

**Section 1**  
**THE AVIATION WEATHER SERVICE PROGRAM**

Providing weather service to aviation is a joint effort of the National Weather Service (NWS), the Federal Aviation Administration (FAA), the Department of Defense (DOD), and other aviation-oriented groups and individuals. This section discusses the civilian agencies of the U.S. Government and their observation and communication services to the aviation community.

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)**

The National Oceanic and Atmospheric Administration (NOAA) is an agency of the Department of Commerce. NOAA is one of the leading scientific agencies in the U.S. Government. Among its six major divisions are the National Environmental Satellite Data and Information Service (NESDIS) and the NWS.

**NATIONAL ENVIRONMENTAL SATELLITE DATA AND INFORMATION SERVICE (NESDIS)**

The National Environmental Satellite Data and Information Service (NESDIS) is located in Washington, D.C., and directs the weather satellite program. Figures 3-2 and 3-3 are examples of Geostationary Operational Environmental Satellite (GOES) images. These images are available to NWS meteorologists and a wide range of other users for operational use.

**Satellite Analysis Branch (SAB)**

The Satellite Analysis Branch (SAB) coordinates the satellite and other known information for the NOAA Volcanic Hazards Alert program under an agreement with the FAA. SAB works with the NWS as part of the Washington D.C. Volcanic Ash Advisory Center (VAAC).

**NATIONAL WEATHER SERVICE (NWS)**

The National Weather Service (NWS) collects and analyzes meteorological and hydrological data and subsequently prepares forecasts on a national, hemispheric, and global scale. The following is a description of the NWS facilities tasked with these duties.

**National Centers for Environmental Prediction (NCEP)**

There are nine separate national centers under National Centers for Environmental Prediction (NCEP), each with its own specific mission. They are the Climate Prediction Center, Space Environment Center, Marine Prediction Center, Hydrometeorological Prediction Center, Environmental Modeling Center, NCEP Center Operations, Storm Prediction Center, Aviation Weather Center, and the Tropical Prediction Center.

**National Center Operations (NCO)**

Located in Washington, D.C., the National Center Operations (NCO) is the focal point of the NWS's weather processing system. From worldwide weather reports, NCO prepares automated weather analysis charts and guidance forecasts for use by NWS offices and other users.

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Some NCO products are specifically prepared for aviation, such as the winds and temperatures aloft forecast. Figure 4-9 is the network of forecast winds and temperatures aloft for the contiguous 48 states. Figure 4-10 shows the Alaskan and Hawaiian network.

NCO is part of VAAC, which runs an ash dispersion model. NCO works with SAB to fulfill the VAAC responsibilities to the aviation communities regarding potential volcanic ash hazards to aviation.

#### Storm Prediction Center (SPC)

The Storm Prediction Center (SPC) is charged with monitoring and forecasting severe weather over the 48 continental United States. Its products include convective outlooks and forecasts, as well as severe weather watches. The center also develops severe weather forecasting techniques and conducts research. The SPC is located in Norman, Oklahoma, near the heart of the area most frequently affected by severe thunderstorms.

#### Hydrometeorological Prediction Center (HPC)

The Hydrometeorological Prediction Center (HPC) prepares weather charts which include basic weather elements of temperature, fronts and pressure patterns.

#### Aviation Weather Center (AWC)

The Aviation Weather Center (AWC), located in Kansas City, Missouri, issues warnings, forecasts, and analyses of hazardous weather for aviation interests. The center identifies existing or imminent weather hazards to aircraft in flight and creates warnings for transmission to the aviation community. It also produces operational forecasts of weather conditions expected during the next 2 days that will affect domestic and international aviation interests. As a Meteorological Watch Office (MWO) under regulations of the International Civil Aviation Organization (ICAO), meteorologists in this unit prepare and issue aviation area forecasts (FAs) and inflight weather advisories (Airman's Meteorological Information [AIRMET], Significant Meteorological Information [SIGMET], and Convective SIGMETs) for the contiguous 48 states.

#### Tropical Prediction Center (TPC)

The Tropical Prediction Center (TPC) is located in Miami, Florida. The National Hurricane Center, as an integral part of TPC, issues hurricane advisories for the Atlantic, the Caribbean, the Gulf of Mexico, the eastern Pacific, and adjacent land areas. The center also develops hurricane forecasting techniques and conducts hurricane research. The Central Pacific Hurricane Center in Honolulu, Hawaii, issues advisories for the central Pacific Ocean.

