

The National FAA Safety Team Presents



Federal Aviation
Administration

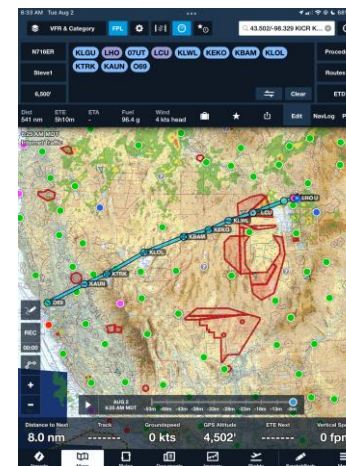
Topic of the Month – August, 2024 Pre-flight & In-flight Weather Resources

Presented to: AOPA Flying Clubs Safety Meetings

Prepared by: Steve Bateman and Rich Doyle

Date: At Your Club's Next Safety Meeting

Produced by:
The National FAA Safety Team (FAASTeam)



PDF Of These Slides Available For Your Further Study and Use

- Actual slides post on the third Sunday of every month (August 18th)
- <https://bit.ly/ToMSafetyArticle>
- Select the safety article (month) of interest
- Open and save the PDF
- **I'LL SHOW THIS INFO AGAIN AT THE END OF THE PRESENTATION**



- Thanks to the AOPA Flying Clubs Initiative



Overview

- **Weather related accidents – how do things go wrong?**
- **Pre-take-off weather resources**
 - Not a comprehensive list
 - Sample of resources available today
 - Many third-party resources are available—*choose wisely!*
- **In-flight weather resources**
 - Not a comprehensive list
 - Sample of resources available today
- **Pre-landing weather resources**
 - ATIS, AWOS, Remarks (DA, Lighting, distant NE...), Eyeballs




Why This Is Important...

Non-commercial GA, fixed wing

In 2021, 938 “accidents”, 166 fatalities

Figure 1.4: General Aviation Accidents in 2021

2021 Non-commercial fixed-wing



	Accidents	Fatal Accidents
Pilot-Related	647 69%	103 62%
Mechanical	151 16.1%	12 7.2%
Other / Unknown	128 13.6%	46 27.7%
null	12 1.3%	5 3%

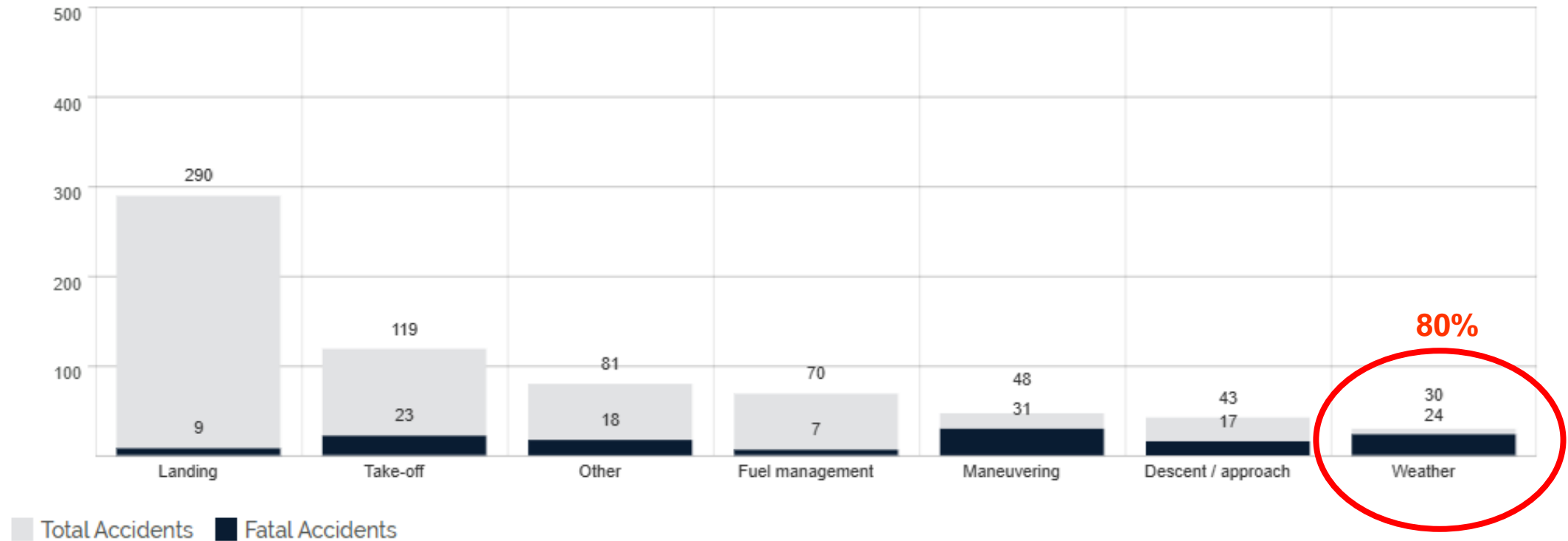
<https://www.aopa.org/training-and-safety/air-safety-institute/accident-analysis/richard-g-mcspadden-report>



Why This Is Important...

Figure 1.11: Major types of accidents

2021 Non-commercial fixed-wing



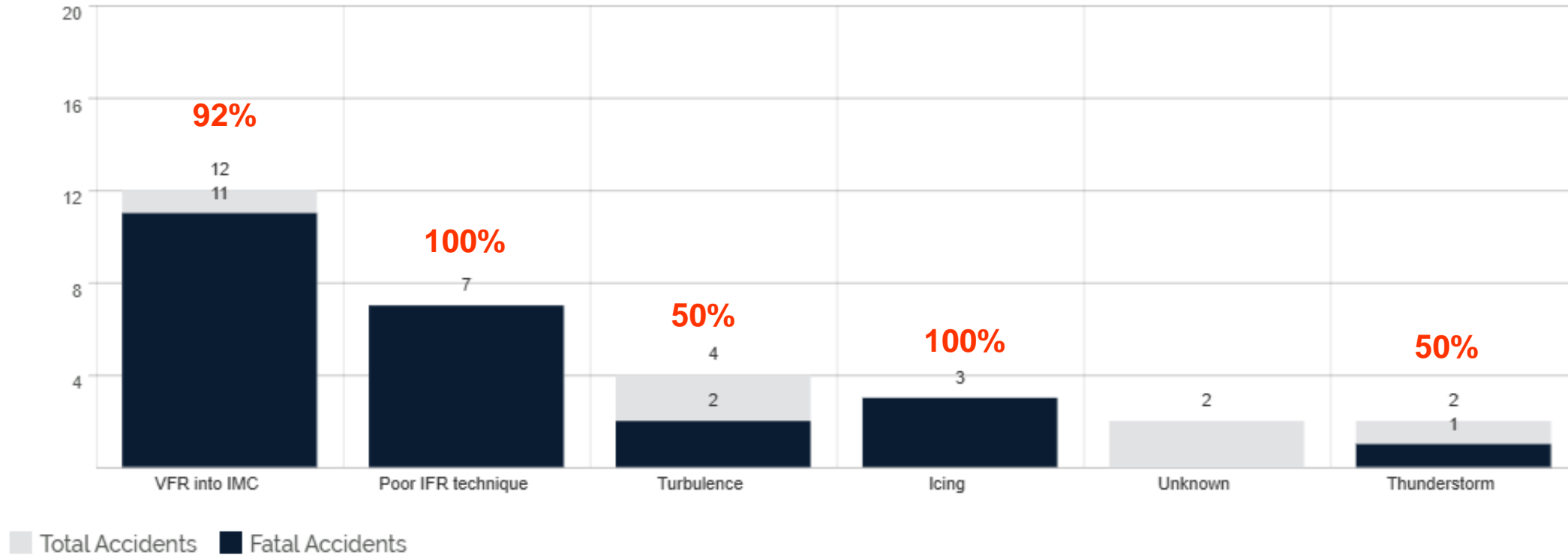
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Why This Is Important...

Figure 1.7.2: Types of weather accidents

2021 Non-commercial fixed-wing

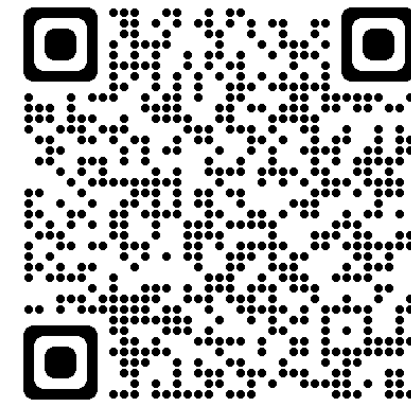


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Resources

- **FAA H-8083-28 Aviation Weather Handbook**
 - Incorporates information from and replaces:
 - AC 00-6, Aviation Weather
 - AC 00-24, Thunderstorms
 - AC 00-30, Clear Air Turbulence Avoidance
 - AC 00-45, Aviation Weather Services
 - AC 00-54, Pilot Windshear Guide
 - AC 00-57, Hazardous Mountain Winds

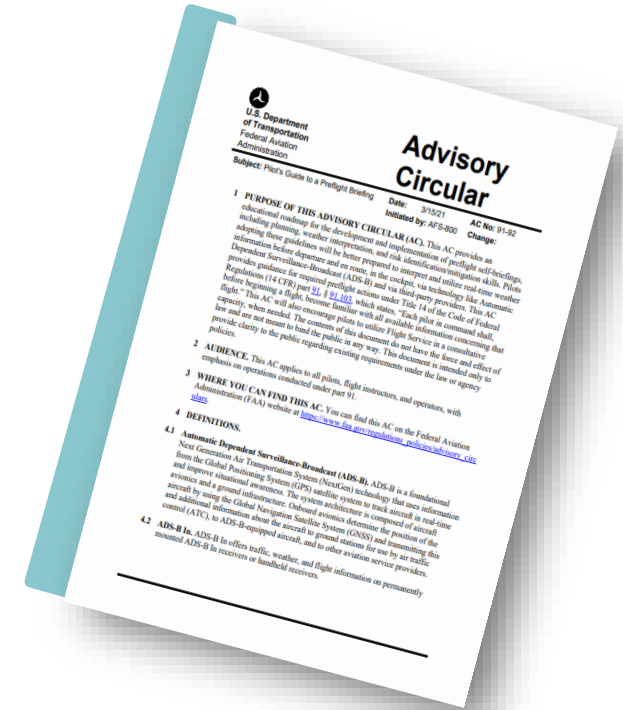


https://www.faa.gov/sites/faa.gov/files/FAA-H-8083-28_FAA_Web.pdf



Resource

- **AC 91-92: Pilot's Guide to a Preflight Briefing**
 - Extensive ADS-B discussion
 - Flight Service web services
 - Self-briefing information and tips
 - Single-pilot Resource Management (SRM)



This AC provides a roadmap for the implementation of preflight self-briefings, including planning, weather interpretation, and risk identification/mitigation skills

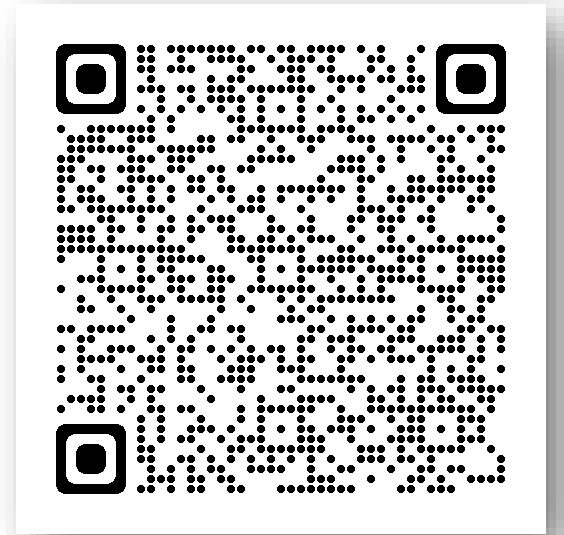
Pilots will be better prepared utilize real-time weather information before departure and en-route, in the cockpit, via Automatic Dependent Surveillance-Broadcast (ADS-B)



More on AC 91-92 (Latest 03-15-2021)

- Encourages pilots to conduct regulatory compliant *pre-flight self-briefings*

- Replaces FAA publications:
 - General Aviation Pilot's Guide to Preflight Weather Planning, Weather self-Briefings, and Weather Decision Making
 - How to
 - Obtain a Good Weather Briefing



https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_91-92.pdf



More on AC 91-92

- **True or False:**
 - To be legal (91.103) official weather briefings can only be obtained from flight service, therefore, a self weather briefing is not legal
- **Generally, false:**
 - “For many GA pilots, the Flight Service Station (FSS) remains an important source of comprehensive weather and aeronautical information. However, most pilots have become more accustomed to performing a self-briefing than calling an FSS”
 - *The FAA considers that a self-briefing can be compliant with current Federal aviation regulations*
 - *Pilots are encouraged to utilize online automated weather resources to conduct self-briefings prior to contacting Flight Service*
 - *Pilots who have preflight information are better prepared to make in-flight decisions as real-time weather information is consumed*
- **Note: If in any doubt or want a discussion, call Flight Service**



Weather analysis and decision making are big parts of our job (Remember FAR 91.103?)



§ 91.103 (Know all there is to know...)

- § 91.103 Preflight action.

Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include—

(a) For a flight under IFR or a flight not in the vicinity of an airport, **weather reports and forecasts**, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which the pilot in command has been advised by ATC;

(b) For any flight, runway lengths at airports of intended use, and the following **takeoff and landing distance** information:

- (1) For civil aircraft for which an approved Airplane or Rotorcraft Flight Manual containing takeoff and landing distance data is required, the takeoff and landing distance data contained therein; and
- (2) For civil aircraft other than those specified in paragraph (b)(1) of this section, other reliable information appropriate to the aircraft, relating to aircraft performance under expected values of airport elevation and runway slope, aircraft gross weight, and wind and temperature.



Pre-Flight Self-Briefing Resources

Preflight Self-Briefing - Government Resources



1800wxbrief.com	Leidos Flight Service FAA Contract Vendor	Go!	ssd.noaa.gov/VAAC/ vaac.html	Volcanic Ash Advisory Centers (VAAC)	Go!
weathercams.faa.gov	FAA Weather camera network and interactive map display	Go!	sua.faa.gov	Special Use Airspace (SUA)	Go!
aviationweather.gov	NOAA/Government website for aviation weather	Go!	tfr.faa.gov/tfr2/list.html	Temporary Flight Restrictions (TFR)	Go!
Fly.faa.gov/flyfaa/ usmap.jsp	FAA Flight Delay Information	Go!	weather.gov	National Weather Service Forecast Office (NWSFO)	Go!
nhc.noaa.gov	National Hurricane Center (NHC)	Go!	weather.gov/aawu	Alaska Aviation Weather Unit (AAWU)	Go!
notams.aim.faa.gov/ notamSearch	Federal NOTAM System (FNS)	Go!	weather.gov/hfo	National Weather Service Forecast Office Honolulu, HI	Go!
spc.noaa.gov	NOAA Storm Prediction Center (SPC)	Go!	wpc.ncep.noaa.gov	Weather Prediction Center (WPC)	Go!

Note: Additional third-party automated resources may be used to conduct preflight self-briefings



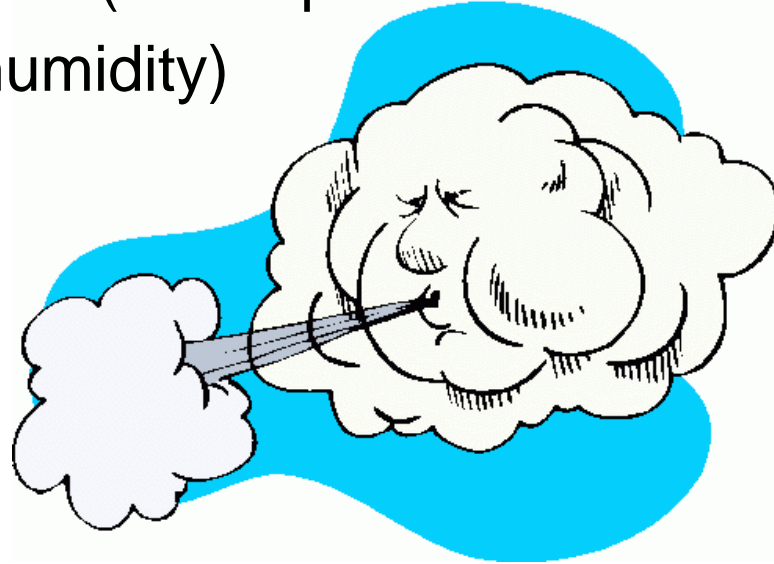
Weather Is Caused By...?

- **Uneven heating of the earth's surface, resulting in:**
 - Temperature gradients
 - Rising/falling air
 - Condensation, fog, clouds, viz
 - Pressure gradients
 - Wind vector



Three Basic Elements of Weather are...

- 1) Temperature (warm or cold)
- 2) Air movement (wind speed and direction)
- 3) Moisture (humidity)



Temperature, wind, and moisture combine to varying degrees to create conditions that affect pilots

So, these are things we should know about!



Best Practices When Planning

- **Pre-flight weather review is a regulatory requirement (FAR 91.103)**
- **Use more than one (trusted) weather data source**
- **Plan to be late**
- **Plan for alternatives**
- **Frequent scenario training for weather related contingencies**
 - Diversions, etc.
- **Check weather often while en-route...many options**



Making Sense of the Data

How will the weather affect this flight?

- **Visibility (vs terrain)**
 - Viz, cloud clearance, separation
 - Flight rules
- **Wind (head, tail, turbulence...)**
- **Aircraft performance (density altitude)**
- **...and it all changes with the weather...**



Types of Pre-Flight Briefings

Briefing Type	Value	Time Frame
Outlook	<ul style="list-style-type: none"> Provides weather information available in advance For planning purposes Gives indication of weather elements that may be a factor for your flight 	<ul style="list-style-type: none"> 6-48 hours before flight
Standard	<ul style="list-style-type: none"> Provides a complete and detailed depiction of the weather elements for the intended flight Pilot will have a clear indication of the weather-related risk factors for the flight On subsequent briefings, compare METARs to prior Terminal Aerodrome Forecast (TAF) to determine if the forecasts are accurate (e.g., improving as forecast) 	<ul style="list-style-type: none"> Within 6 hours of flight Can be obtained multiple times for flights during dynamic weather
Abbreviated	<ul style="list-style-type: none"> Provides pilot with updated information for specific elements of the weather Focuses on the more dynamic elements of the weather that may have changed since the standard weather briefing was obtained Helps pilot focus on the specific risk areas for the intended flight in an efficient manner Can be used in flight for proactive reaction to changing weather 	<ul style="list-style-type: none"> As soon as practical before flight



Pre-Flight Briefing Elements

Briefing Elements	Description	OTLK	SB	AB
Adverse Conditions	<ul style="list-style-type: none"> IFR conditions, mountain obscurations, thunderstorms, icing, turbulence, volcanic ash, dust/sandstorms, tropical cyclones, high density altitude, low-level wind shear, strong low-level winds Adverse aeronautical information, including adverse NOTAMs (airport/runway closures, air traffic delays, TFRs, etc.) 	Y	Y	Y
Synopsis	Weather systems, frontal systems and/or air masses	Y	Y	
Current Conditions	<ul style="list-style-type: none"> Current observations for departure, <u>en</u> route, and destination Includes METARs, PIREPs, satellite, and NEXRAD imagery 		Y	Y
Forecast Conditions	Forecasts for departure, <u>en</u> route and destination	Y	Y	Y
Winds Aloft	Winds aloft forecast (interpolate between levels) and temperature at proposed altitude		Y	
NOTAMS	NOTAMs for departure, <u>en</u> route and destination	Y	Y	Y
Restrictions or SUA	Prohibited areas (P40, P56) and SFRA around Washington DC	Y	Y	Y
Air Traffic Control (ATC) Delays	ATC delays and flow control advisories		Y	Y

OTLK-Outlook

SB-Standard Briefing

AB-Abbreviated Briefing



Adverse Weather Element

Adverse Weather

Review AIRMETs, SIGMETs, Center Weather Advisories, PIREPs, or any other advisory or information issued for the geographical location of the planned flight for the following weather conditions:

IFR conditions

Mountain obscurations

Thunderstorms

Icing

Turbulence

Dust/Sandstorms

Tropical cyclones

High density altitude

Low-level wind shear

Strong low-level winds

Volcanic Ash

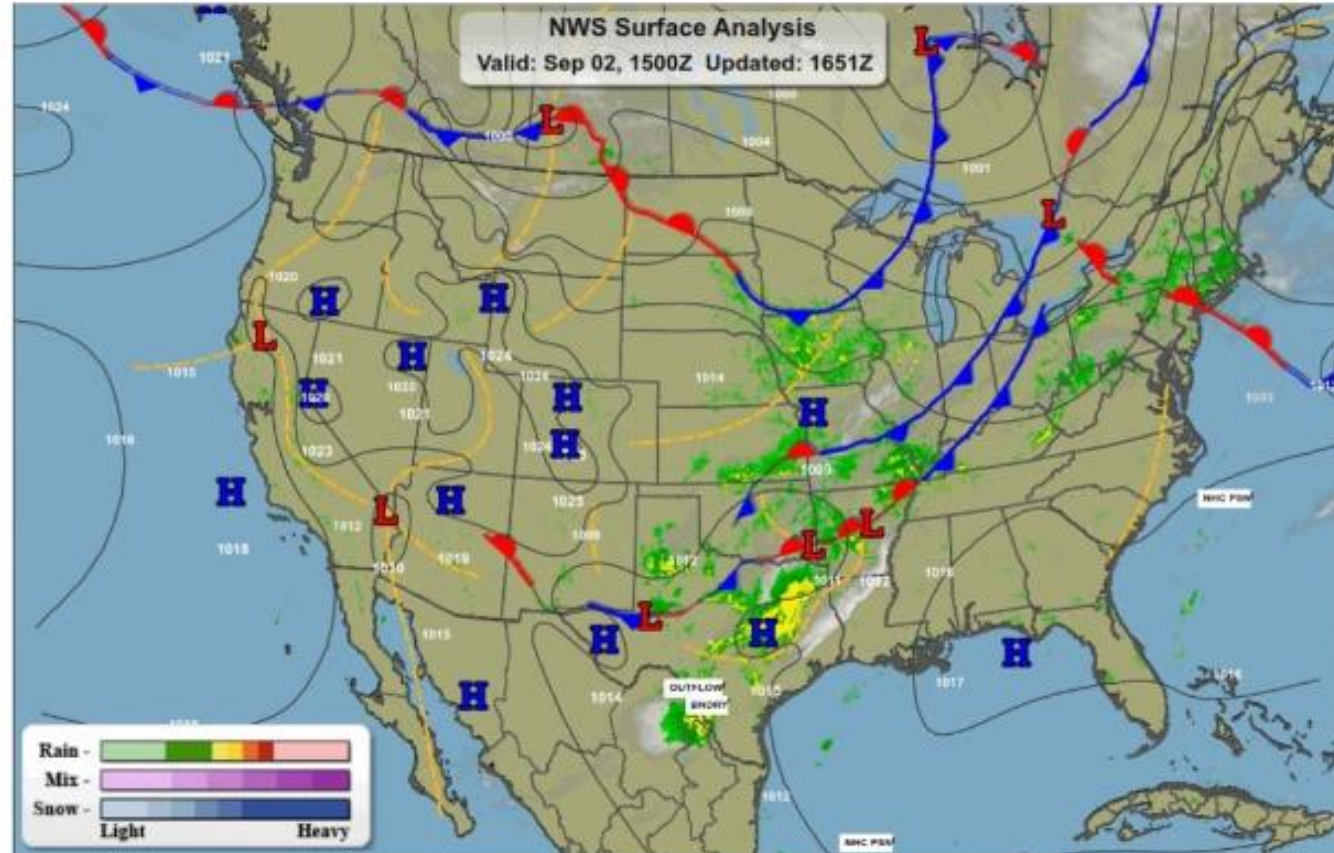


Synopsis Element

A synopsis or “birds' eye” view of weather systems provides information on major weather elements that may affect all phases of flight

These weather systems include frontal types and movement, locations of high and low pressure, formation of major weather elements, and upper air wind gradients

The synopsis is a prelude to what you will see in the METARs and TAFs



Current Conditions Element

Flight Rules

Review current weather (METARs, satellite, GFA, FAA weather cameras) for all phases of flight to determine if VFR flight is possible

- Ceilings and visibility
- Wind speed and direction
- Temperature, density altitude, and dewpoint

Check for recent PIREPs to see what other pilots are experiencing

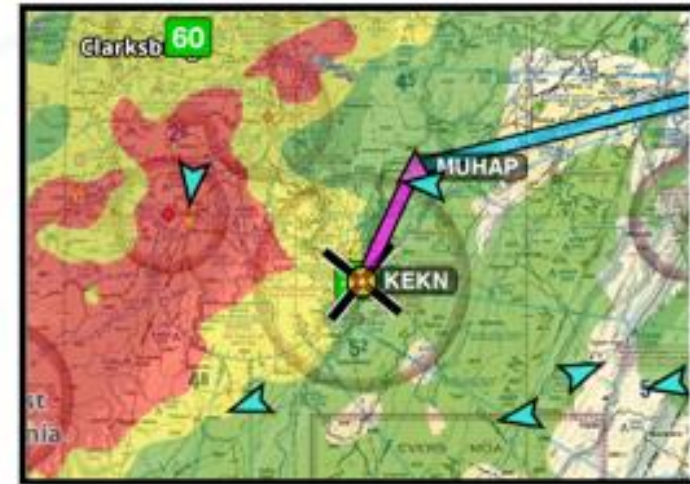
Category	Ceiling		Visibility
Visual Flight Rules VFR	greater than 3,000 feet AGL	and	greater than 5 miles
Marginal Visual Flight Rules MVFR	1,000 to 3,000 feet AGL	and/or	3 to 5 miles
Instrument Flight Rules IFR	500 to below 1,000 feet AGL	and/or	1 mile to less than 3 miles
Low Instrument Flight Rules LIFR	below 500 feet AGL	and/or	less than 1 mile



NEXRAD Element (Even delayed on your computer)

NEXRAD is a great addition to preflight planning and inflight weather awareness. There are several aspects to NEXRAD that can get you in trouble if you do not understand their behavior.

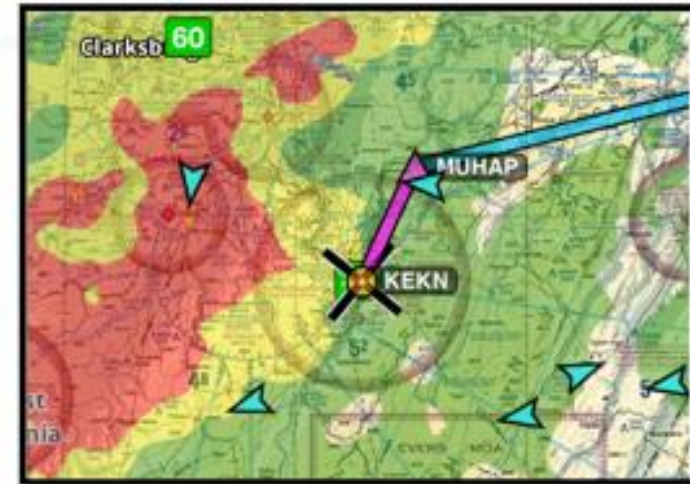
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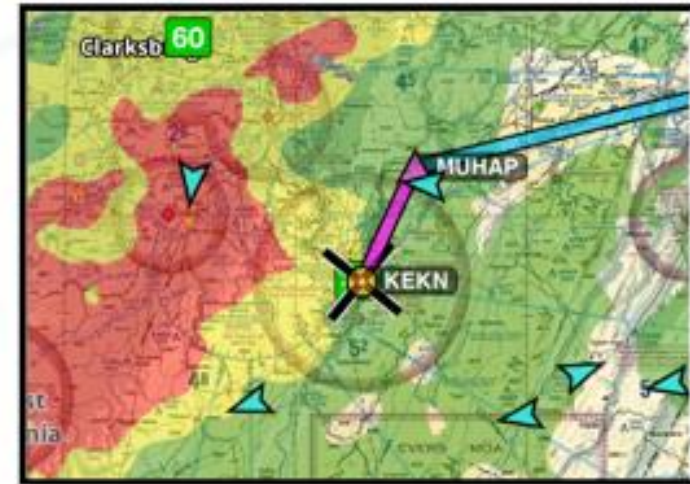
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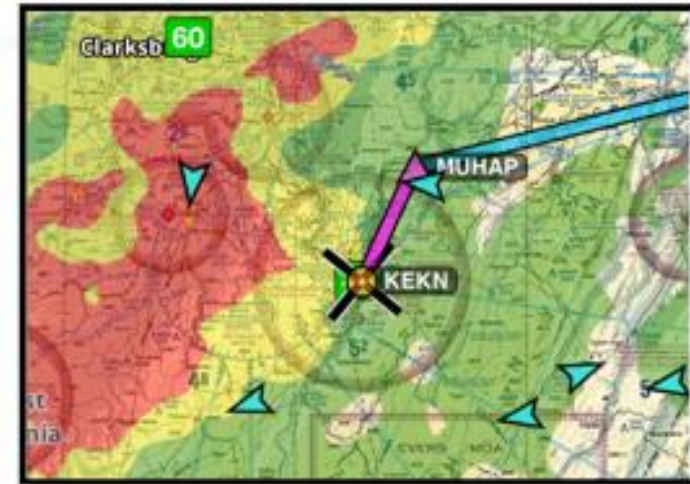
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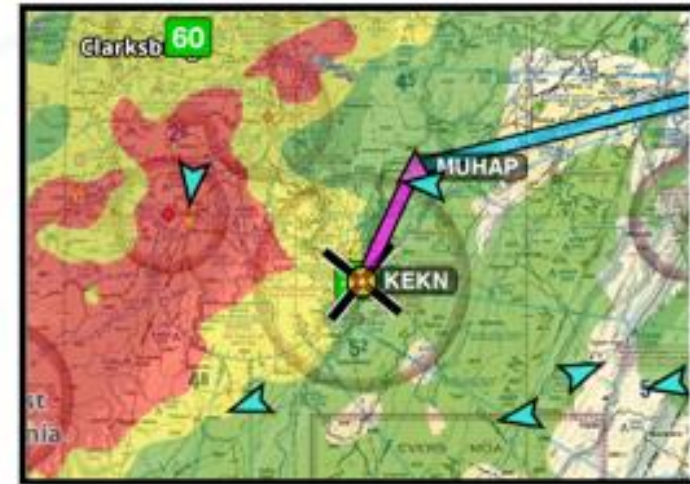
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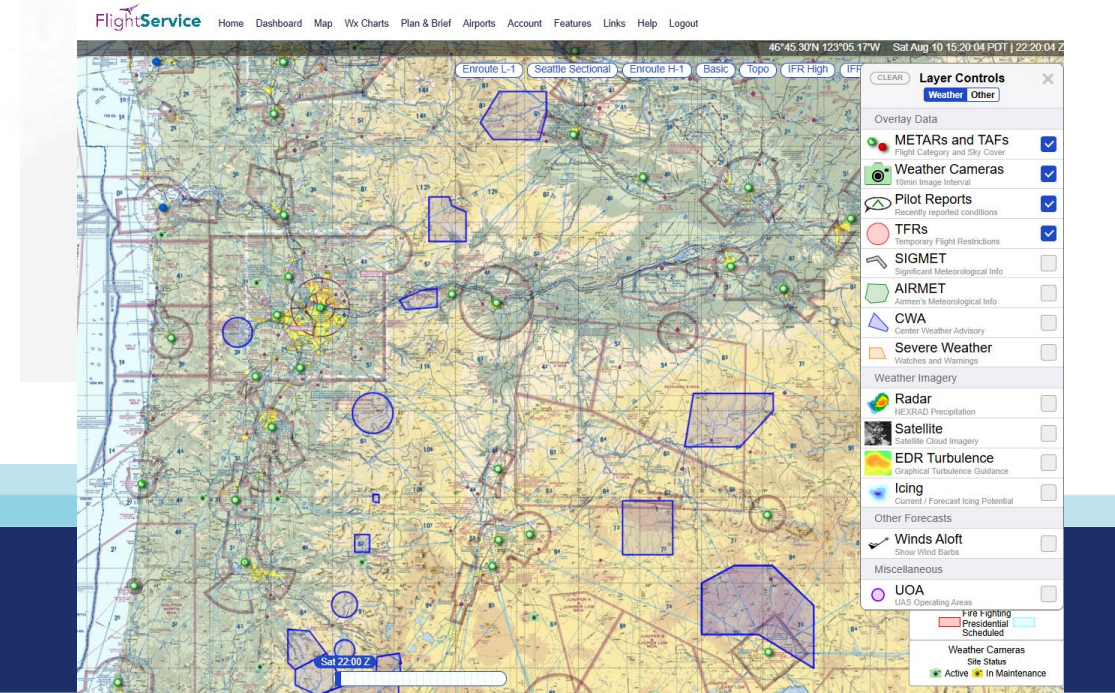
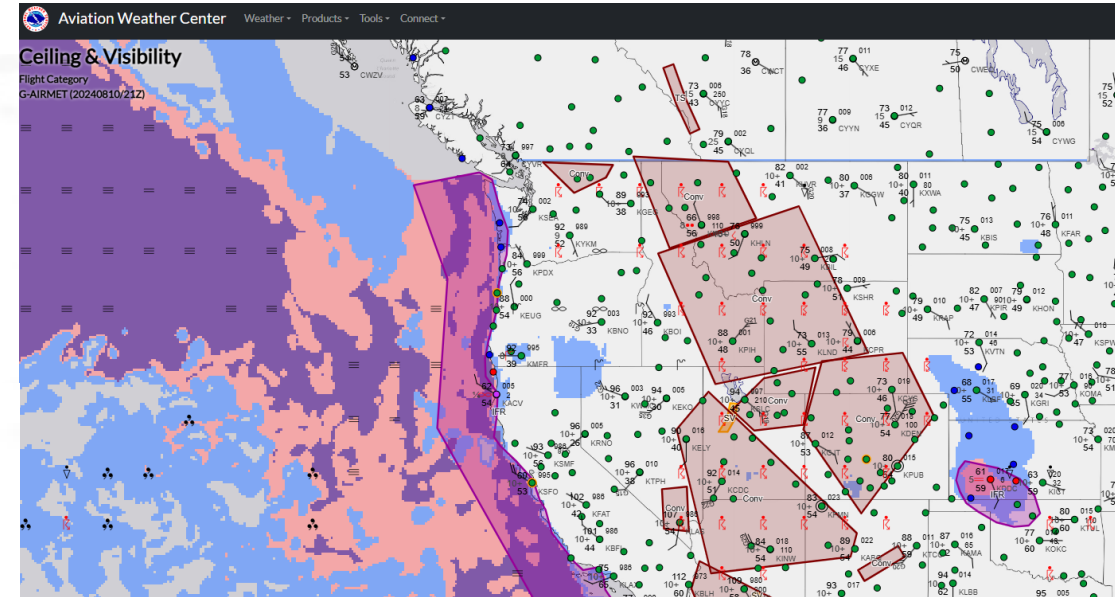
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- Different online and in cockpit resources can depict the intensity of weather with a different number of colors. This means on one, the view of a cell is shown in red (which we know to avoid) and on another the same cell might be a lighter yellow



