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**Fourth Meeting of the North American, Central American and Caribbean Working Group
Implementation of Aeronautical Meteorology (MET) Task Force
(NACC/WG/MT/TF/4)**

Mexico City, Mexico, 28 to 31 July 2026

Agenda Item 6: Requirements for Current and Future Meteorological Services

AUTOMATED PLAIN LANGUAGE AVIATION FORECAST IN THE UNITED STATES

(Presented by United States)

EXECUTIVE SUMMARY	
Overview of how numerical guidance can be used to increase aviation users' situational awareness, and add additional forecasts for locations that do not have a Terminal Aerodrome Forecast (TAF)	
<i>Strategic Objectives:</i>	• Global Harmonization and Interoperability • Air Navigation Capacity and Efficiency
<i>References:</i>	• N/A

1. INTRODUCTION

1.1 This paper highlights additional aviation forecasts and how they are used in the United States' (US) State of Alaska. This project was driven by a need for more aviation specific forecasts and leaning into the availability of model guidance. While the need for more TAFs in the region was obvious, limited resources meant that alternatives were needed.

2. DISCUSSION

2.1 To add a new TAF for a location is neither easy nor inexpensive. TAFs demand 24/7 surveillance to remain valid. Automated or manual observing as a minimum for the meteorologist. Several years ago, the US considered adding new TAFs for Alaska, but this quickly became a resource issue, not so much the observations, since these were already in place. But adding meteorologists to ensure the TAFs were under continuous watch.

2.2 The alternative was to instead take advantage of numeric guidance that updated every hour and use that guidance to build a plain language aviation forecast. Totally automated and updated every hour. The engine used to make this work is the Localized Aviation MOS Program (LAMP) guidance.

2.3 LAMP guidance is also used as a comparison tool to evaluate US TAFs. The US evaluates approximately 715 TAFs against the same locations in the LAMP database for its verification program. This data provides some basic facts.

- The LAMP guidance is typically more pessimistic versus a TAF when forecasting cloud ceiling (broken or overcast) less than 1000 feet (300 m) and/or visibility less than 3 statute miles (5000 m) (IFR) in the first 6 hours of a TAF. E.g., a higher False Alarm Ratio (FAR) than a TAF.
- The LAMP Probability of Detection for IFR was similar or a bit higher the first 6 hours of the TAF due to the higher FAR.

2.4 This analysis led to accepting a new experimental aviation product for Alaska, called the Alaskan Aviation Guidance, or AAG.

2.5 AAGs are not produced for locations that have a current TAF, but rather locations that have an observation that provides enough meteorological elements in the observation to create an AAG. Alaska currently has 39 TAFs. Adding AAGs for locations with no TAFs, added an additional 59 plain language aviation forecasts across the State.

2.6 Please see the link in **Appendix A** for commonly asked questions about LAMP and the AAG.

2.7 Please see **Appendix B** for guidance on the use of the AAG, per the Federal Aviation Administration (FAA)

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

Appendix A

Alaska Aviation Guidance (AAG) Frequently Asked Questions

Click on the question below to jump to the answer:

[Introduction](#)

[What is LAMP?](#)

[How is Alaska Aviation Guidance \(AAG\) created?](#)

[How often is AAG updated?](#)

[What do the colors on the map represent?](#)

[Why doesn't AAG include forecasts for convection, blowing snow or smoke?](#)

[Since AAG is not an official NWS forecast, how should I use it in my operations?](#)

[How do I provide feedback on this product?](#)

Introduction

The Alaska Aviation Guidance (AAG) is an experimental product to help pilots anticipate weather at specific locations across the state. It is created for airports that have an automated weather station (AWOS or ASOS), but do not have a Terminal Area Forecast (TAF). Unlike the TAF and other forecasts which are constructed by a human weather forecaster, the AAG is a totally automated estimate of weather conditions projected to take place over the next six hours. It is constructed from another National Weather Service (NWS) product, the Localized Aviation Model Output Statistics Product (LAMP), which is a tool used internally by forecasters, described below in more detail.

AAG uses elements of the LAMP, which have been re-packaged into a plain-language format for use directly by the aviation community. This provides a six-hour look-ahead at expected conditions including wind, visibility, ceiling and cloud cover. It does not provide information on some conditions that might limit visibility, such as smoke or blowing snow, or convective activity. The AAG is intended to be used for operations conducted under Visual Flight Rules, and for flights not more than two-hours in duration.