TPC prepares and distributes tropical weather, aviation and marine analyses, forecasts, and warnings. As an MWO, TPC meteorologists prepare and issue aviation forecasts, SIGMETs, and Convective SIGMETs for their tropical Flight Information Region (FIR).

#### **Weather Forecast Office (WFO)**

A Weather Forecast Office (WFO) issues various public and aviation forecast and weather warnings for its area of responsibility. In support of aviation, WFOs issue terminal aviation forecasts (TAFs) and transcribed weather broadcasts (TWEBs). As MWOs, the Guam and Honolulu Hawaii WFOs issue aviation area forecasts and inflight advisories (AIRMETs, and international SIGMETs). Figures 4-1 through 4-4 show locations for which TAFs are issued. Figure 4-8 shows the TWEB routes.

### **Alaskan Aviation Weather Advisory Unit (AAWU)**

The Alaskan Aviation Weather Unit (AAWU) is a regional aviation forecast unit located in Anchorage, Alaska. As an MWO, AAWU meteorologists prepare and issue International SIGMETs within the Alaskan FIR, as well as domestic FAs and AIRMETs for Alaska and the adjacent coastal waters. The AAWU prepares and disseminates to the FAA and the Internet a suite of graphic products, including a graphic FA and a 24- and 36-hour forecast of significant weather. The AAWU is one of nine VAACs worldwide, preparing Volcanic Ash Advisory Statements (VAAS) for the Anchorage FIR.

### **FEDERAL AVIATION ADMINISTRATION (FAA)**

The Federal Aviation Administration (FAA) is a part of the Department of Transportation. The FAA provides a wide range of services to the aviation community. The following is a description of those FAA facilities which are involved with aviation weather and pilot services.

### **FLIGHT SERVICE STATIONS (FSSs)**

The FAA is in the process of modernizing its Flight Service Station (FSS) program. The older, manual (or nonautomated) FSS is being consolidated into the newer, automated FSS (AFSS). With about one per state and with lines of communications radiating out from it, these new AFSSs are referred to as “hub” facilities. Pilot services provided previously by the older FSSs have been consolidated into facilities with new technology to improve pilot weather briefing services.

The FSS or AFSS provides more aviation weather briefing service than any other U.S Government service outlet. The FSS or AFSS provides preflight and inflight briefings, transcribed weather briefings, scheduled and unscheduled weather broadcasts, and furnishes weather support to flights in its area.

As a starting point for a preflight weather briefing, a pilot may wish to listen to one of the recorded weather briefings provided by an FSS or AFSS. For a more detailed briefing, pilots can contact the FSS or AFSS directly.

### **Transcribed Weather Broadcast (TWEB)**

The transcribed weather broadcast (TWEB) provides continuous aeronautical and meteorological information on low/medium frequency (L/MF) and very high frequency (VHF) omni-directional radio range (VOR) facilities.

At TWEB equipment locations controlling two or more VORs, the one used least for ground-to-air communications, preferably the nearest VOR, may be used as a TWEB outlet simultaneously with the nondirectional radio beacon (NDB) facility.

The sequence, source, and content of transcribed broadcast material shall be:

1. Introduction.
2. Synopsis. Prepared by selected WFOs and stored in Weather Message Switching Center (WMSC).
3. Adverse Conditions. Extracted from inflight weather advisories, center weather advisories (CWAs), and alert severe weather watch bulletins (AWWs).
4. TWEB Route Forecasts. Includes the valid time of forecasts prepared by WFOs and stored in the WMSC.
5. Winds Aloft Forecast. Broadcast for the location nearest to the TWEB. The broadcast should include the levels for 3,000 to 12,000 feet, but shall always include at least two forecast levels above the surface.
6. Radar Reports. Local or pertinent radar weather reports (SDs) are used. If there is access to real-time weather radar equipment, the observed data is summarized using the SDs to determine precipitation type, intensity, movement, and height.
7. Surface Weather Reports (METARs). Surface/special weather reports are recorded, beginning with the local reports, then the remainder of the reports beginning with the first station east of true north and continuing clockwise around the TWEB location.
8. Density Altitude. Includes temperature and the “check density altitude” statement for any station with a field elevation at or above 2,000 feet MSL and meets a certain temperature criteria.
9. Pilot Weather Reports (PIREPs). PIREPs are summarized. If the weather conditions meet soliciting requirements, a request for PIREPs will be appended.
10. Alert Notices (ALNOT), if applicable.
11. Closing Statement.

