSU

Each weather monitoring system provides a workstation for the CWSU meteorologist to review weather patterns and forecasts produced by the system. Meteorologists disseminate information received by these systems to brief air traffic control sector managers where, when, and what is expected, when the weather arrives in the ARTCC sector of coverage.

In addition, meteorologists have the capability of coding forecasts disseminated from AWIPS or WARP. These codes are grouped into products, then relayed throughout the United States by use of intricate system of data relays.

✚ Some products meteorologist provide to pilots and dispatchers.

- ☁ SIGMET's (significant meteorological events)
- ☁ Convective SIGMET's (significant meteorological event associated with convection)
- ☁ AIRMET's (significant meteorological events generally effecting smaller aircraft)
- ☁ CWA (Center Weather Advisories)
- ☁ MIS (Meteorological Impact Statements)

From time to time, air traffic controllers operating within the ARTCC need immediate assistance. Meteorologists will standby to offer recommendations as to the most appropriate course of action to assist any aircraft in distress with hazardous conditions.

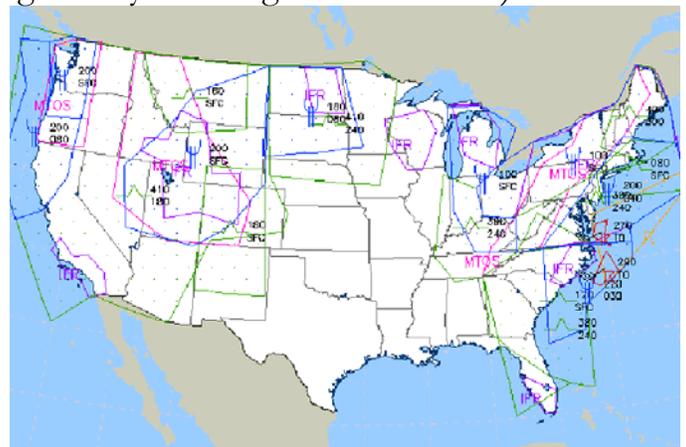


Figure 4. Graphical depiction of SIGMETs and AIRMETS

These incidents, known as Flight Assists, do not occur often, but when they do, they are considered a defining moment in understanding the unique



relationship between the FAA ARTCC Air Traffic Controllers and NOAA/NWS meteorologist.