Department of Commerce • National Oceanic & Atmospheric Administration • National Weather Service

NATIONAL WEATHER SERVICE WESTERN REGION SUPPLEMENT 9-2003
APPLICABLE TO NWSI 10-801, 10-803 and 10-813
FEBRUARY 19, 2010

Operations and Services
Aviation Weather Services, NWSPD 10-8
Aviation Weather Services, NWSI 10-801, 10-803 and 10-813

WESTERN REGION AVIATION SERVICES

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SUMMARY OF REVISIONS: This directive supersedes Regional Supplement 9-2003, dated November 14, 2007, filed with Instructions 10-801, 10-803, and 10-813.

The following changes were made in this issuance:

1. Section 3. Added the TAF Collaboration (OEP) product policy to the Supplement because the TAF Collaboration policy and format changed in Western Region.
2. Section 4b. Added Airport Weather Warning (AWW) Verification policy.
3. Section 5. Aviation section of the Area Forecast Discussion policy was added Because the public Supplement 23-3003 was discontinued.

Signed 02/04/10
Robert Tibi Date
Regional Director, Western Region

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1. Description: The aviation program at WR WFOs and CWSUs is a vital part of NWS forecast operations. All aviation forecasters must be fully qualified to produce aviation products, regardless of grade. WFO workload often requires aviation forecasts be issued by any forecaster on shift, not just a designated "aviation forecaster". Meteorologist Interns may write TAFs after receiving the proper local aviation training provided the TAFs are reviewed by a forecaster before issuance.

2. Terminal Aerodrome Forecasts (TAF). TAFs are prepared by WR WFOs for airports as listed in NWSI 10-813, Appendix E.

a. Changes to TAF Hours: Requests to change the hours of TAF coverage should come from a local or regional FAA office. A MIC may also request expanded TAF hours for sites where observations have changed from part-time to full-time, and they believe the increase will benefit aviation customers. The MIC after working with the local Steward will forward such requests to MSD, who will discuss the expansion with the WFO in regards to workload. If the request is approved by MSD, MSD will forward the request to Office of Climate Weather and Water Services (OCWWS) NWSH for consideration. Once the change is approved at all levels, MSD will draft a change notice and send it to NWSH for dissemination.

b. Addition of TAFs: Requests for new TAF service must come from a local aviation customer or regional FAA office to MSD. MSD will discuss a formal request with the responsible WFO(s), and through the appropriate labor management relationship channels, and upon agreement that the TAF is justified and observation requirements are satisfied (NWSI 10-813), MSD will forward the

request to OCWWS for approval. MSD will draft a change notice and send it to NWSH for dissemination.

c. Deletion of TAFs: Requests to terminate an existing TAF may be made by the MIC. Justification for the deletion of a TAF will be sent to the Director of OCWWS, NWSH through MSD. The letter from the MIC should state the reason for the request (i.e. unavailability of observations, etc.). Once the letter sent to OCWWS, Aviation Services Branch (ASB) for action, they will forward it to the FAA. Only in very rare circumstances will the FAA allow termination of a TAF. WFOs should not discontinue a TAF until approval from WRH or OCWWS.

d. Verification: The national aviation verification statistics can be found under the "Stats on Demand" web site. Other supplemental verification programs may be used by the WFO, but statistics from "Stats on Demand" will be used for any regional or national purposes. Verification results must be evaluated by the WFO management team/focal point on a routine basis to determine strengths and weaknesses of the WFOs TAF program. WFOs are requested to produce summaries for the staff and WR MSD on a quarterly basis. These reports will be submitted January 30, April 30, July 30, and October 30.

e. Content: In addition to the guidelines presented in NWSI 10-813, WR forecasters should take the following information into account when preparing TAFs:

1. Write the forecast based on the conditions a pilot can expect when landing or departing from the airport, keeping in mind that an automated observation system may only "see" over a point, while the TAF is to cover a five-mile radius from the center of airport.