Items 2, 3, 4, and 5 are forecasts and advisories prepared by the NWS and are discussed in detail in Section 4. The synopsis and route forecasts are prepared specifically for the TWEB by WFOs. Adverse conditions, outlooks, and winds/temperature aloft are adapted from inflight advisories, area forecasts, and the winds/temperature aloft forecasts. Radar reports and pilot reports are discussed in Section 3. Surface reports are discussed in Section 2.

### **Pilots' Automatic Telephone Weather Answering System (PATWAS)**

Pilots' automatic telephone weather answering system (PATWAS) provides a continuous telephone recording of meteorological information. At PATWAS facilities where the telephone is connected to the TWEB, the information contained in the broadcast shall be in accordance with the TWEB format. PATWAS messages are recorded and updated at a minimum of every 5 hours beginning at 0600 and ending at 2200 local time using the following procedures:

1. Introduction (describing PATWAS area).
2. Adverse Conditions. Summarized inflight weather advisories, center weather advisories, alert severe weather watch bulletins, and any other available information that may adversely affect flight in the PATWAS area.
3. VFR Flight Not Recommended Statement (VNR). When current or forecast conditions, surface-based or aloft, would make visual flight doubtful.
4. Synopsis. Should be a reflection of current and forecast conditions using synopsis products prepared by selected WFOs or extracted from the synopsis section of the area forecast.
5. Current Conditions. Summarized current weather conditions over the broadcast area.
6. Surface Winds. Provided from local reports.
7. Forecast. Summarized forecast conditions over the PATWAS area.
8. Winds Aloft. Summarized winds aloft as forecast for the local station or as interpolated from forecasts of adjacent stations for levels 3,000 through 9,000 feet or a minimum of at least two forecast levels above the highest terrain.
9. Request for PIREPs, if applicable.
10. Alert Notices (ALNOT), if applicable.
11. Closing Announcement.

The PATWAS service holds high operational priority. This ensures the information is current and accurate. If service is reduced during the period of 2200-0600 local time, a suspension announcement is recorded including a time when the broadcast will be resumed. The [Airport Facility Directory](#) lists PATWAS telephone numbers for FSS briefing offices.

### **Telephone Information Briefing Service (TIBS)**

Telephone information briefing service (TIBS) is provided by AFSSs and provides continuous telephone recordings of meteorological and/or aeronautical information. TIBS shall contain area and/or route briefings, airspace procedures, and special announcements, if applicable.

TIBS should also contain, but not limited to, METARs, aviation terminal forecasts (TAFs), and winds/temperatures aloft forecasts.

Each AFSS shall provide at least four route and/or area briefings. Area briefings should encompass a 50-NM radius. Each briefing should require the pilot to access no more than two channels which shall be route- and/or area-specific. Pilots shall have access to NOTAM data through an area or route briefing on a separate channel designated specifically for NOTAMs or by access to a briefer.

TIBS service is provided 24 hours a day. Recorded information shall be updated as conditions change. Area and route forecast channels shall be updated whenever material is updated.

The order and content of the TIBS recording is as follows:

1. Introduction. Includes the preparation time and the route and/or the area of coverage.
2. Adverse Conditions. A summary of inflight weather advisories, center weather advisories, alert severe weather watch bulletins, and any other available information that may adversely affect flight in the route/area.
3. VFR Not Recommended Statement (VNR). Included when current or forecast conditions, surface or aloft, would make the flight under visual flight rules doubtful.
4. Synopsis. A brief statement describing the type, location, and movement of weather systems and/or masses which might affect the route or the area.
5. Current Conditions. A summary of current weather conditions over the route/area.
6. Density Altitude. A "check density altitude" statement will be included for any weather reporting point with a field elevation at or above 2,000 feet MSL and meets certain temperature criteria.
7. En Route Forecast. A summary of appropriate forecast data in logical order; i.e., climb out, en route, and descent.
8. Winds Aloft. A summary of winds aloft forecast for the route/area for levels through 12,000 feet.
9. Request for PIREPs, if applicable.
10. NOTAM information that affects the route/area as stated above.
11. Military Training Activity. Included in the closing announcement.
12. ALNOT Alert Announcement. If applicable.
13. Closing Announcement. Shall be appropriate for the facility equipment and the mode of operation.

Service may be reduced during the hours of 2200 and 0600 local time. During the period of reduced service, an announcement must be recorded. The Airport Facility Directory lists TIBS telephone numbers for AFSS briefing offices. A touch-tone telephone is necessary to access the TIBS program.

For those pilots already in flight and needing weather information and assistance, the following services are provided by flight service stations. They can be accessed over the proper radio frequencies printed in flight information publications.

#### Hazardous Inflight Weather Advisory Service (HIWAS)

The hazardous inflight weather advisory service (HIWAS) is a continuous broadcast of inflight weather advisories; i.e., SIGMETs, Convective SIGMETs, AIRMETs, AWWs, CWAs, and urgent PIREPs.

The HIWAS broadcast area is defined as the area within 150 NM of HIWAS outlets. HIWAS broadcasts shall not be interrupted/delayed except for emergency situations. The service shall be provided 24 hours a day.

An announcement shall be made if there are no hazardous weather advisories. Hazardous weather information shall be recorded if it is occurring within the HIWAS broadcast area. The broadcast shall include the following elements:

1. A statement of introduction including the appropriate area(s) and a recording time.
2. A summary of inflight weather advisories, center weather advisories, and alert severe weather watch bulletins, and any other weather not included in a current hazardous weather advisory.
3. A request for PIREPs, if applicable.
4. A recommendation to contact AFSS/FSS/FLIGHT WATCH for additional details concerning hazardous weather.

Once the HIWAS broadcast is updated, an announcement will be made once on all communications/NAVAID frequencies except emergency, and En Route Flight Advisory Service (EFAS). In the event that a HIWAS broadcast area is out of service, an announcement shall be made on all communications/NAVAID frequencies except emergency and EFAS.

#### En Route Flight Advisory Service (EFAS)

The en route flight advisory service (EFAS), or “Flight Watch,” is a service from selected FSSs or AFSSs on a common frequency 122.0 MHz below flight level (FL) 180 and on assigned discrete frequencies to aircraft at FL180 and above. The purpose of EFAS is to provide en route aircraft with timely and pertinent weather data tailored to a specific altitude and route using the most current available sources of aviation meteorological information. Additionally, EFAS is a focal point for rapid receipt and dissemination of pilot reports. Figure 1-1 indicates the sites where EFAS and associated outlets are located. To use this service, call for flight watch. Example, “(Oakland) FLIGHT WATCH, THIS IS...”

The following paragraphs describe other FAA facilities which provide support to the aviation community.

#### Air Traffic Control System Command Center (ATCSCC)

The Air Traffic Control System Command Center (ATCSCC), also known as “central flow control,” is located in Herndon, Virginia. ATCSCC has the mission of balancing air traffic demand with system capacity. This ensures maximum safety and efficiency for the National Airspace System while minimizing delays. The ATCSCC utilizes the Traffic Management System, aircraft situation display, monitor alert, the follow-on functions, and direct contact with the air route traffic control center (ARTCC) and terminal radar approach control facility (TRACON) traffic management units to manage flow on a national as well as local level.

Because weather is the most common reason for air traffic delays and re-routings, the ATCSCC is supported full-time by Air Traffic Control System Command Center Weather Unit Specialists (ATCSCCWUS). These specialists are responsible for the dissemination of meteorological information as it pertains to national air traffic flow management.

#### Air Route Traffic Control Center (ARTCC)

An air route traffic control center (ARTCC) is a facility established to provide air traffic control service to aircraft operating on IFR flight plans within controlled airspace and principally during the en route phase of flight. When equipment capabilities and controller workload permit, certain advisory/assistance services may be provided to VFR aircraft.

En route controllers become familiar with pertinent weather information and stay aware of current weather information needed to perform air traffic control duties. En route controllers shall advise pilots of hazardous weather that may impact operations within 150 NM of the controller’s assigned sector or area of jurisdiction.

#### Center Weather Service Unit (CWSU)

The purpose of the center weather service unit (CWSU) is to provide weather consultation, forecasts, and advice to managers and staff within ARTCCs and to other supported FAA facilities. The CWSU is a joint agency aviation weather support team located at each ARTCC. The unit is composed of NWS meteorologists and FAA traffic management personnel, the latter being assigned as Weather

Coordinators. The CWSU meteorologist provides FAA traffic managers with accurate and timely weather information. This information is based on monitoring, analysis, and interpretation of real-time weather data at the ARTCC through the use of all available data sources including radar, satellite, PIREPs, and various NWS products such as TAFs and area forecasts, inflight advisories, etc. The flow or exchange of weather information between the CWSU meteorologists and the FAA personnel in the ARTCC is the responsibility of the Weather Coordinator.

#### Air Traffic Control Tower (ATCT)

An air traffic control tower (ATCT) is a terminal facility that uses air/ground communications, visual signaling, and other devices to provide ATC services to aircraft operating in the vicinity of an airport or on the movement area. It authorizes aircraft to land or take off at the airport controlled by the tower or to transit the Class D airspace area regardless of flight plan or weather conditions (IFR or VFR). A tower may also provide approach control services.

Terminal controllers become familiar with pertinent weather information and stay aware of current weather information needed to perform air traffic control duties. Terminal controllers shall advise pilots of hazardous weather that may impact operations within 150 NM of the controller's assigned sector or area of jurisdiction. Tower cab and approach control facilities may opt to broadcast hazardous weather information alerts only when any part of the area described is within 50 NM of the airspace under the ATCT's jurisdiction.

The responsibility for disseminating weather information is shared with the NWS at many ATCT facilities. If the responsibility is not shared, the controllers are properly certified and acting as official weather observers for the elements being reported.

An automatic terminal information service (ATIS) is a continuous broadcast of recorded information in selected terminal areas. Its purpose is to improve controller effectiveness and to relieve frequency congestion by automating the repetitive transmission of noncontrol airport/terminal area and meteorological information.

#### Direct User Access Terminal Service (DUATS)

The direct user access terminal system (DUATS) provides current FAA weather and flight plan filing services to U.S. Coast Guard and certified civil pilots. The computer-based system receives and stores up-to-date weather and NOTAM data from the FAA's WMSC. Pilots using a personal computer, modem, and a telephone line can access the system and request specific types of weather briefings and other pertinent data for planned flights. The pilot can also file, amend, or cancel flight plans while dialed into the system. Further information about DUATS can be obtained from any AFSS or FAA Flight Standards District Office (FSDO).

### **OBSERVATIONS**

Weather observations are measurements and estimates of existing weather conditions both at the surface and aloft. When recorded and transmitted, an observation becomes a report; and reports are the basis of all weather analyses, forecasts, advisories, and briefings. The following paragraphs briefly describe the observation programs of the NWS and the FAA. More detailed information on each program follows.

## **SURFACE AVIATION WEATHER OBSERVATIONS (METARs)**

Surface aviation weather observations (METARs) include weather elements pertinent to flying. A network of airport stations provides routine up-to-date surface weather information. For more information on surface aviation observation, see Section 2.

## **UPPER-AIR OBSERVATIONS**

Upper-air weather data is received from sounding balloons (known as radiosonde observations) and pilot weather reports (PIREPs). Upper-air observations are taken twice daily at specified stations. These upper-air observations furnish temperature, humidity, pressure, and wind data, often to heights above 100,000 feet. In addition, pilots are a vital source of upper-air weather observations. In fact, aircraft in flight are the only means of directly observing turbulence, icing, and height of cloud tops. For more information on PIREPs, see Section 3. Recently some US and other international airlines have equipped their aircraft with instruments that automatically send weather observations via a satellite downlink. These are important observations which are used by NCEP in their production of forecasts.

## **RADAR OBSERVATIONS**

The weather radar provides detailed information about precipitation, winds, and weather systems. Doppler technology allows the radar to provide measurements of winds through a large vertical depth of the atmosphere, even within “clear air.” This information helps support public and aviation warning and forecast programs. Figure 7-2 shows the weather radar network across the United States.

FAA terminal doppler weather radars (TDWRs) are being installed near a number of major airports around the country. The TDWRs will be used to alert and warn airport controllers of approaching wind shear, gust fronts, and heavy precipitation which could cause hazardous conditions for landing or departing aircraft.

Also installed at major airports are the FAA airport surveillance radars. With this radar, specific locations of six different precipitation intensity levels are available for the routing of air traffic in and about a terminal location. However, the radar’s primary function is for aircraft detection.

## **LOW-LEVEL WIND SHEAR ALERT SYSTEM (LLWAS)**

The low-level wind shear alert system (LLWAS) provides pilots and controllers with information on hazardous surface wind conditions (on or near the airport) that create unsafe landing or departure conditions. LLWAS evaluates wind speed and direction from sensors on the airport periphery with center field wind data. During the time that an alert is posted, air traffic controllers provide wind shear advisories to all arriving and departing aircraft.

## **SATELLITE IMAGERY**

Visible, infrared (IR), and other types of images (or pictures) of clouds are taken from weather satellites in orbit. These images are then made available on a near-real-time basis to NWS and FAA facilities. Satellite pictures are an important source of weather information. For more information on satellite products, see Section 3.

## **COMMUNICATION SYSTEM**

High speed communications and automated data processing have improved the flow of weather data and products through the nation's weather network. The flow of weather information within and between agencies is becoming faster as computers and satellites are being used to facilitate the exchange of data. A new computer-based advanced weather interactive processing system (AWIPS) workstation is being deployed for the NWS. This system is replacing the current system and will allow quicker dissemination of weather information. AWIPS will be linked with the weather radars to provide better detection, observing, and forecasting of weather systems, especially severe weather.

The flow of alphanumeric weather information to the FAA service outlets is accomplished through leased lines to computer-based equipment. The NWS and FAA service outlets exchange weather information through the use of graphic products and alphanumeric information. Graphic products (weather maps) are received by FAA service outlets from NCEP through a private sector contractor. Alphanumeric information exchanged through telecommunication gateways at NWS and FAA switching centers serves to pass data between the various FAA facilities, NWS, and other users.

## **USERS**

The ultimate users of the aviation weather service are pilots and dispatchers. Maintenance personnel may use the service to keep informed of weather that could cause possible damage to unprotected aircraft. Pilots contribute to, as well as use, the service. Pilots should send PIREPs to help fellow pilots, briefers, and forecasters. The service can be no better or more complete than the information that goes into it.

In the interest of safety and in compliance with Title 14, Code of Federal Regulations, all pilots should get a complete weather briefing before each flight. It is the responsibility of the pilot to ensure he/she has all the information needed to make a safe flight.

## **OBTAINING A GOOD WEATHER BRIEFING**

When requesting a briefing, pilots should identify themselves as pilots and give clear and concise facts about their flight:

1. Type of flight (VFR or IFR)
2. Aircraft identification or pilot's name
3. Aircraft type
4. Departure point
5. Proposed time of departure
6. Flight altitude(s)
7. Route of flight
8. Destination
9. Estimated time en route (ETE)

With this background, the briefer can proceed directly with the briefing and concentrate on weather relevant to the flight. The weather information received depends on the type of briefing requested. A “standard” briefing should include:

1. Adverse conditions. Meteorological or aeronautical conditions reported or forecast that may influence a pilot to alter the proposed flight.
2. VFR flight not recommended (VNR). VFR flight is proposed and sky conditions or visibilities are present or forecast, surface or aloft, that, in the judgment of the AFSS/FSS briefer, would make flight under visual flight rules doubtful.
3. Synopsis. A brief statement describing the type, location, and movement of weather systems and/or air masses which might affect the proposed flight.
4. Current conditions. A summary from all available sources reporting weather conditions applicable to the flight.
5. En Route forecast. A summary from appropriate data forecast conditions applicable to the proposed flight.
6. Destination forecast. Destination forecast including significant changes expected within 1 hour before and after the ETA.
7. Winds aloft. Forecast winds aloft for the proposed route; temperature information on request.
8. NOTAMs. Provides NOTAMs pertinent to the flight.
9. ATC delays. Informs the pilot of any known ATC delays and/or flow control advisories that may affect the proposed flight.
10. Request for PIREPs. A request is made if a report of actual inflight conditions would be beneficial or when conditions meet the criteria for solicitation of PIREPs.
11. EFAS. Informs pilots of the availability of Flight Watch for weather updates.
12. Any other information the pilot requests; e.g., military training routes, etc.

An “abbreviated” briefing will be provided at the user’s request:

1. To supplement mass disseminated data.
2. To update a previous briefing.
3. To request that the briefing be limited to specific information.

An “outlook” briefing will be provided when the proposed departure is 6 hours or more from the time of the briefing. Briefing will be limited to applicable forecast data needed for the proposed flight.

