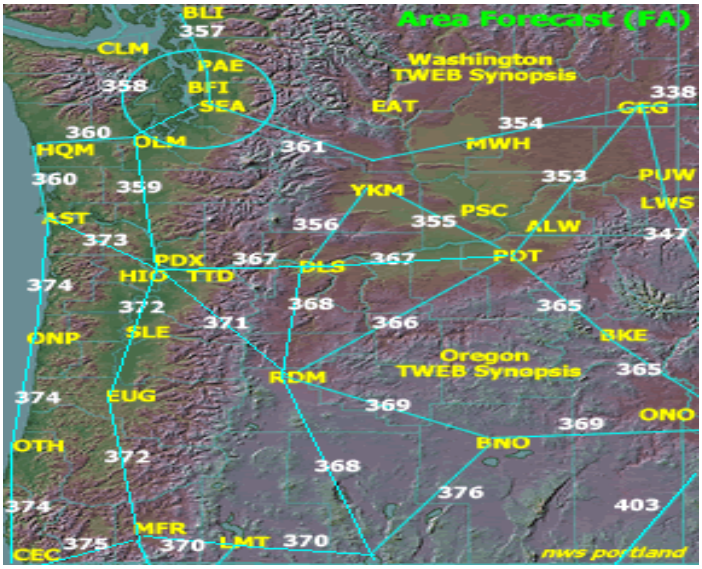
Aviation Service

WFO Portland produces aviation forecasts tailored for general aviation purposes including flight planning and enroute operations. The Terminal Aerodrome Forecast (TAF) provides a concise 24-hour forecast for significant weather conditions that affect aviation operations within five statute miles of an airport. Weather impacts to aviation activities are also included in the daily Area Forecast Discussions (AFDs).

Aviation Forecast Locations



TAFs Issued by WFO Portland:

- Astoria (AST)
- Eugene (EUG)
- Hillsboro (HIO)
- Newport (ONP)
- Portland (PDX)
- Salem (SLE)
- Troutdale (TTD)

Aviation Forecast Locations

Aviators not only rely on forecasts, they use Meteorological Aviation Reports (METAR) to find out current weather information at an airport for their operations. An observing system called Automated System Observation System (ASOS) or a trained weather observer produces observations once or more an hour depending on how quickly the weather is changing. Pilots can use radio signals to obtain data directly from the observing system at the end of the runway. The ASOS unit measures the following weather elements:

METAR Observation Elements	
Wind (Speed and Direction)	Temperature
Visibility	Dew Point Temperature
Weather Conditions and Obscurations	Altimeter (Atmospheric Pressure)
Sky Conditions (Cloud Cover)	Precipitation

Aviation Forecast Products

Terminal Aerodrome Forecast

KPDX 251738Z 251818 20012KT P6SM SCT015 BKN045 BKN070
TEMPO 1822 -SHRA SCT015 BKN030
FM0200 23008KT P6SM -SHRA SCT025 BKN045
FM1300 20006KT P6SM BKN025 OVC045

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(TAF FTUS80)

The TAF is issued at 00Z, 06Z, 12Z, and 18Z and is forecast for the next 24 hours. The forecast is valid for a radius of five statute miles from the airport. It includes surface wind direction and speed, surface visibility, weather, and cloud coverage (few, scattered, etc.) and levels as well as the time to expect these conditions. As weather conditions change, amendments may be issued.

Aviation Forecast Products

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NZUS17 KPQR DDHHMM
SRGPDX

SOARING FORECAST
NATIONAL WEATHER SERVICE - PORTLAND OR
630 AM PDT Sun Aug 23 2005

THIS SOARING FORECAST IS FOR WESTERN OREGON
WITH SPECIFIC INDICES FOR THE GREATER SALEM AND MEDFORD AREAS

FOR CURRENT FLIGHT CONDITIONS...FORECASTS...AND ADVISORIES...
CONSULT YOUR LOCAL BRIEFING OUTLET OR FLIGHT SERVICE STATION.

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LOCAL INDICES FOR SALEM:

THERMAL INDEX....MINUS SIGN INDICATES INSTABILITY
      5000 FT ASL........2.5
      6000 FT ASL........3.5
     10000 FT ASL........8.5
     15000 FT ASL........14.0

HEIGHT OF THE - 3 INDEX...................1400 FT ASL
TOP OF THE LIFT...........................3300 FT ASL
MAXIMUM TEMPERATURE AT SALEM...(DEG F)... 72
FIRST USABLE LIFT..............(DEG F)... 75
TOP OF LIFT...................(FT MSL).. 3300
SOARING INDEX.................(FPM).... -171
MAXIMUM LIFT..................(FPM)..... 197

AFTERNOON WINDS ALOFT FORECAST
MSL (FT) WIND/TEMP
3000  2709/
6000  2815/+05
9000  2818/-01
10000 2820/-02
12000 2823/-05
14000 2824/-08
16000 2926/-12