2. Although the critical TAF period for most airports is within the first six hours (0-6 hours) of the TAF valid time, international airports with flights crossing the Atlantic and/or Pacific rely on the second half of the 30 hour TAF to plan their flight operations. Airlines and airports with flights originating in Australia, Europe, Asia, etc use information 12 - 30 hours from the current valid time because that is when their flights will be arriving at Western Region International Airports.

3. Use of TEMPO group: WR forecasters should use TEMPO sparingly in the first 12 hours of a TAF, and should eliminate them if possible after 12 hours. TEMPO is defined to indicate fluctuating conditions that have a high probability of occurring, and should not be used as a "just in case" group.

4. Consistency with other products should be strived for. However, due to the different natures of the TAF and public zone forecasts, there is no requirement for an exact match between the two in terms of precipitation and obstructions to vision. Scattered precipitation in the public forecast

zone containing the airport, may be less likely to occur at the airport itself, and the TAF should reflect that difference.

5. NIL TAFs should not be used, except in rare situations. Refer to NWSI 10-813 for examples of when NIL TAF may be used. If NIL TAF is issued, the WFO forecast team will provide written documentation to WR-MSD on the circumstances leading to the decision are issue NIL TAF.

   NIL TAFs disrupt airline operations, cause inconvenience to the traveling public, and force users to seek weather information from other sources. If surface observations are missing in AWIPS, unreliable, or not complete, forecasters may append AMD NOT SKED to the end of a TAF. The use of AMD NOT SKED provides a valid forecast, but alerts the user that no amendments will be issued.

3. TAF Collaboration Product (OEPXXX): The CWSU meteorologist will provide, at least twice per day and at least one hour prior to each scheduled TAF issuance time (i.e. before 1630Z and 2230Z) to the responsible WFO, input into the TAF for each of their high impact airports (Operational Evolution Partnership (OEP)). The input will be in the form of a collaboration product (OEPXXX). CWSUs with multiple OEP airports should divide the product into separate sections for each airport. Other airports may be added to this requirement in coordination with WR-MSD. This information will be disseminated on the CWSUs AWIPS Remote Display. The OEP product is designed as a technical communication between qualified meteorologists, and not intended for use by non-meteorologist or the general public (example format in Appendix C).

   a. The OEP product will include a short introductory paragraph of the anticipated high impact weather for consideration in the TAF. The CWSU may add a few sentence to the introduction focusing on traffic managers immediate concerns this can alert WFO forecasters to extra scrutiny of the forecasts. For example the CWSU may add - "TMU are very concerned about timing of wind shift during traffic push between 20-22Z." The CWSU forecaster should avoid a synoptic weather discussion and re-stating the area forecast discussion (AFD) from the WFO.

   b. The introductory paragraph will be followed by no more than three bullet points highlighting each terminals problems of the day. The bulleted section allows for expression of uncertainty and/or confidence factors, may lead to additional WFO-CWSU coordination if necessary, and could include weather parameters no included in the TAF (i.e. icing, turbulence, etc.).

   c. The last portion of the OEP product will include:

      1. Current airport acceptance rest (AAR). The state important numbers for the Airport that impact AAR are optional depending on local WFO requirements.

      2. Draft of the first 12 hours of the OEP TAF (12 hours Work TAF) for WFO consideration.

4. Airport Weather Warnings (AWW): AWWs are prepared for airports through users' agreement between local airport management and the supporting WFO. An example of the required Letter of Agreement (LOA), between the issuing office and the users, is detailed in NWSI 10-801. The AWW complements, and will be consistent with, existing NWS warnings and forecasts.

The AWW addresses weather phenomena which can adversely impact airport ground operations. Information contained in this product is useful to airport managers, fixed-based operators, airline ground personnel and others responsible for the safety of ground operations. AWWs are not intended for use by in-flight operations.

a. The AWW will be disseminated via the NOAA port Advanced Satellite Broadcast Network (SBN). The AWW may use county codes (UGC) or zone codes depending on local requirements for dissemination. In addition, a locally established communication system can be used if no access to the NOAA data stream is available. Refer to NWSI 10-801 for additional AWW procedures and issuance criteria.

b. Verification: AWWs will be verified and evaluated by the WFO management team/focal point on a routine basis similar to analysis of other NWS warning products. WFOs are required to produce AWW verification summaries for WR MSD on a quarterly basis. These reports will be submitted January 30, April 30, July 30, and October 30m and the events will be separated into long fused events (synoptic type) and short fused events (thunderstorms hail, etc.).

