Alaska Aviation Guidance (AAG) Frequently Asked Questions

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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

requested during this experimental period, which is anticipated to last approximately one year. You can send your feedback to the NWS through the following following survey::

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

What is LAMP?

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.

Because of LAMP's use of the latest meteorological aerodrome report (METAR) observations and airport climatology to apply corrections to the GFS model forecast, LAMP guidance is typically one of the best performing types of aviation model guidance, especially during the first 6 hours of the forecast.

Additional information on LAMP is available from the NWS Meteorological Development Laboratory.

How is Alaska Aviation Guidance (AAG) created?

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.

Table 1. LAMP output for St. George Island, AK.

PAPB ST GEORGE ISLAND (AS GFS LAMP GUIDANCE 7/10/2019 1500 UTC

UTC	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
TMP	49	49	49	50	50	50	51	51	52	52	51	51	51	50	49	49	48	47	47	47	46	46	46	46	46
DPT	48	48	48	48	48	48	48	48	48	48	48	48	47	47	47	46	46	46	45	45	45	44	44	44	44
WDR	14	14	14	14	15	15	16	16	17	17	17	18	18	19	19	19	20	20	21	22	22	22	22	22	22
WSP	06	06	06	07	08	08	08	09	09	09	09	08	07	07	06	05	05	04	04	04	04	04	03	03	03
WGS	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
PPO	7	10	8	10	11	10	13	15	15	14	11	9	6	4	0	0	0	0	0	0	0	0	0	0	0
PCO	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
P06									23						21						12				
POS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
TYP	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
CLD	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV	OV
CIG	6	6	5	3	3	3	3	3	3	2	3	2	2	2	2	2	2	1	1	1	1	1	2	1	
CCG	5	5	5	3	3	3	3	2	3	3	2	2	2	2	2	2	2	1	1	1	2	1	2	2	2
VIS	7	7	7	7	6	6	7	7	6	5	5	5	5	5	4	3	3	3	2	4	2	2	3	3	2
CVS	7	5	5	5	5	5	5	5	5	4	4	4	4	4	4	5	4	4	4	5	5	5	4	4	3
OBV	N	N	N	N	HZ	N	N	N	N	HZ	HZ	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR	FG

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:

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