More details on the product, how it is constructed, and its limitations will be described in an FAA Information for Operators (InFO) document which is not yet publicly available. Pilot feedback is

<https://www.surveymonkey.com/r/AlaskanAvnGuidance>

LAMP, or Localized Aviation Model Output Statistics Program, is a statistical system operated by the National Weather Service that uses the latest observations, airport climatology, and model forecasts from the Global Forecast System (GFS) to provide guidance for aviation forecasting. This guidance is a tool that has been utilized by National Weather Service aviation forecasters since 2006.

Additional information on LAMP is available from the [NWS Meteorological Development Laboratory](#).

Alaska Aviation Guidance utilizes the LAMP guidance described above to produce an automated six-hour aviation forecast in a plain language format. The table below is an example of the LAMP guidance used to produce AAG. While this is a forecast for the next 25 hours, we will focus on the first 6 hours highlighted in the box below.

[illegible]

The AAG system reads this coded aviation forecast, and converts it into the following plain language forecast:

Experimental Guidance for: PAPB (St George Is, AK) issued at 1540 UTC 10 Jul 2019

Forecast period: 1600 to 1700 UTC 10 July 2019

Forecast type: FROM: standard forecast or significant change

Winds: from the SE (140 degrees) at 7 MPH (6 knots; 3.1 m/s)

Visibility: 6 or more sm (10+ km)

Ceiling: 5000 feet AGL

Clouds: overcast cloud deck at 5000 feet AGL

Forecast period: 1700 to 1800 UTC 10 July 2019

Forecast type: FROM: standard forecast or significant change

Winds: from the SE (140 degrees) at 7 MPH (6 knots; 3.1 m/s)

Visibility: 6 or more sm (10+ km)

Ceiling: 2500 feet AGL

Clouds: overcast cloud deck at 2500 feet AGL

Forecast period: 1800 to 2200 UTC 10 July 2019

Forecast type: FROM: standard forecast or significant change

Winds: from the SSE (160 degrees) at 9 MPH (8 knots; 4.1 m/s)

Visibility: 6 sm (10 km)

Ceiling: 700 feet AGL

Clouds: overcast cloud deck at 700 feet AGL

Weather: HZ (haze)

How often is AAG updated?

AAG will be updated automatically every hour, at 40 minutes after the hour for each location. Each update will create a new six hour forecast beginning at the start of the next hour. For example, an AAG product updated at 1540z will include conditions expected from 1600-2200z. The next update will occur at 1640z, to include conditions from 1700-2300z.

What do the colors on the map represent?

These colors represent the following flight category forecasted **only in the first period** of the AAG product:

-  LIFR (ceiling less than 500 ft. and/or visibility less than 1 mile)
-  IFR (ceiling between 500-1000 ft. and/or visibility between 1-3 miles)
-  MVFR (ceiling between 1000-3000 ft. and/or visibility between 3-5 miles)

■ VFR (ceiling greater than 3000 ft. and visibility greater than 5 miles)

For example, the following AAG product would display as MVFR, even though IFR and LIFR conditions are expected in later periods:

Forecast period: 2300 UTC 13 August 2019 to 0000 UTC 14 August 2019

Forecast type: FROM: standard forecast or significant change

Winds: from the SE (140 degrees) at 13 MPH (11 knots; 5.7 m/s)

Visibility: 6 or more sm (10+ km)

Ceiling: 1500 feet AGL

Clouds: overcast cloud deck at 1500 feet AGL

Forecast period: 0000 to 0300 UTC 14 August 2019

Forecast type: FROM: standard forecast or significant change

Winds: from the SE (130 degrees) at 13 MPH (11 knots; 5.7 m/s)

Visibility: 6 sm (10 km)

Ceiling: 700 feet AGL

Clouds: overcast cloud deck at 700 feet AGL

Weather: BR (mist)

Forecast period: 0300 to 0500 UTC 14 August 2019

Forecast type: FROM: standard forecast or significant change

Winds: from the SE (130 degrees) at 12 MPH (10 knots; 5.1 m/s)

Visibility: 4 sm (6 km)

Ceiling: 300 feet AGL

Clouds: overcast cloud deck at 300 feet AGL

Weather: BR (mist)

Why doesn't AAG include forecasts for convection, blowing snow or smoke?

Due to current limitations in LAMP guidance, convection (including thunderstorm activity), blowing snow, or smoke cannot be directly forecast and will not be included in the AAG product. AAG does have limited skill in forecasting visibilities during periods of prolonged visibility reduction due to smoke or blowing snow, however these forecasts should be used with caution. This is because the model is not able to capture the physical process producing the blowing snow or smoke, and is simply making a forecast based on trends in the surrounding observations.

