

**NATIONAL WEATHER SERVICE WESTERN REGION SUPPLEMENT 9-2003
APPLICABLE TO NWSI 10-801, 10-803 and 10-813
JULY 7, 2014**

**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 May 4, 2012, filed with Instructions 10-801, 10-803, and 10-813.

The following changes were made in this issuance:

1. PSD was changed to Western Region Headquarters (WRH) throughout the document.
2. Section 2.b and c. were deleted because the information was repetitive with NWSI 10-813.
3. Section 2.e.4. was updated to include NDFD and point and click forecasts.
4. Section 2.e.5. was deleted because the information was repetitive with NWSI 10-813.
5. Section 5.a. per field remark added language to avoid abbreviations and contractions in the aviation section of the AFD.
6. Section 6 and associated appendices were deleted because they will be replaced by new NWSI 10-815.

Signed

07/02/14

David Billingsley

Date

Acting Director, Western Region

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1. Description. The aviation program at Western Region (WR) Weather Forecast Offices (WFOs) and Center Weather Services Units (CWSUs) is a vital part of NWS forecast operations. Regardless of grade, aviation forecasters must be fully qualified to produce aviation products. WFO workload often requires any forecaster on shift to issue an aviation forecast, not just a designated “aviation forecaster”.

2. Terminal Aerodrome Forecasts (TAF). WFOs prepare and issue TAFs for airports as listed in NWSI 10-813, Appendix F.

a. Changes to TAF Hours. Requests to increase the hours of TAF coverage may come from any aviation customer. A Meteorologist in Charge (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. After working with the local Steward, the MIC will forward such requests to Western Region Headquarters (WRH), who will discuss the expansion with the WFO in regards to workload. WRH will forward the request to Office of the Climate Weather and Water Services (OCWWS) for consideration. Once the change is approved at all levels, WRH will draft a change notice (Technical Information Notice (TIN)) and send it to National Weather Service Headquarters (NWSH) for dissemination.

b. Verification. The national aviation verification statistics are on 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.

c. 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 covers 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 and Asia, use information 12 - 30 hours from the current valid time, as this is when their flights are arriving at International Airports within the Western Region.
3. Use of TEMPO group: WR forecasters should use TEMPO sparingly in the first 12 hours of a TAF, and should eliminate them 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. Strive for consistency with other NWS information. While the public forecasts and TAFs have different purposes and exact match is not always expected, aviation customers, most notably FAA facilities and Airlines, use NWS public and aviation information to make decisions. Recently, the National Digital Forecast Database and the “point and click” forecast for an airport(s) location have become popular for aviation planning. WFOs should routinely evaluate the uniformity between public and aviation information.

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. This information will be disseminated via the CWSU AWIPS. 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).

- 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 sentences to the introduction focusing on traffic managers immediate concerns which 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 terminal's problems of the day. These bullets allow for expression of uncertainty and/or confidence factors, may lead to further WFO-CWSU coordination if necessary, and could include weather parameters not included in the TAF (e.g. icing, turbulence, etc.).
 - c. The last portion of the OEP product will include:
 - 1. Current Airport Acceptance Rate (AAR). The static 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 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 remains 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 AWIPS 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 the NOAA data stream is unavailable. 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 WRH on a quarterly basis. These reports will be submitted by January 31, April 30, July 31, and October 31. Events are 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 and follows the main portion of the AFD (Discussion section(s)) and topic divider (“&&”). This section will begin with the string, “AVIATION...”, and should be written to the NWS aviation customers.

- 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. Avoid using abbreviations and contractions since they are not always understood by the customers of the information. Forecasters should use the aviation section to discuss details not permitted in the TAF (e. g. confidence factors, areal coverage and possibilities).
- b. The aviation section should be updated as necessary to convey the latest forecast reasoning near the issuance time of the TAFs. 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 24 hours do not enter "see TAFs" or "refer to TAFs". Aviation customers have responded negatively to forecasters adding "see TAFs" to the AFD. Address the forecast and/or observed conditions even during benign weather situations.

APPENDIX A - TAF COLLABORATION PRODUCT (OEPXXX)

NOUS70 KSEW DDHHMM
OEPZSE

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

.KSEA/SEA-TAC DISCUSSION...

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	04-46	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 DISCUSSION...

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 270018G28KT 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	MOD 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/OR 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 WINDSHIFTS			10MIN DELAYS/RWY SWITCH/FLOW CHG
STG E SFC WINDS WITH STG S-SW WINDS ABV 1500 FT AGL		48	PSBL MINOR DELAYS
&&			
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