Forecast Conditions Element

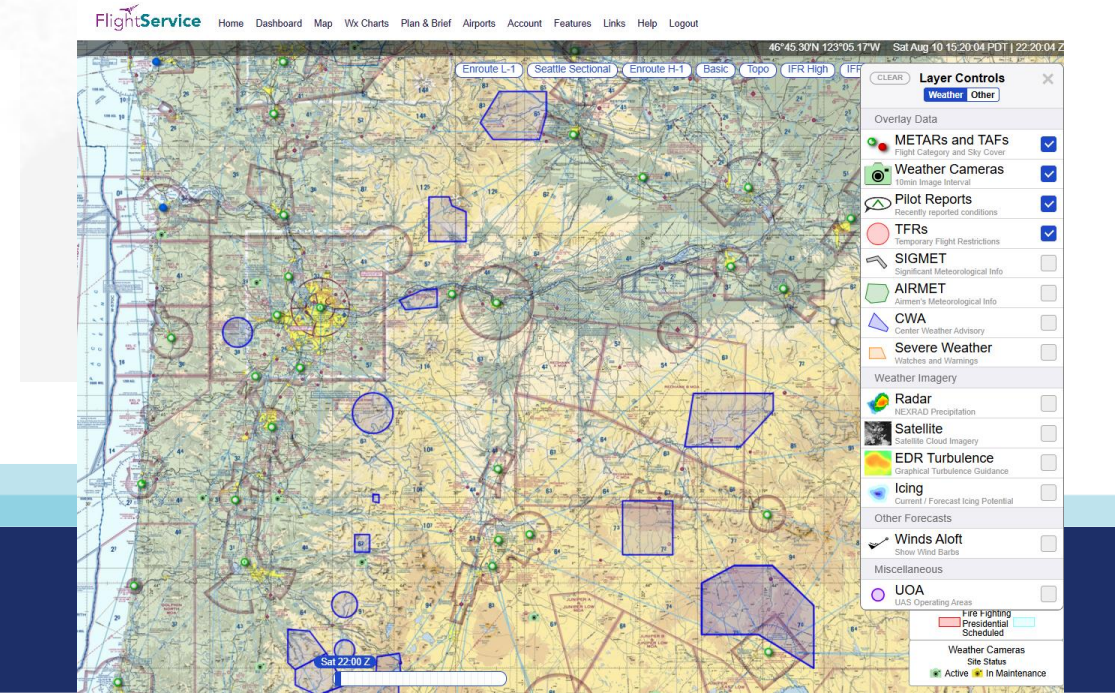
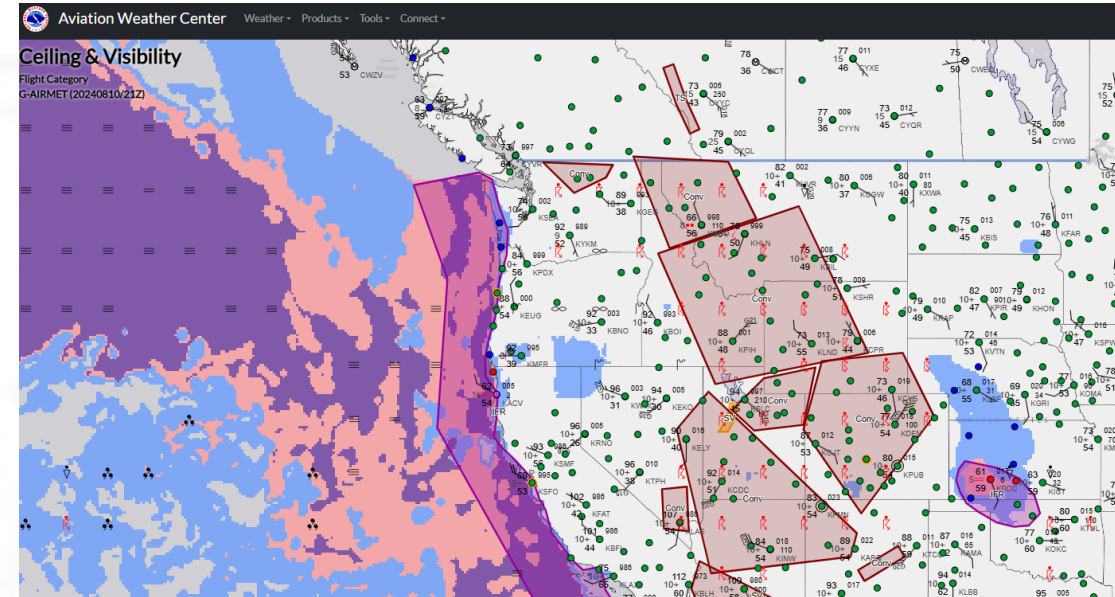
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Forecast Conditions Element

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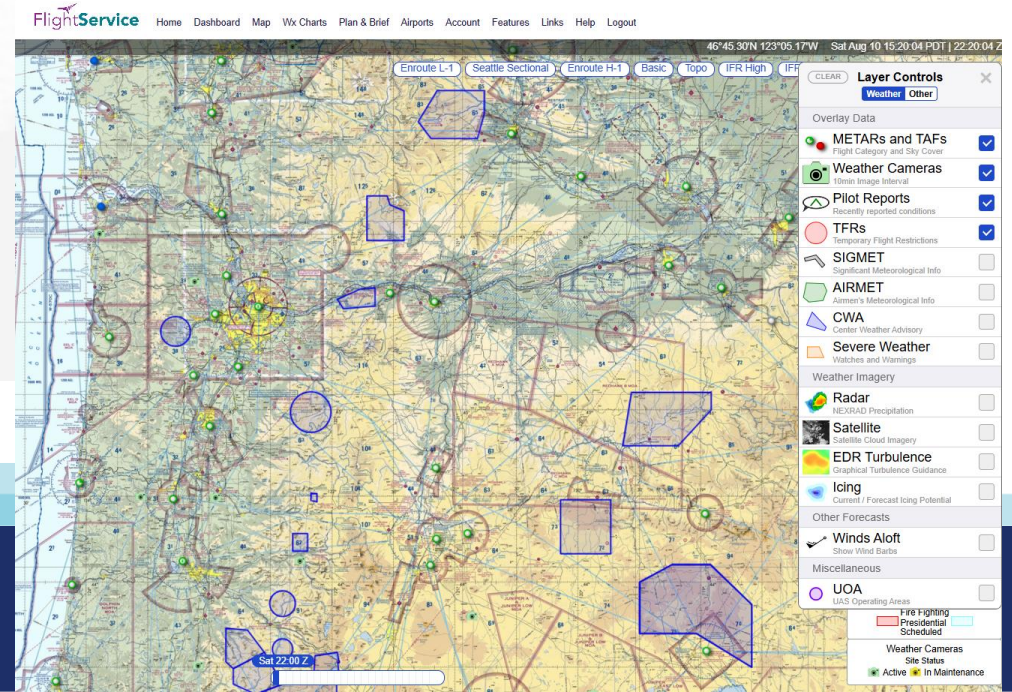
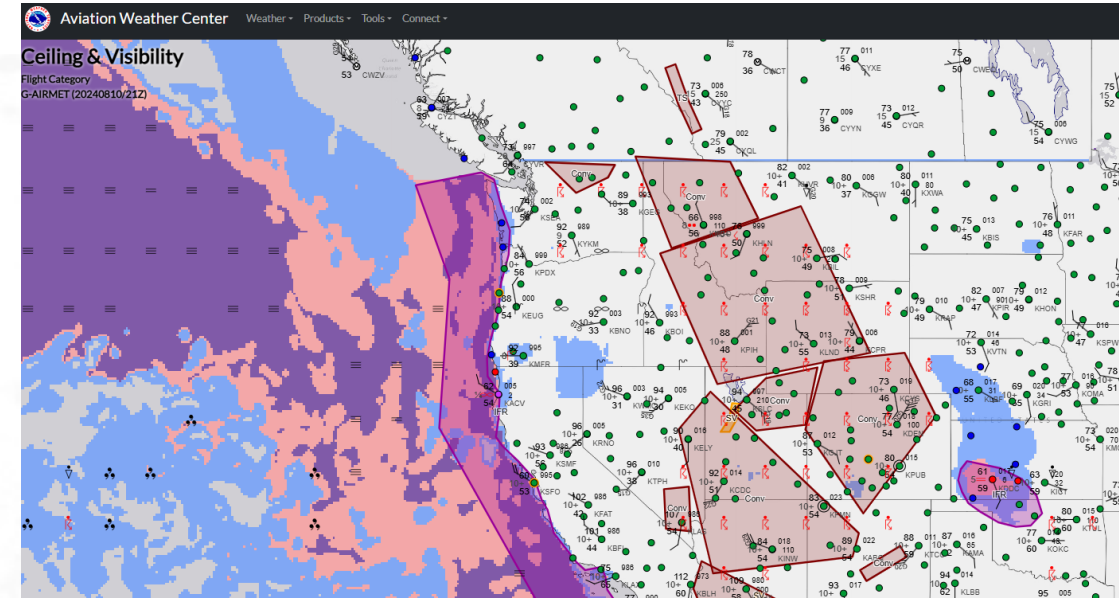


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Compare METARs to prior forecasts and current forecasts to see the trends that are developing, and to verify that the current forecast is accurate and coming to fruition.



Wind Speed and Direction Element

Know surface wind direction, speed, and gust factor for departure and destination airports to determine:

- Runway and approach speeds to use
- If cross winds exist, and if so, that they do not exceed the cross wind component for the aircraft (consult the POH) or your ability



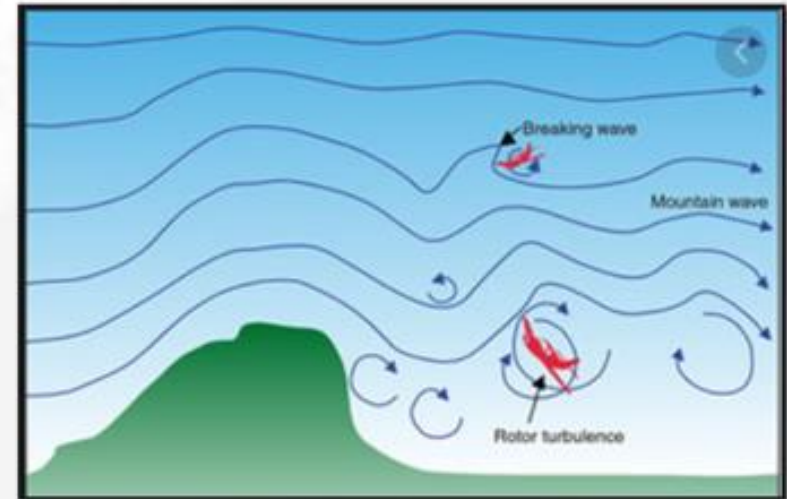
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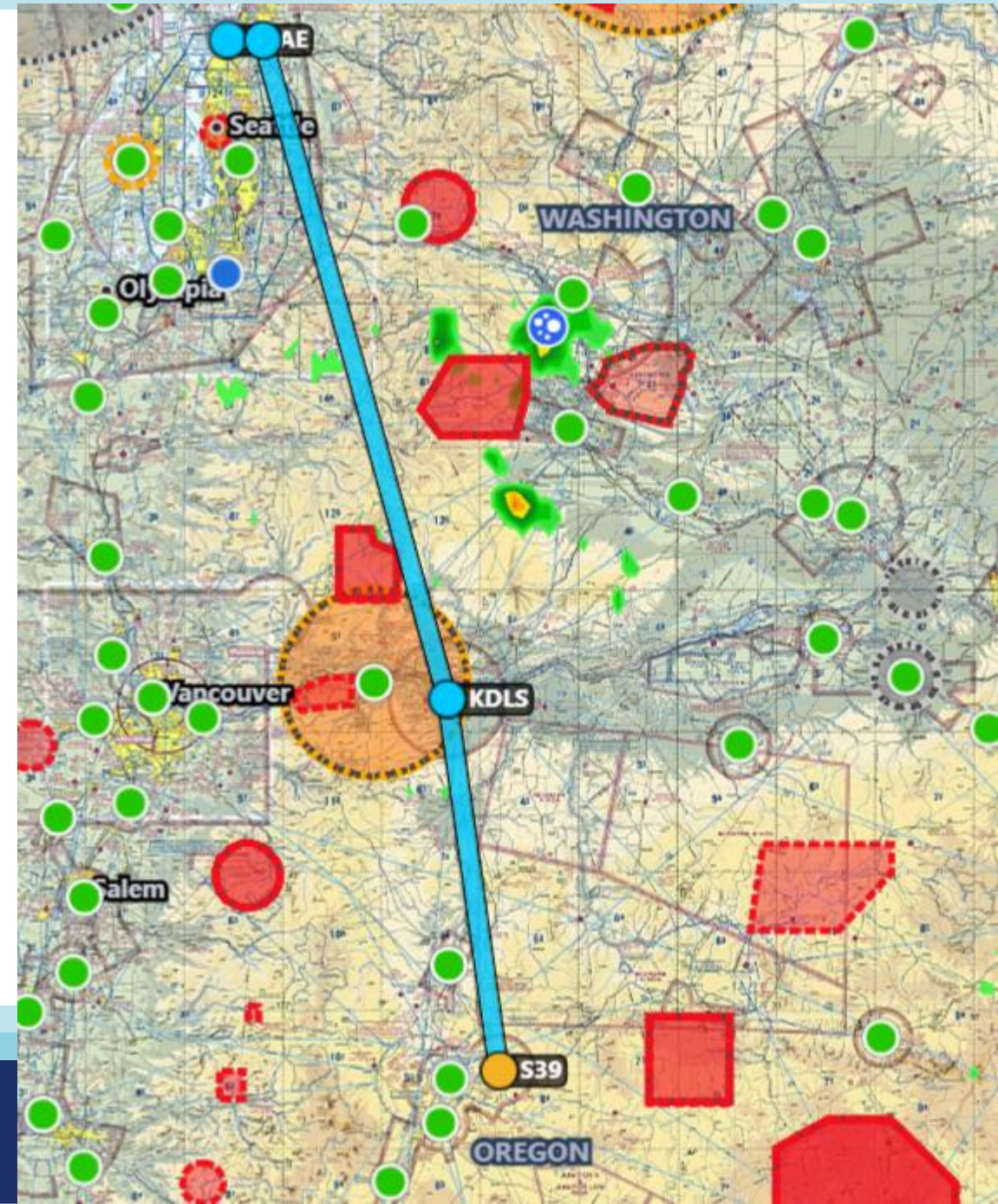
Know winds aloft direction and speed along the planned route to determine:

- Expected ground speed, time en route, and needed fuel
- If adverse conditions exist such as turbulence, mountain waves, or low-level wind shear



NOTAM and TFR Element

- Check NOTAMs for the planned flight to know about:
 - Airspace & airport limitations, changes, outages etc.
 - Adverse NOTAMs
 - Adverse aeronautical information
 - Service outages
 - Obstacles
- Check for SFRAs and active TFR and SUAs
- Study the route of flight to know about obstacles and high terrain along the route



Cloud Awareness Element

Clear of Clouds

Remaining clear of clouds requires constant awareness of cloud bases, terrain heights and the ability to recognize when cloud bases are getting lower during flight



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Lowering Cloud Bases

Lowering cloud bases impact minimum safe altitude, forces you downward toward terrain and increases the chance of entering instrument (IFR) conditions



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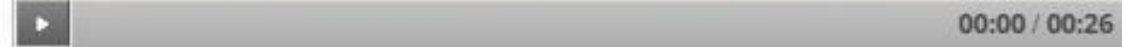
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Developing Ceilings

Be aware of broken or overcast clouds developing in flight to avoid getting stuck on top



Visibility Awareness Element

It is critical to remain aware of changing weather conditions that can reduce visibility en route

Diminishing flight visibility can be difficult to recognize or estimate.
Don't assume it will improve



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Visibility in flight, even if above minimums (3SM) when departing, can diminish en route due to:

- HAZE: A very common weather element, not always observed at the surface can be encountered in flight. It can rapidly reduce inflight visibility to less than VFR minimums causing unsafe flight conditions



Reduced Visibility on a VFR Day



Valley Fog forming next to a ridge



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- FOG: If the temperature approaches the dewpoint, fog is likely to develop. Fog is also common near mountains and in cold climates



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Temperature and Density Awareness Element

Density altitude directly affects aircraft performance during takeoff, landing and go-arounds.

It is very important to know the effect density altitude will have on your aircraft's performance when departing from airports on hot days, at high altitude in high terrain areas.

It's imperative to consult your Pilot Operating Handbook (POH) to determine if such a departure is possible.

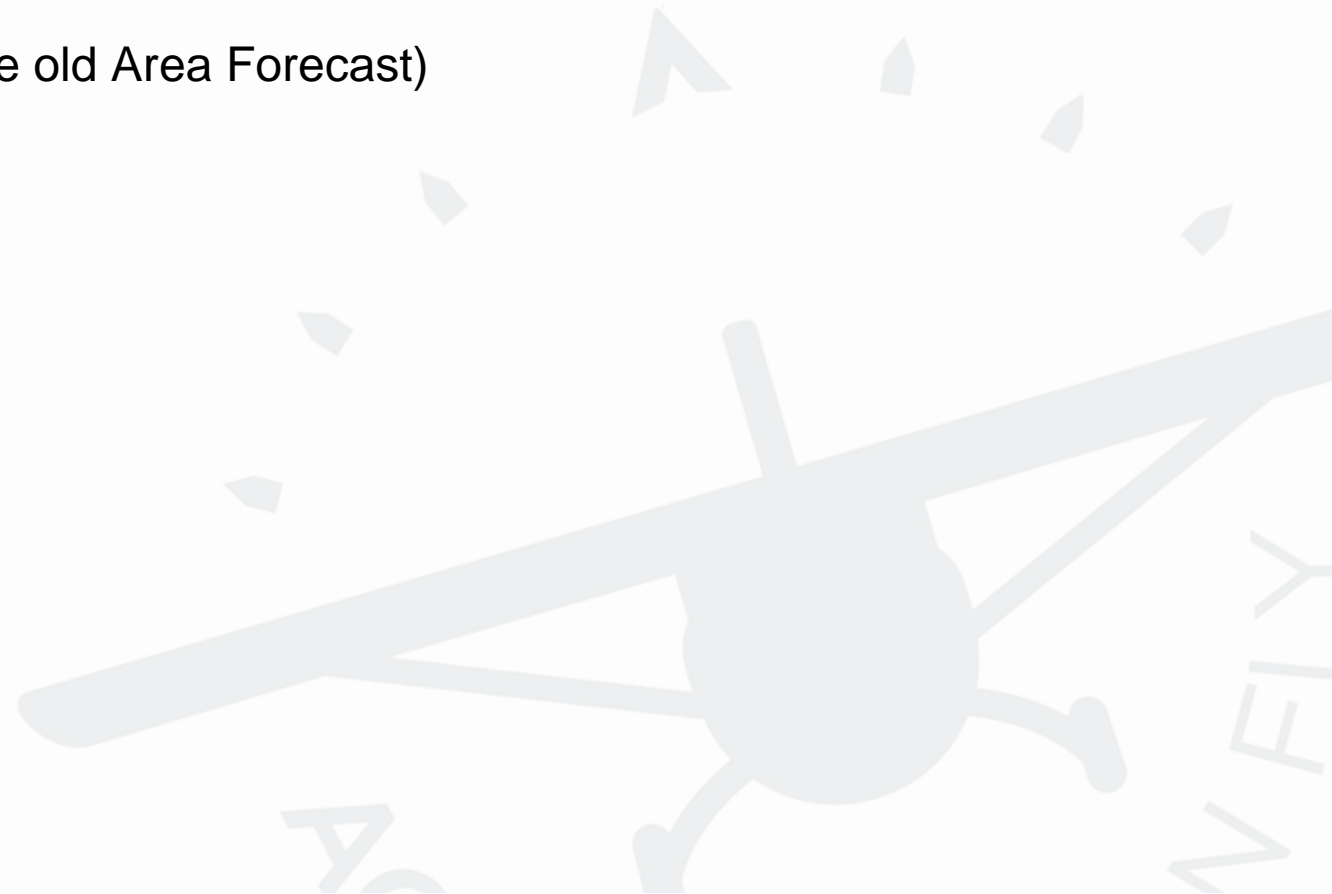


When it doesn't work out: <https://www.youtube.com/watch?v=OVM3RRd1vf0>



Pre-Flight Tools

- Big picture – graphical tools
 - ✓ Aviation Weather Center (AWC)
 - ✓ National Weather Service (NWS)
 - ✓ Graphical Aviation Forecast (replaces the old Area Forecast)
- Pre-flight briefing:
 - ✓ Flight Service - 1800WXBRIEF.com
 - ✓ Favorite EFB
 - ✓ Area briefing
 - ✓ Route briefing
 - ✓ AOPA Weather
- Then...call a briefer
 - ✓ 1-800-WXBRIEF
 - ❖ Driving off a cliff not recommended
 - ❖ So, VFR not recommended...?
- No-Go/Go? (Baseline is to no-go)



Hangar-Talk Myths Busted #1:

Does the self-briefing need to be recorded or documented by the automation site(s) I use?

- There is no FAA requirement for a self-brief to be recorded
- If you prefer to have your self-briefing preparation recorded, consider using the Route Brief functionality on [1800wxbrief.com](https://www.1800wxbrief.com)
- Third-party applications may also offer recorded briefing functionality

Draft ICAO Domestic

Recent Flight Plans Favorite Flight Plans Save as Favorite

* Click field names for help

Aircraft ID N781GG	Flight Rule [v]	Flight Type (Optional) [v]	No. of Aircraft 1	Aircraft Type C162	Wake Turbulence L
Aircraft Equipment SBDGR	Departure [v]	Airport Info Area Brief	Departure Date & Time 08/10/2024 HHMM UTC	Evaluate	Cruising Speed N0085
Level [v]	Optimize	Surveillance Equipment EB2U2	Route of Flight DCT	Map	Plan
Other Information (Optional) PBN/A1B2C2D2S1 CODE/AA45DC			Destination [v]	Airport Info Area Brief	Est Elapsed Time HHMM Calculate
Alternate 2 (Optional) [v]			Fuel Endurance HHMM	Persons on Board [v]	Aircraft Color & Markings (Optional) W:R
Survival Equipment <input type="checkbox"/> Polar <input type="checkbox"/> Desert <input type="checkbox"/> Maritime <input type="checkbox"/> Jungle			Jackets <input type="checkbox"/> Light <input type="checkbox"/> Fluorescent <input type="checkbox"/> UHF <input type="checkbox"/> VHF	Dinghies (Optional) Number Capacity Color Covered	Pilot Contact Information BATEMAN, STEPHEN, (402)200-8930

Emergency Radios
 UHF
 VHF
 ELBA

Route Brief File NavLog Return Flight Plan Next Leg Clear



Hangar-Talk Myths Busted #2:

If I use graphical tools (GFA, interactive maps) to conduct preflight planning, do I still need to use the “route briefing” functionality on the website or app that provides a full textual briefing?

- Full textual (i.e., route briefing) functionality is not required to be used
- The goal is to conduct a comprehensive preflight self-briefing; if you have done this (i.e., covered all the checklist items) using the graphical tools, you do not need to use full textual briefing functionality
- However, the route briefing functionality is a good idea as a double check that you have not missed something in your own workflow



Hangar-Talk Myths Busted #3:

If I conduct a self-brief and still decide to call Flight Service, will they know what I have done online?

- YES, if you have used 1800wxbrief.com and requested a route briefing
- YES, if you have used a third-party application that links to your 1800wxbrief.com account and uses an approved route briefing product*
- NO, if you have used just the graphical functionality on 1800wxbrief.com or third-party sites

Doing a Route Briefing may shorten your wait time when calling FSS



So, why not just do it?