Since AAG is not an official NWS forecast, how should I use it in my operations?

Guidance on the use of AAG by pilots will be available through the FAA through an Information for Operators (InFO) document which is not currently available. This document will be updated to include a link to the InFO once it is publicly available.

Do flight planning programs have access to AAG?

During the 1 year experimental period, AAG will not be available through private flight planning programs. This service may be available in the future if AAG becomes an operational product.

Why do the lengths of the forecast period change?

The time blocks of the forecasts change when a significant change of conditions is anticipated. Under stable conditions, a single forecast will cover the entire six-hour period, as illustrated in the example below.

*Experimental Guidance issued 2240 UTC 22 Aug 2019
PASH (SHISHMAREF, AK) 201908222300-201908230500
Six Hour Forecast:
Forecast period: 2300 UTC 22 August 2019 to 0500 UTC 23 August 2019
Forecast type: FROM: standard forecast or significant change
Winds: from the N (350 degrees) at 23 MPH (20 knots; 10.3 m/s)
Visibility: 6 or more sm (10+ km)
Ceiling: 1500 feet AGL
Clouds: overcast cloud deck at 1500 feet AGL*

In other cases, the forecast periods are shorter, indicating conditions are expected to change, such as this example from Middleton Island, where conditions are improving through the six-hour period.

*Experimental Guidance issued 2240 UTC 22 Aug 2019
PAMD (MIDDLETON IS, AK) 201908222300-201908230500*

Six Hour Forecast:

*Forecast period: 2300 UTC 22 August 2019 to 0200 UTC 23 August 2019
Forecast type: FROM: standard forecast or significant change
Winds: from the ENE (70 degrees) at 29 MPH (25 knots; 12.9 m/s) gusting to 37 MPH (32 knots; 16.m/s)
Visibility: 4 sm (6 km)
Ceiling: 2500 feet AGL*

Clouds: overcast cloud deck at 2500 feet AGL

Weather: -RA (light rain)

Forecast period: 0200 to 0400 UTC 23 August 2019 Forecast type:

FROM: standard forecast or significant change

Winds: from the ENE (60 degrees) at 29 MPH (25 knots; 12.9 m/s) gusting to 37 MPH (32 knots; 16.m/s)

Visibility: 6 sm (10 km)

Ceiling: 2500 feet AGL

Clouds: overcast cloud deck at 2500 feet AGL

Weather: -RA (light rain)

Forecast period: 0400 to 0500 UTC 23 August 2019 Forecast type:

FROM: standard forecast or significant change

Winds: from the ENE (60 degrees) at 25 MPH (22 knots; 11.3 m/s) gusting to 33 MPH (29 knots; 14 m/s)

Visibility: 6 or more sm (10+ km)

Ceiling: 5000 feet AGL

Clouds: broken clouds at 5000 feet AGL

Weather: -RA (light rain)

Finally, when conditions are highly variable, a text block describing temporary conditions may be included. Look at the second line in the text block to determine if the forecast type is standard or temporary conditions.

Experimental Guidance issued 1840 UTC 08 Oct 2019

PAHL (Huslia Arpt) 201910081900-201910090100

Six Hour Forecast:

Forecast period: 1900 to 2000 UTC 08 October 2019

Forecast type: FROM: standard forecast or significant change

Winds: from the ESE (110 degrees) at 10 MPH (9 knots; 4.6 m/s) gusting to 17 MPH (15 knots; 7.7 m/s)

Visibility: 4 sm (6 km)

Ceiling: 1500 feet AGL

Clouds: overcast cloud deck at 1500 feet AGL

Weather: -RA (light rain)

Forecast period: 2000 to 2200 UTC 08 October 2019

Forecast type: FROM: standard forecast or significant change

Winds: from the SE (130 degrees) at 9 MPH (8 knots; 4.1 m/s)

Visibility: 4 sm (6 km)

Ceiling: 700 feet AGL

Clouds: overcast cloud deck at 700 feet AGL

Weather: -RA (light rain)

Forecast period: 2200 to 2300 UTC 08 October 2019

Forecast type: TEMPORARY: The following changes expected for less than half the time period

Winds: missing
Visibility: 2.00 sm (3.22 km)
Ceiling: 700 feet AGL
Clouds: overcast cloud deck at 700 feet AGL
Weather: -RA (light rain)

Forecast period: 2200 to 2300 UTC 08 October 2019
Forecast type: FROM: standard forecast or significant change
Winds: from the SSE (150 degrees) at 10 MPH (9 knots; 4.6 m/s)
Visibility: 6 or more sm (10+ km)
Ceiling: 1500 feet AGL
Clouds: overcast cloud deck at 1500 feet AGL