The FSS/AFSS’s purpose is to serve the aviation community. Pilots should not hesitate to ask questions and discuss factors they do not fully understand. The briefing should be considered complete only when the pilot has a clear picture of what weather to expect. It is also advantageous for the pilot to make a final weather check immediately before departure if at all possible.

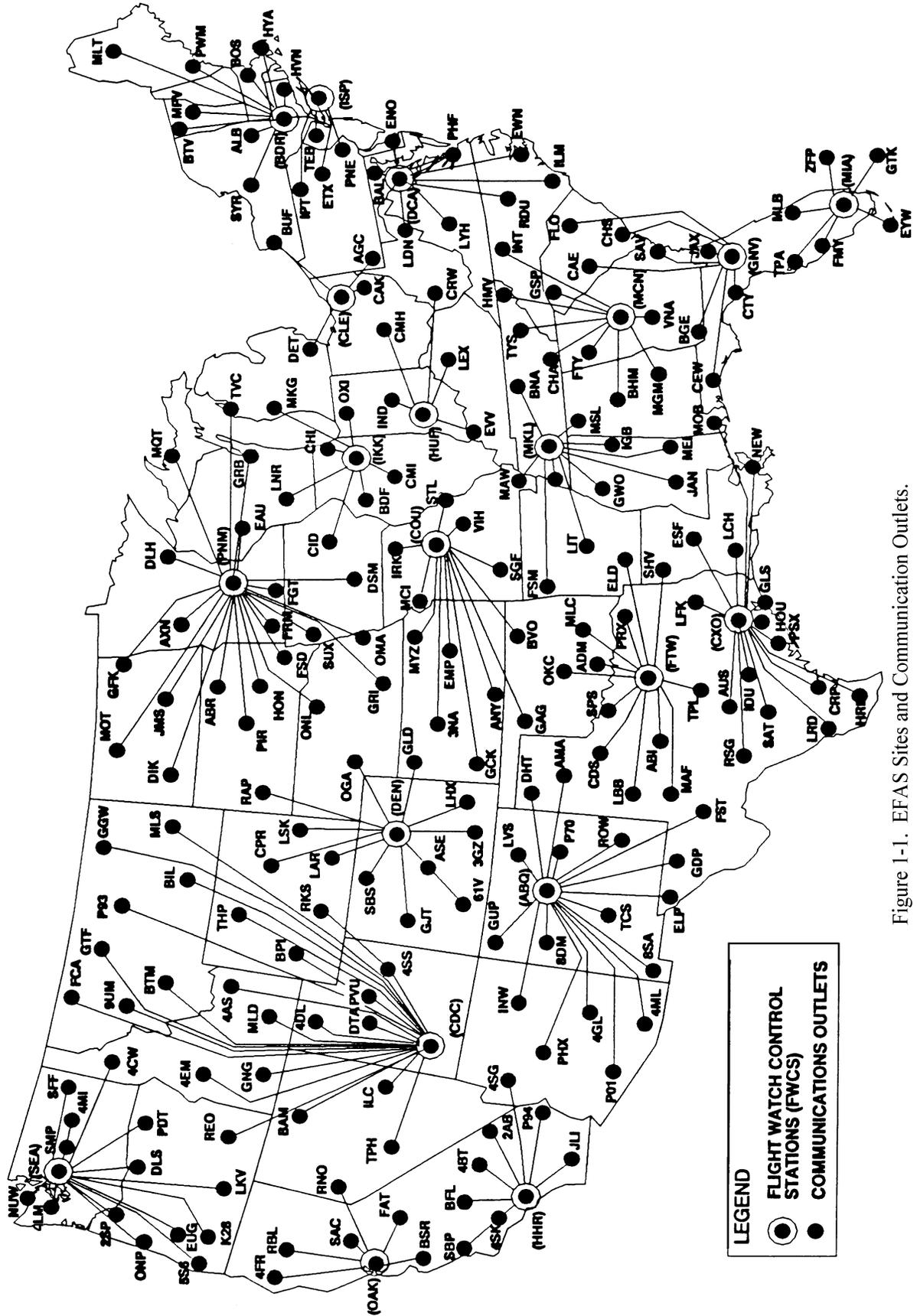


Figure 1-1. EFAS Sites and Communication Outlets.