Welcome STEPHEN C BATEMAN

Mon Aug 08 15:16:51 EDT | 19:16:51 Z

Draft
ICAO Domestic

Recent Flight Plans
Favorite Flight Plans
Save as Favorite

* Click field names for help

Aircraft ID N761GG	Flight Rule VFR	Flight Type G	No. of Aircraft 1	Aircraft Type C152	Wake Turbulence L	Aircraft Equipment SBDGR
Departure KFDK		Departure Date & Time 08/08/2022 1700 EDT		Cruising Speed N0085	Level A035	Surveillance Equipment EB2U2
Route of Flight DCT			Other Information (Optional) PBN/A1B2C2D2S1 CODE/AA45DC			
Destination KLNS		Est Elapsed Time HHMM		Alternate 1 (Optional)		Alternate 2 (Optional)
Fuel Endurance 0400	Persons on Board 2	Aircraft Color & Markings (Optional) W:R		Supplemental Remarks (Optional)		Pilot In Command (Optional)
Emergency Radios <input type="checkbox"/> UHF <input checked="" type="checkbox"/> VHF <input type="checkbox"/> ELBA	Survival Equipment <input type="checkbox"/> Polar <input type="checkbox"/> Desert <input type="checkbox"/> Maritime <input type="checkbox"/> Jungle	Jackets <input type="checkbox"/> Light <input type="checkbox"/> Fluorescent <input type="checkbox"/> UHF <input type="checkbox"/> VHF	Dinghies (Optional)		Pilot Contact Information BATEMAN, STEPHEN, (402)200-8930	

Route Brief
File
NavLog
Return Flight Plan
Next Leg
Clear



Welcome STEPHEN C BATEMAN

Mon Aug 08 15:13:03 EDT | 19:13:03 Z

Draft
ICAO Domestic

Recent Flight Plans
Favorite Flight Plans
Save as Favorite

* Click field names for help

Aircraft ID N761GG	Flight Rule VFR	Flight Type G	No. of Aircraft 1	Aircraft Type C152	Wake Turbulence L	Aircraft Equipment SBDGR
Departure KFDK		Departure Date & Time 08/08/2022 1700 EDT		Cruising Speed N0085	Level A035	Surveillance Equipment EB2U2
Route of Flight DCT			Other Information (Optional) PBN/A1B2C2D2S1 CODE/AA45DC			
Destination KLNS		Est Elapsed Time HHMM		Alternate 1 (Optional)		Alternate 2 (Optional)
Fuel Endurance 0400	Persons on Board 2	Aircraft Color & Markings (Optional) W:R		Supplemental Remarks (Optional)		Pilot In Command (Optional)
Emergency Radios <input type="checkbox"/> UHF <input checked="" type="checkbox"/> VHF <input type="checkbox"/> ELBA	Survival Equipment <input type="checkbox"/> Polar <input type="checkbox"/> Desert <input type="checkbox"/> Maritime <input type="checkbox"/> Jungle	Jackets <input type="checkbox"/> Light <input type="checkbox"/> Fluorescent <input type="checkbox"/> UHF <input type="checkbox"/> VHF	Dinghies (Optional)		Pilot Contact Information BATEMAN, STEPHEN, (402)200-8930	

Route Brief
File
NavLog
Return Flight Plan
Next Leg
Clear

Briefing Customization
ICAO Domestic

Recent Flight Plans
Favorite Flight Plans
Save as Favorite

* Click field names for help

Aircraft ID N761GG	Flight Rule VFR	Flight Type G	No. of Aircraft 1	Aircraft Type C152	Wake Turbulence L	Aircraft Equipment SBDGR
Departure KFDK		Departure Date & Time 08/08/2022 1700 EDT		Cruising Speed N0085	Level A035	Surveillance Equipment EB2U2
Route of Flight DCT			Other Information (Optional) PBN/A1B2C2D2S1 CODE/AA45DC			
Destination KLNS		Est Elapsed Time HHMM		Alternate 1 (Optional)		Alternate 2 (Optional)
Fuel Endurance 0400	Persons on Board 2	Aircraft Color & Markings (Optional) W:R		Supplemental Remarks (Optional)		Pilot In Command (Optional)
Emergency Radios <input type="checkbox"/> UHF <input checked="" type="checkbox"/> VHF <input type="checkbox"/> ELBA	Survival Equipment <input type="checkbox"/> Polar <input type="checkbox"/> Desert <input type="checkbox"/> Maritime <input type="checkbox"/> Jungle	Jackets <input type="checkbox"/> Light <input type="checkbox"/> Fluorescent <input type="checkbox"/> UHF <input type="checkbox"/> VHF	Dinghies (Optional)		Pilot Contact Information BATEMAN, STEPHEN, (402)200-8930	

Route Brief
File
NavLog
Return Flight Plan
Next Leg
Clear

Briefing Type: Standard | Abbreviated | Outlook

Route Settings:

Briefing Corridor: 50 nm

Winds Aloft Corridor: 200 nm

Briefing Output Settings:

Include Graphics

Plain Text Translations

Include NextGen Content

Briefing Content Filters:

Include Evaluate Departure Time Details [What's this?](#)

For briefings > FL180 only include Dep & Dest METARs & TAFs

Only include most recent METARs

Only include Graphical Forecast Products for departure time

Only include Winds Aloft for altitudes within 4000ft of filed altitude

Only include En Route Obstruction NOTAMs above the filed altitude minus 1000ft

Include En Route NAV NOTAMs:

DME NDB VOR VOR-DME

ILS TACAN VORTAC Other

Include FDC NOTAMs: [What's this?](#)

AIRSPACE DATA IAP ROUTE SID STAR

CHART DVA ODP SECURITY SPECIAL VFP

Include Optional Briefing Products:

Flow Control Messages NHC Bulletins State Department NOTAMs

Military NOTAMs Non-Location FDC NOTAMs

Web Briefing | PDF Briefing | Email Briefing | Cancel



Route Briefing Using Foreflight “Flights”

KOSH to O69
Mon Aug 8, 9:25 PM CDT

Send To Map Share Delete Show Map

DIST 1,603 nm ETE 15h01m ETA (PDT) 10:25 am FLIGHT FUEL 185 g WIND 3 kts head

Calculated a minute ago Refresh

Navlog Briefing 0 New Msg

OVERVIEW

Date	Time (CDT)	Departure	Destination	Alternate	Aircraft
08/08/2022	9:25 PM	KOSH	O69	Optional	N716ER (AA5)

Performance Profile
Steve1 (Default)

ROUTE

Route
KCHU KOTG KICR KDGW KLGU KBMC 40.741/-112.696 KENV KEKO KBAM KLOL KTRK KAUN

Altitude 6,500 Flight Rules VFR

DESTINATION SERVICES

FBO
Petaluma Municipal Airport

122.7 UNICOM / \$7.40/gal

FLIGHT LOG

Fuel at Shutdown (g) 0 Times Optional

Add Next Flight Copy Delete

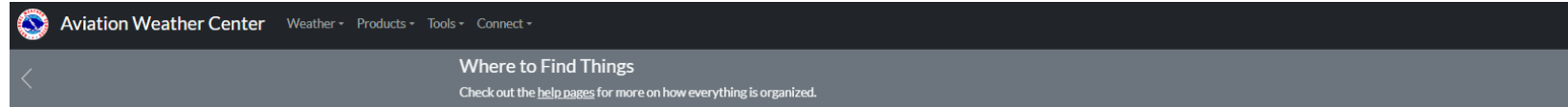
Route Briefing



Route



Aviation Weather Center—AWC



<https://aviationweather.gov/>

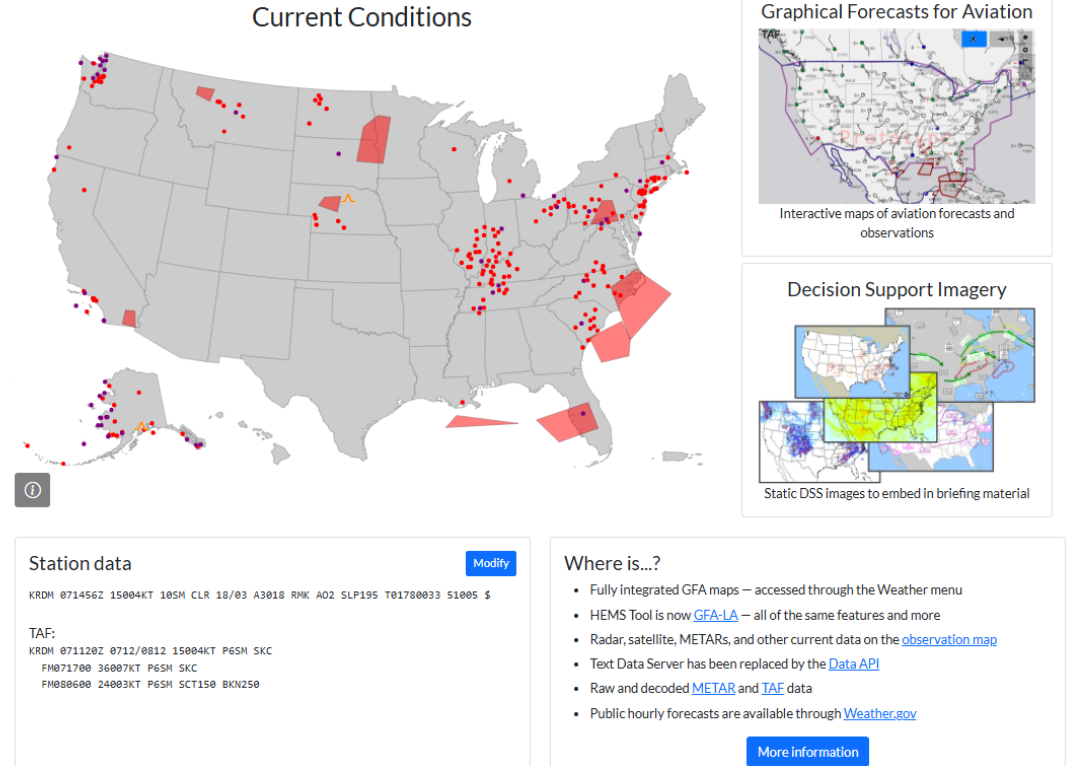
Amazing!

One stop shop for official weather

Lots of graphical renderings

“A picture is worth a thousand contractions”

Past, present and future



Current Conditions

Graphical Forecasts for Aviation
Interactive maps of aviation forecasts and observations

Decision Support Imagery
Static DSS images to embed in briefing material

Station data [Modify](#)

KRDH 071456Z 15004KT 10SM CLR 18/03 A3018 RMK AO2 SLP195 T01780033 51005 \$

TAF:
KRDH 071120Z 0712/0812 15004KT P6SM SKC
FM071700 36007KT P6SM SKC
FM080600 24003KT P6SM SCT150 BKN250

Where is...?

- Fully integrated GFA maps – accessed through the Weather menu
- HEMS Tool is now [GFA-LA](#) – all of the same features and more
- Radar, satellite, METARs, and other current data on the [observation map](#)
- Text Data Server has been replaced by the [Data API](#)
- Raw and decoded [METAR](#) and [TAF](#) data
- Public hourly forecasts are available through [Weather.gov](#)

[More Information](#)



Aviation Weather Center—AWC



Aviation Weather Center

Weather ▾ Products ▾ Tools ▾ Connect ▾

Observations

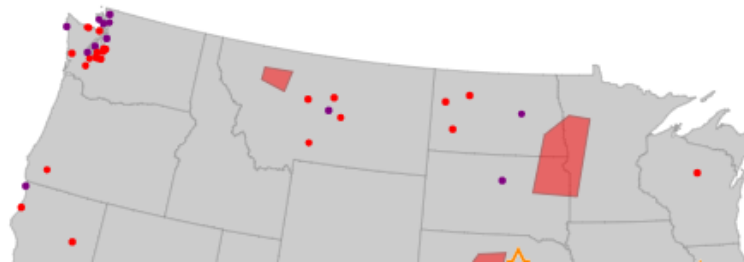
FORECAST

- Ceiling & Visibility
- Clouds
- Precipitation
- Thunderstorms
- Temperature
- Winds
- Turbulence
- Icing

Current Weather

Visit the [observation map](#) to view METARs, PIREPs, fronts, and more

Current Conditions



Federal Aviation
Administration

Aviation Weather Center—AWC

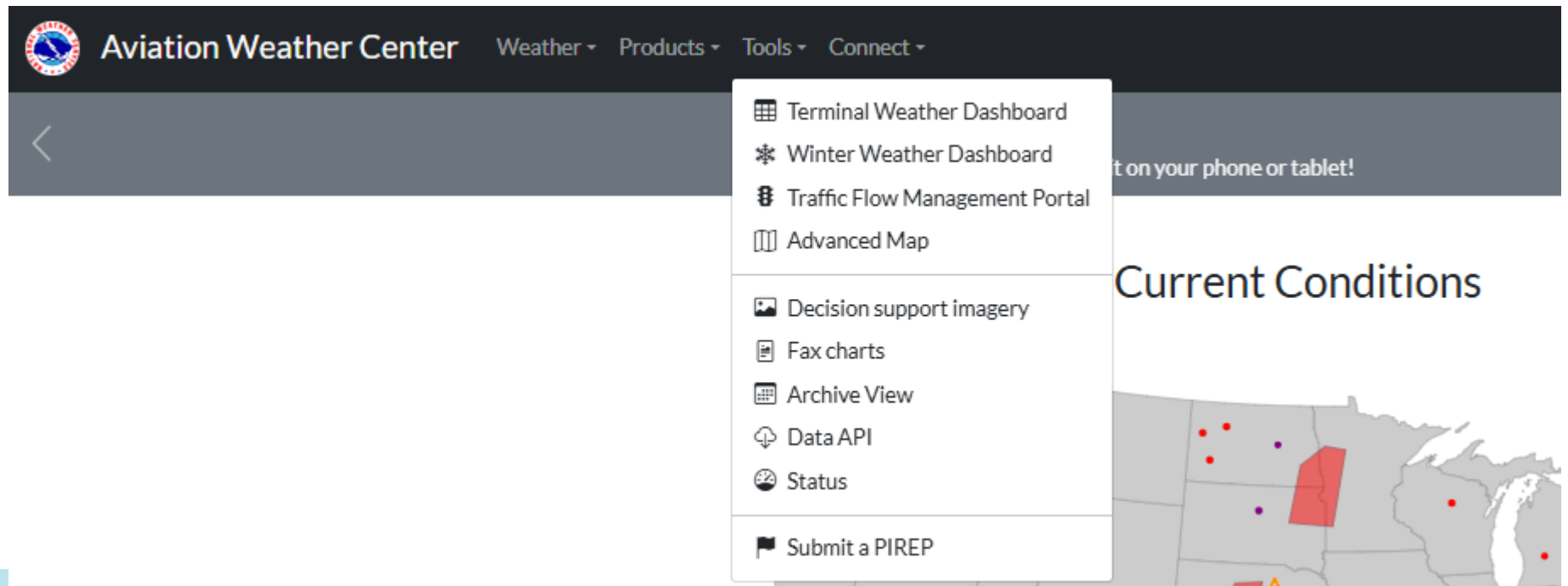
The screenshot displays the Aviation Weather Center (AWC) website interface. At the top left is the AWC logo, followed by the text "Aviation Weather Center" and a navigation menu with items: "Weather", "Products", "Tools", and "Connect". Below the navigation bar is a dark grey banner with a left-pointing arrow and the text "...er on the go -- try it on your phone or tablet!". A white dropdown menu is open, listing various data products and services:

- ◆ SIGMET
- △ G-AIRMET
- 📍 Center Weather Adv
- 📄 Prog charts
- 📄 TAF map
- 🗣️ Forecast Discussions
- 📄 METAR data
- 📄 TAF data
- 📄 PIREP data
- 📄 Wind/temp data
- 📄 ITWS data
- 🌐 WAFS grids
- ☁️ TFM Convective Forecasts

To the right of the menu is a map titled "Current Conditions" showing the United States with various weather symbols and shaded regions. The map includes red and purple dots, orange triangles, and red shaded areas, primarily concentrated in the central and eastern parts of the country.



Aviation Weather Center—AWC

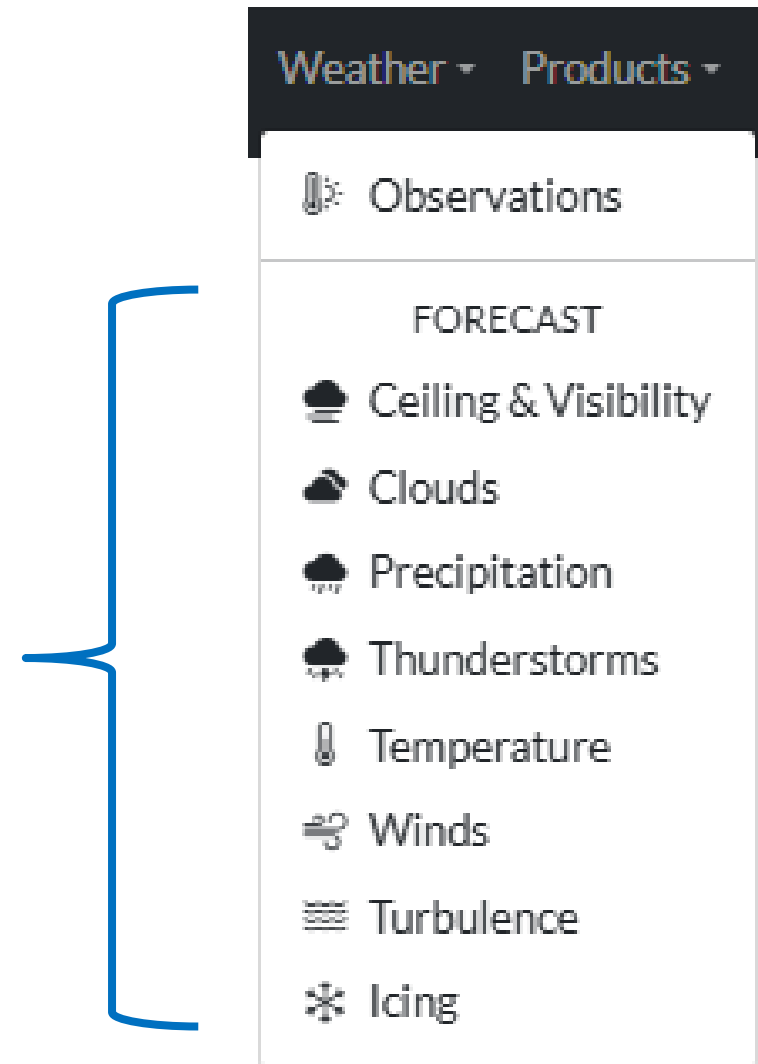


The screenshot shows the Aviation Weather Center website interface. At the top left is the AWC logo, followed by the text "Aviation Weather Center". To the right are navigation links: "Weather", "Products", "Tools", and "Connect". Below the navigation bar is a dark grey banner with a left-pointing arrow and the text "View this content on your phone or tablet!". A dropdown menu is open, listing the following options: "Terminal Weather Dashboard", "Winter Weather Dashboard", "Traffic Flow Management Portal", "Advanced Map", "Decision support imagery", "Fax charts", "Archive View", "Data API", "Status", and "Submit a PIREP". To the right of the menu, the text "Current Conditions" is visible above a map of the United States, which shows a red shaded area in the central region and several red and purple dots.

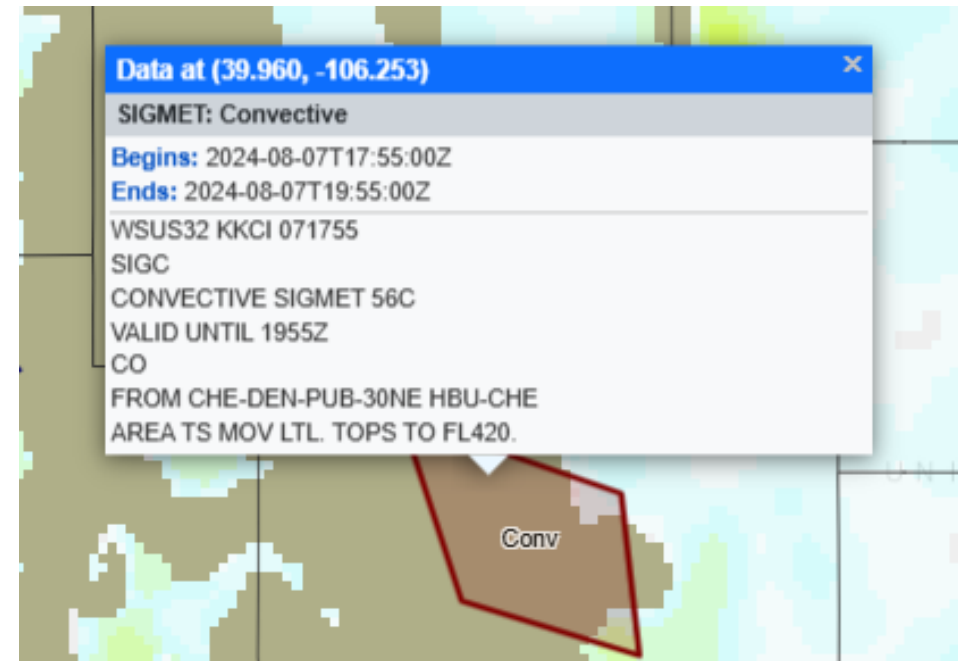
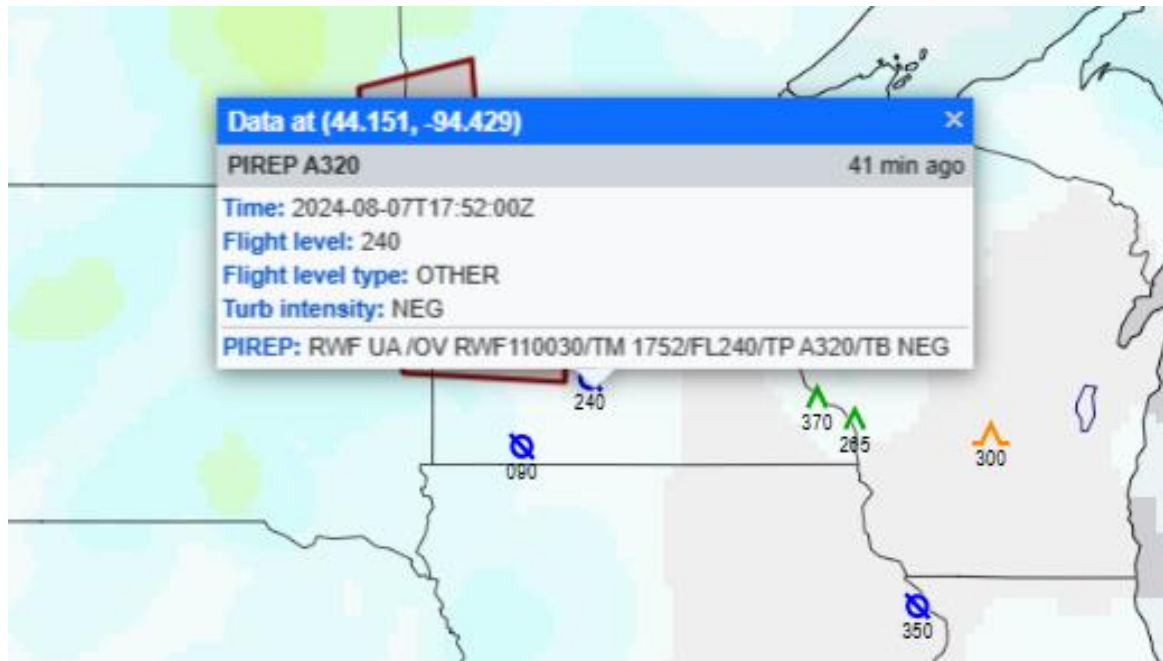


Forecast GFA (BTSSB)

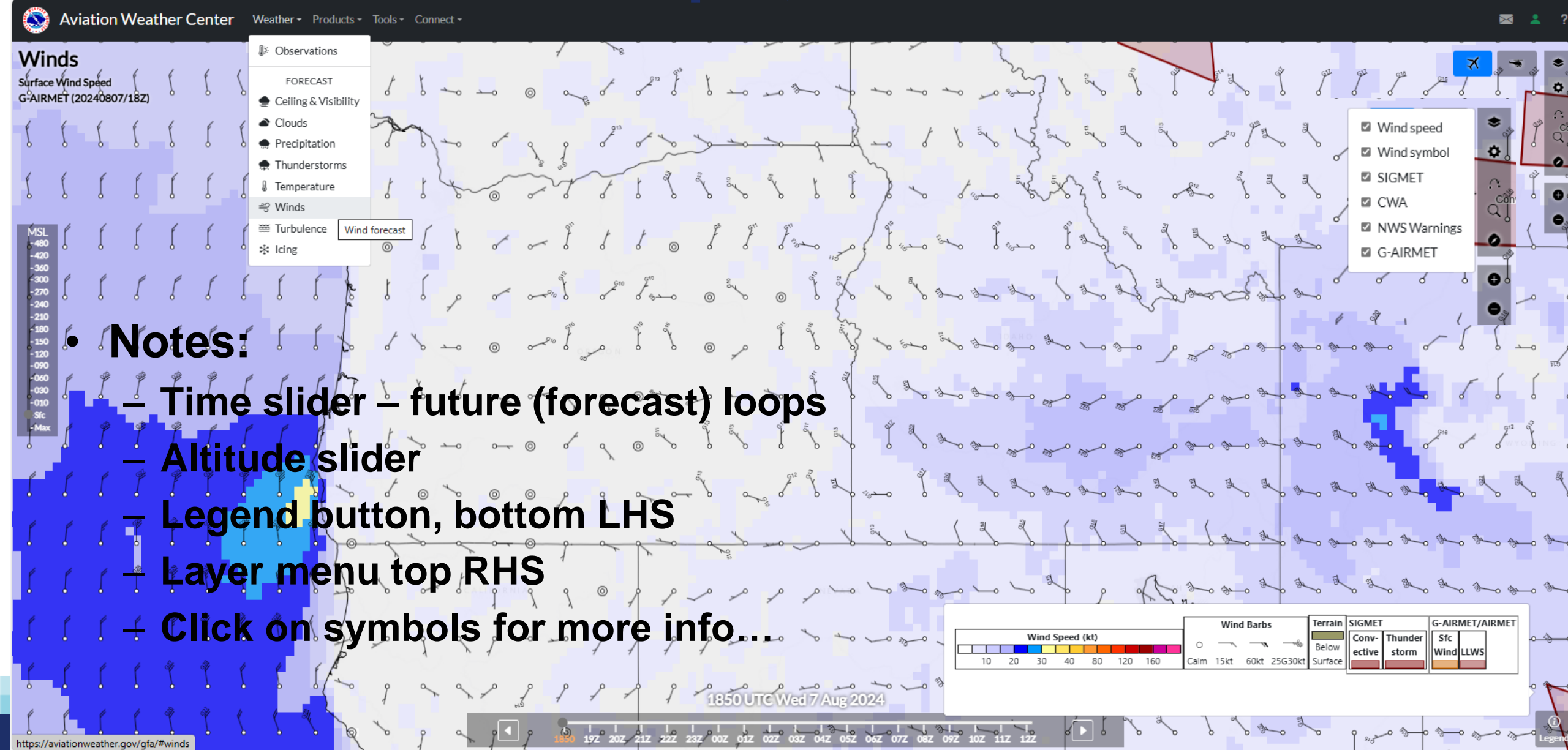
- **Graphical Forecast for Aviation**
 - Previously Graphical Area Forecast
- **Now fully integrated in AWC via the “Weather -> Forecast” menu...all forecast products**



Forecast GFA – Example, Turbulence:



Forecast GFA – Example, Wind:

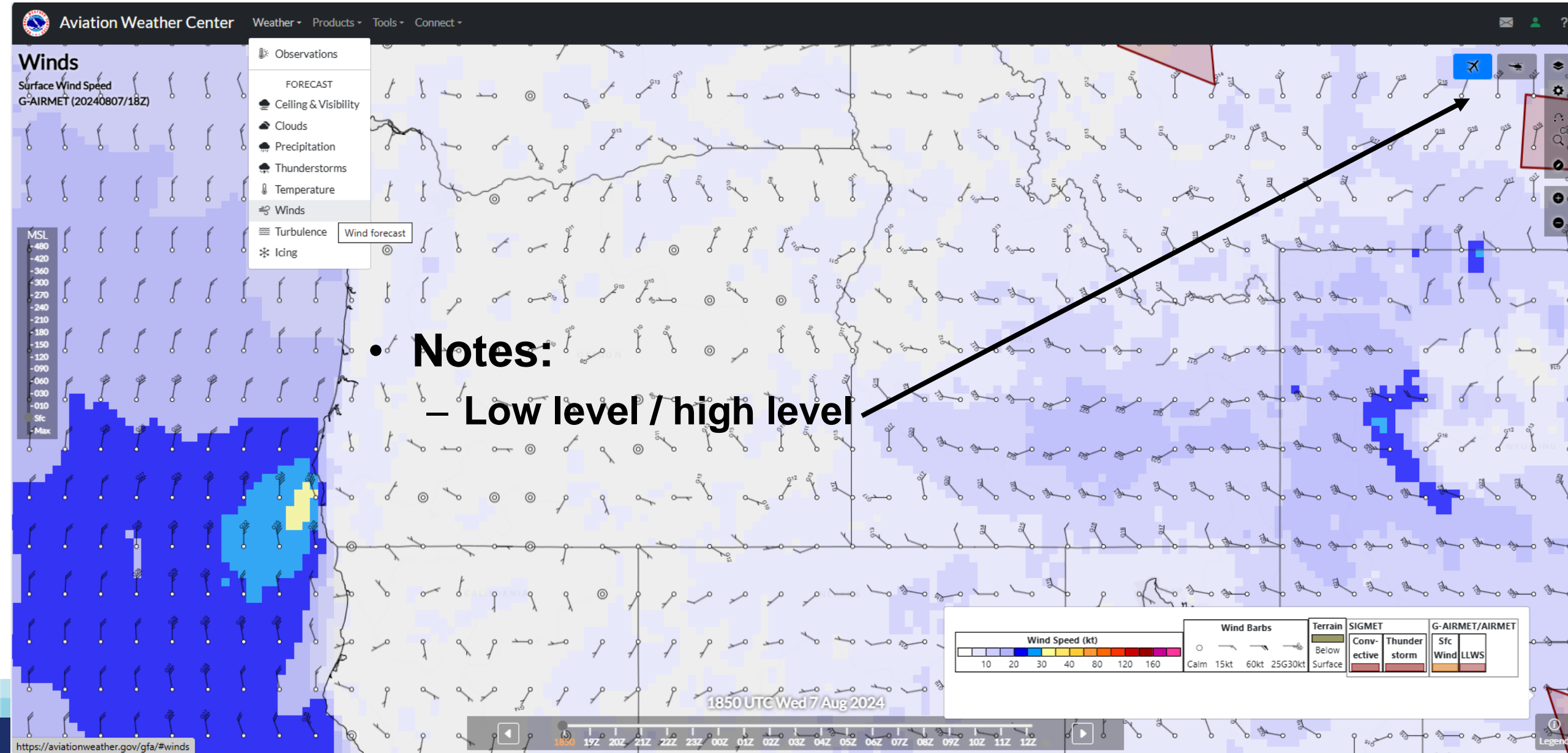


- **Notes:**
 - Time slider – future (forecast) loops
 - Altitude slider
 - Legend button, bottom LHS
 - Layer menu top RHS
 - Click on symbols for more info...

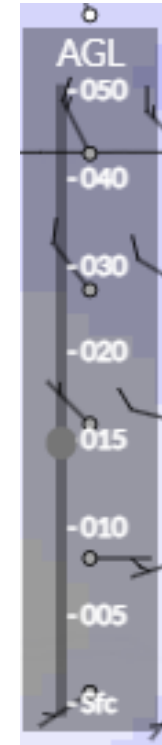
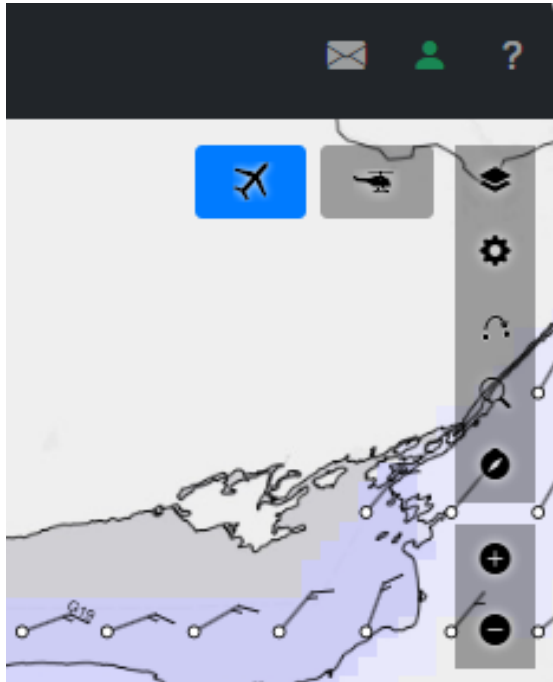
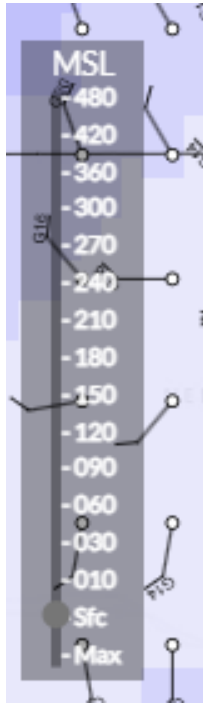
<https://aviationweather.gov/gfa/#winds>



Forecasts GFA – Example, Wind:



Forecast GFA – Example, Wind:

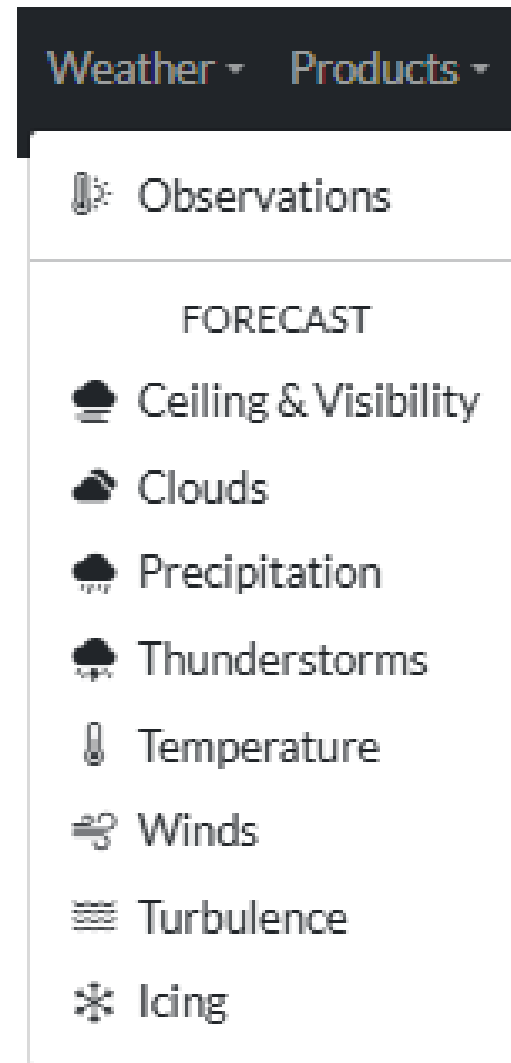


- **Notes:**
 - Airplane = high level;
 - Helicopter = low level



AWC Observations

- Observations under “Weather -> Observations”



Observations Page:

Observations
Flight Category
Satellite IR (20240807/1820Z)
Radar composite refl (20240807/1840Z)

Data at (44.242, -121.187)

METAR: KRDM (Redmond Muni, OR, US) 51 min ago
KRDM 071756Z 00000KT 10SM CLR 28/03 A3015 RMK AO2
SLP184 T02780033 10278 20083 58010 \$ [more](#)

Flight cat: KRDM (Redmond Muni, OR, US) 51 min ago
Visibility: 10+ sm

METAR: KRDM 071756Z 00000KT 10SM CLR 28/03 A3015 RMK AO2
SLP184 T02780033 10278 20083 58010 \$

- Infrared
- Radar Composite
- Flight category
- METAR
- Flight Cat Dots
- PIREP
- Fronts
- SIGMET
- CWA
- NWS Warnings
- G-AIRMET
- G-AIRMET
 - IFR
 - Mtn obs
 - LLWS
 - Sfc wind
 - Freezing lv
 - Turb high
 - Turb low
 - Icing

Notes:

- Time slider - goes back in time (loops)
- Legend button, bottom LHS
- Layer menu top RHS
- Note pull downs for selections
- Click on symbols for more info...

Temp: 36 Wx: 998 Vis: 9 Dew: 33 Wind: 030 Gust: 998 Altim: 24 Cdg: 998 KJLJ Weather Symbols	Flight Cat LIFR IFR MVFR VFR non-ceiling clouds below 3000 ft All Symbols	PIREP Turb: NIL LGT MOD SEV LLWS NIL Ice: NIL LGT MOD SEV Other: 024	Radar (dBZ) 5 15 25 35 45 55 65	Radar Echo Tops (kft) 5 15 25 35 45 55 65	Flight Cat LIFR IFR MVFR	Terrain Below Surface
--	--	--	---	---	------------------------------------	---------------------------------



NWS Site:

- <https://www.weather.gov/>
- Amazing website
- So much data and so many tools
- Spend lots of time on this site!

NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME FORECAST PAST WEATHER SAFETY INFORMATION EDUCATION NEWS SEARCH ABOUT

Local forecast by "City, St" or ZIP code
Enter location ...
[Location Help](#)

DEBBY UPDATES

ACTIVE ALERTS FORECAST MAPS RADAR RIVERS, LAKES, RAINFALL AIR QUALITY SATELLITE PAST WEATHER

Created: 08/07/24 at 21:20 UTC

Click on the map above for detailed alerts or [Public Alerts in XML/CAP v1.2 and ATOM Formats](#)

Severe Thunderstorm Warning	Severe Thunderstorm Watch	Dense Fog Advisory	Flood Watch
Flash Flood Warning	Red Flag Warning	Small Craft Advisory	Excessive Heat Watch
Severe Weather Statement	Tropical Storm Watch	Hazardous Seas Warning	Special Weather Statement
Special Marine Warning	Hurricane Local Statement	Lake Wind Advisory	Marine Weather Statement
Tropical Storm Warning	Heat Advisory	Rip Current Statement	Beach Hazards Statement
Flood Warning	Flood Advisory	Gale Watch	Air Quality Alert
Excessive Heat Warning	Coastal Flood Advisory	Coastal Flood Watch	
Tornado Watch	High Surf Advisory		

NWS Site:

- Enter airport ID
- Click here

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME FORECAST PAST WEATHER SAFETY INFORMATION EDUCATION NEWS SEARCH ABOUT

S39 Go

View Location Examples

Your local forecast office is [Pendleton, OR](#)

Current conditions at **Prineville Airport (KS39)**
Lat: 44.287°N Lon: 120.9038°W Elev: 3250.0ft

Clear **86°F**
30°C

Humidity 9%
Wind Speed N 4 MPH
Barometer 30.1 in (1019.3 mb)
Dewpoint 23°F (-5°C)
Visibility 10.00 mi
Heat Index 83°F (28°C)
Last update 07 Aug 02:35 PM PDT

More Information:
[Local Forecast Office](#)
[More Local Wx](#)
[3 Day History](#)
[Hourly Weather Forecast](#)

Extended Forecast for **3 Miles WSW Prineville OR**

This Afternoon	Tonight	Thursday	Thursday Night	Friday	Friday Night	Saturday	Saturday Night	Sunday
High: 90 °F	Low: 56 °F	High: 90 °F	Low: 57 °F	High: 91 °F	Low: 52 °F	High: 88 °F	Low: 51 °F	High: 87 °F
Haze	Haze	Haze	Haze	Sunny	Mostly Clear	Sunny	Mostly Clear	Sunny

Detailed Forecast

Time	Forecast
This Afternoon	Widespread haze. Mostly sunny, with a high near 90. North wind around 9 mph.
Tonight	Widespread haze. Mostly cloudy, with a low around 56. North wind 5 to 10 mph becoming light and variable in the evening.
Thursday	Widespread haze. Mostly sunny, with a high near 90. Calm wind becoming northwest 5 to 9 mph in the afternoon.
Thursday Night	Widespread haze. Partly cloudy, with a low around 57. North wind 8 to 11 mph becoming light and variable after midnight.
Friday	Sunny, with a high near 91. Light and variable wind becoming northwest 5 to 10 mph in the afternoon.
Friday Night	Mostly clear, with a low around 52.
Saturday	Sunny, with a high near 88.
Saturday Night	Mostly clear, with a low around 51.
Sunday	Sunny, with a high near 87.
Sunday Night	Partly cloudy, with a low around 50.
Monday	Sunny, with a high near 83.
Monday Night	Mostly clear, with a low around 45.

Topographic
Click Map For Forecast

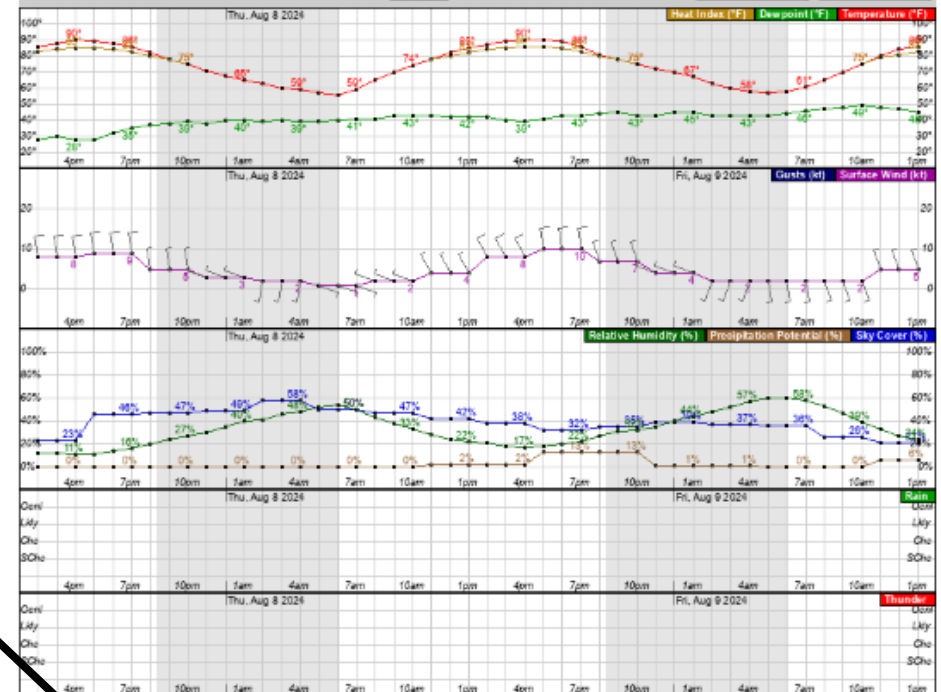
Point Forecast: 3 Miles WSW Prineville OR
44.29N 120.9W (Elev. 3225 ft)

Last Update: 2:47 pm PDT Aug 7, 2024

Hourly Weather Forecast Graph

<input checked="" type="checkbox"/> Temperature (°F) <input checked="" type="checkbox"/> Dewpoint (°F) <input checked="" type="checkbox"/> Heat Index (°F) <input checked="" type="checkbox"/> Surface Wind (kt) <input checked="" type="checkbox"/> Sky Cover (%) <input checked="" type="checkbox"/> Precipitation Potential (%) <input checked="" type="checkbox"/> Relative Humidity (%)	<input checked="" type="checkbox"/> Rain <input checked="" type="checkbox"/> Thunder <input type="checkbox"/> Fog	<input type="checkbox"/> Mixing Height (x100ft) <input type="checkbox"/> Haines Index <input type="checkbox"/> Lightning Activity Level <input type="checkbox"/> Trans. Wind (kt)
--	---	--

48-Hour Period Starting: 2pm Wed, Aug 7 2024 [Submit] [Back 2 Days] [Forward 2 Days]



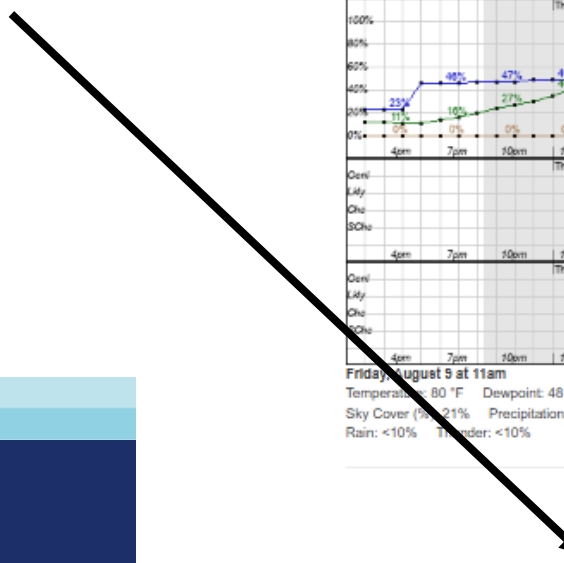
Friday, August 9 at 11am
 Temperature: 80 °F Dewpoint: 48 °F Heat Index: 79 °F Surface Wind: N 5kt
 Sky Cover (%): 21% Precipitation Potential (%): 6% Relative Humidity (%): 33%
 Rain: <10% Thunder: <10%

Additional Forecasts & Information

- [International System of Units](#)
- [Forecast Discussion](#)
- [7-Day Forecast](#)
- [Tabular Forecast](#)
- [Climate Information](#)
- [How do I read this?](#)
- [Sunrise - Sunset](#)
- [User Defined Area](#)

Meteogram

- Local by hour forecasts from NWS site
- More interesting stuff here:



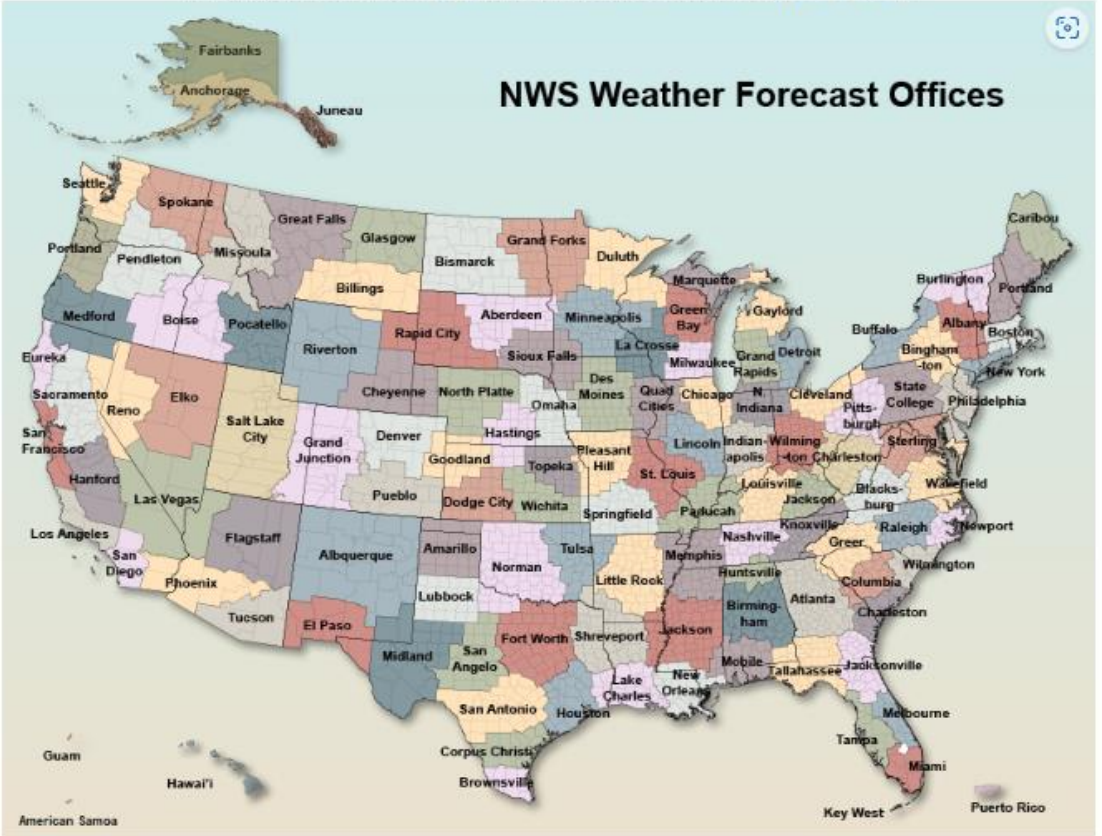
Local forecast by "City, St" or ZIP code
Enter location ...
[Location Help](#)

Excessive Rainfall Along the Mid-Atlantic into the Northeast; Excessive Heat Concerns

Tropical moisture from Debby will track northward with excessive rainfall potential from the Carolina's and eventually into the Northeast corridor. Gusty winds will accompany the track of Debby as this storm tracks northward through the first half of the weekend. Meanwhile, heat and fire weather concerns for the Intermountain West continues. For Puerto Rico and USVI, excessive heat into Thursday. [Read More >](#)

For the latest climate forecasts see the [Climate Prediction Center \(CPC\)](#) web page.

The map below is your portal to NWS Climate information. Select an area of interest and you will be directed to the local Weather Forecast Office page to access their climate data. [\[User Video \]](#)



National Weather Service Climate Prediction Center

Home Site Map News Organization
DOC NOAA NWS NCEP Centers: AWC CPC EMC NCO NHC OPC SPC SWPC WPC

Search the CPC

Climate News

- WPC-CPC Key Message (Issued 7 Aug 2024) - Potential Re-Emergence of Excessive Heat Across the Lower Mississippi Valley and Southern Plains Later Next Week
- ENSO-neutral is expected to continue for the next several months, with La Niña favored to emerge during August-October (70% chance) and persist into the Northern Hemisphere winter 2024-25 (79% chance during November-January) (11 July 2024)

Click on product title to go to product page. Move cursor over product parameter name to display the graphic -- click to enlarge. Links to these same products are also available below.

6-10 Day Outlook (Interactive) Temperature Precipitation	One Month Outlook (Interactive) Temperature Precipitation
8-14 Day Outlook (Interactive) Temperature Precipitation	Three Month Outlook (Interactive) Temperature Precipitation
Week 3-4 Outlooks Temperature Exp. Precipitation	8-14 Day U.S. Hazards Outlook Composite Probabilistic: Temp Precip Snow Wind
U.S. Drought Information Monitor Monthly Outlook Seasonal Outlook	Global Tropics Hazards Outlook Weeks 2 and 3

Seasonal Temperature Outlook
Valid: Aug-Sep-Oct 2024
Issued: July 18, 2024

Probability (Percent Chance):
Likely Above: 20-40%, 40-60%, 60-80%, 80-90%, 90-99%
Equal Chances: 20-40%, 40-60%, 60-80%, 80-90%, 90-99%
Likely Below: 20-40%, 40-60%, 60-80%, 80-90%, 90-99%

Seasonal Precipitation Outlook
Valid: Aug-Sep-Oct 2024
Issued: July 18, 2024

Probability (Percent Chance):
Likely Above: 20-40%, 40-60%, 60-80%, 80-90%, 90-99%
Equal Chances: 20-40%, 40-60%, 60-80%, 80-90%, 90-99%
Likely Below: 20-40%, 40-60%, 60-80%, 80-90%, 90-99%

Local Climate, Water & Weather Topics

<ul style="list-style-type: none"> U.S. Hazards Outlook U.S. Drought Information ENSO Diagnostic Discussion Climate-Weather Expert Assessments Products Expert Assessments Index 	<ul style="list-style-type: none"> Outlooks Products Outlooks Index Monitoring and Data Products Monitoring and Data Index El Niño/La Niña Stratosphere 	<ul style="list-style-type: none"> Pacific Islands International Partnerships Outreach CPC Information Contact Us
--	---	--

About Us
Vision & Mission
Who We Are

Contact Us
CPC Information
CPC Web Team



Storm Prediction Center

Current time (in UTC/GMT/Zulu): 22:16:14 [Site Map](#) [Organization](#) [About Us](#) [Mobile](#) [Feedback](#) [Local Forecast by ZIP](#)

Storm Prediction Center

N O A A / National Weather Service

[HOME](#) [NEWS](#) [SFC PRODUCTS](#) [WEATHER INFO](#) [FORECAST TOOLS](#) [RESEARCH](#) [OUTREACH](#) [NW&NCEP](#)

A Slight Risk of Severe Thunderstorms is Forecast Today and/or Tonight

Strong to severe thunderstorms capable of damaging gusts are possible across the central High Plains this afternoon and evening. A few tornadoes remain possible today and tonight across the coastal Carolinas.

» For additional details, see the latest [Day 1 Convective Outlook](#).

TROPICAL STORM DEBBY Related Information:

» Visit [National Hurricane Center](#) for comprehensive information

» Tornado Watch: [0610](#)

» Day 1 Outlook: [Day 1 Outlook](#)

Overview | **Conv. Outlook** | **Watches** | **MDs** | **Storm Reports** | **Mesoanalysts** | **Fire**

All Products | **Watches** | **MDs** | **Outlooks** | **Fire**

Day 3-8 Fire Weather Outlook
- Categorical Risk: No Areas
- Issued: 17 minutes ago

SEVERE THUNDERSTORM 0611
- Valid until: 08/08/2024 0400Z
- States affected: CO KS NE WY
- Issued: 08/07/2024 at 2015Z

Thunderstorm Outlook
- Issued: 08/07/2024 at 2008Z

TORNADO 0610
- Valid until: 08/08/2024 0300Z
- States affected: NC SC AM CW
- TROPICAL STORM DEBBY Related Watch
- Issued: 08/07/2024 at 2000Z

Day 1 Convective Outlook
- Categorical Risk: Slight
- Issued: 08/07/2024 at 1957Z

Day 2 Fire Weather Outlook

SFC DAY1 CONV OUTLOOK
ISSUED: 1957Z 08/07/2024
VALID: 072000Z-091200Z
FORECASTER: HANT
National Weather Service
Storm Prediction Center
Norman, Oklahoma

Hazard	Wed (08/07)	Thu (08/08)	Fri (08/09)	Sat (08/10)	Sun (08/11)	Mon (08/12)	Tue (08/13)	Wed (08/14)
Severe	Slight	Slight	Marginal	No Area	No Area	No Area	No Area	No Area
Fire	Elevated	Isa DryT	No Area	No Area	No Area	No Area	No Area	No Area

Severe Weather Climatology (1982-2011)
Severe Hail Probabilities: 07 Aug

Today's Storm Report Trend

Did You Know?
How's a Forecast Made?

How's a Forecast Made?

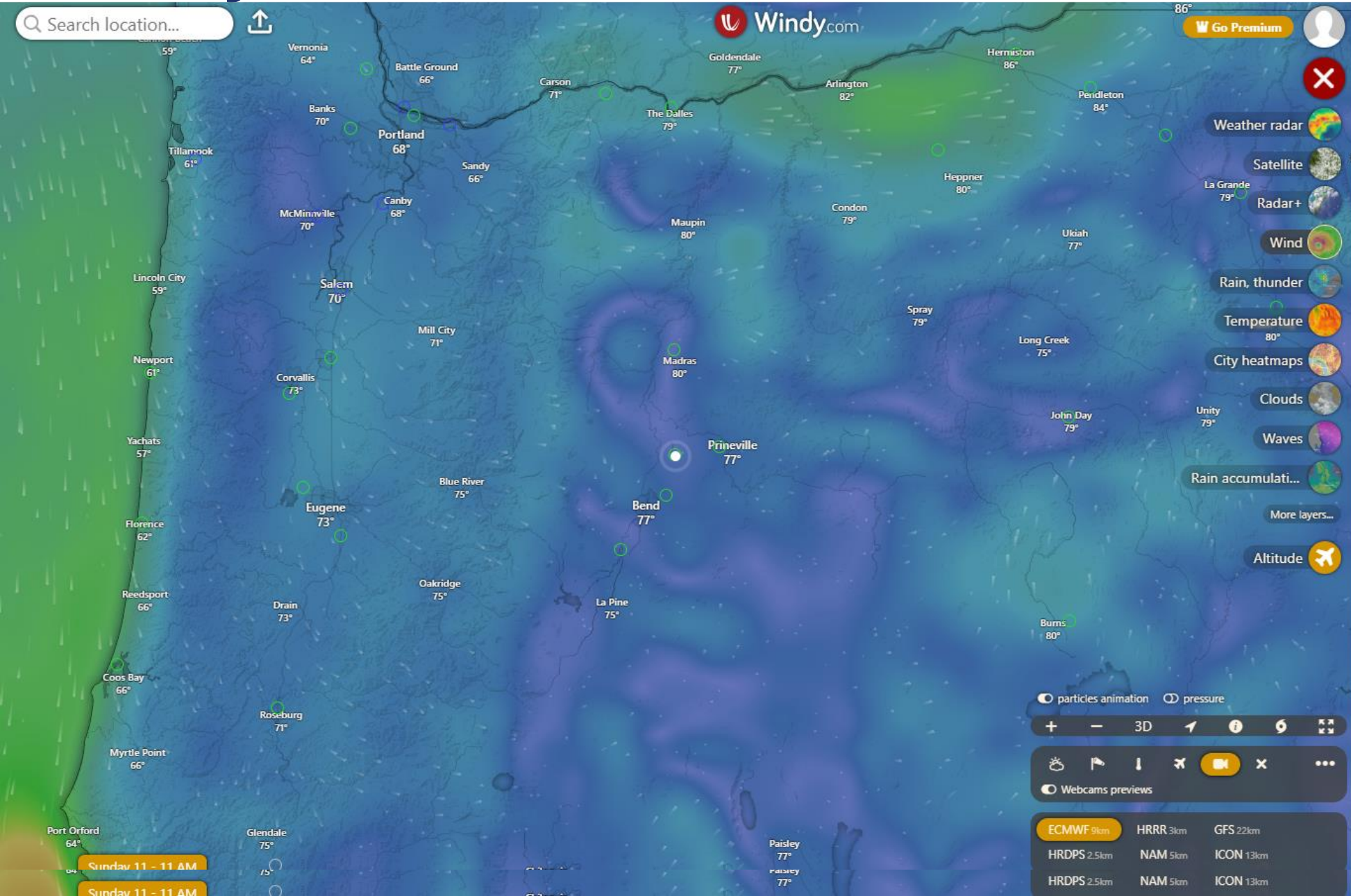
Forecast Tools
Tornado Environment Browser

2024 Watch Summaries

Page last modified: August 07 2024 12:27 UTC

Wildfire Climatology (1992-2015)
100 Acres Wildfire Probabilities: 07 Aug

<https://www.spc.noaa.gov/>



KRDM - RDM

Roberts Field

Rwys, info

METAR

Webcams

NOTAM

METAR

raw mode

1h 1m ago:

Wind calm. Visibility 10sm. No clouds under 12.000 ft. **VFR**

Temperature 26°C, dew point 7°C. Altimeter 30.05inHg. ASOS station.

Remark: AUTO AO2 SLP146 T02610072 10267 20122 58010 \$

2h 1m ago: **VFR**

3h 1m ago: **VFR**

4h 1m ago: **VFR**

5h 1m ago: **VFR**

TAF

Issued 1h 25m ago - all times local

From Sunday 11:00 till Monday 11:00:

Wind variable 5kt. Sky clear.

From Sunday 13:00:

Wind 330° 10kt. Sky clear.

From Sunday 16:00:

Wind 320° 14kt, gusting 21kt. Clouds few 25000ft.

From Sunday 22:00:

Wind variable 5kt. Clouds few 25000ft.

METEOGRAM

Windy (with Web Cams)

<https://www.windy.com/>

Search location...

Windy.com

Go Premium

Menu

Weather radar

Satellite

Radar+

Wind

Rain, thunder

Temperature

City heatmaps

Clouds

Waves

Rain accumulat...

Altitude

Pressure

Wednesday 7 - 3 PM

Wednesday 7

Thursday 8

Friday 9

Saturday 10

Sunday 11

Monday 12

Tuesday 13

Wednesday 14

Thursday 15

Friday 16

kt 0 5 10 20 30 40 60

Talking of Web Cams (Remote Observations)...

- **Started in Alaska in 1999**
- **Resulted in 85% reduction in weather-related accidents**
- **Some co-located with remote (off-airport) weather stations**
 - Remote AWOS
- **Cameras around mountain tops/ridges, passes, etc.**



Now Nationwide and In-filing: <https://weathercams.faa.gov/>

Federal Aviation Administration

WeatherCams Notices UTC:18:03 Local:11:03 Tutorials Submit F

Search

My Routes >

Basemap >

Cameras >

Airports >

METARs >

TAFs >

Advisory Weather >

AIRMETs >

SIGMETs >

PIREPs >

IR Satellite >

Radar >

RCOs >

NOTAMs (PilotWeb) >

TFRs >

53 VFR Planning >

48 IFR Enroute (Low) >

15 IFR Enroute (High) >

33 Terminal Area >

Data valid at 18:02:46z

Lots of Features and Layers: <https://weathercams.faa.gov/>

The screenshot displays the Federal Aviation Administration (FAA) WeatherCams website interface. The top navigation bar includes the FAA logo, the text "Federal Aviation Administration", and tabs for "WeatherCams", "Notices", and "UTC: 11". A search bar is located in the top left. The main map area shows a satellite view of Colorado with various weather and flight data layers overlaid. A sidebar on the left contains a list of layers, many of which are checked and highlighted in green:

- My Routes
- Basemap
- Cameras
- Airports
- METARs
- TAFs
- Advisory Weather
- AIRMETs
- SIGMETs
- PIREPs
- IR Satellite
- Radar
- RCOs
- NOTAMs (PilotWeb)
- TFRs
- VFR Planning
- IFR Enroute (Low)
- IFR Enroute (High)
- Terminal

The map shows various airports and weather stations across Colorado, including locations like Rawlins, Rock Springs, Green River, Vernal, Steamboat Springs, Fort Collins, Boulder, Fort Collins, Breckenridge, Colorado Springs, Pueblo, and Alamosa. Major highways (80, 25, 76, 70) are also visible. The text "COLORADO" is prominently displayed in the center of the map. A "Data valid at 1" label is visible in the top right corner of the map area.

Airports With WXCAM

<https://weathercams.faa.gov/>

Federal Aviation Administration | WeatherCams | Notices | UTC:18:19 Local:11:19 | Tutorials | Submit Feedback

Search []

My Routes | Basemap | Cameras | Airports | METARs | TAFs | Advisory Weather | AIRMETS | SIGMETs | PIREPs | IR Satellite | Radar | RCOs | NOTAMS (PilotWeb) | TFRs | VFR Planning | IFR Enroute (Low) | IFR Enroute (High) | Terminal Area

Data valid at 18:18:03z

Alexander (KANK) | UTC:18:19 Local:12:19 | Operated by: CDOT Aero

METAR KANK 141750Z AUTO 10010G16KT 10SM CLR A3058 RMK A01

Harriet Alexander Field (SW) | 18:10 08/14/23 (UTC) | 12:10 08/14/23 (MDT)

CLEARDAY VISUAL REFERENCE

Poncha Mountain 10,135' MSL 4.25 SM

Cleveland Mt 9620' MSL 4.5 SM

Site Elevation: 7450' MSL

Show Camera Loop

North (345°) | SouthEast (115°) | SouthWest (210°) | West (270°)

Weather Data | Weather Trends | PIREPs | Sectional | RCO | Airport Info | NOTAMS (PilotWeb)



Federal Aviation Administration

More options, here

Mtn. Pass with WXCAM

<https://weathercams.faa.gov/>

Federal Aviation Administration | WeatherCams | Notices | UTC:18:21 Local:11:21 | Tutorials | Submit Feedback

Search []

My Routes | Basemap | Cameras | Airports | METARs | TAFs | Advisory Weather | AIRMETs | SIGMETs | PIREPs | IR Satellite | Radar | RCOs | NOTAMS (PilotWeb) | TFRs | VFR Planning | IFR Enroute (Low) | IFR Enroute (High) | Terminal Area

Matchless Mountain | Americus | Buena Vista | Bald Mountain | KAEJ | Nathrop | Pikes Peak | Cascade-Chippita Park | Manitou Springs | Colorado Springs | Cimarron Hills

Abbeyville | Tincup | Mt Princeton | Fairview Peak | Mt Antero | Pitkin | Ohio City | Parlin | Whitepine | Monarch | Maysville | Poncha Springs | KANK | Cleora | Wellsville | Howard | Mears Junction | Alder | Coaldale | Cotopaxi | Saguache

Monarch Pass (MYP) | UTC:18:21 Local:12:21 | Operated by: CDOT Aero | METAR KMYP 141755Z AUTO 21010KT 10SM SCT044 SCT060 13/04 A3088 RMK A02

Monarch Pass (NE) | 12z14 03/14/23 (UTC) | 12z14 03/14/23 (MDT)

CLEARDAY VISUAL REFERENCE

Monarch Ridge North 11,844' MSL 2.5 SM
Mount Shavano 14,229' MSL 9.5 SM
Site Elevation: 11918' MSL

FAA advisory weather product

Show Camera Loop

NorthEast (34°) | SouthEast (117°) | SouthWest (223°) | NorthWest (293°)

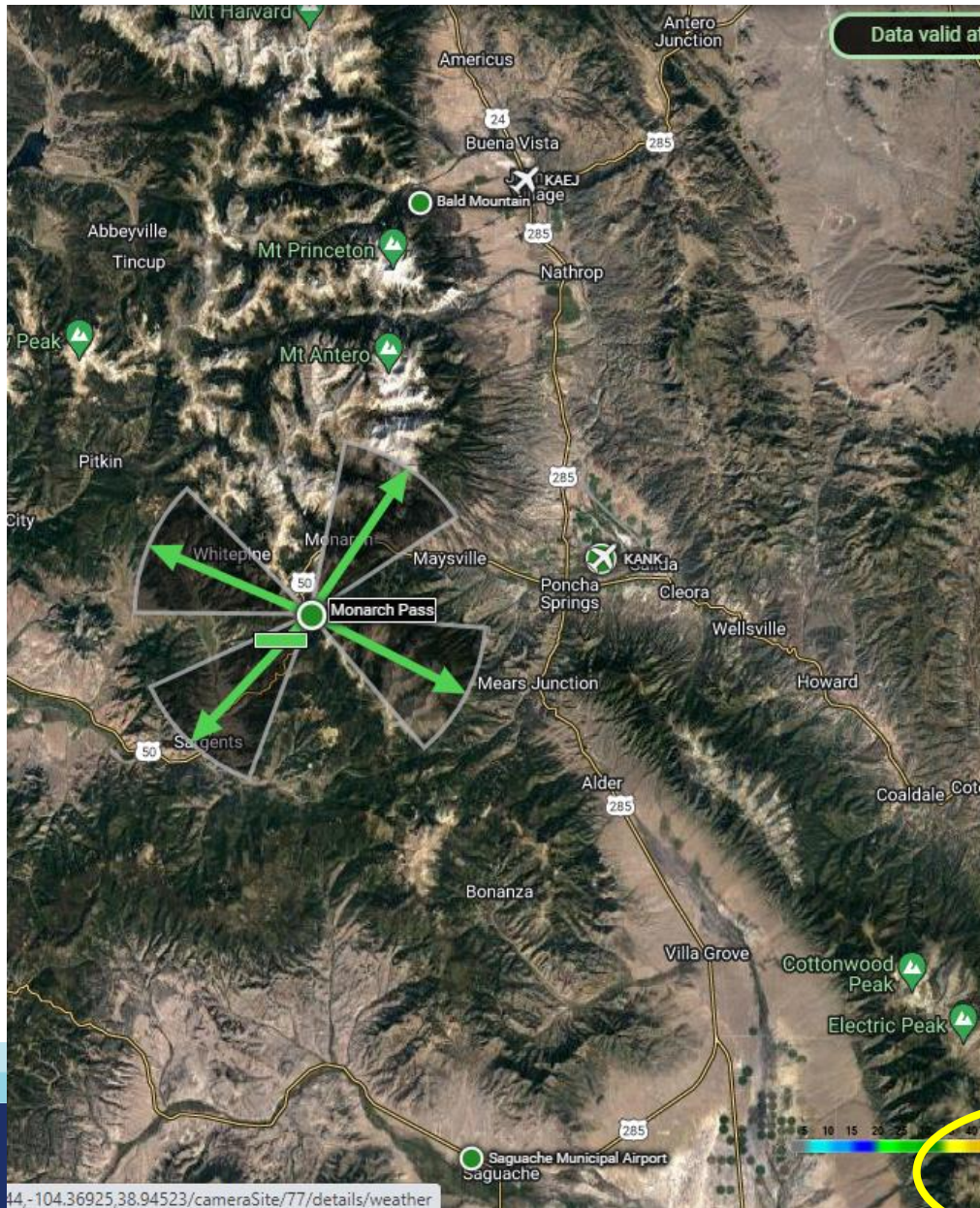
Weather Data | Weather Trends | PIREPs | Sectional | RCO | Site Info | NOTAMS (PilotWeb)



Federal Aviation Administration

More options, here

Pass With WXCAM and AWOS <https://weathercams.faa.gov/>



Monarch Pass (MYP) UTC:18:43 Local:12:43
Operated by: CDOT Aero

METAR KMYP 141815Z AUTO 29007KT 200V360 10SM SCT042 SCT050 14/05 A3088 RMK AO2

METAR KMYP VFR

METAR Raw Text
KMYP 141815Z AUTO 29007KT 200V360 10SM SCT042 SCT050 14/05 A3088 RMK AO2

METAR Plain Text

- Observed: 2023-08-14 18:15z [28 minutes ago]
- Metar Type: SPECI
- Temperature: 14.0°C (57.2°F)
- Dew Point: 5.0°C (41.0°F)
- Pressure (altimeter): 30.88 inches Hg
- Winds: From WNW (290°) at 7 kts
- Visibility: 10 miles
- Ceiling: No ceiling
- Clouds: Scattered at 4200 ft AGL
Scattered at 5000 ft AGL
- Vertical Visibility: missing
- Weather: missing
- Remarks: AO2

[view complete METAR history on weather.gov](#)

Previous METARs

- KMYP 141755Z AUTO 21010KT 10SM SCT044 SCT060 13/04 A3088 RMK AO2
- KMYP 141735Z AUTO 00000KT 10SM CLR 13/04 A3089 RMK AO2
- KMYP 141715Z AUTO 25006KT 10SM CLR 13/03 A3089 RMK AO2
- KMYP 141655Z AUTO 22010G14KT 10SM CLR 12/02 A3088 RMK AO2
- KMYP 141635Z AUTO 25009KT 10SM CLR 12/03 A3089 RMK AO2
- KMYP 141615Z AUTO 24007KT 10SM CLR 11/05 A3088 RMK AO2

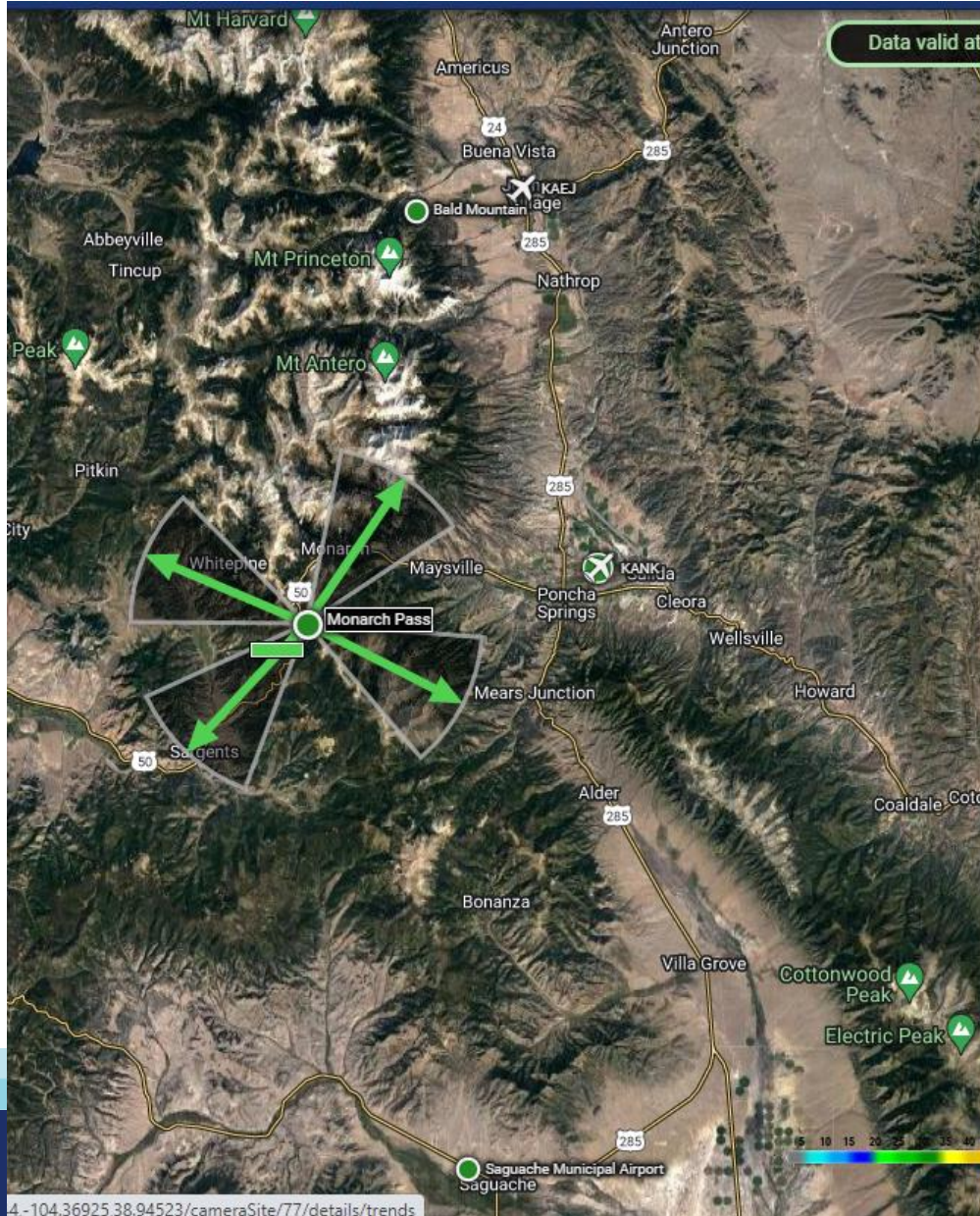
NorthEast (34°) SouthEast (117°) SouthWest (223°) NorthWest (293°)

Weather DataWeather TrendsPIREPsSectionalRCOSite InfoNOTAMS (PilotWeb)



Pass With WXCAM

<https://weathercams.faa.gov/>



Monarch Pass (MYP) UTC:18:45 Local:12:45
Operated by: CDOT Aero

METAR KMYP 141815Z AUTO 29007KT 200V360 10SM SCT042 SCT050 14/05 A3088 RMK AO2

METAR

Trend	Most Recent Observation
	Temperature 14.0°C (57.2°F)
	Dew Point 5.0°C (41.0°F)
	Pressure 30.88 inches Hg
	Wind Speed 7 knots
	Wind Direction 290 degrees

360°
180°

Weather Data **Weather Trends** PIREPs Sectional RCO Site Info NOTAMs (PilotWeb)



Also, RCOs

<https://weathercams.faa.gov/>

The screenshot displays a satellite map of the Colorado Springs area. A pop-up window for GUNNISON (GUC) is open, showing the following information:

- GUNNISON (GUC)** UTC:18:23 Local:12:23
- Remote Communications Outlet
- GUNNISON (GUC)**
- Frequencies:
 - 122.55

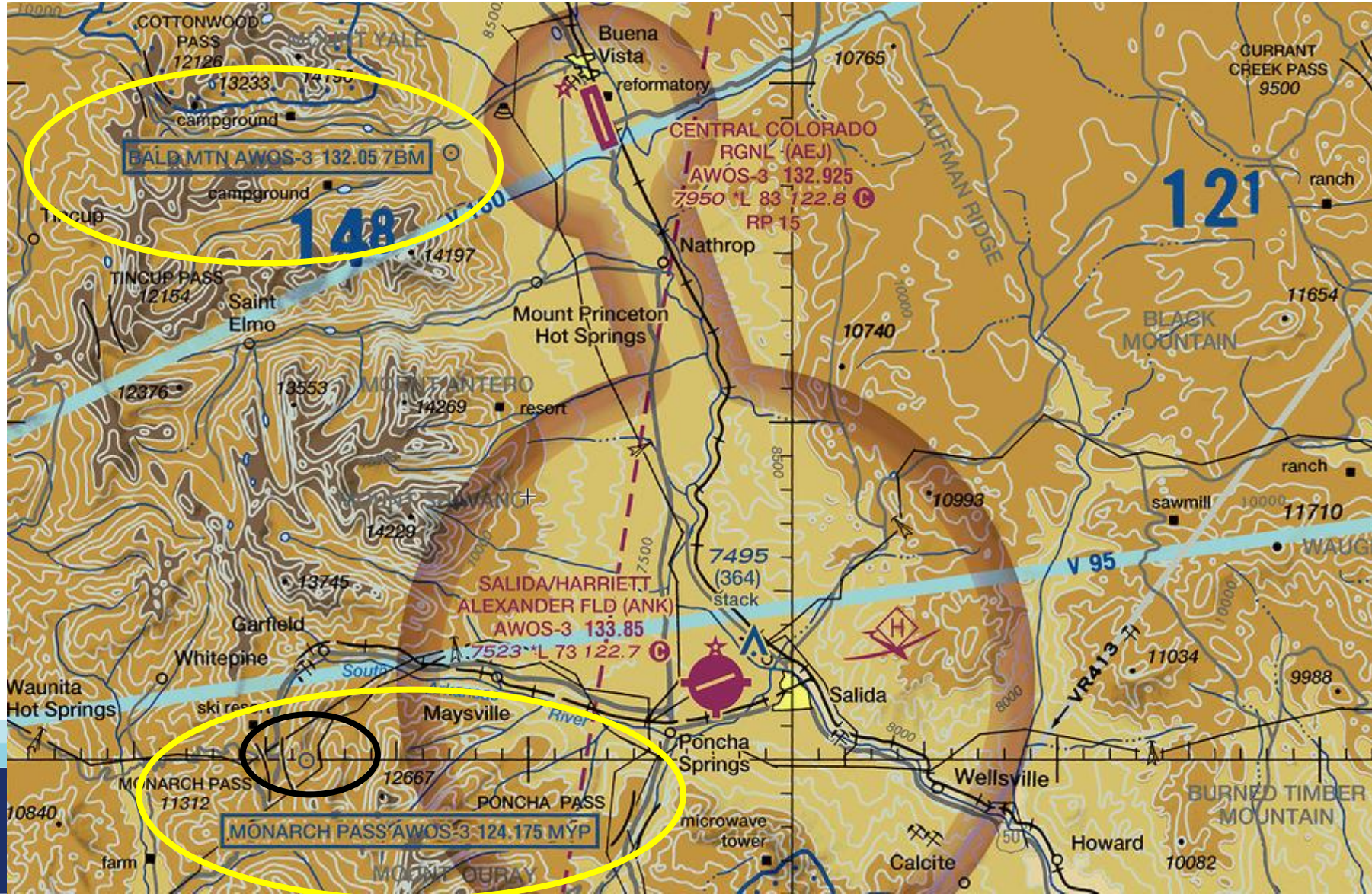
The map also shows other airports and locations such as Colorado Springs (KCOS), Stratmoor (KCQJ), and KFCST. A scale bar at the bottom left of the map indicates distances of 5, 10, 15, and 25 units.



Federal Aviation
Administration

Use Remote AWOS Along Your Route

May or may not have collocated WXCAM



Many Airports Have Webcams: Prineville S39



Federal Aviation
Administration

Locate AWOS


- https://www.faa.gov/air_traffic/weather/asos

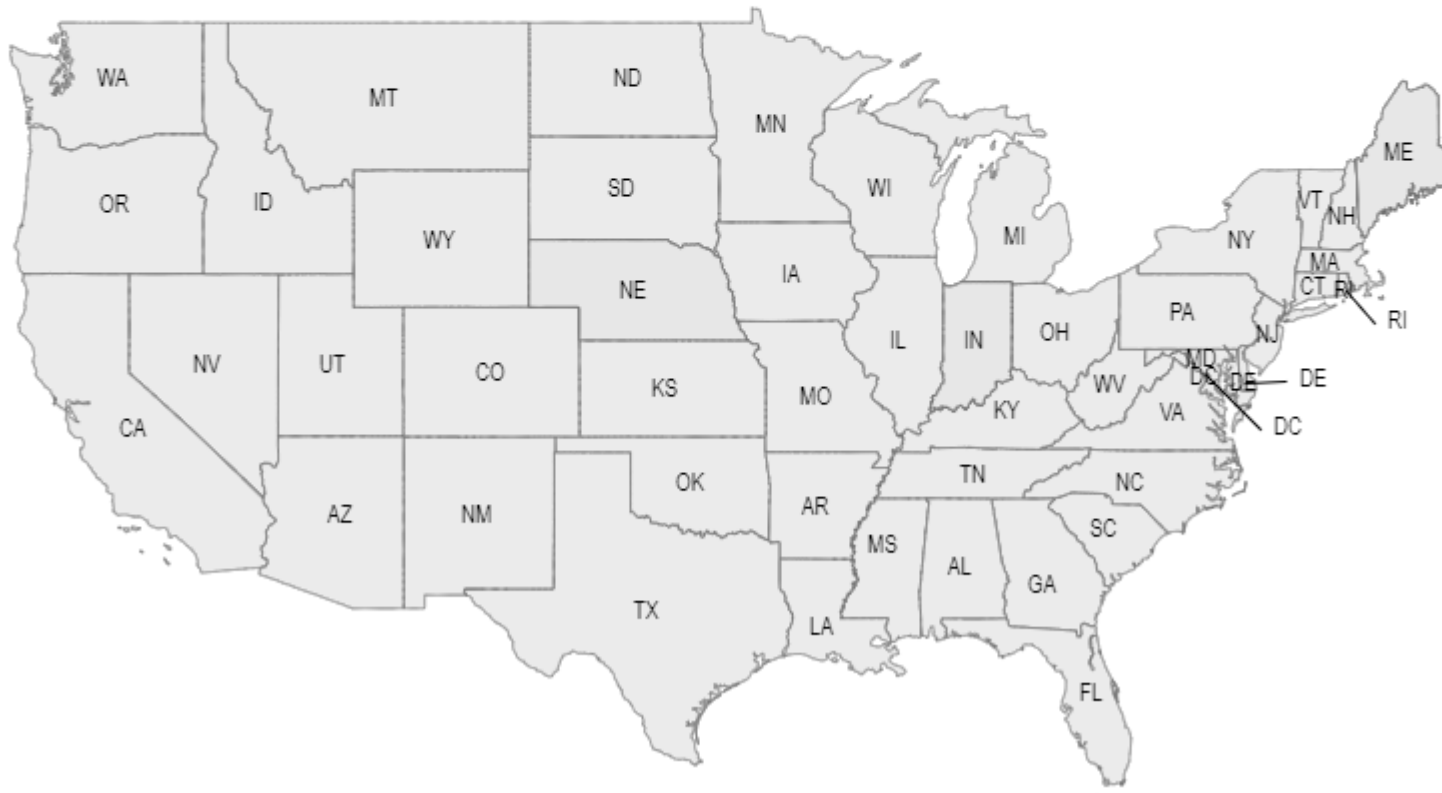
Surface Weather Observation Stations (ASOS/AWOS)

Click a state or territory or select from the drop down to view weather observation station data for that area.

Select a State/Territory or Enter a Weather Station Airport ID

--Select a State/Territory-- --Enter a Weather Station Airport ID--

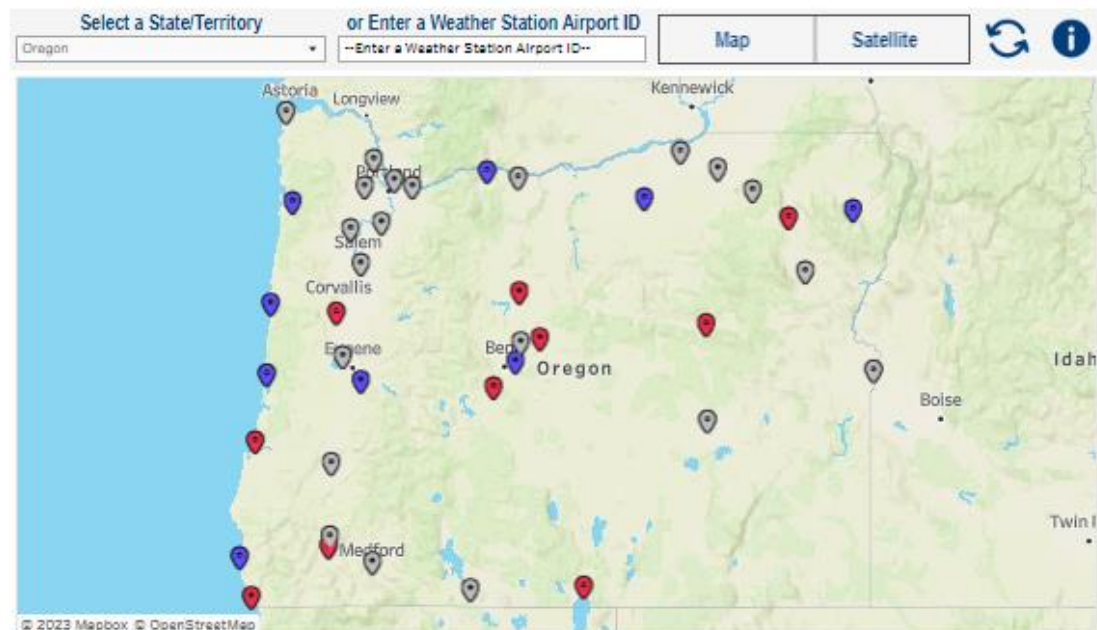




AWOS by State

Surface Weather Observation Stations (ASOS/AWOS)

Click a state or territory or select from the drop down to view weather observation station data for that area.



ASOS

AWOS-3

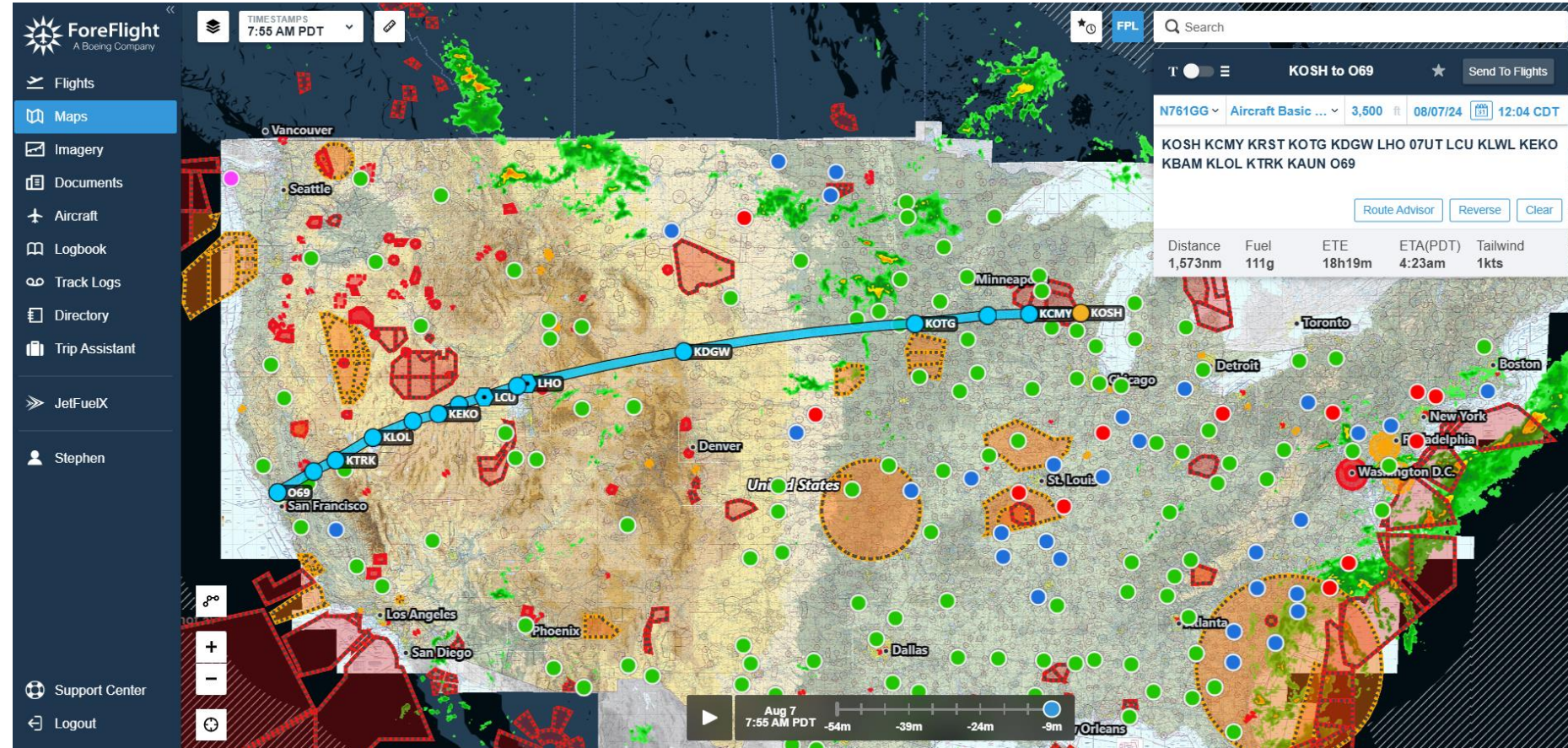
AWOS-3PT

ID	Location	County	State	Frequency	Phone	Type
K358	Grants Pass	Josephine	Oregon	120	(541) 956-3392	AWOS-3PT
K4S1	Gold Beach	Curry	Oregon	118.15	(541) 247-2518	AWOS-3
K4S2	Hood River - Ken Jemstedt	Hood River	Oregon	134.375	(541) 386-2386	AWOS-3
K8S2	Florence	Lane	Oregon	118.225	(541) 997-8664	AWOS-3
K9S9	Lexington	Morrow	Oregon	134.475	(541) 989-8557	AWOS-3
K77S	Creswell - Hobby	Lane	Oregon	119.275	(541) 896-2349	AWOS-3
KAST	Astoria - Astoria Regional Airport	Clatsop	Oregon	135.375	(503) 861-1371	ASOS
KBDN	Bend	Deschutes	Oregon	134.425	(541) 382-1477	AWOS-3
KBKE	Baker - Baker City Municipal Airport	Baker	Oregon	134.275	(541) 523-5412	ASOS
KBNO	Burns - Burns Municipal Airport	Harney	Oregon	135.575	(541) 573-1382	ASOS
KBOK	Brookings	Curry	Oregon	132.025	(541) 412-8682	AWOS-3PT
KCOV	Corvallis	Benton	Oregon	135.775	(541) 754-0081	AWOS-3PT
KDLS	Dallesport - The Dalles - Columbe Gor.	Klickitat	Oregon	135.175	(509) 767-1726	ASOS
KEUG	Eugene - Mahlon Sweet Field Airport	Lane	Oregon	ATIS 125.225	(541) 461-3114	ASOS
KGCD	Ogilvie	Grant	Oregon	118.375	(541) 575-1122	AWOS-3PT
KHIO	Hillsboro - Portland-Hillsboro Airport	Washington	Oregon	ATIS 127.65	(503) 615-4314	ASOS
KHRH	Hermiston - Hermiston Municipal Airport	Umatilla	Oregon	135.225	(541) 567-8580	ASOS

• https://www.faa.gov/air_traffic/weather/asos

Share

Foreflight Web



- **Foreflight web**

- Big screen planning
- Get to know the layers!
- Save in Flights for FF mobile access



Foreflight Web

- **Foreflight Web**

- Get to know the layers!
- It will only show what you select!

The screenshot displays the Foreflight Web interface. At the top left, the logo reads "ForeFlight A Boeing Company". Below it is a navigation menu with options: Flights, Maps (highlighted), Imagery, Documents, Aircraft, Logbook, Track Logs, Directory, Trip Assistant, JetFuelX, and Stephen. At the bottom are Support Center and Logout. The top right shows a timestamp of 7:55 AM PDT. The main content area is a "CHARTS & LAYERS" panel with two columns: "MAPS" and "LAYERS".

MAPS	LAYERS
<input type="checkbox"/> Aeronautical	<input checked="" type="checkbox"/> Radar
<input type="checkbox"/> Street Map	<input type="checkbox"/> Radar (Classic)
<input type="checkbox"/> Aerial Map	<input type="checkbox"/> Enhanced Satellite
<input checked="" type="checkbox"/> U.S. VFR	<input type="checkbox"/> Color IR Satellite
<input type="checkbox"/> U.S. IFR (low)	<input type="checkbox"/> Icing (US)
<input type="checkbox"/> U.S. IFR (high)	<input type="checkbox"/> Icing (Global)
<input type="checkbox"/> U.S. IFR (planning)	<input type="checkbox"/> Turbulence (US)
<input type="checkbox"/> U.S. IFR (ocean)	<input type="checkbox"/> Turbulence (Global)
<input type="checkbox"/> U.S. VFR (flyway)	<input type="checkbox"/> Clouds
<input type="checkbox"/> Carib/Mexico (low)	<input type="checkbox"/> Surface Analysis
<input type="checkbox"/> Carib/Mexico (high)	<input type="checkbox"/> Traffic
<input type="checkbox"/> U.S. Helicopter	<input type="checkbox"/> AIR/SIGMETs/CWAs
<input type="checkbox"/> Heli Gulf VFR	<input checked="" type="checkbox"/> NOTAMs
<input type="checkbox"/> Heli Gulf IFR	<input checked="" type="checkbox"/> TFRs
	<input checked="" type="checkbox"/> Flight Category
	<input type="checkbox"/> Surface Winds
	<input type="checkbox"/> Winds Aloft
	<input type="checkbox"/> Dewpoint Spread
	<input type="checkbox"/> Temperature
	<input type="checkbox"/> Visibility

Foreflight Web

- Portal to other WX products

The screenshot displays the ForeFlight web interface. On the left is a dark sidebar with navigation options: Flights, Maps, Imagery (highlighted), Documents, Aircraft, Logbook, Track Logs, Directory, Trip Assistant, JetFuelX, and a user profile for Stephen. The main content area is titled 'REGIONS' and shows a dropdown for 'USA'. Under 'USA', there are several menu items: National, Featured, CONUS Weather (highlighted), Prog Charts, 6 HR Qty of Precipitation, 12 HR Prob of Precipitation, Outlook (SIGWX), Convective Outlooks (highlighted), 4-8 HR Convective Fcst, 10-30 HR Convective Fcst, Graphical Aviation Forecasts, CONUS Cloud, CONUS Surface, Northeast Cloud, Northeast Surface, East Cloud, East Surface, Southeast Cloud, Southeast Surface, North Central Cloud, North Central Surface, Central Cloud, and Central Surface.

On the right, under the heading 'SPC CONVECTIVE OUTLOOKS Now 1511Z', there is a grid of seven weather outlook maps for the USA:

- Severe Storm Watches:** A map showing 'No Watches In Effect'.
- Day 1 Outlook:** A map showing green shaded areas indicating convective activity.
- Day 1 Tornado Probability:** A map showing areas with a probability of tornadoes.
- Day 2 Outlook:** A map showing green shaded areas for Day 2.
- Day 2 Tornado Probability:** A map showing areas with a probability of tornadoes for Day 2.
- Day 2 Wind Probability:** A map showing areas with a probability of high winds, with the text 'LESS THAN 5% ALL AREAS'.
- Day 7:** A map showing a 'POTENTIAL TOO LOW' warning.



The Ultimate: Flight Service <https://www.1800wxbrief.com>

Welcome STEPHEN C BATEMAN

Wed Aug 07 15:34:09 PDT | 22:34:09 Z

Flight Services made a system change that inadvertently impacted some user accounts. The accounts were restored but passwords were removed. If you have issues accessing your account, reset your password by clicking the Forgot/Reset Password Link in the Login Window.

Optimize your experience

Learn & Register

ACAS



EasyActivate™
EasyClose™



Close
Reminders



ATC Notices



SE-SAR



Preflight
Summaries



Provide information for improved service

My Aircraft

Flight Plans (Activate, Close, Amend, Cancel, and View Alerts here)

Last updated at 22:30Z

No current flight plans

Map Snapshot (click for Interactive Map)

Weather Charts Edit Charts

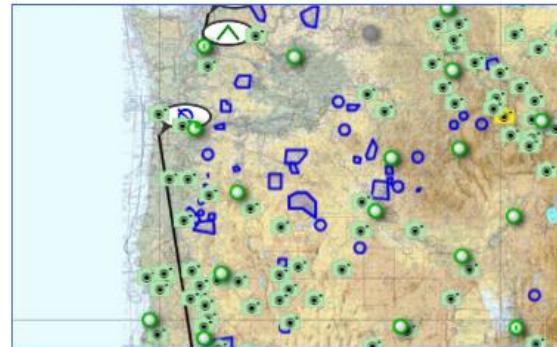


Chart is not current.



U.S. Weather Depiction



U.S. Surface Analysis

Quick Search -
METARs, TAFs, D-NOTAMs

Enter ICAO/Domestic Airport IDs, FRDs, or Lat/Longs

Search

METAR

TAF

D-NOTAM

Airport Conditions Edit Airports

S39

Area Brief

RDM

Area Brief

PDX

Area Brief

*Aircraft ID: N761GG

METAR

TAF

D-NOTAM

Plain Text

S39 (Density Altitude: 5678 ft)

VFR KS39 072215Z 34009KT 10SM CLR 31/M03 A3009 RMK AO2

No TAFs exist for this location.

No D-NOTAMs exist for this location.

RDM (Density Altitude: 5607 ft)

VFR KRDM 072156Z 35009KT 10SM CLR 32/00 A3008 RMK AO2 SLP160 T03220000 \$

- Work hard to get to know this website – it is magnificent!
- Set up your dashboard
- Area brief feature

Flight Service Interactive Map

Search RBL 45°39.26'N 123°05.97'W Wed Aug 7 15:37:14 PDT | 22:37:14 Z

Enroute L-1 Seattle Sectional Enroute H-1 Basic Topo IFR High IFR

Flight Plan

AIRCRAFT	SPEED	ALTITUDE	DEP TIME
N761GG	85 kts	8000 ft	2230 UTC
DEPARTURE	PRINEVILLE Prineville, OR		
ROUTE OF FLIGHT	Text NavLog PLAN		
DCT			
DESTINATION	AURORA STATE Aurora, OR		
DISTANCE	TIME	BURN	
98.3 NM			

Plan & Brief →

Layer Controls

CLEAR Weather Other

Overlay Data

- METARs and TAFs
Flight Category and Sky Cover
- Weather Cameras
10min Image Interval
- Pilot Reports
Recently reported conditions
- TFRs
Temporary Flight Restrictions
- SIGMET
Significant Meteorological Info
- Convective SIGMET
- SIGMET
- Convective Outlooks
- AIRMET
Airmen's Meteorological Info

Show: G-AIRMET AIRMET

- AIRMET Tango
- AIRMET Sierra
- AIRMET Zulu
- Freezing Levels
- CWA
Center Weather Advisory
- Severe Weather
Watches and Warnings
- Weather Imagery
- Radar
NEXRAD Pre.

Weather Cameras
Site Status
 Active In Maintenance

FSS Plan and Brief

- ICAO flight plan form
- Can save aircraft info
- Area Brief for each airport
- Route Brief

- Can file the flight plan and get text/email updates and reminders to close the plan

Welcome STEPHEN C BATEMAN Wed Aug 07 15:48:46 PDT | 22:48:46 Z

Flight Services made a system change that inadvertently impacted some user accounts. The accounts were restored but passwords were removed. If you have issues accessing your account, reset your password by clicking the Forgot/Reset Password Link in the Login Window.

Draft		ICAO <input type="checkbox"/> Domestic <input checked="" type="checkbox"/>					
Recent Flight Plans	Favorite Flight Plans	Save as Favorite					
* Click field names for help							
Aircraft ID N781GG	Flight Rule VFR	Flight Type (Optional) G	No. of Aircraft 1	Aircraft Type C152	Wake Turbulence L		
Aircraft Equipment SBDGR	Departure S39 Sunrise: 0559 PDT Sunset: 2019 PDT	Airport Info Area Brief	Departure Date & Time 08/07/2024 1700 PDT Required	Evaluate	Cruising Speed N0085		
Level A085	Optimize	Surveillance Equipment EB2U2	Route of Flight DCT Map Plan				
Other Information (Optional) PBN/A1B2C2D2S1 CODE/AA45DC		Destination KJAO Sunrise: 0604 PDT Sunset: 2029 PDT	Airport Info Area Brief	Est Elapsed Time 0130 Calculate			
Alternate 1 (Optional)		Airport Info Area Brief					
Alternate 2 (Optional)		Airport Info Area Brief					
Fuel Endurance 0400		Persons on Board 1	Aircraft Color & Markings (Optional) W:R				
Supplemental Remarks (Optional)		Pilot In Command (Optional) BATEMAN		Emergency Radios <input type="checkbox"/> UHF <input checked="" type="checkbox"/> VHF <input type="checkbox"/> ELBA			
Survival Equipment <input type="checkbox"/> Polar <input type="checkbox"/> Desert <input type="checkbox"/> Maritime <input type="checkbox"/> Jungle	Jackets <input type="checkbox"/> Light <input type="checkbox"/> Fluorescent <input type="checkbox"/> UHF <input type="checkbox"/> VHF	Dinghies (Optional) Number Capacity Color Covered		Pilot Contact Information BATEMAN, STEPHEN, (402)200-8930			
Route Brief			File	NavLog	Return Flight Plan	Next Leg	Clear

Flight Service Interactive Map - WXCAMS

Flight Plan

AIRCRAFT	SPEED	ALTITUDE	DEP TIME
N761GG	85 kts	8000 ft	2230 UTC

DEPARTURE: **S39** PRINEVILLE, OR

ROUTE OF FLIGHT: DCT

DESTINATION: **KUAO** AURORA STATE, OR

DISTANCE: 98.3 NM

Plan & Brief →

Layer Controls

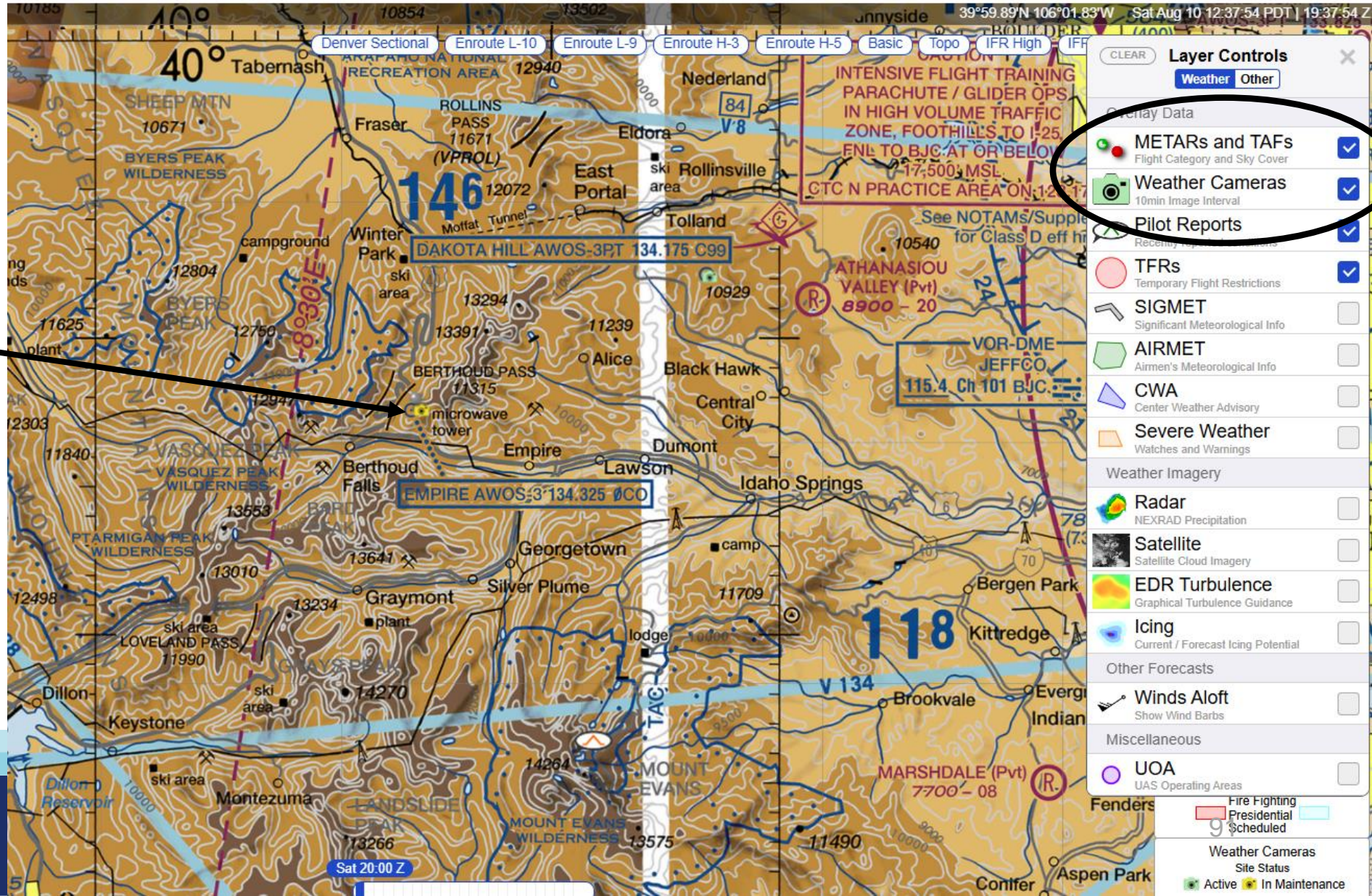
- METARs and TAFs
- Weather Cameras
- Pilot Reports
- TFRs
- SIGMET
- Convective SIGMET
- SIGMET
- Convective Outlooks
- AIRMET
- Show: **G-AIRMET** AIRMET
- AIRMET Tango
- AIRMET Sierra
- AIRMET Zulu
- Freezing Levels
- CWA
- Severe Weather
- Weather Imagery
- Radar

Weather Cameras

- Active
- In Maintenance

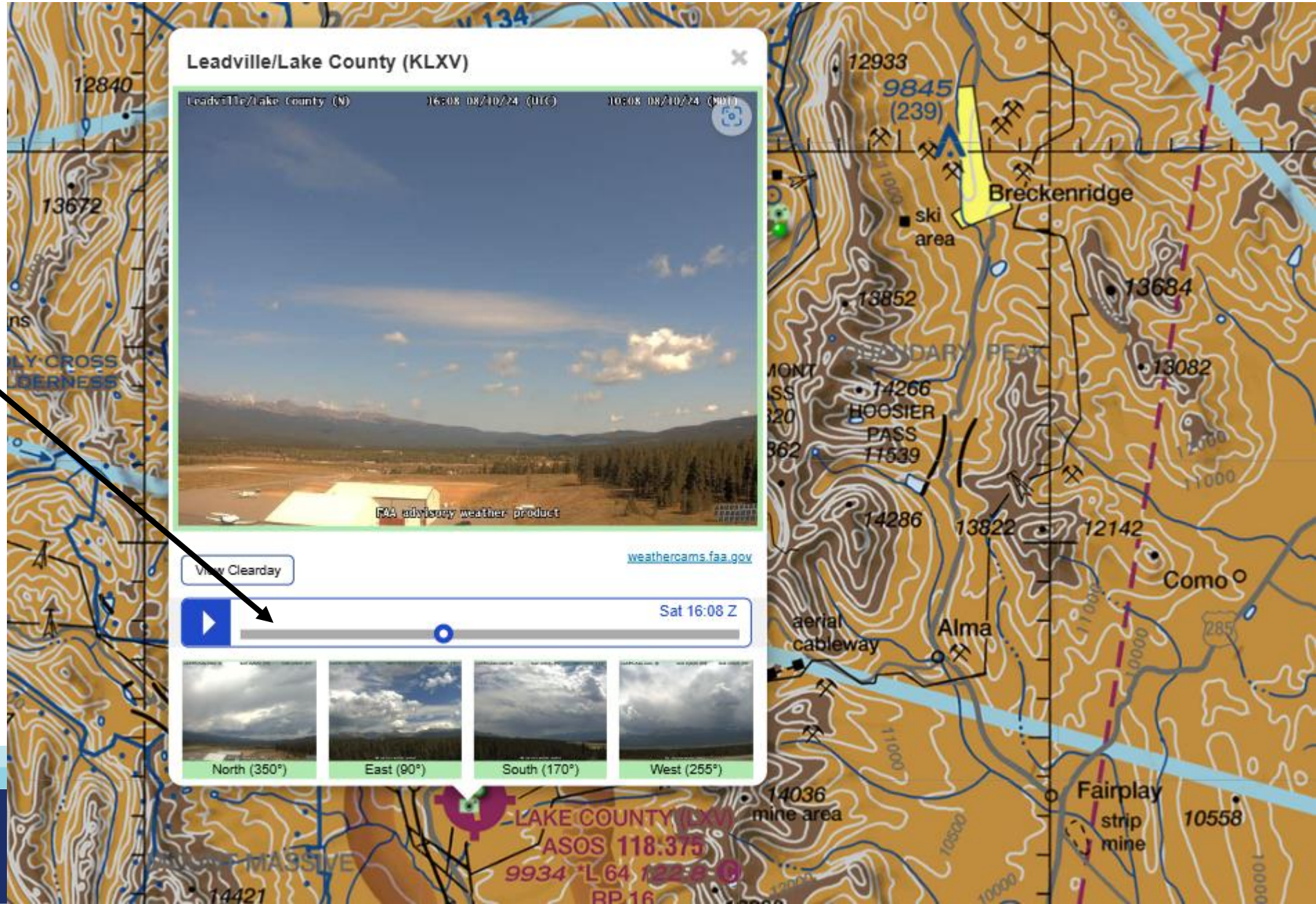
Flight Service Interactive Map - WXCAMs

- Tricky to see the small camera symbol but click on it...



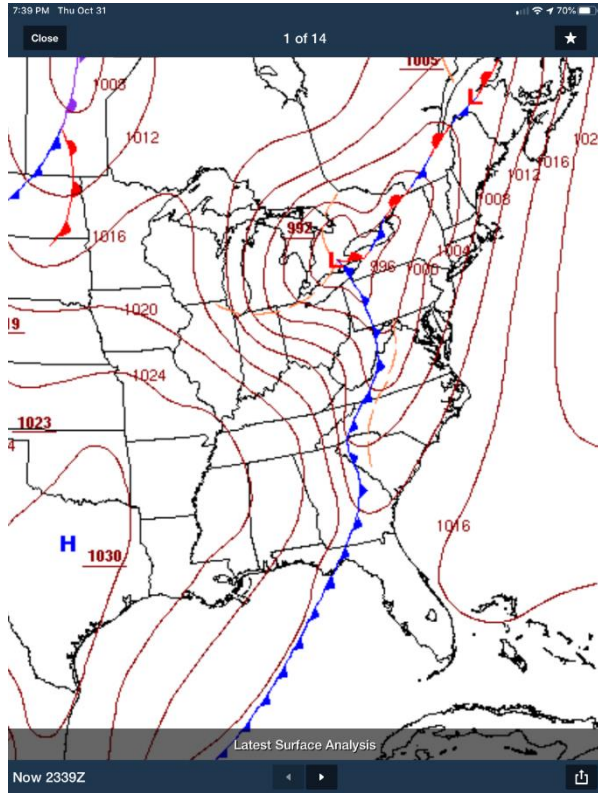
Flight Service Interactive Map - WXCAMS

- Loop through the images



Different Views...Give more Info...

Fast Moving Cold Front...October 2019



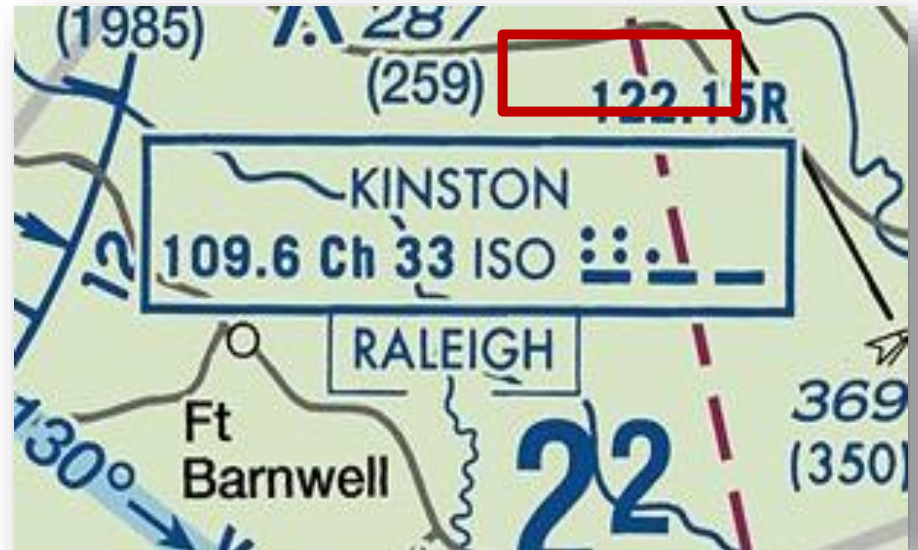
Still Want to Go?

In-Flight Tools



In-Flight Weather Sources

- Flight Service (FSS) en-route weather
- Frequencies depicted on VOR data block
 - When talking with FSS, always give a PIREP in return
 - FSS transmits & receives on 122.2 MHz, “everywhere”
 - FSS receives on 122.15 MHz & transmits on 109.6 MHz (VOR). (Audio panel switch and volume)



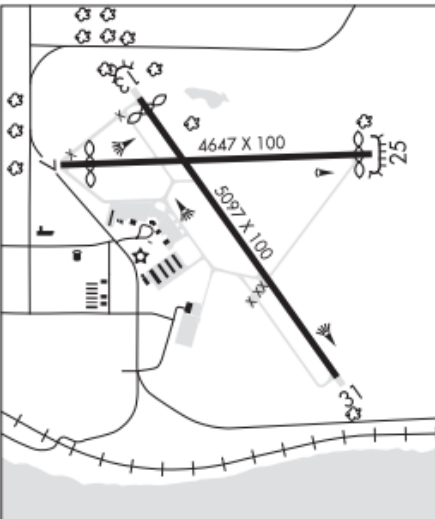
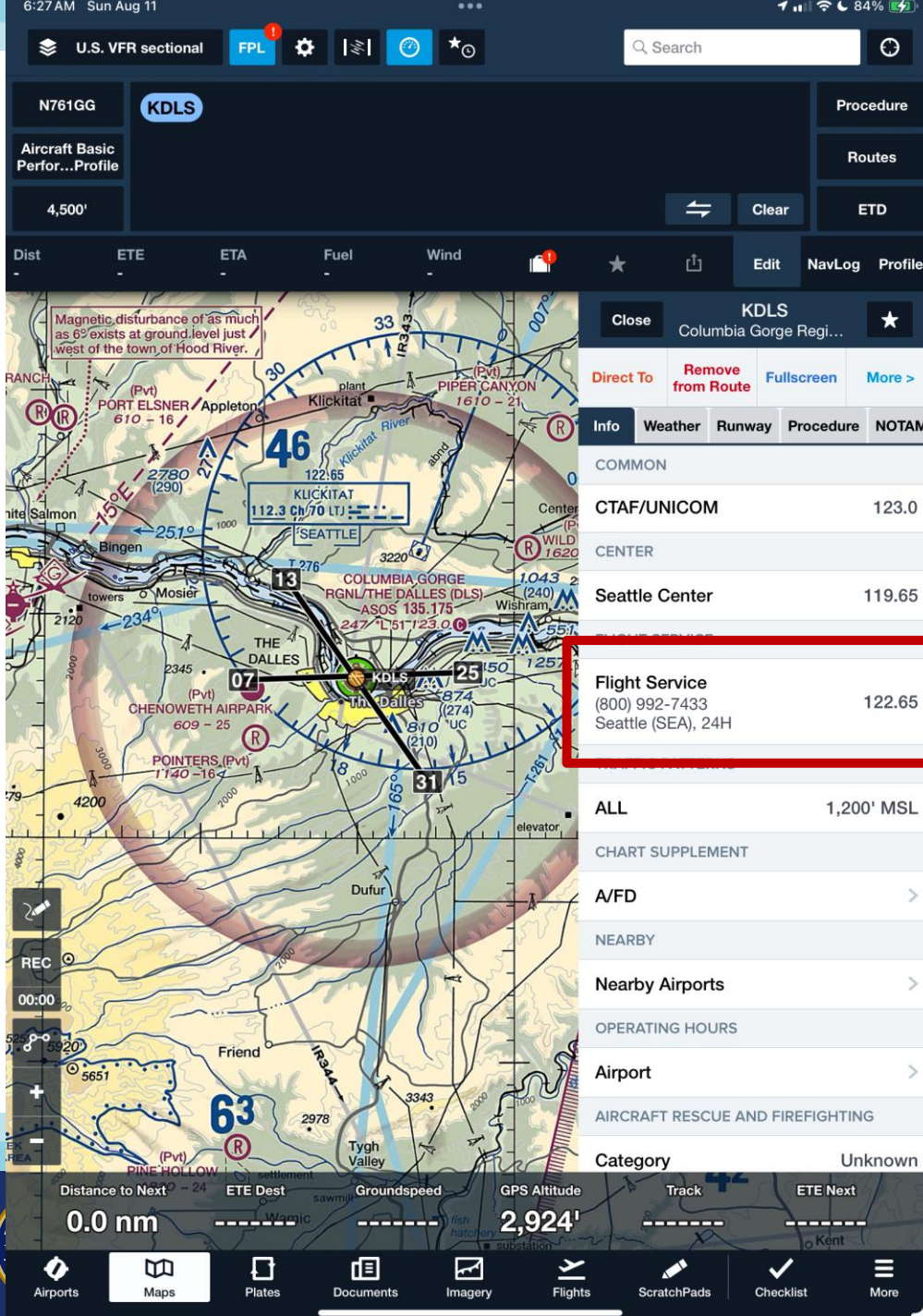
In-Flight Weather Sources

- Flight Service (FSS) en-route weather
- EFB airport info
- Not shown in chart supplement entry

OREGON 215

THE DALLES

COLUMBIA GORGE RGNL/THE DALLES MUNI (DLS)(KDLS) 2 NE UTC-8(-7DT) N45°37.16' SEATTLE
W121°10.10' H-1B, L-13A
247 B NOTAM FILE DLS IAP
RWY 13-31: H5097X100 (ASPH) S-30, D-30 PCN 32 F/C/X/T
MIRL 0.5% up SE
RWY 13: Thld dspclcd 200'. Trees.
RWY 31: REIL.
RWY 07-25: H4647X100 (ASPH) S-30, D-30 MIRL 0.7% up E
RWY 07: Thld dspclcd 440'. Trees.
RWY 25: Thld dspclcd 196'.
SERVICE: S4 FUEL 100LL, JET A1 LGT ACTIVATE MIRL Rwy 13-31,
Rwy 07-25 and REIL Rwy 31-CTAF. REIL opr on 7 clicks only.
AIRPORT REMARKS: Attended 1600-0200Z+. Waterfowl on and inofov arpt.
PPR for overweight ldg. Mountains byd 5000' apch Rwy 31.
AIRPORT MANAGER: 509-767-2272
WEATHER DATA SOURCES: ASOS 135.175 (509) 767-1726.
COMMUNICATIONS: CTAF/UNICOM 123.0
Ⓡ SEATTLE CENTER APP/DEP CON 119.65
CLEARANCE DELIVERY PHONE: For CD ctc Seattle ARTCC at 253-351-3694.
RADIO AIDS TO NAVIGATION: NOTAM FILE DLS.
KLICKITAT (VH) (DH) VOR/DME 112.3 LTJ Chan 70 N45°42.82'
W121°06.05' 186° 6.3 NM to fld. 3220/21E.
VOR unusable:
003°-017° byd 40 NM
192°-198° byd 40 NM
207°-211° byd 40 NM
306°-311° byd 40 NM
LDA/DME 109.35 I-DLS Chan 30(Y) Rwy 25. LOC unusable byd 33° rgt of course. Unmonitored.

U.S. VFR sectional FPL

N761GG KDLS

Aircraft Basic Perfor...Profile 4,500'

Dist ETE ETA Fuel Wind

Close KDLS Columbia Gorge Regi...
Direct To Remove from Route Fullscreen More >

Info	Weather	Runway	Procedure	NOTAM
COMMON				
CTAF/UNICOM				123.0
CENTER				
Seattle Center				119.65
Flight Service	(800) 992-7433		Seattle (SEA), 24H	122.65
ALL				1,200' MSL
CHART SUPPLEMENT				
A/FD				
NEARBY				
Nearby Airports >				
OPERATING HOURS				
Airport >				
AIRCRAFT RESCUE AND FIREFIGHTING				
Category	Unknown			

Distance to Next 0.0 nm ETE Dest Groundspeed GPS Altitude 2,924' Track ETE Next

Airports Maps Plates Documents Imagery Flights ScratchPads Checklist More

In-Flight Weather Sources

- Automated Surface Observing System (ASOS)
- Automated Weather Observing System (AWOS)
- “One-minute weather”
- Source for METARs

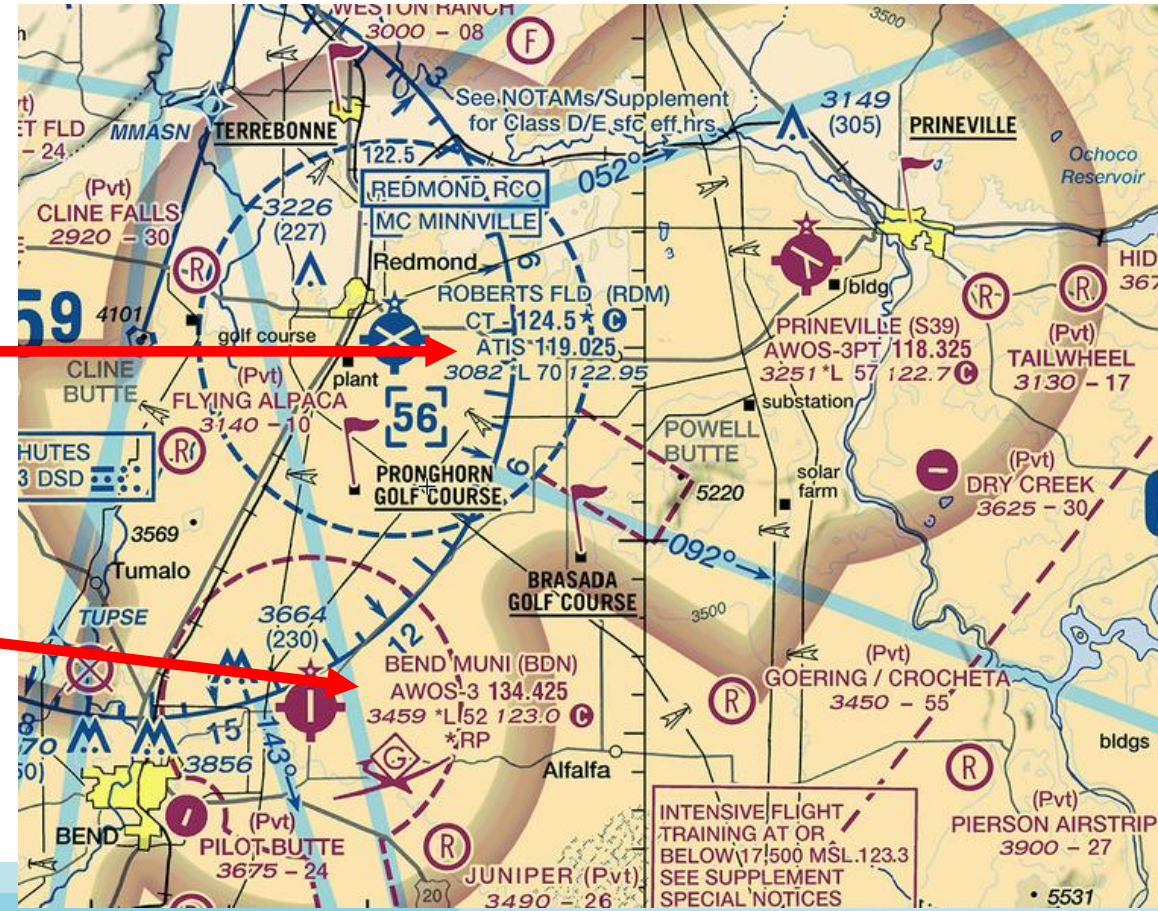


In-Flight Weather Sources

- Automated Terminal Information Service (ATIS)

ATIS (could be up to an hour old)
“Wind Check, Please”

AWOS



ASOS Information

METAR Element	Information Provided
Wind Direction, Speed, & Character	Tens of degrees – Knots, Gusts
Visibility	Up to & including 10 statute miles
Runway Visual Range (RVR)	At selected sites
Basic present weather	Type and intensity
Obstructions to vision	Fog, mist, haze, & freezing fog
Sky condition	Cloud height and amount to 12,000 Ft. AGL CLR, FEW, SCT, BKN, OVC
Ambient & Dew point Temperatures	Degrees Celsius
Pressure	Altimeter Setting In. Hg.
Remarks	Automated, Manual, & Plain Language – depending on service level



AWOS Information

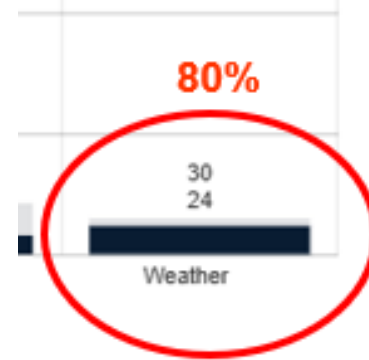
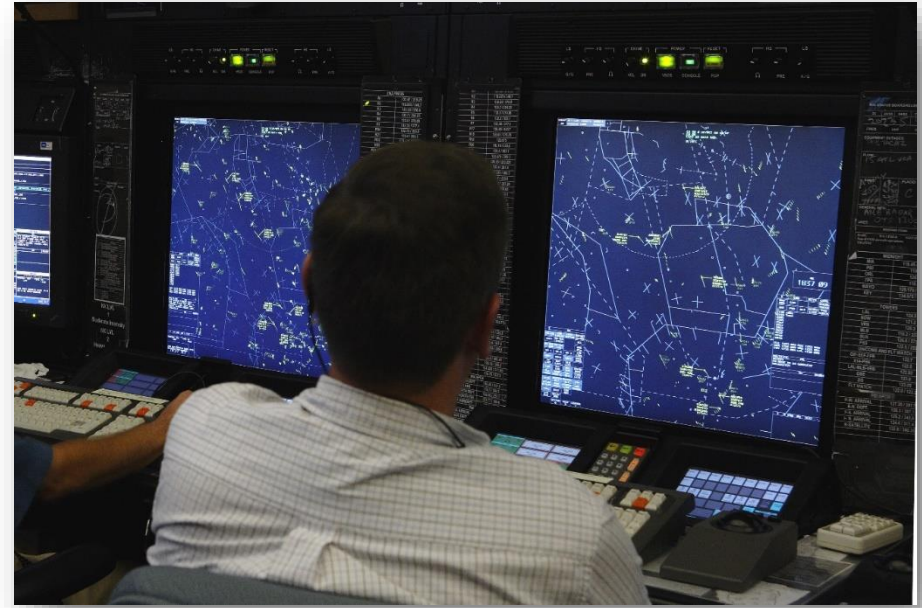
AWOS Type	Information Provided
AWOS-A	Altimeter Setting
AWOS-AV	Altimeter Setting & Visibility
AWOS-1	Altimeter Setting, Wind speed & direction, Temperature, Dew Point, & Density Altitude
AWOS-2	AWOS-1 plus Visibility
AWOS-3	AWOS-2 plus Cloud & Ceiling Data
AWOS-3P	AWOS-3 plus Precipitation Discriminator
AWOS-3PT	AWOS-3P plus Thunderstorm/Lightning
AWOS-3T	AWOS-3 plus Thunderstorm/Lightning
AWOS-4	AWOS-3 plus precipitation type and accumulation, freezing, thunderstorm, & runway surface information



Air Traffic Control

- Limited ability and time to forward weather information
- You can learn a lot by just listening
- Don't wait until the last minute to make diversion requests

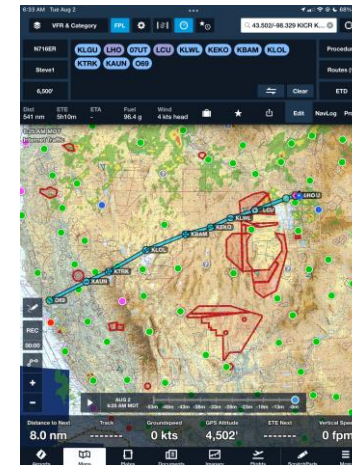
- Psst!...use the “e-word” if you get into weather trouble...remember...



ADS-B FIS-B (Flight Information Services Broadcast)

The Non-Traffic Side of ADS-B IN

Rich Doyle



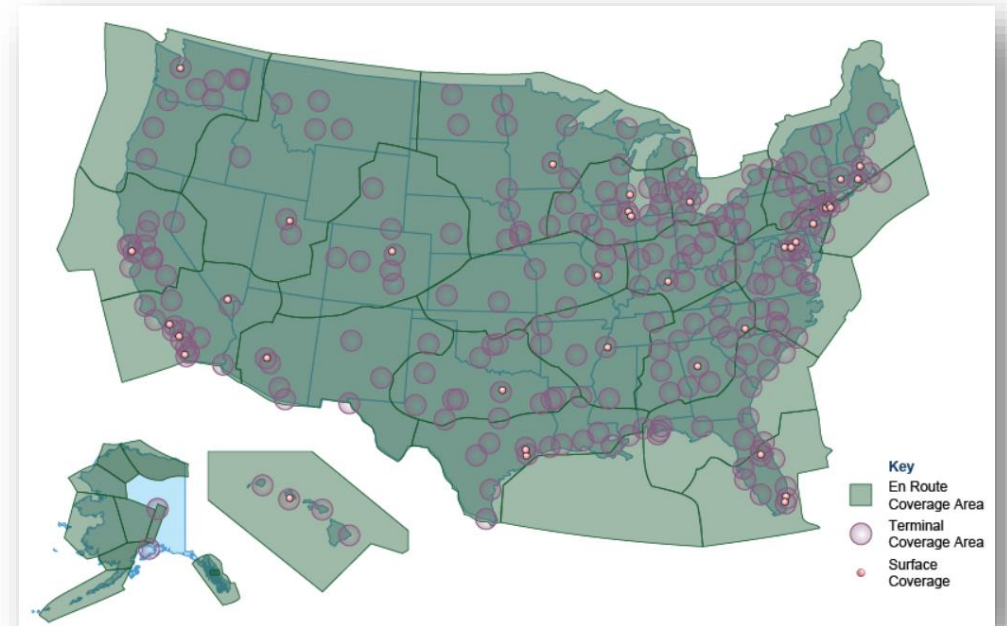
Automatic Dependent Surveillance-Broadcast

- **ADS-B OUT**
 - The “mandate” to operate in controlled (transponder) airspace
- **ADS-B IN**
 - The benefit to us for complying with the mandate (“data link”)



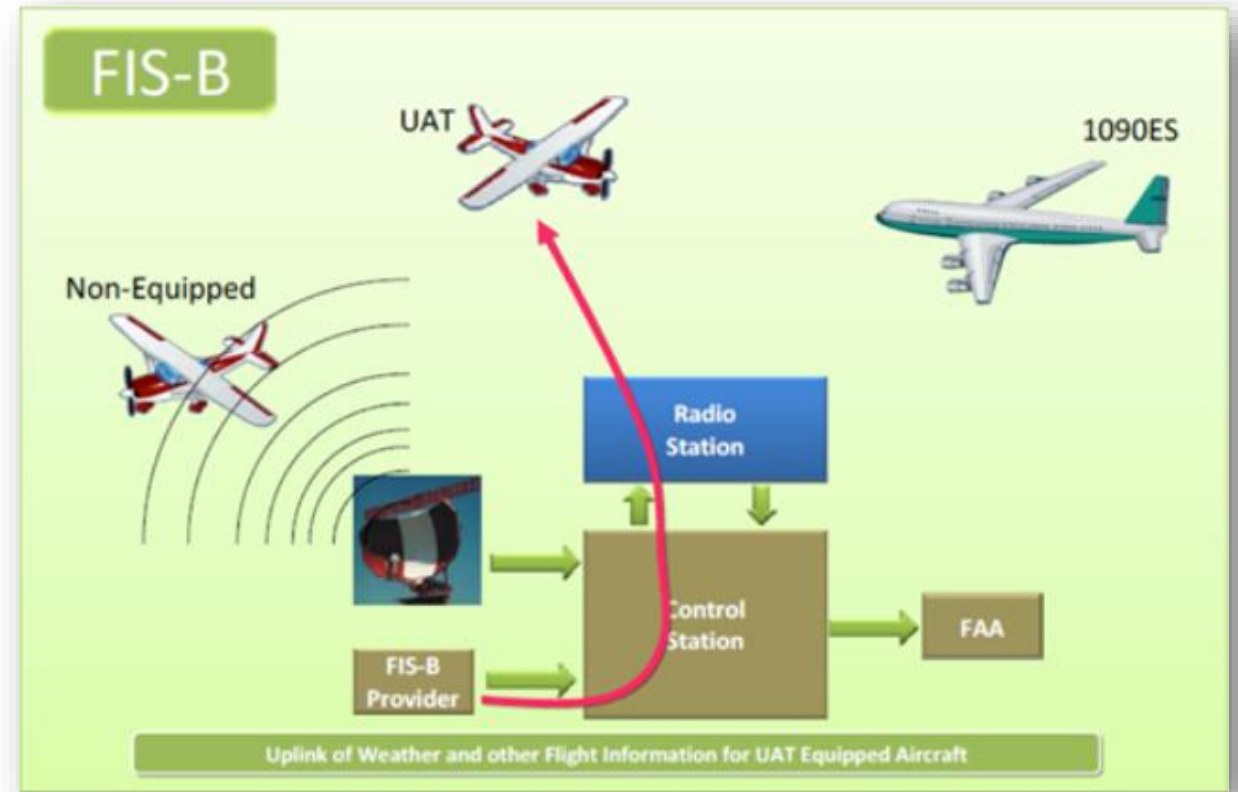
ADS-B IN Applications

- Traffic Information Services - Broadcast (TIS-B) (1090 and UAT)
- **Flight Information Services - Broadcast (FIS-B) (UAT only)**
 - UAT is broadcast on 978 MHz
- When equipping, get dual-band IN
- At least use a hand-held...



FIS-B

- Available to ADS-B UAT equipped aircraft/handhelds
- System broadcasts aeronautical information products from the FAA and weather products from the National Weather Service



FIS-B Products (Radar can be ~15-mins old)

AIRMETS	TAFs
Convective SIGMETs	Amended TAFs
SIGMETs	Winds & Temperature Aloft
METARS	Lightning
SPECIs	Turbulence
National NEXRAD	Icing
Regional NEXRAD	Cloud Tops
D-NOTAMs	Graphical AIRMETS
FDC-NOTAMs	Center Weather Advisories
PIREPS	TIS-B Service Status
Special Use Airspace (SUA) Status	

Note: All radar tools pull data from NOAA NEXRAD and crunch/display it differently

Note: Radar shows precipitation not clouds/viz



The Basics

- **This set of services is provided unsolicited to anyone with an operating ADS-B IN setup receiving 978UAT**
 - Typically, ADS-B receivers “listen” on this and 1090ES channels
- **FIS-B is transmitted continuously from the ADS-B towers on 978UAT only**
- **Requires line-of-sight to at least one tower—may not be available close to ground level**
- **There is no interaction with an aircraft’s ADS-B OUT configuration, nor does it require ADS-B OUT capability from the receiving aircraft**
- **978UAT is a US-only capability, though the system can provide information beyond US borders**



What Does It Provide?

- **Weather information—lots!**
- **TFRs – updated in “real” time.**
- **MOA and other restricted airspace status.**
 - Still prudent to check!
- **NOTAMs**



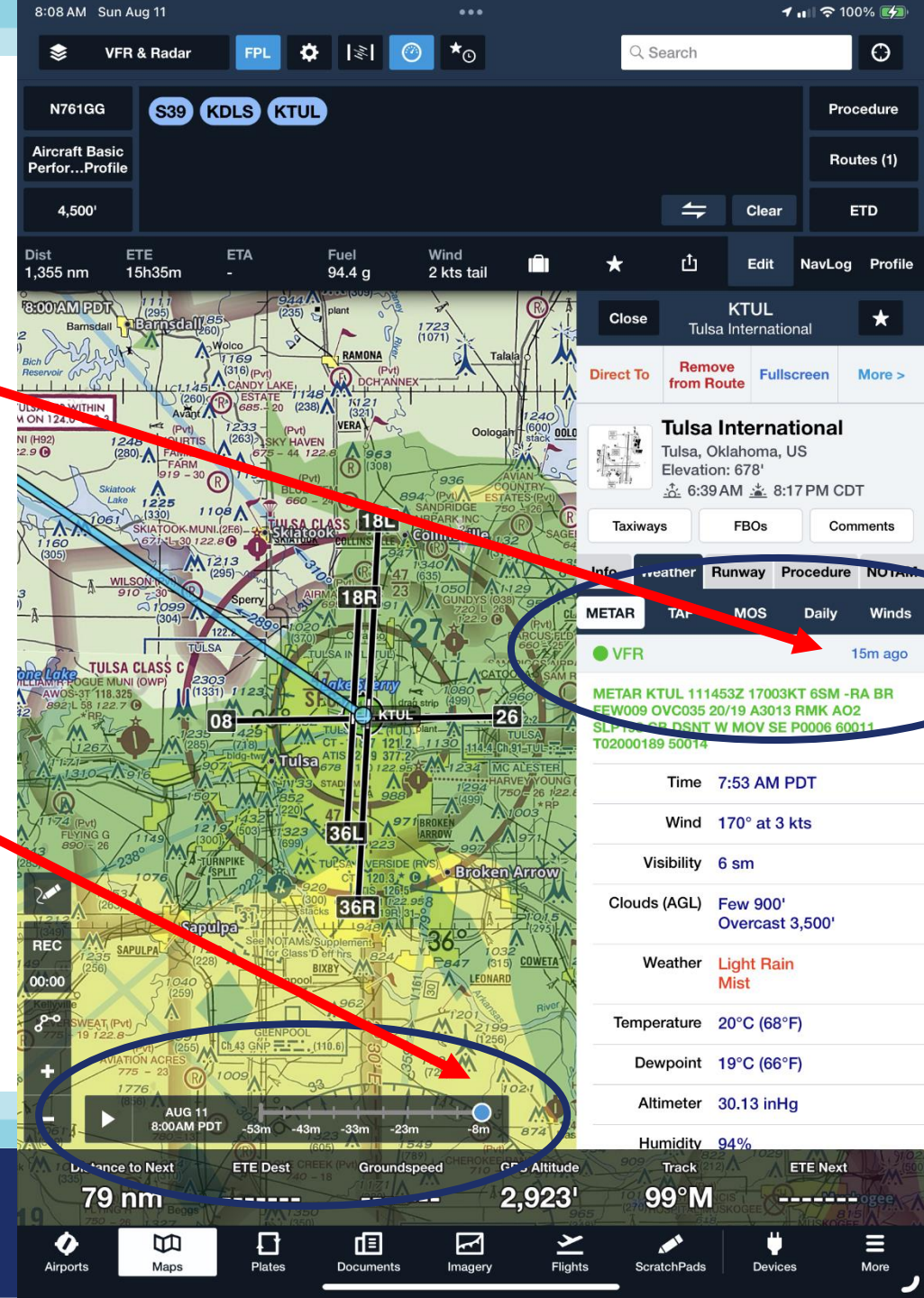
Limitations

- **Transmissions from towers may not be available at levels close to or on the surface**
- **There is some time delay. This is typically 5-15 minutes but could be somewhat longer**
 - Composite radar takes time to crunch—allegedly up to 15-minutes
 - Then there is a transmission delay
- **Radar and other returns should NOT be used for severe weather avoidance**
 - It's only a general depiction of conditions
- **Usefulness and scope of the data is dependent on the features and capabilities of your display system**
- **Provides ASOS/AWOS data, but not full ATIS. Example of missing information: “visual approaches in use, landing and departing runways 5 and 11”**
- **Note: Foreflight Performance Plus Plan needed for D-ATIS**



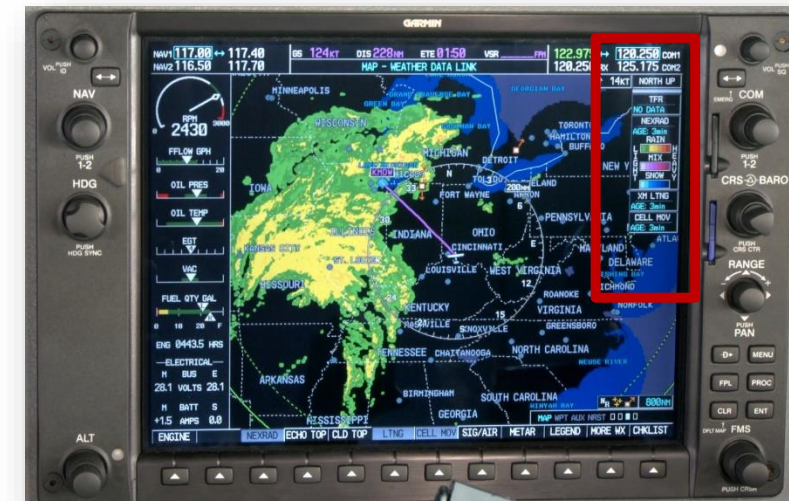
Limitations

- Read the time stamp
 - This is the age of the data
- Understand the time slider for radar layer (trend)
 - At least 8-mins old, here



SiriusXM Aviation Services

- Subscription required (next slide)
- Weather info via satellite, not ground
- “Near Real Time”
 - 2.5 minute weather update
 - Look for time stamp
- Cloud-to-ground and cloud-to-cloud lightening
- Good for *strategic* planning (not tactical)
- Just as bad as FIS-B for threading the needle
- Not a substitute for on-board weather radar



SiriusXM Aviation Services

SiriusXM Pilot Express

\$29.99 /mo

Plus \$25 initial activation fee. See Offer Details below.



Radar &
Lightning

Essential weather information for all pilots.

SiriusXM Pilot for ForeFlight

\$39.99 /mo

Plus \$25 initial activation fee. See Offer Details below.



Cloud &
Echo Top

Radar &
Lightning

This package is designed specifically for use with the ForeFlight mobile app.

SiriusXM Pilot Preferred

\$59.99 /mo

Plus \$25 initial activation fee. See Offer Details below.



Cloud &
Echo Top

Radar &
Lightning

Builds on the Express package with forecasts and weather observations.

SiriusXM Pilot Pro

\$99.99 /mo

Plus \$25 initial activation fee. See Offer Details below.



Extended
Forecast

Cloud &
Echo Top

Radar &
Lightning

SiriusXM Aviation's most comprehensive package for pilots who need SiriusXM's full weather service.



FIS-B vs SiriusXM Weather

- **There are some advantages to SiriusXM:**
 - Refresh rate and surface availability
 - It can provide music and other audio feeds to the cockpit
- **It uses a different information channel so it requires additional equipment and a monthly subscription.**
- **XM is weather-centric. Various non-weather items provided by FIS-B require higher subscription level (NOTAM, TFR...)**
- **Some EFB products can provide XM weather on the (ADS-B) screen along with other data**



SiriusXM Aviation Services


- AOPA ASI comparison:

<https://www.youtube.com/embed/gcD54HMqONs>

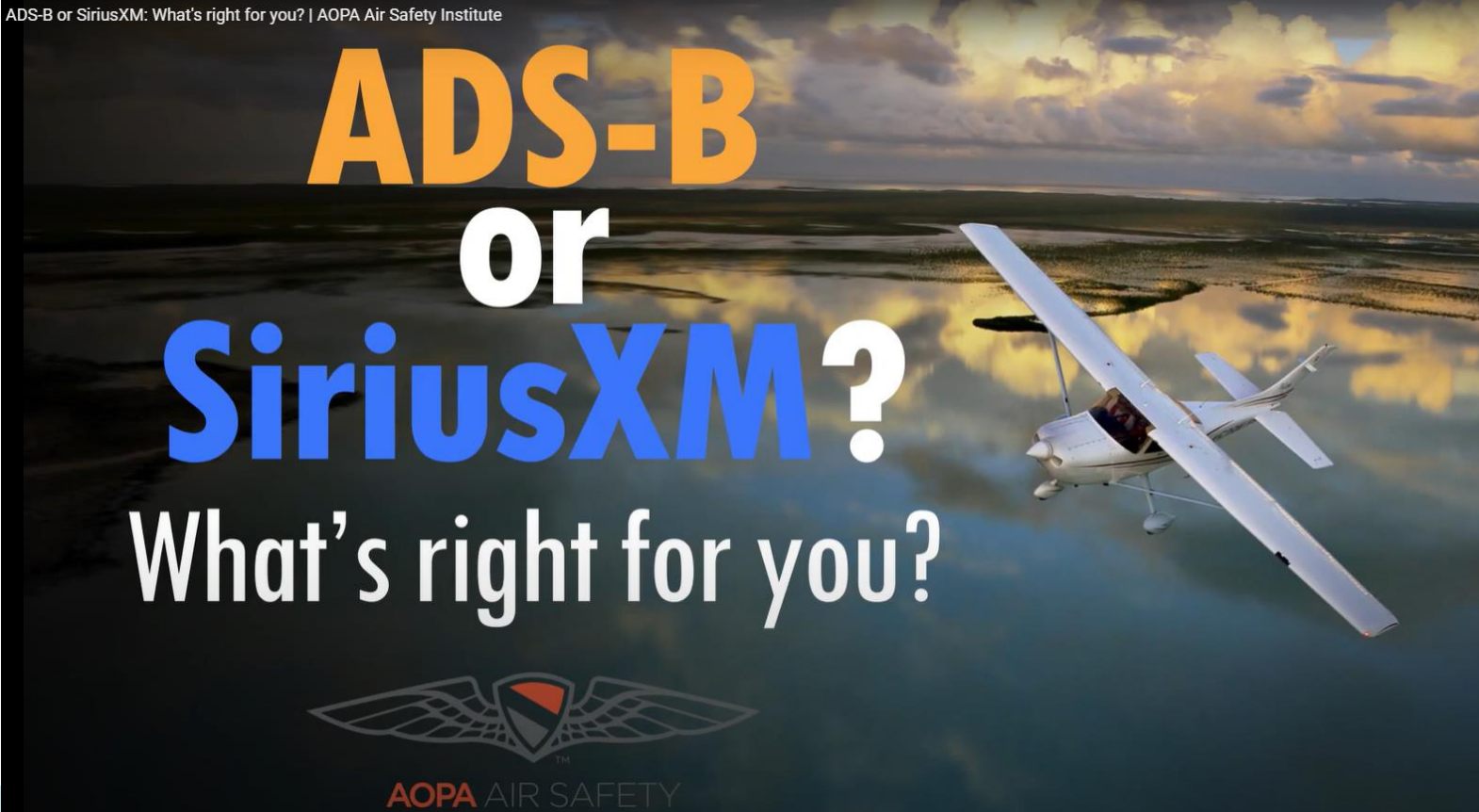
ADS-B or SiriusXM: What's right for you? | AOPA Air Safety Institute

ADS-B or SiriusXM?

What's right for you?



AOPA AIR SAFETY

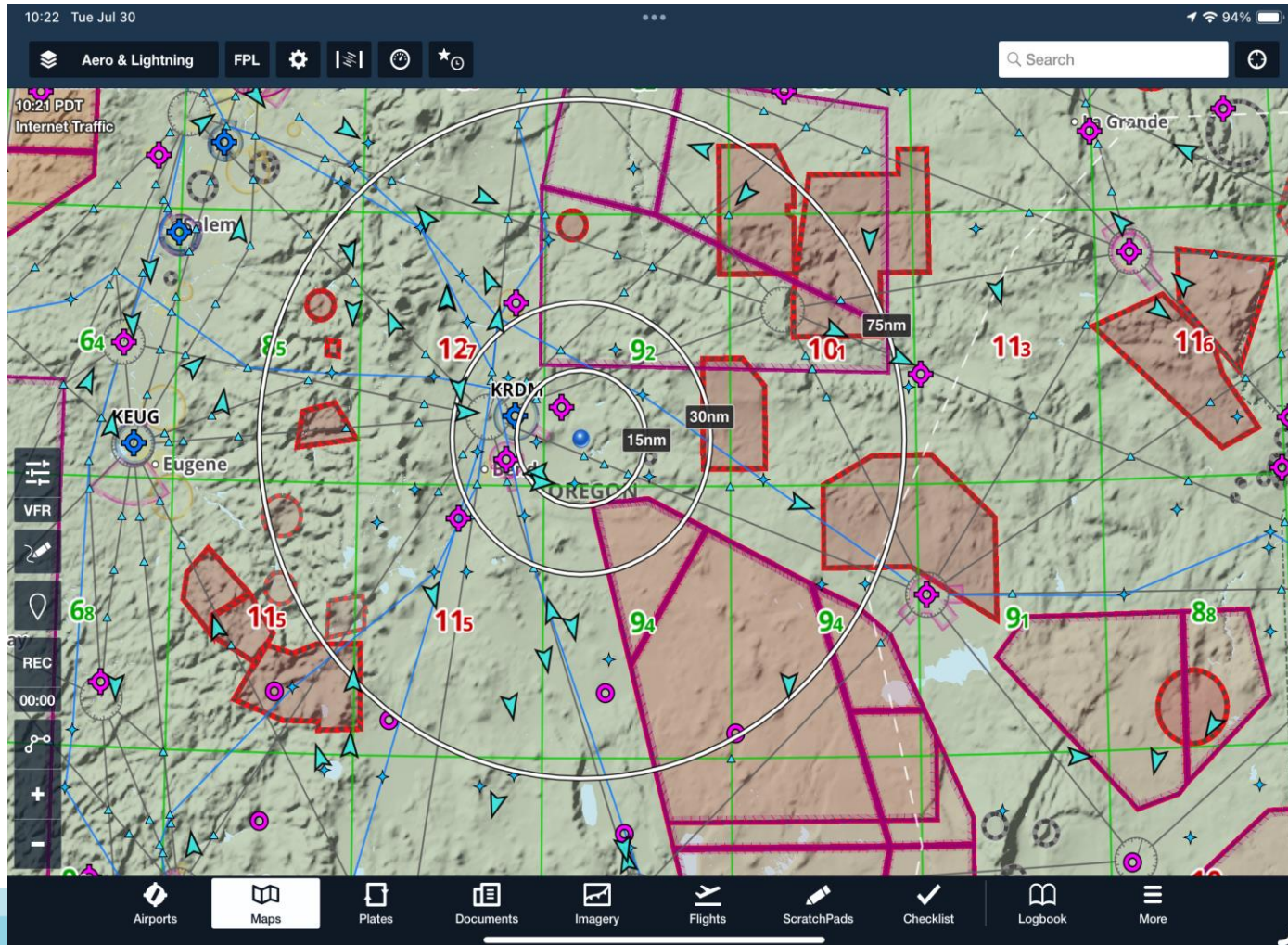


Notes on Examples that Follow

- **These are various Foreflight screens**
- **This is not meant to imply that only Foreflight provides these data**
- **Other EFBs that depict this information have different screen navigation and will likely display it in different formats than shown**



Foreflight Airspace Condition Display



- TFRs galore (firefighting)
- MOAs active and not.



Federal Aviation
Administration

Foreflight Terminal Weather Display

10:34 Tue Jul 30

KRDJ: Roberts Field
Redmond, Oregon, US
44.25°N/121.15°W
05:51 20:30 PDT

3D View FBOs
Taxiways Comments

Latest Weather **VFR, Variable at 3 kts, 10 sm, sky clear** ☼
Elevation **3,082' MSL**
Pattern altitude **4,082' MSL (est.)**
Fuel **Jet A, Jet A+, 100LL**
Procedures **ILS, GPS, VOR, LOC, RNAV, VISUAL, RNP**

ATIS **119.025**
Clearance -----
Ground **121.8**
Tower **124.5**
Center **126.15**

Info Weather Runway Procedure NOTAM

METAR > ● VFR 37m ago
TAF >
MOS >
Daily >
Winds >

METAR KRDJ 301656Z VRB03KT 10SM CLR 20/12
A3006 RMK AO2 SLP159 T02000117 S

Time 09:56 PDT
Wind Variable at 3 kts
Visibility 10 sm
Clouds Sky clear
Temperature 20°C (68°F)
Dewpoint 12°C (54°F)
Altimeter 30.06 inHg
Humidity 60%
Density Altitude 4,419'

NEARBY WEATHER

● KBDN: Bend Municipal 19m
3,459' MSL, CTAF 123.0
Winds calm, 10 sm
30.06 inHg, 20°C (11°C dewpoint)
9.8nm S, course 179°M

● S39: Prineville 19m
3,251' MSL, CTAF 122.7
Winds calm, 10 sm
30.07 inHg, 20°C (11°C dewpoint)
10.7nm NE, course 65°M

● S33: Madras Municipal 19m
2,438' MSL, CTAF 122.8

Airports Maps Plates Documents Imagery Flights ScratchPads Logbook More

- Although a Towered airport, you see ASOS, not ATIS.
- Note various other weather depictions available.



Federal Aviation
Administration

Remember “Area Forecasts”?

10:35 Tue Jul 30

Airports Edit

Search

Favorites Recents Maps/Flights Browse

KRDM: Roberts Field

3D View FBOs

Taxiways Comments

ATIS 119.025

Clearance -----

Ground 121.8

Tower 124.5

Center 126.15

Procedure NOTAM

Forecast Discussion

Close Forecast Discussion

AFD PDT 14m ago

AVIATION

18Z TAFS... VFR CONDITIONS ARE EXPECTED THROUGH THE FORECAST PERIOD. SCATTERED CLOUDS AT 040-090 WILL GIVE WAY TO SKC BY THIS EVENING. WINDS WILL BE 15G25KT AT KDLS UNTIL EARLY THIS EVENING AND GUSTS 15-20KT AT KRDM, KPDT AND KBDN THIS AFTERNOON. ELSEWHERE WINDS WILL BE 5-12 KT. WINDS WILL DIMINISH TO 3-8KT THIS EVENING AND BE TERRAIN DRIVEN. 78

PRELIMINARY POINT TEMPS/PROBABILITY OF PRECIPITATION

PDT	82	55	89	59	/	10	0	0	0
ALW	86	59	92	63	/	20	0	0	0
PSC	88	62	93	64	/	0	0	0	0
YKM	85	55	90	60	/	0	0	0	0
HRI	88	60	93	61	/	0	0	0	0
ELN	82	57	91	60	/	0	0	0	0
RDM	82	50	90	57	/	0	0	0	0
LGD	80	52	90	58	/	30	0	0	0
GCD	83	53	93	59	/	20	0	0	0
DLS	83	61	93	66	/	0	0	0	0

PDT WATCHES/WARNINGS/ADVISORIES

OR...
NONE.
WA...
NONE.