Forecast period: 2300 UTC 08 October 2019 to 0100 UTC 09 October 2019
Forecast type: TEMPORARY: The following changes expected for less than half the time period
Winds: missing
Visibility: 6 or more sm (10+ km)
Ceiling: 1500 feet AGL
Clouds: overcast cloud deck at 1500 feet AGL
Weather: -RA (light rain)

Forecast period: 2300 UTC 08 October 2019 to 0100 UTC 09 October 2019
Forecast type: FROM: standard forecast or significant change
Winds: from the SE (140 degrees) at 10 MPH (9 knots; 4.6 m/s)
Visibility: 6 or more sm (10+ km)
Ceiling: 1500 feet AGL
Clouds: overcast cloud deck at 1500 feet AGL

How do I provide feedback on this product?

A short online survey is the primary tool forecasters at NWS are using to collect information on this product. To take the survey, go to <https://www.surveymonkey.com/r/AlaskanAvnGuidance>. You may take the survey more than once.

If you have specific questions or problems to report, please contact:

David Kochevar
Regional Aviation Meteorologist
NWS Alaska Region Headquarters
david.kochevar@noaa.gov
(907) 271-3352



**U.S. Department
of Transportation
Federal Aviation
Administration**

InFO

Information for Operators

InFO 20002
DATE: 3/25/20

Flight Standards Service
Washington, DC

http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info

An InFO contains valuable information for operators that should help them meet certain administrative, regulatory, or operational requirements with relatively low urgency or impact on safety.

Subject: Use of the Experimental Alaskan Aviation Guidance (AAG) Weather Product.

Purpose: This InFO provides information to operators, pilots and aircraft dispatchers, regarding the use of the experimental AAG weather product, provided by the United States (U.S.) National Weather Service (NWS).

Background: The NWS provides Terminal Aerodrome Forecasts (TAFs) at specific locations that meet the International Civil Aviation Organization standards for an Aviation Forecast. Many Alaskan airports do not have access to TAFs. These gaps in the availability of weather information, coupled with the unique operational challenges in Alaska and the reliance of many remote communities on aviation services for access to goods and services, prompted the Federal Aviation Administration to request that the NWS provide an automated forecast product to support operations at locations where TAFs are not available. Based on this request, the NWS developed the AAG product at 61 locations. Due to the experimental nature of this product, its 24/7 availability cannot be guaranteed as system failures and maintenance may result in outages, which may only be addressed during regular business hours. Although the AAG is deemed experimental, it is available for use by operators that conduct operations in Alaska under Title 14 Code of Federal Regulations (14 CFR) parts 91 without restriction or, 121, or 135 with approved procedures.

Discussion: The AAG is decoded plain language forecast based off the Localized Aviation Model Output Statistics Product (LAMP). The AAG is valid for 6 hours and updated hourly. See the example below:

Guidance for: PXXX (Someplace, AK) issued at 0900 UTC 12 Jun 2019 Forecast period: 0900 to 1000 UTC 12 June 2019
Forecast type: FROM: standard forecast or significant change
Winds: from the E (90 degrees) at 21 MPH (18 knots; 9.3 m/s) gusting to 28 MPH (24 knots; 12.3 m/s)
Visibility: 2.00 sm (3.22 km)
Ceiling: 1500 feet AGL
Clouds: overcast cloud deck at 1500 feet AGL
Weather: -RA BR (light rain, mist)

Forecast period: 1000 to 1200 UTC 12 June 2019
Forecast type: FROM: standard forecast or significant change
Winds: from the E (90 degrees) at 17 MPH (15 knots; 7.7 m/s) gusting to 25 MPH (22 knots; 11.3 m/s)
Visibility: 2.00 sm (3.22 km)
Ceiling: 700 feet AGL
Clouds: overcast cloud deck at 700 feet AGL
Weather: -RA BR (light rain, mist)

Forecast period: 1200 to 1500 UTC 12 June 2019
Forecast type: FROM: standard forecast or significant change
Winds: from the E (90 degrees) at 13 MPH (11 knots; 5.7 m/s)
Visibility: 1.50 sm (2.41 km)
Ceiling: 700 feet AGL
Clouds: overcast cloud deck at 700 feet AGL
Weather: -RA BR (light rain, mist)

The AAG is designed to be updated every hour, at all hours, for each location, and includes the latest surface conditions. This means the forecast is weighted towards the latest hourly Meteorological Aerodrome Reports (METAR).

AAG Limitations. Currently, the AAG does not account for thunderstorms, as no convective activity is forecasted in the AAG. Blowing snow is also not accounted for in the AAG. Lastly, as this is a completely automated product, updates will only be possible through changes to the LAMP guidance, with no manual changes by NWS forecasters possible.

Usage: Parts 121 and 135 contain multiple regulations requiring weather information to ensure the safety of operations that air carriers conduct. Such regulations often refer to weather reports or forecasts that meet the NWS standards. The AAG is a forecast tool and may be used in locations where a TAF is not available at the intended destination in Alaska. It is intended for use under Visual Meteorological Conditions (VMC) and within 6 hours from the time the forecast was taken. Certificate holders conducting operations under part 135 with approved procedures that operate to a destination airport without weather reporting may use the AAG when the destination weather is below 1000 feet and 3 miles (1000/3). Certificate holders conducting operations under part 121 (or Part 135 operators without approved procedures) could utilize their approved Enhanced Weather Information System (EWINS) and obtain a TAF if the AAG is forecasting a ceiling and visibility below 1000/3 miles.

Operators conducting operations under part 121 or part 135 cannot use AAG at alternate airports. The AAG is also limited for flight times of two hours or less in duration. The AAG, in conjunction with METARs, Pilot Reports (PIREPs), the Area Forecast (FA), Significant Meteorological Information (SIGMETs) and Airmen's Meteorological Information (AIRMETs), helps inform operators of the weather conditions at the estimated time of arrival and whether those conditions will be at or above the minimums, which determines whether operations can be conducted within the performance limitations of the aircraft per §§ 91.103, 135.213, and 121.101. In addition, the AAG will not indicate blowing snow or convective activity. If precipitation is forecasted, other products, including SIGMETs and Next Generation (NEXRAD) weather radar, where available, can determine if hazardous convective weather will be present when the aircraft arrives. The operator may then plan appropriately. The AAG may be used by operators conducting operations under part 91 without restriction.

How to Access the AAG Product: The AAG is currently available on the typical communication lines that provide weather information for Alaska. The AAG can be found at: <https://www.weather.gov/arh/aag>. Airports and reporting stations with the AAG are listed below:

Airports List

PAAK ATKA	PAMH MINCHUMINA
PABA BARTER ISLAND	PAMM METLAKATLA
PABL BUCKLAND	PAMR MERRILL FIELD
PABV BIRCHWOOD	PAMY MEKORYUK
PACZ CAPE ROMANZOF	PANI ANIAK
PADE DEERING	PANN NENANA
PADK ADAK ISLAND	PANV ANVIK
PAEG EAGLES	PAOH HOONAH
PAEH CAPE NEWENHAM	PAPB ST GEORGE ISLAND
PAEM EMMONAK	PAPH PORT HEIDEN
PAFE KAKE	PAPO POINT HOPE
PAFM AMBLER	PARC ARCTIC VILLAGE
PAGL GOLOVIN	PASA SAVOONGA
PAGM GAMBELL	PASH SHISHMAREF
PAHL HUSLIA	PASK SELAWIK
PAHP HOOPER BAY	PASL SLEETMUTE
PAHY HYDABURG	PASM SAINT MARY'S
PAII EGEKIK	PASO SELDOVIA
PAIM INDIAN MOUNTAIN LRRS	PASV SPARREVOHN
PAIN MCKINLEY PARK	PASX SOLDOTNAPATG TOGIAK VILLAGE
PAJC CHIGNIK	PATL TATALINA LRRS
PAKK KOYUK	PAVL KIVALINA
PAKP ANAKTUVUK PASS	PAWD SEWARD
PAKU KUPARUK	PAWI WAINWRIGHT
PAKV KALTAG	PAWN NOATAK
PALH LAKE HOOD	PAWS WASILLA
PALJ PORT ALSWORTH	PAZK EUREKA
PALU CAPE LISBURNE	PFYU FORT YUKON
PAMD MIDDLETON ISLAND	PPIZ POINT LAY
PATG - TOGIAC VILLAGE	PATO - PORTAGE GLACIER
PATC - TIN CITY	

Recommended Action: All pilots, aircraft dispatchers, and operators interested in reviewing information on AAG can access the information at <https://www.weather.gov/arh/aag>. The NWS is soliciting comments and feedback on the usability of this product, which can be submitted at <https://www.weather.gov/arh/aag>.

Contact: Questions or comments regarding this InFO should be directed to the Air Transportation Division at (202) 267-8166.