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LOCAL INDICES FOR MEDFORD:
630 AM PDT Sun Aug 23 2005

THERMAL INDEX....MINUS SIGN INDICATES INSTABILITY
      5000 FT ASL........ 0.5
      6000 FT ASL........ 1.5
     10000 FT ASL........ 7.0
     15000 FT ASL........ 12.0

HEIGHT OF THE - 3 INDEX................... 1400 FT ASL
TOP OF THE LIFT........................... 4500 FT ASL
MAXIMUM TEMPERATURE AT MEDFORD...(DEG F)... 75
FIRST USABLE LIFT..............(DEG F)... 76
TOP OF LIFT...................(FT MSL).. 4500
SOARING INDEX.................(FPM)..... -105
MAXIMUM LIFT..................(FPM)..... 204

AFTERNOON WINDS ALOFT FORECAST
MSL (FT) WIND/TEMP
3000  9900/
6000  2810/+07
9000  2722/+02
10000 2724/+00
12000 2827/-02
14000 2829/-05
16000 2932/-08

THIS PRODUCT IS ROUTINELY PREPARED BY 630 AM AND IS
DISTRIBUTED TO THE McMINNVILLE FLIGHT SERVICE STATION
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Soaring Forecast
(SRGPDX, NZUS17)

The Soaring Forecast is issued daily at 6:30 am and transmitted to the Flight Service Station in McMinnville. This product provides information such as thermal indices for use by sail plane pilots, as well as the hang gliding and paragliding communities.

Aviation Products Issued by the Aviation Weather Center

Other valuable information can be obtained from the NWS Aviation Weather Center website including forecasts (such as turbulence and icing forecasts), advisories (such as SIGMETs and AIRMETs), observations (such as PIREPs) and graphical forecasts. The site can be accessed by going to the following URL:

http://aviationweather.gov

SIGMET: A SIGMET (SIGnificant METeorlogical Information) advises of weather potentially hazardous to all aircraft other than convective activity. In the U.S, items covered are:

- Severe icing
- Severe or extreme turbulence
- Dust storms and sand storms lowering visibilities to less than three miles
- Volcanic Ash

SIGMET items are considered to be *widespread;* they must be affecting or be forecast to affect an area of at least 3000 square miles at any one time. However, if the total area to be affected during the forecast period is very large, it could be that only a small portion of this total area would be affected at any one time.

SIGMETs are issued for six hour periods if conditions are associated with hurricanes and for four hour periods for all other events. If conditions persist beyond the forecast period, the SIGMET is updated and reissued.

CONVECTIVE SIGMET: Convective SIGMETs are weather advisories concerning convective weather significant to the safety of all aircraft. It is a description of phenomena compiled from radar reports, satellite data, Pilot Reports (PIREPs), or other reports which satisfy the criteria below. CONVECTIVE SIGMETs are issued in the U.S. for any of the following:

- Tornadoes
- Areas of thunderstorms greater than or equal to VIP level 4 affecting 40% or more of an area at least 3000 square miles
- Line of thunderstorms
- Isolated severe thunderstorm due to
    - surface winds greater than or equal to 50 knots
    - hail at the surface greater than or equal to 3/4 inches in diameter
- Embedded thunderstorms

Any Convective SIGMET implies severe or greater turbulence, severe icing, and low level wind shear. A Convective SIGMET may be issued for any convective situation which the forecaster feels is hazardous to all categories of aircraft.

Aviation Products Issued by the Aviation Weather Center

AIRMET: An AIRMET (AIRman's METeorological Information) advises of weather, other than convective activity, that may be hazardous to single engine aircraft, other light aircraft, and Visual Flight Rule (VFR) pilots. Operators of large aircraft may also be concerned with phenomena addressed in an AIRMET. The items covered are:

- AIRMET Sierra (IFR):
    - Ceilings less than 1000 feet and/or visibility less than 3 miles affecting over 50% of the area at one time.
    - Extensive mountain obscuration
- AIRMET Tango (Turbulence):
    - Moderate turbulence
    - Sustained surface winds of 30 knots or more at the surface
- AIRMET Zulu (Icing):
    - Moderate icing
    - Freezing levels

These AIRMET items are considered to be *widespread* because they must be affecting or be forecast to affect an area of at least 3000 square miles at any one time. However, if the total area to be affected during the forecast period is very large, it could be that only a small portion of this total area would be affected at any one time.

AIRMETs are routinely issued for six hour periods beginning at 0145 Universal Time Coordinate (UTC) during Daylight Time, and at 0245 UTC during Standard Time. AIRMETS are also amended as necessary due to changing weather conditions or because of the issuance or cancellation of a SIGMET.

Area Forecasts: Domestic Area Forecasts (FAs) contain a brief description of the location and movement of weather fronts and surface pressure systems, as well as description of clouds and other weather conditions.

An example of a SIGMET and AIRMET product is shown below: