



National Transportation Safety Board

NTSB PIREP Special Investigation Report Summary

Paul Suffern
NTSB Investigator

NTSB PIREP SIR Timeline

- Since 2012 more than 20 accident/incident investigations revealed PIREP and/or weather dissemination issues
- Started formal SIR process in Alaska in 2015
- Held PIREP Forum in summer 2016
- Numerous stakeholders
- PIREP SIR released spring 2017

Various Weather Related Accidents

- Thunderstorm encounter in SC
- Icing/IMC/mtn wv in AZ (2)
- Icing in AK
- Icing/IMC in TN
- Thunderstorm/IMC in WV
- VFR into IMC in AK
- VFR into IMC in GA
- Thunderstorm encounter in NE
- Wind in CA
- VFR into IMC in CA (2)
- Thunderstorm encounter in FL
- Convective encounter in OR



ANC14MA008
Cessna 208B
St. Mary's, Alaska
November 2013

- VFR flight plan
- Part 135 commuter flight
- Bethel to Mountain Village
- Got top of the hour METARs, but no official wx briefing
- 4 fatalities/6 injuries



***PASM 300316Z AUTO 23006KT 3SM OVC003 M08/M32
A3035 RMK AO1=***



ANC14MA008

Sat 30 Nov 2013 02:21:57 UTC
Fri 29 Nov 2013 17:21:57 AKST

St. Marys - NorthWest
See <http://avcams.faa.gov> for more information



FAA supplementary weather product.

ANC14MA008

- Only AIRMET for mountain obscuration out
- AAWU and CWSU forecasters review/monitor weather cameras
 - Changes in weather on cameras no alerting
- However, PIREPS alert or pop up on screen
- FC/FF went home at 1700 AKST
- Ways to improve for all....

ANC14MA008

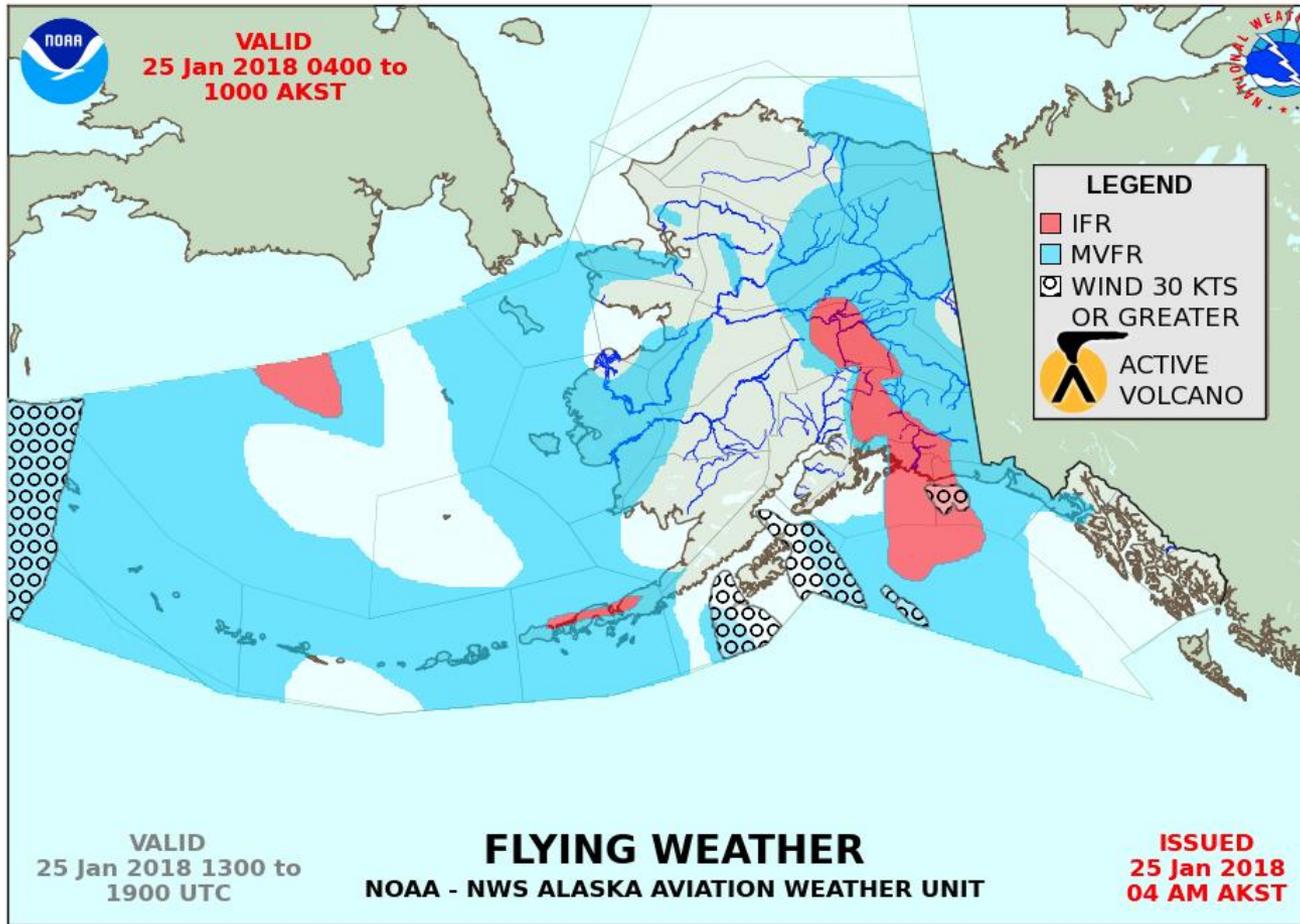
- What about Part 121/135/91 operators/pilots freely sharing PIREP information? FF/FC/Village agent PIREPS?

```
GAM UA /OV GAM /TM 1715 /FL000 /TP MAN /RM RWY 16/34 100 PRCTFROST..6FT BERM 15FT OUTSIDE THE LGT W SIDE TWD OCEAN  
SVA UA /OV SVA /TM 1741 /FL000 /TP MAN /RM RWY IN GOOD SHAPE BARE  
OME UA /OV OME /TM 1640 /FL000 /TP MAN /RM PAEW RWY 10/28 OMEPICKING UP FREEZING DRIZZLE ON WINDSHIELDS  
PAQ UA /OV PAQ280005 /TM 1700 /FL000 /TP MAN /WV 04020G30KT /RM MATANUSKA WIND
```

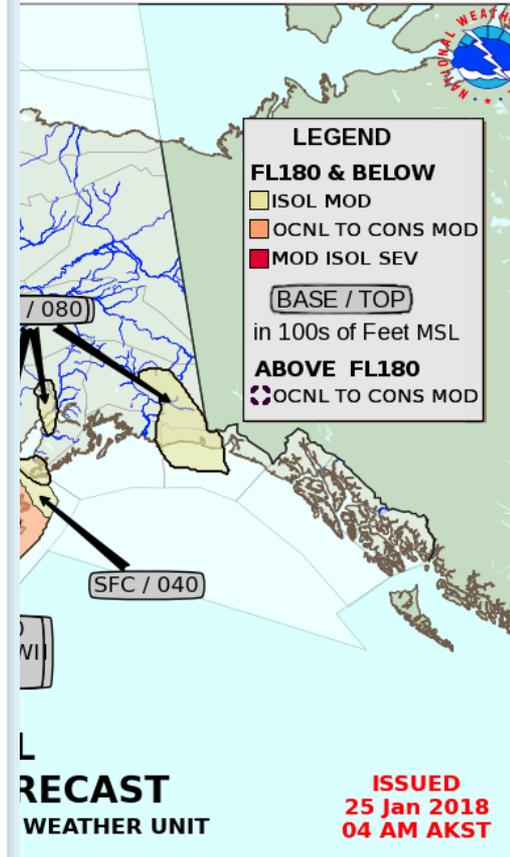
- Want to improve IMC/Icing forecast, need PIREPs for weather developers...

ANC14MA008

Surface Chart | 0400 AKST | 1000 AKST



1200 AKST | 1500 AKST
ST | 1500 AKST



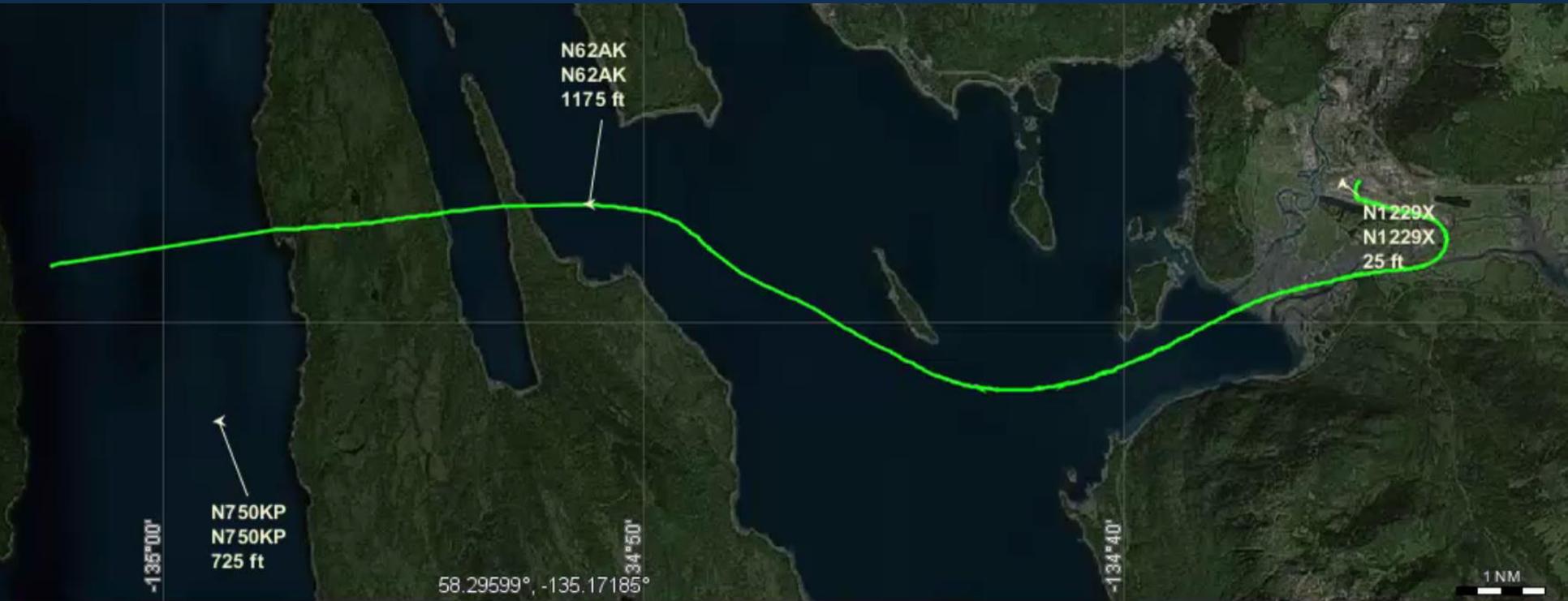
ANC15FA049
Cessna 207A
Juneau, Alaska
July 2015



- VFR flight plan
- Part 135 commuter flight
- Juneau to Hoonah
- Told of poor wx conditions, but unknown if checked any other weather information
- 1 Fatal/4 Serious

***PAOH 172056Z AUTO 00000KT 10SM FEW024
OVC034 18/16A3021 RMK AO2 TSNO 55001
T01770155 OVC V BKN SLP232 \$=***

ANC15FA049



Fri 17 Jul 2015 21:27:05 UTC
Fri 17 Jul 2015 13:27:05 AKDT

Lena Point - SouthWest
See <http://awcams.faa.gov> for more information

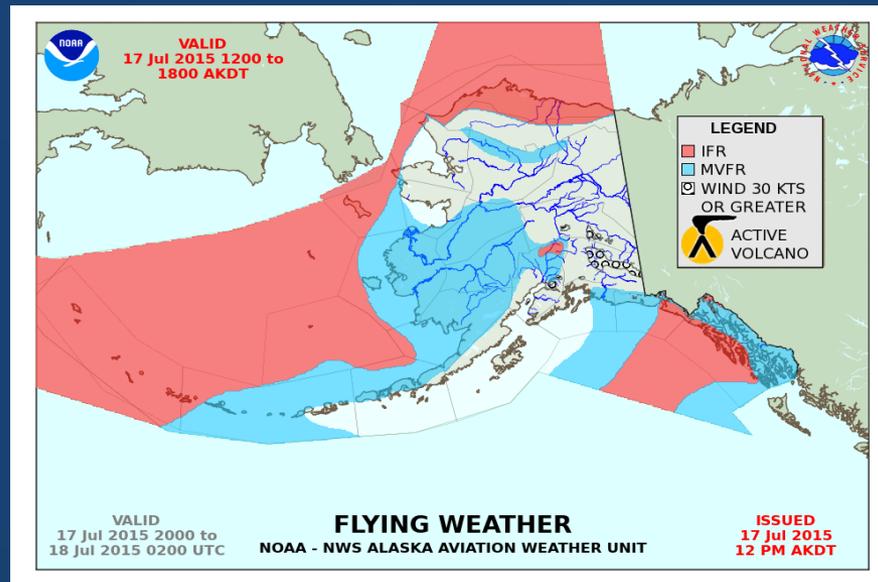
FAA advisory weather product

ANC15FA049

- AIRMET for mountain obscuration out
- On line between MVFR to IFR in AAWU flying wx graphic
- FC/FF briefed accident pilot that every morning flight had cancelled due to weather (one tried and turned around)
- FC/FF told accident pilot to discuss weather with pilot who turned around (no verification that discussion took place)
- Accident pilot said would look at weather cameras before departure
- New FC/FF on shift and never verified accident pilot did the above (only pilot responsible to signoff)

ANC15FA049

- What about FC/FF providing PIREPs? One pilot turned back due to weather earlier... no PIREP
- No PIREPs from flights going ahead or behind accident flight
- Want to improve IMC/Icing forecast, need PIREPs for weather forecasters/developers...



NTSB Learned: Perspectives

2018 Alaska Weather and Aviation Connection Workshop

- Pilots/operators/educators
- ATC
- FSS

PIREPs: Importance, Uses

Fairly universal awareness:

- Valuable source of in-situ info about actual weather conditions
- Strategic and tactical uses in NAS
 - Pilots, dispatchers: route planning
 - ATC: traffic routing, free up airspace

PIREPs: Importance, Uses

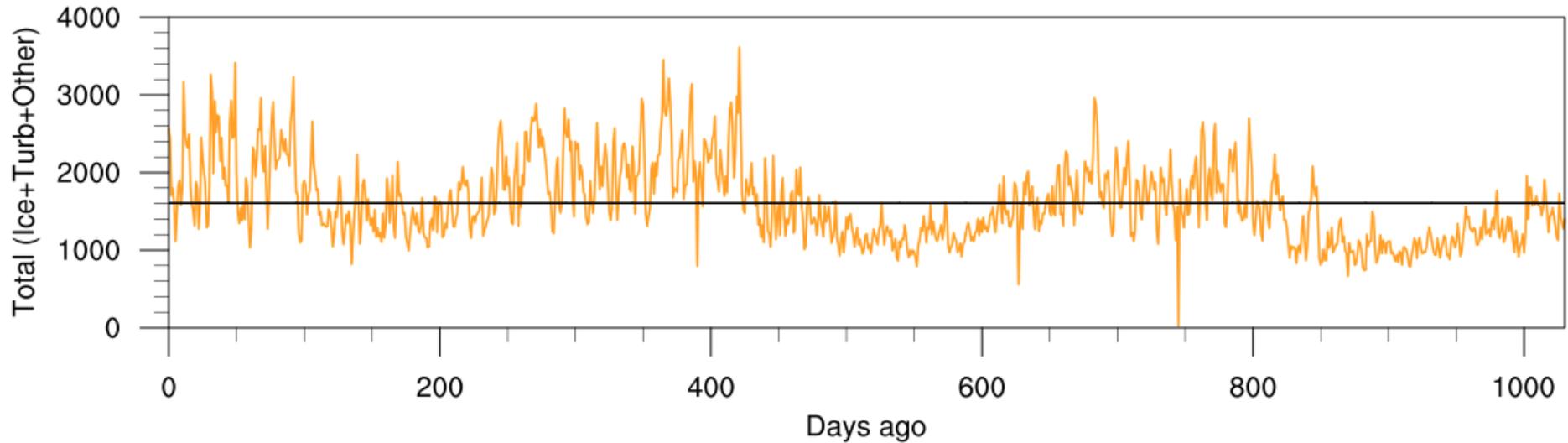
Less awareness among pilots, operators, ATC personnel:

- **Impact on weather products**
 - Essential for forecast verification
 - Critical for accuracy of global forecast models, add value to icing and turbulence product algorithms
 - Both adverse and fair weather PIREPs

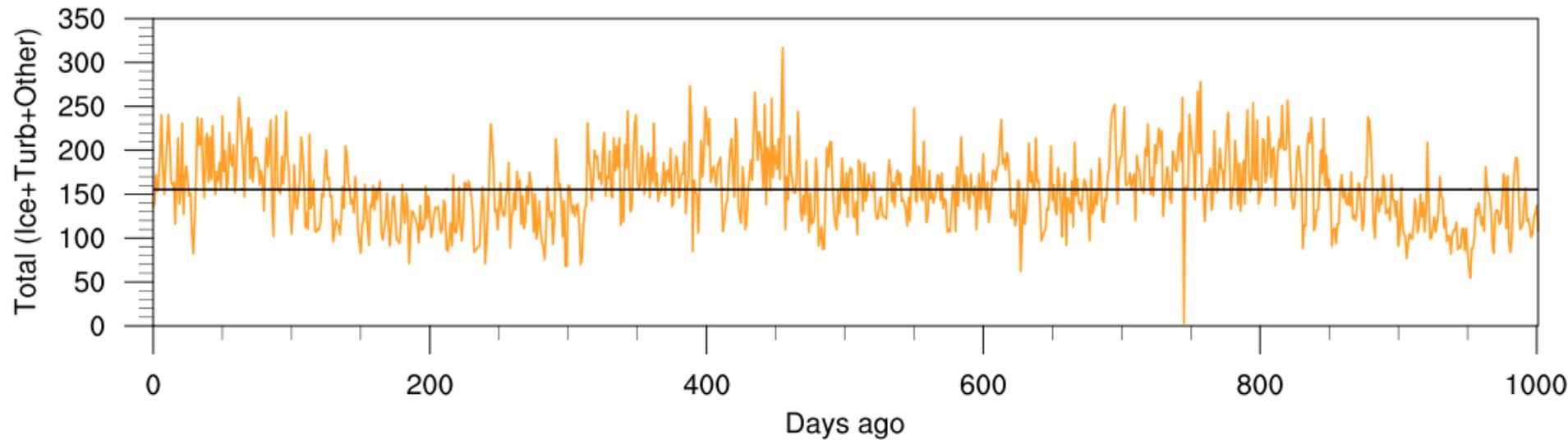
PIREPs: Importance, Uses

- Bottom line: More, better PIREPs = more accurate weather forecasts and advisory products
- “Life or death” for general aviation
- Relevant for transport-category:
Avoid turbulence injuries, damage

PIREPs totals lower 48



PIREPs totals Alaska



PIREPs: Submission, Solicitation, and Dissemination

- Need better quality, quantity, variety submitted from pilots, operators
- Need effective dissemination by ATC, FSS, dispatchers/FC/FF
- Specific time limit requirements prohibitive?
- What ways can technology aid ATC/pilots?

PIREPs: Training, Education, and Operations

- AOPA PIREP Survey
 - Little emphasis in initial training on PIREPs (rarely/never brought up again after initial)
 - Rarely provided PIREPs to ATC/FSS w/o request
 - Only 38% believed their PIREPs would make into NAS if provided

PIREP SIR Recommendations/Responses

AOPA working on course content

No response yet

FAA using data from AOPA survey
and then conducting another
survey to both pilots and ATC
Next update summer 2018

PIREP SIR Recommendations/Responses

- To FAA on enforcement action

NTSB response, in part: "... it does not explain your enforcement policies related to PIREPs nor the potential protections that ASRS can provide...

...that pilots fear enforcement action against their certificates if they file a PIREP for an inadvertent encounter with adverse conditions for which either the pilot is not rated to fly...

We believe that these concerns illustrate the need for FAA clarification on these issues, which would ease pilots' fears of enforcement action... including issuing response in a notice that does not expire...

PIREP SIR Recommendations/Responses

FAA working on it... part of survey

and distribute

FAA working on it... establishing a team and will follow up

The FAA is working on it. ATC is

FAA working on it... establishing a team and will follow up

FAA/NWS working together and will follow up

PIREP SIR Recommendations/Responses

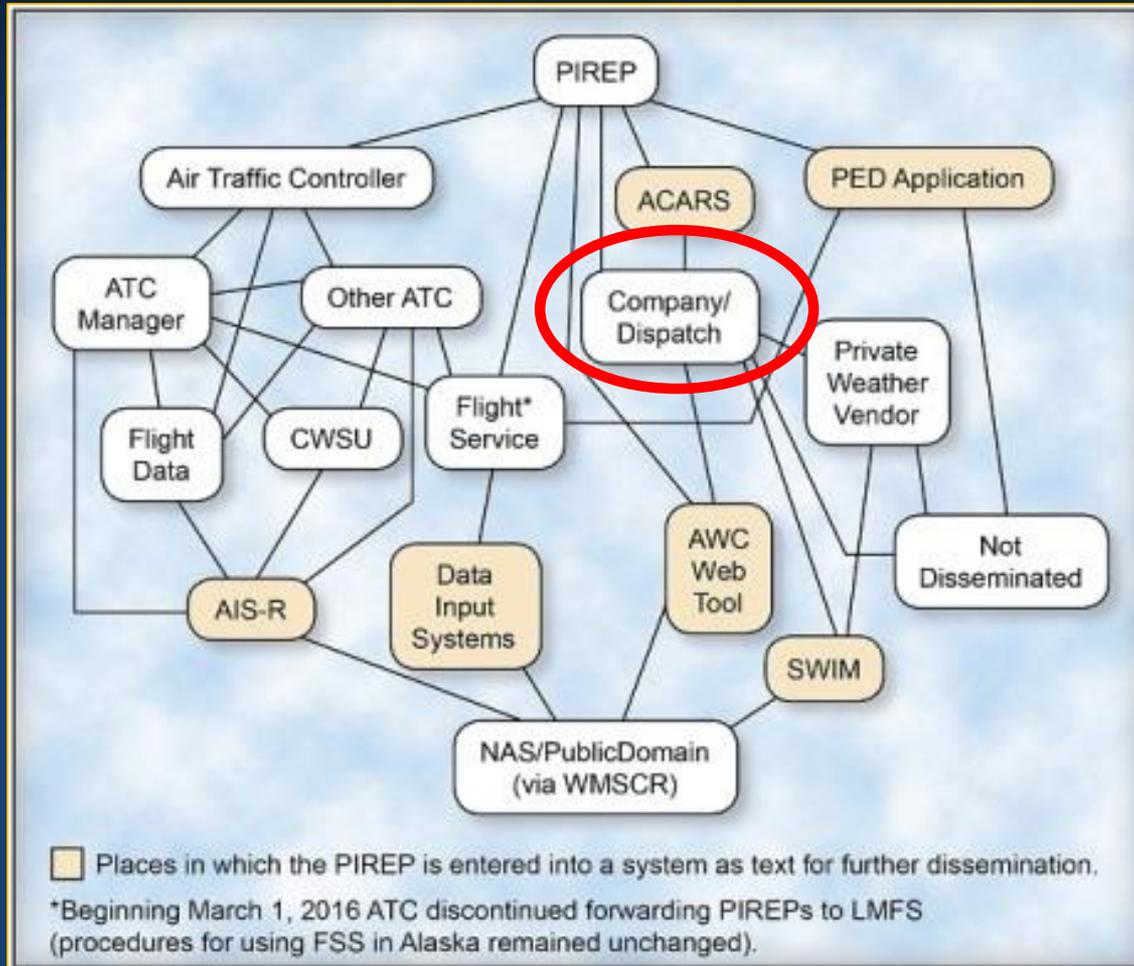
FAA working on it... establishing a team and will follow up

FAA working on it... establishing a team and will follow up

FAA working on it... establishing a team and will follow up

CAA distributed PIREP SIR and part of FAA working groups

Dispatch/Village Agent/FF/FC



FF/FC/Village Agent issue PIREPs

- GAM UA /OV GAM /TM 1715 /FL000 /TP MAN /RM RWY 16/34 100 PRCTFROST..6FT BERM 15FT OUTSIDE THE LGT W SIDE TWD OCEAN
- SVA UA /OV SVA /TM 1741 /FL000 /TP MAN /RM RWY IN GOOD SHAPE BARE
- OME UA /OV OME /TM 1640 /FL000 /TP MAN /RM PAEW RWY 10/28 OMEPICKING UP FREEZING DRIZZLE ON WINDSHIELDS
- PAQ UA /OV PAQ280005 /TM 1700 /FL000 /TP MAN /WV 04020G30KT /RM MATANUSKA WIND

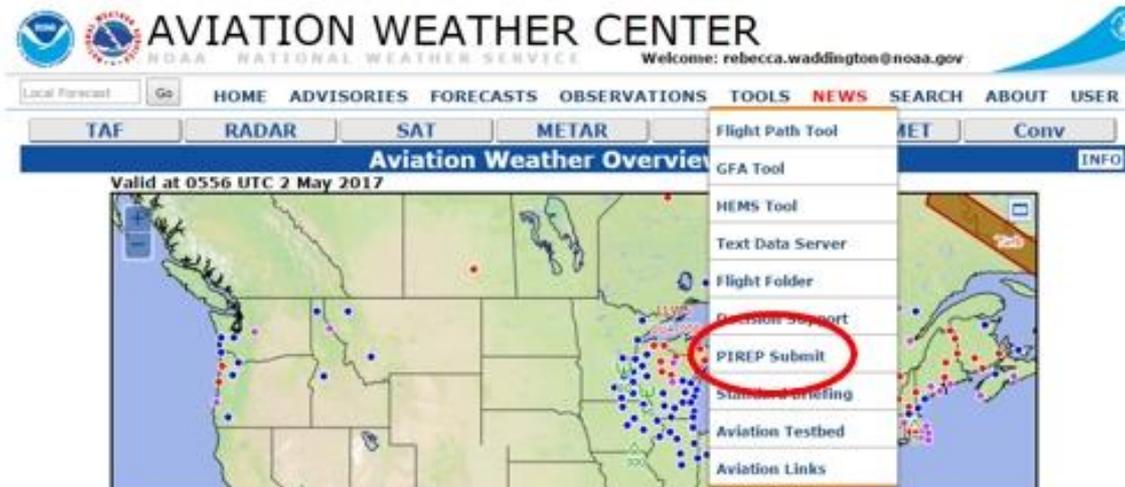
- Data would be invaluable and would help flight briefers not always say, “VFR not recommended...”

AWC PIREP Submit Form

1. Register as a user on www.aviationweather.gov



2. Email ncep.awcweb@noaa.gov to request access to the PIREP Submit Form. Once access is approved, the PIREP Submit link will appear under the TOOLS menu.



3. Start submitting PIREPs using either the Full or the Dispatcher form.



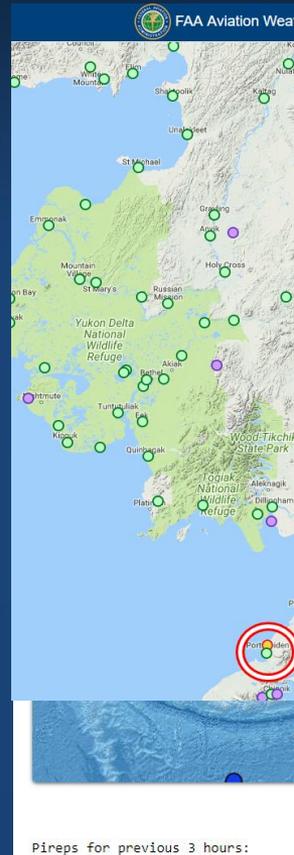
AWC PIREP Submit Form

- Pilots, operators, dispatchers may submit PIREPs electronically

- Just like all PIREPs, these are integrated into the AAWU/CWSU forecast production process

- Will be automatically formatted, distributed, and displayed graphically on:

- www.AviationWeather.gov
- www.weather.gov/aawu
- <http://avcams.faa.gov/#>



Other electronic submission avenues

Partnerships

Honeywell

spidertracks

GARMIN

DELORME

ForeFlight
real time Apps for pilots

Naviator

iFlyGPS

SkyVector

aerovie

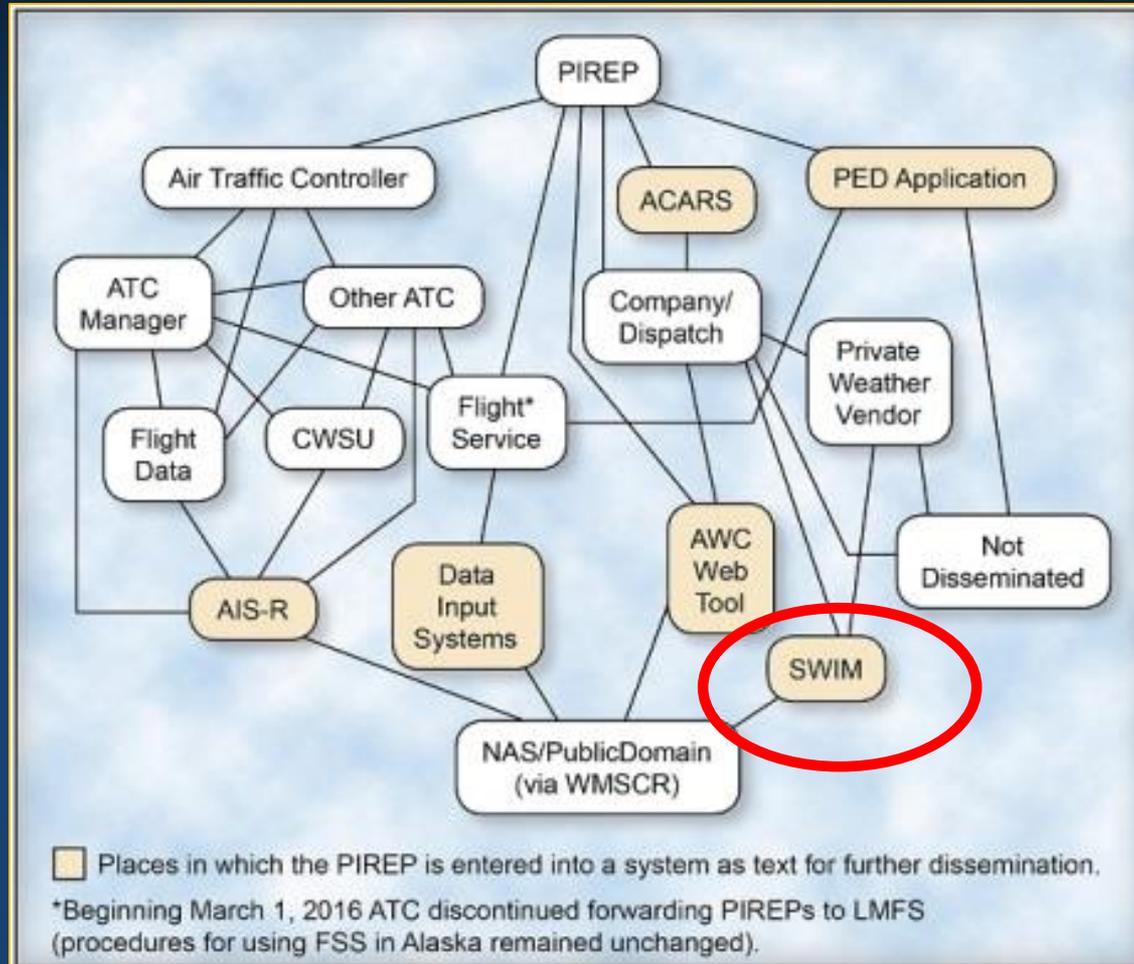
FlightPro

AVARE

spot

avplan:efb

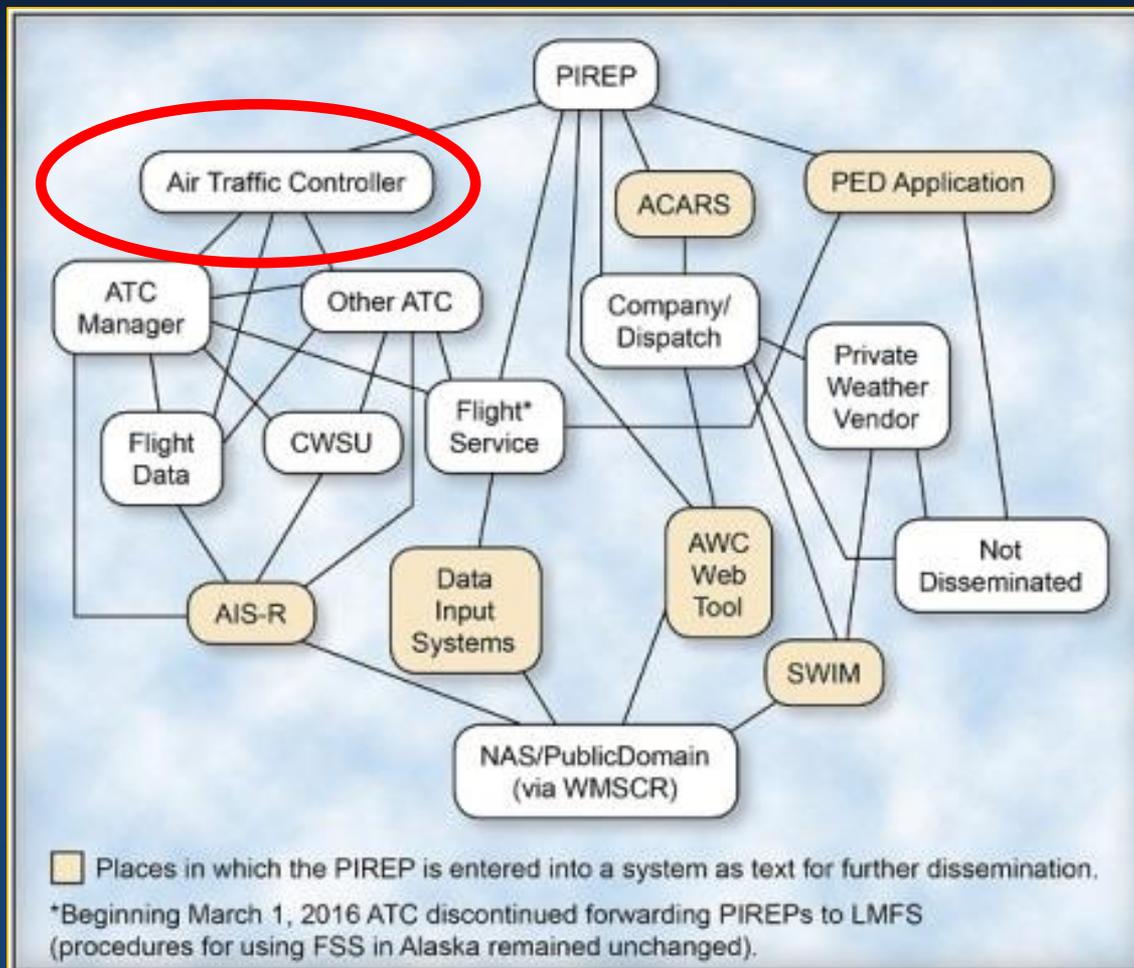
Automated submission...

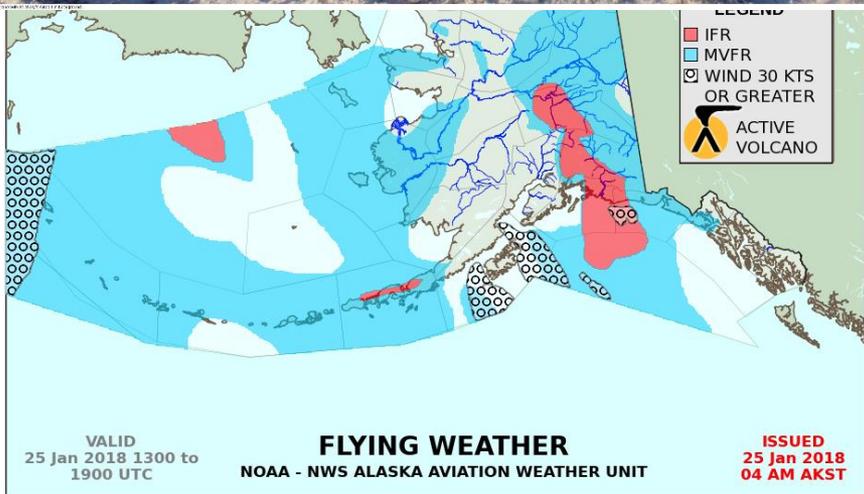


FAA SWIM

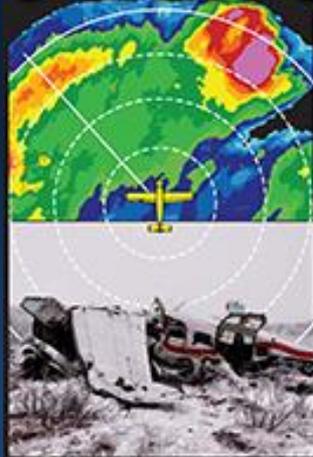
- Process to input PIREPs via FAA SWIM almost complete
- Undergoing testing at WSI February to April and will likely go operational after that
- Other part 121/135 operations could easily follow and more automate the PIREP submission process

Technology aiding ATC?





PIREPs: *Pay it Forward... Because*



**Weather for
ONE
is Weather for
NONE**

 NATIONAL TRANSPORTATION SAFETY BOARD FORUM

Any Questions?

Email: paul.suffern@ntsb.gov