SHORT TERM...
87

LONG TERM...
77

Expires 15:00 PDT

Airports Maps Plates Documents Imagery Flights ScratchPads Checklist Logbook More

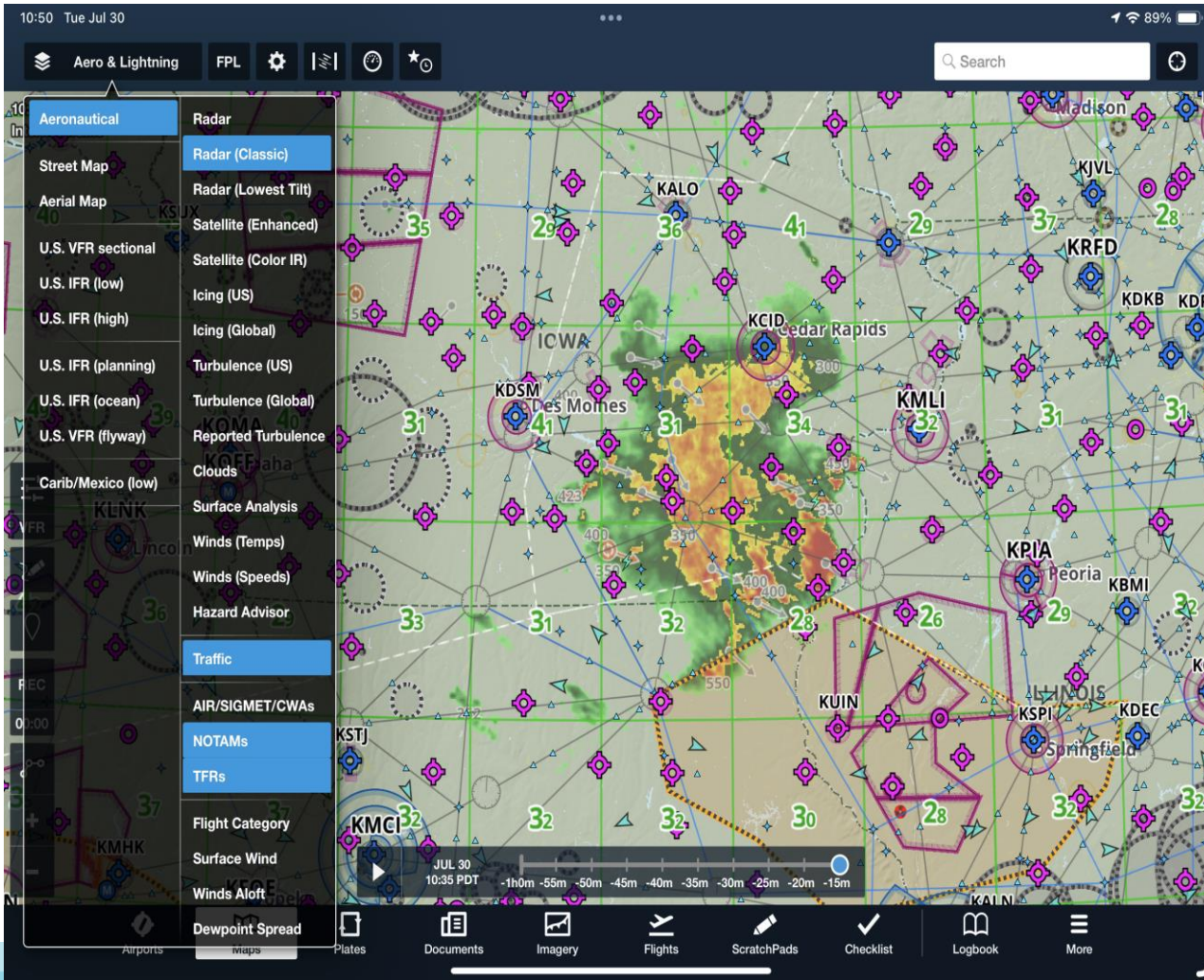
They sort of went away, but it's only a title change

In Foreflight, select “TAF” (previous slide) and then select “Forecast Discussion”



Federal Aviation Administration

Foreflight Map Weather Layers



- Slide bar at bottom shows that radar data is 15-minutes old
- The animation slider can be used to show development and track over the previous hour
- Note the other weather-related layers and items that can be selected
- Not all can be simultaneously displayed



FIS-B Summary

- **Lots of information related to your planned and in-progress flights is available for free, given ADS-B IN capability**
- **Get familiar with what's available and how to get to relevant information using your EFB of choice**
- **Know how to turn-on required layers!**
- **Don't even think about picking your way through convective or icing conditions using this data alone**

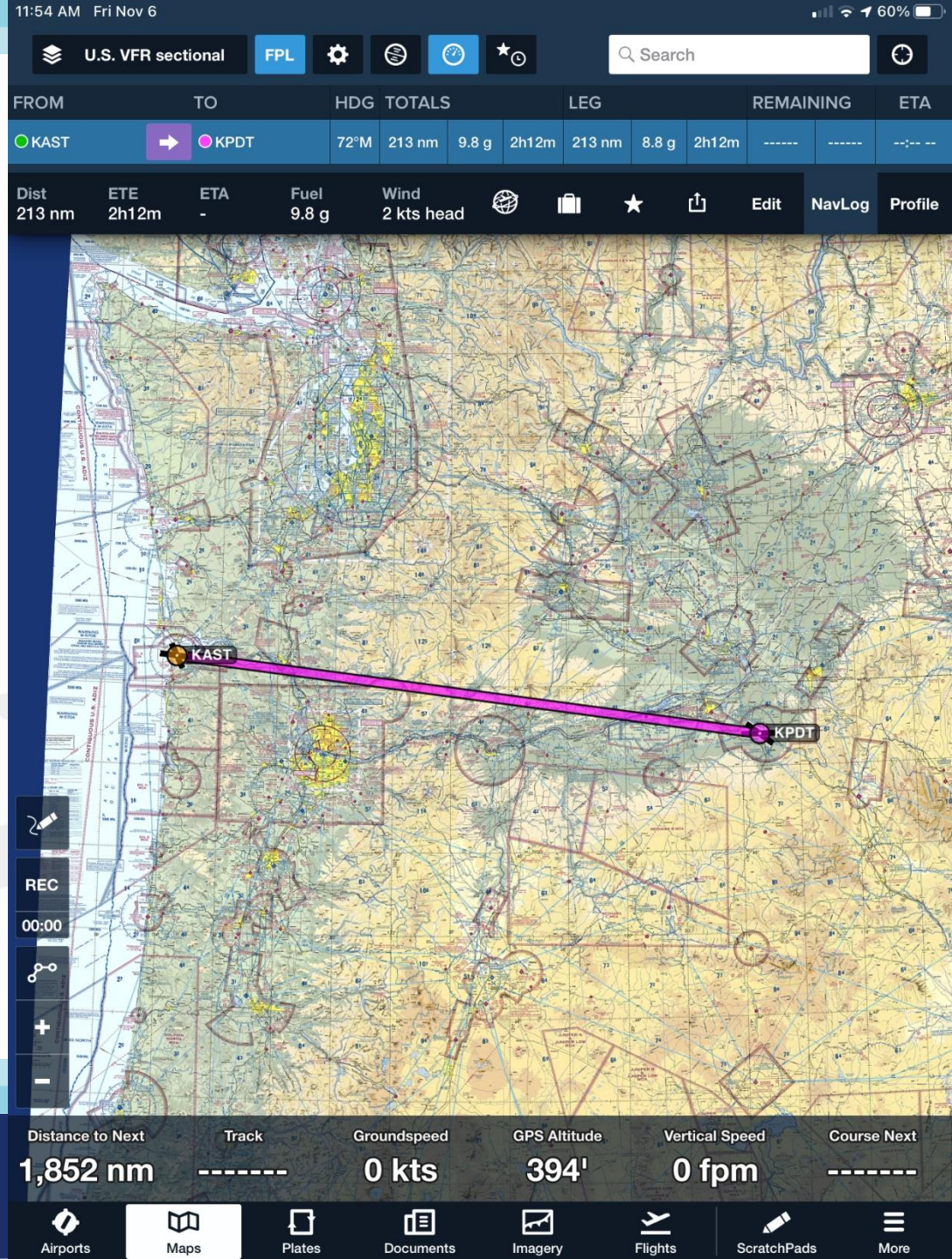


EFB

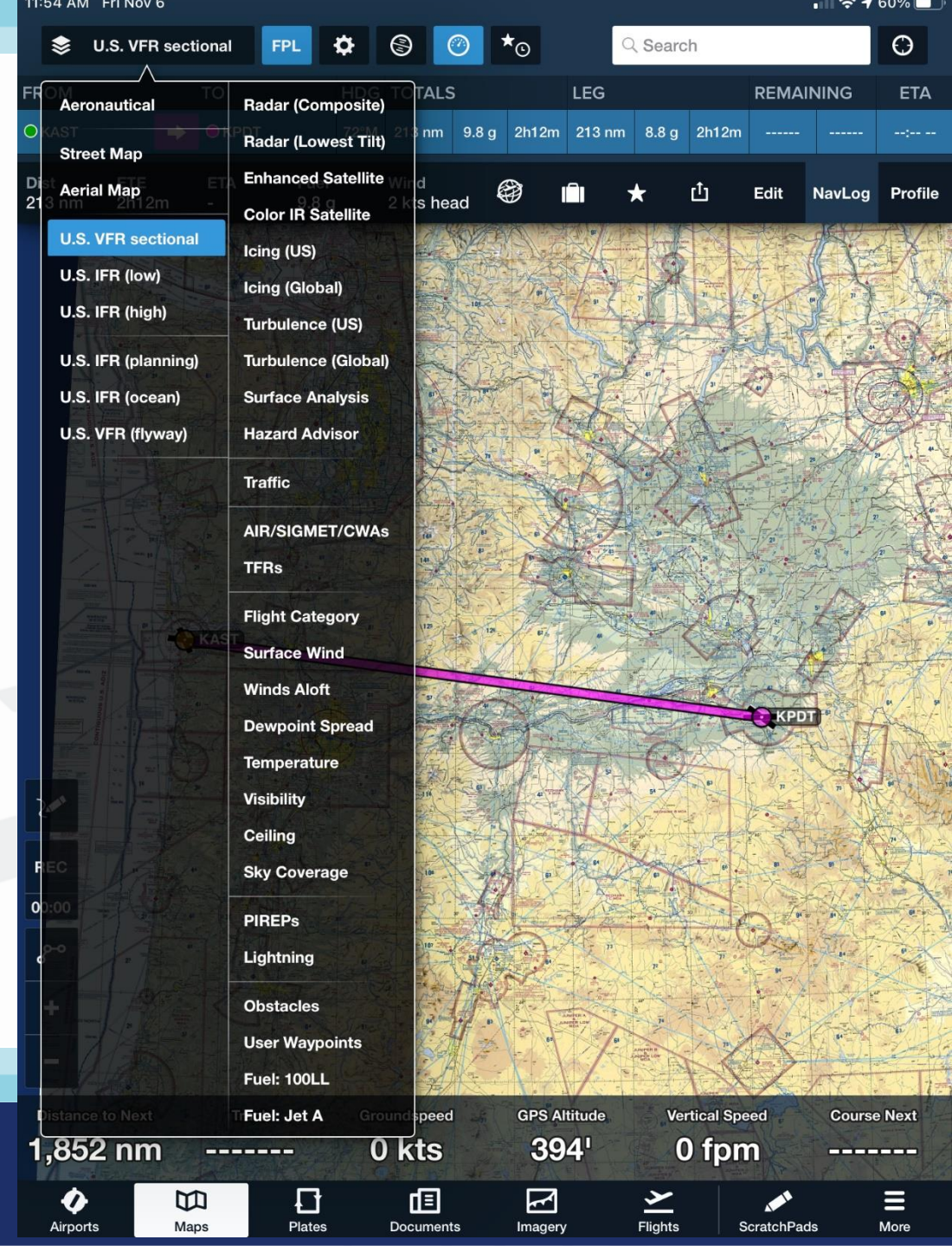
- 1. Charged and/or plugged-in**
- 2. Connected to a source of FIS-B and TIS-B**
-
- 4. You understand the limitations**
- 5. Position it so it doesn't overheat!**
- 6. Know the layers menu!**



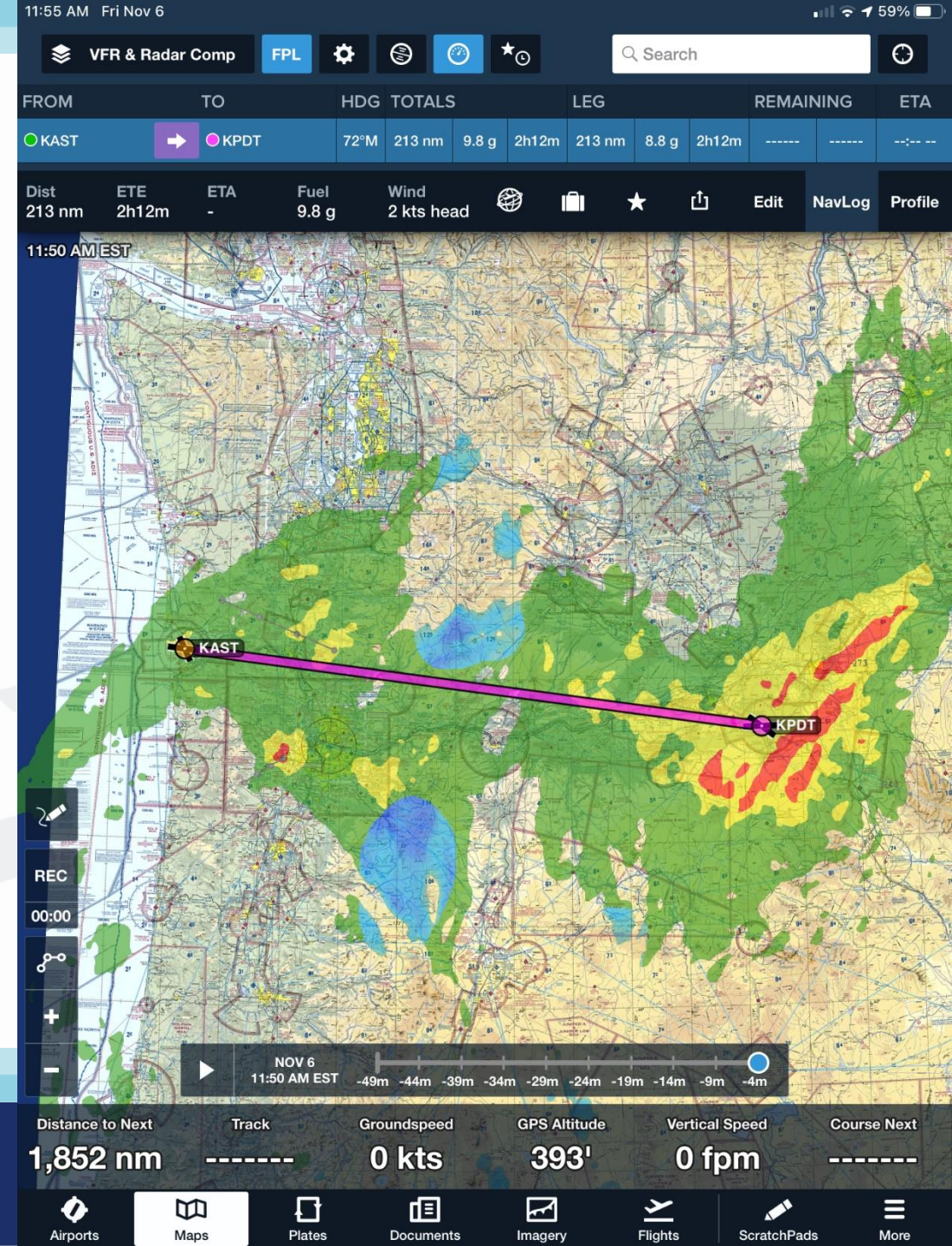
- Astoria to Pendleton, OR
- This looks okay...



- Oh...wait...better turn on RADAR layer



- Umm...might be okay by the time we get there...more planning to do!



TAF, MOS and Forecast Discussion

TAF

Created by meteorologists at NWS regional WX forecasting offices (WFOs).

A concise statement of forecasted WX conditions over a 24 (or 30) hour period.

Issued every 6 hours, beginning at 0000Z.

Covers a 5 sm radius of airport center. VCNTY covers 5-10 sm.

Satisfies “Preflight Action” and IFR flight plan requirements.

MOS/LAMP

Created using computer-based statistical modeling methods.

A “forecast guidance” product that provides “virtual” forecasts for airports where TAFs not issued, and over a longer forecast period.

Provides a 72-hour look-ahead in 3-hour increments. (Hourly for first 25 hours, via LAMP.)

For a given airport, similar coverage area as TAF.

Does not satisfy FAR requirements. Therefore primarily a supplemental tool.

Includes some information not found in TAFs (e.g. Temp/DP).

Forecast Discussion

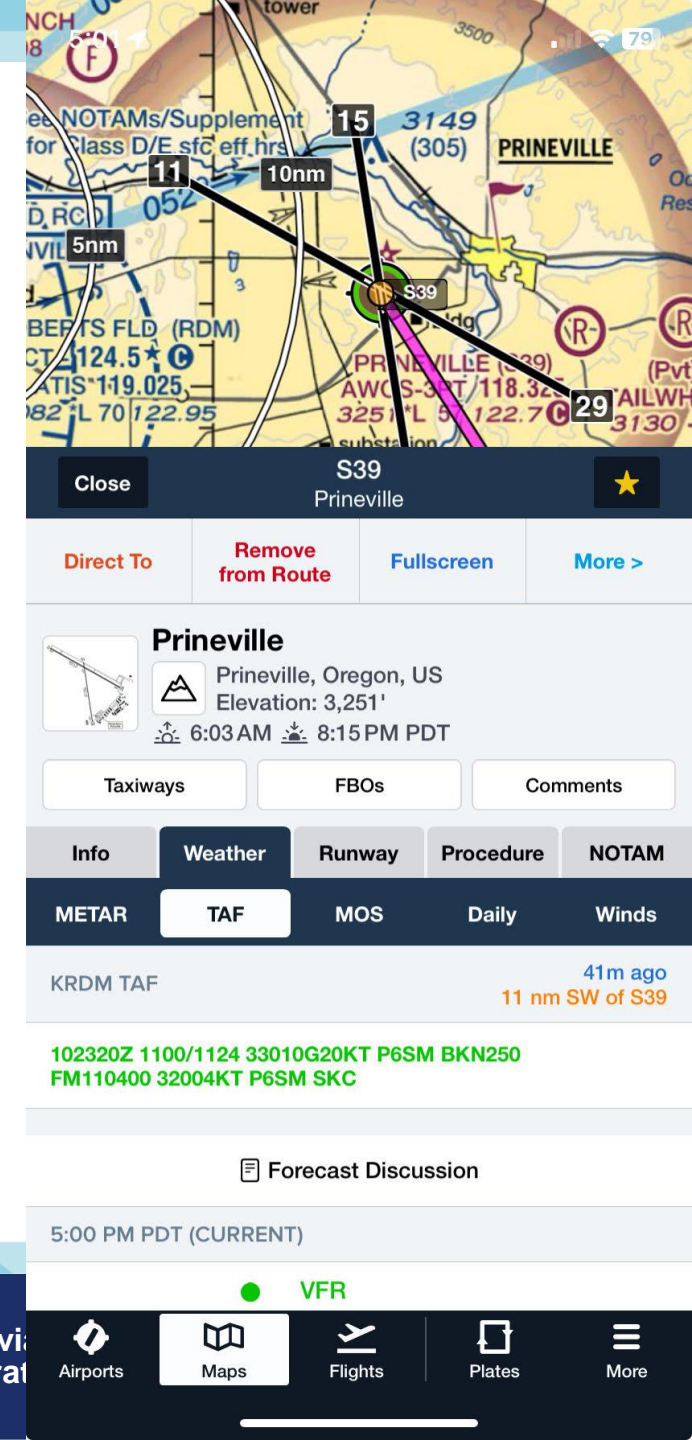
Written by the TAF creator to describe WX conditions in the forecaster’s own words.

May include concerns that cannot be encoded in the TAF and provide the forecaster’s reasoning and level of confidence.

Issued approximately every 6 hours to correspond with the release of the latest TAFs.

Covers the entire area within a WFO’s geography.

Does not satisfy FAR requirements. Therefore primarily a supplemental tool.



Federal Aviation Administration

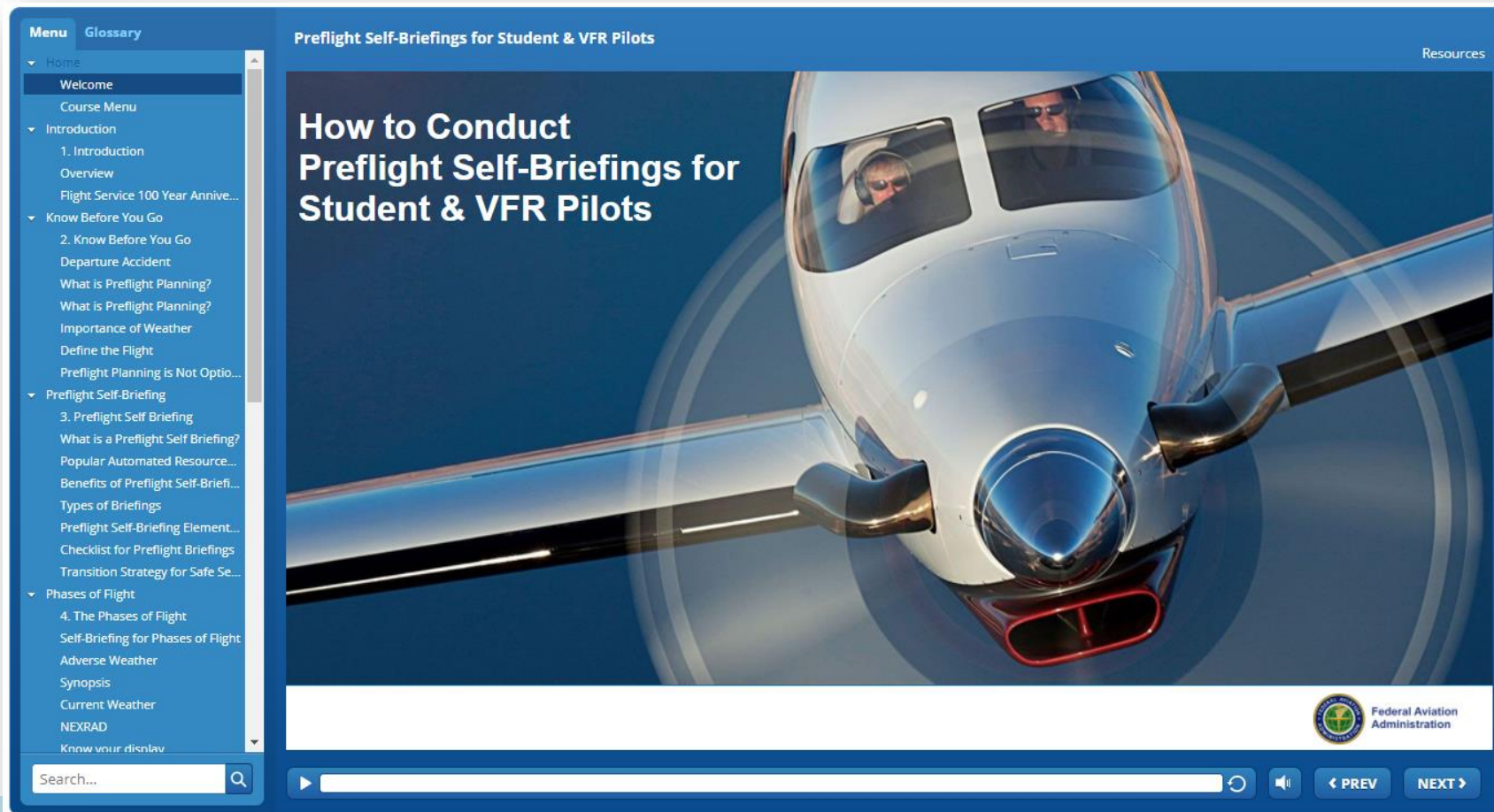
Cautions & Tips

- **Don't fixate on the equipment**
 - Cockpit displays don't tell the whole story
 - We still have to look outside
- **Understand what the displays tell you... and what they don't**
 - You may not see all the traffic in your area
 - ...or all the weather ahead
- **Make weather avoidance decisions early**
 - Don't wait till you're too close to choose a route
 - Refine your decisions as more information becomes available
 - Obey the 20-mile rule



Want to know more?

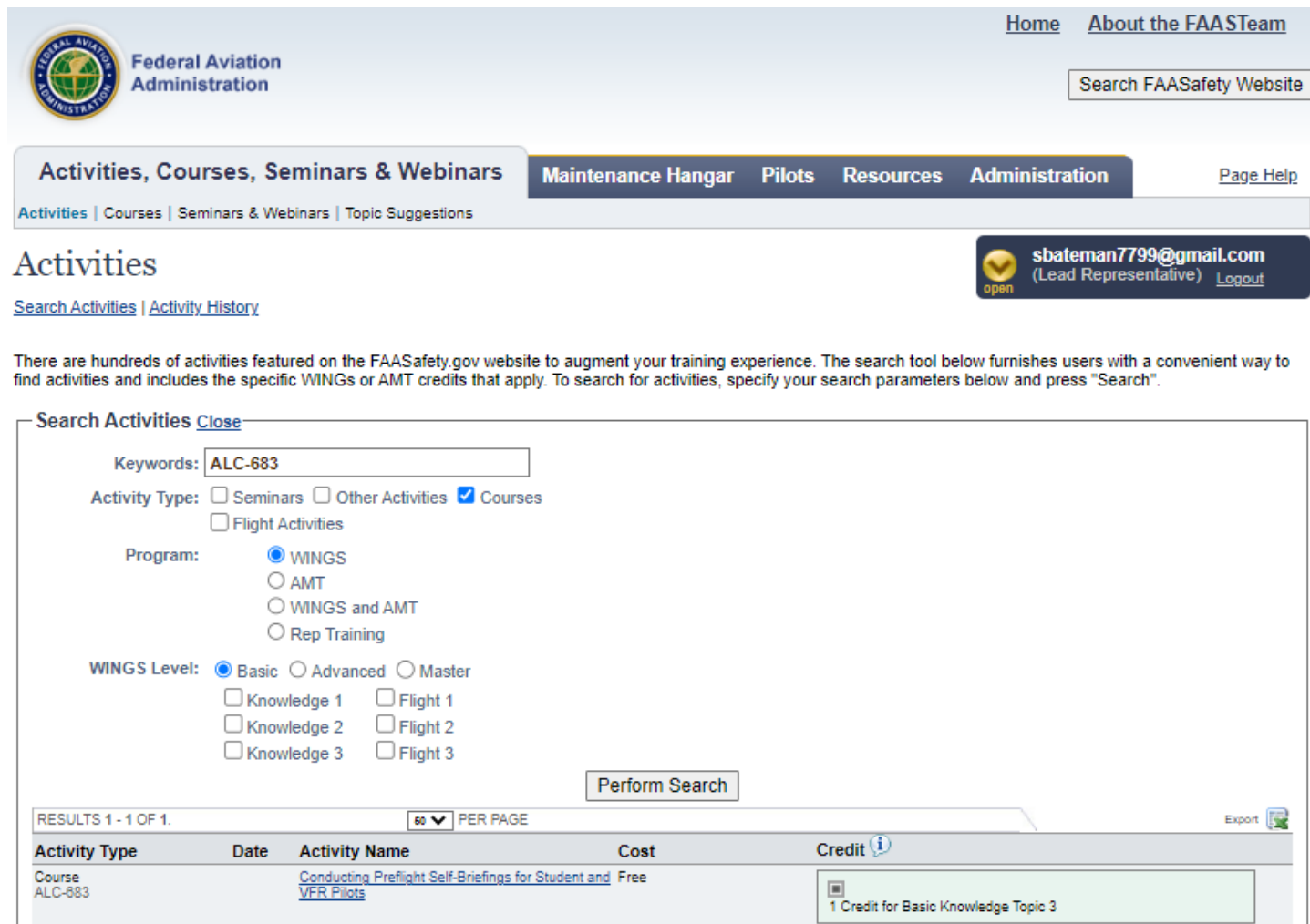
WINGS course ALC-683 – I challenge you to take this tonight!



The screenshot shows a web application interface for a course titled "Preflight Self-Briefings for Student & VFR Pilots". The interface features a blue header with "Menu" and "Glossary" tabs. A left sidebar contains a navigation menu with categories like "Home", "Introduction", "Know Before You Go", "Preflight Self-Briefing", and "Phases of Flight". The main content area displays the title "How to Conduct Preflight Self-Briefings for Student & VFR Pilots" over a background image of an airplane cockpit. At the bottom of the content area, there is a search bar, a progress bar, and navigation buttons for "PREV" and "NEXT". The Federal Aviation Administration logo is visible in the bottom right corner of the content area.



Finding it...



The screenshot shows the FAA Safety Website interface. At the top left is the FAA logo and the text "Federal Aviation Administration". To the right are links for "Home" and "About the FAASafety Team", and a search box labeled "Search FAASafety Website". Below this is a navigation bar with "Activities, Courses, Seminars & Webinars" highlighted, and other tabs for "Maintenance Hangar", "Pilots", "Resources", and "Administration". A user profile for "sbateman7799@gmail.com" is visible. The main content area is titled "Activities" and includes a search tool. The search parameters are: Keywords: ALC-683; Activity Type: Courses (checked); Program: WINGS (checked); WINGS Level: Basic (checked). A "Perform Search" button is present. Below the search tool, the results show "RESULTS 1 - 1 OF 1." and a table with one entry:

Activity Type	Date	Activity Name	Cost	Credit
Course		Conducting Preflight Self-Briefings for Student and VFR Pilots	Free	1 Credit for Basic Knowledge Topic 3

<https://bit.ly/WINGS-ALC-683>



Yep...I did it...



FAA
Aviation Safety

Certificate of Achievement

This is to certify that

Stephen Bateman

has successfully completed the
FAA Safety Team Aviation Learning Center Online
Course

Conducting Preflight Self-Briefings For Student And Vfr Pilots

Course Number ALC-683

Presented by AJI-1560, ATO Safety and Technical Training

July 3, 2024

Certificate Number 0351922-20240703-00683

A handwritten signature in blue ink that reads "Patricia Mathes".

Patricia Mathes, Manager, National FAA Safety Team



Federal Aviation
Administration

Proficiency and Peace of Mind

- Regularly scenarios with your CFI
- “Revert to training”...only works if...?
- Practice, practice...
 - Get in your head
 - ...and keep it there...
- Document in *WINGS*



FAASTeam

Safer Skies Through Education



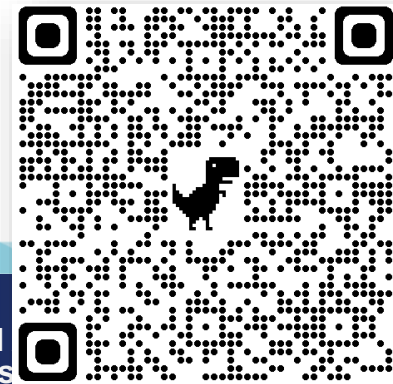
Proficient Pilots are:

- **Competent** - They train regularly to keep their aviation skills razor sharp.
- **Confident** - They understand their capabilities and equally importantly they understand and operate within their limitations.
- **Safe** - Most importantly, they are safe.

Have you earned your **WINGS**?

WINGS Phase = Flight Review
WINGS Instruction = CFI Renewal

AC 61-91J



Federal
Adminis

•Homework

- Read FAA H-8083-28 Aviation Weather Handbook
- Read AIM Chapter 7, Section 1 – Safety of Flight
- Practice using 1800wxbrief.com for weather, briefings and filings
- Do *WINGS* course ALC-683
- If you use Foreflight, practice on the ground!
- Call flight service before flight...at least for latest NOTAMs and TFRs
- Call flight service in flight
 - Give a PIREP and ask for weather updates



References

- **AC 00-63A Use of Flight Deck Displays of Digital Weather and Aeronautical Information**
 - https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_00-63A.pdf
- **AC 90-114B Automatic Dependent Surveillance-Broadcast Operations**
 - https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_90-114B.pdf
- **AC 91-92 Pilot's Guide to a Pre-flight Briefing**
 - https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1036892



References

- **Aeronautical Information Manual**

- [faa.gov/air_traffic/publications/media/aim_basic_dtd_4-20-23.pdf](https://www.faa.gov/air_traffic/publications/media/aim_basic_dtd_4-20-23.pdf)
- Chapter 7 – Safety of Flight
 - Section 1 - Meteorology

- **FAA ADS-B Information**

- <https://www.faa.gov/nextgen/equipadsb/>

- **Automated Surface Observing Systems**

- <https://www.weather.gov/asos/>
- https://www.faa.gov/air_traffic/weather/asos/



Thank you for attending

- You are vital members of our GA safety community



Next Month's ToM:

The National FAA Safety Team Presents

Topic of the Month
September

GA Aircraft Exhaust Systems

Presented to: Safety Minded Aviators, Everywhere...
By: Stephen Bateman, CFI, Chocks Away Aviation, LLC
Date: Tuesday 17th September 2024

Produced by:
The National FAA Safety Team (FAASTeam)



Federal Aviation
Administration

PDF Of These Slides Available For Your Further Study and Use

- Actual slides post on the third Sunday of every month (August 18th)
- <https://bit.ly/ToMSafetyArticle>
- Select the safety article (month) of interest
- Open and save the PDF
- **I'LL SHOW THIS INFO AGAIN AT THE END OF THE PRESENTATION**



- Thanks to the AOPA Flying Clubs Initiative