5. Aviation Section in the Area Forecast Discussion (AFD): An aviation section is mandatory in the AFD. Following the main portion of the AFD (Discussion section(s)) and topic divider ("&&"), the aviation section will be included. This section will begin with the string, "AVIATION…", and should be written to the NWS aviation customers. These customers include (and are not limited to) Automated Flight Services Stations (AFSS), The Aviation Weather Center, pilots, and airline dispatchers.

a. The aviation section of the AFD should be short and concise, and discuss scientific reasoning (using semi-technical language) and uncertainties regarding expected aviation related weather conditions. Forecasters should use the aviation section to discuss details not permitted in the Terminal Aerodrome Forecast (TAF) (i.e. confidence factors, areal coverage and possibilities).

b. The aviation section should be updated as necessary to convey latest forecast reasoning near the issuance time of the TAFs (00z. 06z, 12z, 18z). If the TAF issuance time does not correspond near local WFO AFD issuance time, update the aviation section and add to the product header - "AVIATION SECTION UPDATED". An update to the aviation section is not required each time the TAF is amended.

c. If no significant aviation weather is expected to affect the forecast area for the next 24 hours, do not enter "see TAFs" or "refer to TAFs". Aviation customers have responded negatively to forecasters adding "see TAFs" to the AFD, so the forecast and/or observed conditions should be discussed even during benign weather situations.

6. Training and Professional Development: WR meteorologist producing any of the core suite of aviation products or services must be trained. Forecasters will complete the following requirements before issuing aviation products*:

a. Local Training. Complete local training led by the Science Operation Officer (SOO) and aviation focal point. For CWSUs the training will be led by the Meteorologists in Charge (MIC). Use of the Weather Event Simulator (WES) is encouraged, and the training should focus on (1) the effects of local complex terrain on aviation parameters with an emphasis on cloud cover and visibility; (2) local aviation studies and climatology; and (3) Automated Surface Observing Systems (ASOS/AWOS) and WSR-88D observations.

b. Aviation Baseline Knowledge. Complete the NWS web based aviation training (Distance Learning Aviation Course (DLAC) and other NWS web based aviation training. See task lists - Appendix A and B for specific lessons.

c. Products and Services. Become familiar with all NWS aviation products and services and become proficient in the preparation and dissemination procedures for those products issued by your office. Read NWS Policy Directive 10-8, associated instructions and WR supplements.

d. Briefing Training (CWSU only). Training on the fundamentals of providing quality stand up weather briefings will be provided by the CWSU MIC or designee.

e. New WFO forecasters complete WFO Aviation forecaster task list (Appendix A).

f. New CWSU forecasters complete CWSU Aviation forecaster task list (Appendix B).

* Note: The requirements assume the forecaster has completed the NWS meteorologist intern training (NWSI 20-103). If the forecaster is new to the agency, without a NWS intern assignment, the intern requirement will be completed before the aviation forecaster training. NWS forecasters (general or lead as of 8/1/04) are grand fathered into the training (Section 6).

6.1 Aviation Proficiency: It is important for NWS forecasters to remain current and proficient with the latest advances in the science. Experienced forecasters must complete the following requirements to remain proficient in aviation:

a. Operations. WFO forecasters will work a minimum of two weeks of aviation shifts (minimum 10 shifts) annually. Shifts are defined as issuing the routine aviation products and providing a continuous weather watch. CWSU forecasters will work a minimum of four weeks of operational shifts (minimum 20 shifts) annually. In addition, it is highly recommended for CWSU forecasters to shadow the WFO forecaster for a minimum of one day annually.

b. Meteorology. Read or submit a weather study annually. Attending a local forecasting seminar, AMS meeting, weather workshop, COMET training or NWSTC Course will meet this requirement.

c. Outreach. Perform outreach with an aviation customer every five years.

The MIC will be responsible for ensuring aviation forecasters are proficient. MICs or SOOs will oversee proficiency records in the meteorologist's individual training plans, and determine refresher training if necessary.

APPENDIX A - WFO AVIATION FORECASTER TASK LIST

The MIC will be responsible for ensuring aviation forecasters are properly trained. The MIC or SOO will initial the appropriate task when complete. After all the tasks have been completed, a copy of the task list will be kept in the individual meteorologists training plan.

☐ Complete local training. Use of the WES is encouraged. Focus on (1) the effects of local complex terrain on aviation parameters with an emphasis on cloud cover and visibility; (2) local aviation studies and climatology; and (3) Automated Surface Observing Systems (ASOS) and WSR-88D observations.

Date of completion: _____

☐ Distance Learning Aviation Course (DLAC I and II) - Commerce Learning Center

Date of completion: _____

☐ The Impact of Weather on Air Traffic - Commerce Learning Center

Date of completion: _____

☐ NWS Terminal Aerodrome Forecast (TAF) - Commerce Learning Center

Date of completion: _____

☐ Read National Directives System (10-8) Aviation Weather Services, Instructions 10-801, 10-802, and 10-813.

Date of completion: _____

APPENDIX B - CWSU AVIATION FORECASTER TASK LIST

The MIC will be responsible for ensuring CWSU forecasters are properly trained. The MIC will initial the appropriate task when complete. After all the tasks have been completed, a copy of the task list will be kept in the individual meteorologists training plan.

☐ Complete local weather training. Training should focus on (1) the large areas which encompass the CWSUs area of responsibility, and the effects of complex terrain on aviation parameters which affect aviation traffic flow; (2) local aviation studies and climatology; (3) and major jet routes used by the Center.

Date of completion: _____

☐ ARTCC training. This includes (but not limited to) FAA orientation and clearance, local equipment training, knowledge of Aviation Weather Center products and local CWSU products.

Date of completion: _____

☐ Distance Learning Aviation Courses (DLAC I and II) - Commerce Learning Center

Date of completion: _____

☐ Forecasting Aviation Icing: Icing Type and Severity - Commerce Learning Center

Date of completion: _____

☐ Icing Assessment Using Observation and Pilot Reports - Commerce Learning Center

Date of completion: _____

☐ The Impact of Weather on Air Traffic including the Weather Impact Playbook - Commerce Learning Center

Date of completion: _____

☐ Read National Directives System (10-8) Aviation Weather Services, Instructions 10-802 through 10-804, 10-811 through 10-813.

Date of completion: _____

☐ Training on the fundamentals of providing quality stand up weather briefings.

Date of completion: _____

APPENDIX C - TAF COLLABORATION PRODUCT (OEPXXX)

NOU KSEW DDHHMM
OEPZSE

TERMINAL FORECAST DISCUSSION
NATIONAL WEATHER SERVICE CWSU AUBURN WA
815 AM PST THU NOV 05 2009

.KSEA/SEA-TAC DISCISSION…

A COLD FRONT CURRENTLY MOVING ONTO THE WA COAST WILL PUSH THROUGH KSEA AREA AROUND 0100Z THIS EVENING. TMU ARE VERY CONCERNED ABOUT TIMING OF WIND SHIFT AND WIND COMPRESSION DURING TRAFFIC PUSH BETWEEN 20-22Z.

- MAIN CONCERN TODAY IS THE WINDS WITH SFC AROUND 15G20-25KT AND LL WINDS OF 50KT AT 020 FROM SSW THIS AFTN.

- HIGH CONFIDENCE LIGHT RAIN AND CIGS 025-035 WILL CONTINUE THROUGH TOMORROW MORNING.

KSEA CURRENT ARRIVAL RATE…42 SOUTH FLOW

WRKTAF
KSEA 181730Z 1818/1924 17012KT P6SM-RA BKN035
FM182200 22015G25KT P6SM -RA BKN025 OVC035 WS020/20050KT
FM190000 24017G30KT 4SM -RA OVC035 WS020/22050KT
FM190200 27010KT P6SM -RA BKN035=

IMPORTANT NUMBERS FOR KSEA (**Optional Section)…**

CIG/WX	VSBY	AAR	IMPACT
>6000	>10	48-52	NO ARTCC PROBLEMS
4100-6000	>6	4-46	LMTD VAPS (METER DELAYS)
3000-4000	>6	40-44	LMTD/NO VAPS (TMA, CFR)
1000-3000	>6	40-44	NO VAPS (TMA, CFR, AND/OR GDP)
100-900	1-5	30-38	MOD DELAYS (TMA, CFR, AND/OR GDP)
<100	<1	28-30	MAJOR DELAYS (TMA, CFR, AND/OR GDP)
FZRA/FZDZ/SN		00-28	MAJOR DELAYS FOR PLOWING/DEICING TMA, CFR, AND/OR GDP
TSRA		VRBL	DELAYS (TMA, CFR, GS, AND/OTR GDP)
WINDS(2-6K)>30KT		24-32	MAJOR DELAYS (TMA, CFR, AND/OR GDP)
WINDSHIFTS		20 MIN	DELAYS/RWY SWITCH/FLOW CHG

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.KPDX/PORTLAND DISUSSION…

PACNW COLD FRONT WILL BRUSH NRN OREGON THIS EVEING AROUND 0300Z. TMU CONCERNED ABOUT WET RUNWAYS THIS ATFTN/EVE.

- LIGHT RAIN WILL BEGIN AROUND 22Z THEN TAPER OFF JUST BEHIND THE FRONT.
- WINDS 02Z-05Z COULD POSE A PROBLEM IF SUSTAINED 18-20KT SHIFT TO NW…CAUSING A RUNWAY CHANGE.

KPDX CURRENT ARRIVAL RATE…40 EAST FLOW

WRKTAF
KPDX 18730Z 1818/1918 17010KT P6SM FEW015 SCT060 BKN100
FM182200 19014G23KT P6SM -RA SCT015 BKN040 OVC060
FM190200 270019G28KT P6SM -RA SCT010 OVC040
FM190400 270012KT P6SM BKN040=

IMPORTANT NUMBERS FOR KPDX… **(Optional Section)**

CIG/WX	VSBY	AAR	IMPACT
>4100	>6	60	NO ARTCC PROBLEMS
1000-4000	>6	40	LMTD/NO VAPS (TMA, CFR, AND/OR GDP)
100-900	>1-5	24	MOD DELAYS (TMA, CFR, AND/OR GDP)
<100	<1	24	MAJOR DELAYS (TMA, CFR, AND/OR GDP)
FZRA/FZDZ/SN		20	MAJOR DELAYS FOR PLOWING/DEICING (TMA, CFR, AND/OR GDP)
TSRA		VRB	DELAYS (TMA, CFR, GS, AND/OTR GDP)
SFC WD 170-230 DEG, WS>20KT, CIG>=4000 FT		32	MOD DELAYS (TMA, CFR, AND/OR GDP)
SFC WD 170-230 DEG, WS>20KT, CIG<4000 FT		24	MOD DELAYS (TMA, CFR, AND/OR GDP)
SFC SINDSHIFTS		10MIN	DELAYS/RWY SWITCH/FLOW CHG
STG E SFC WINDS WITH STG S-SW WINDS ABV 1500 FT AGL		48	PSBL MINOR DELAYS

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MIT=MILES IN TRAIL GDP=GROUND DELAY PROGRAM GS=GROUND STOP
CFR=CALL FOR RELEASE TMA+TRAFFIC MANAGEMENT ADVISOR
VAPS=VISUAL APPROACHES

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FORECASTER NAME