EMBRY-RIDDLE
Aeronautical University

Pilot Weather Knowledge and Product Interpretation

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Pilot Weather Knowledge and Product Interpretation

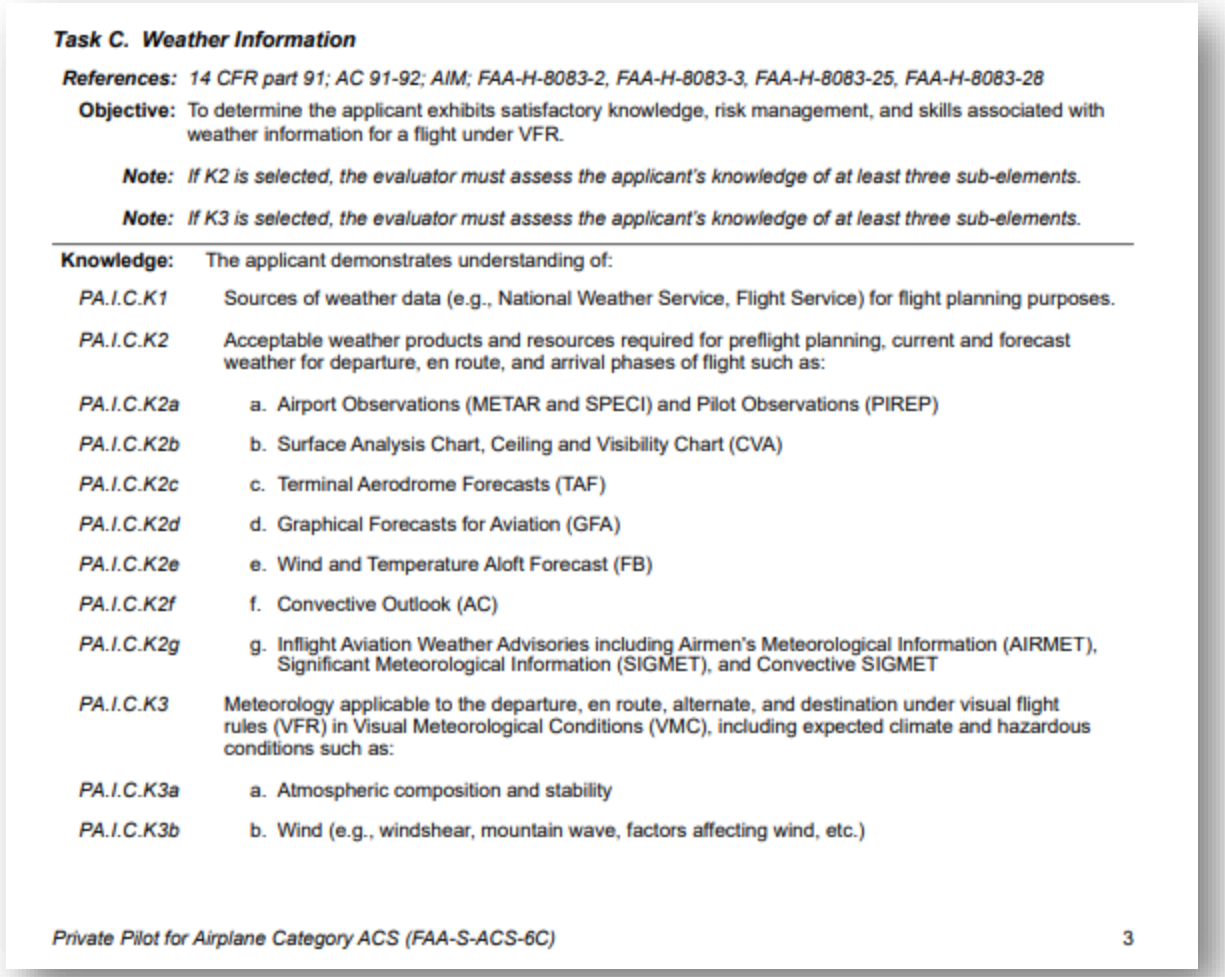
- My Background:
  - Flight/Ground Instructor
  - Check Instructor
  - Aeronautical Science Professor
  - FAA Designated Pilot Examiner

Pilot Weather Knowledge and Product Interpretation

- My Questions for you are…
  - How do we train and test for weather knowledge and product interpretations in different environments?
  - AND create pilots with skills and knowledge to adapt and recognize changing weather conditions?

What does the ACS say for weather?

- Private Pilot ACS
- Knowledge:
  - Sources of Weather
  - Acceptable Products
- Risk Management:
  - Identify and assess risk
  - Diversions
  - Use and Limitations of weather equipment and products
- Skills:
  - Obtain a weather briefing
  - Analyze weather products
  - Making the go/no go decision



Task C. Weather Information

References: *14 CFR part 91; AC 91-92; AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25, FAA-H-8083-28*

Objective: To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with weather information for a flight under VFR.

Note: *If K2 is selected, the evaluator must assess the applicant's knowledge of at least three sub-elements.*

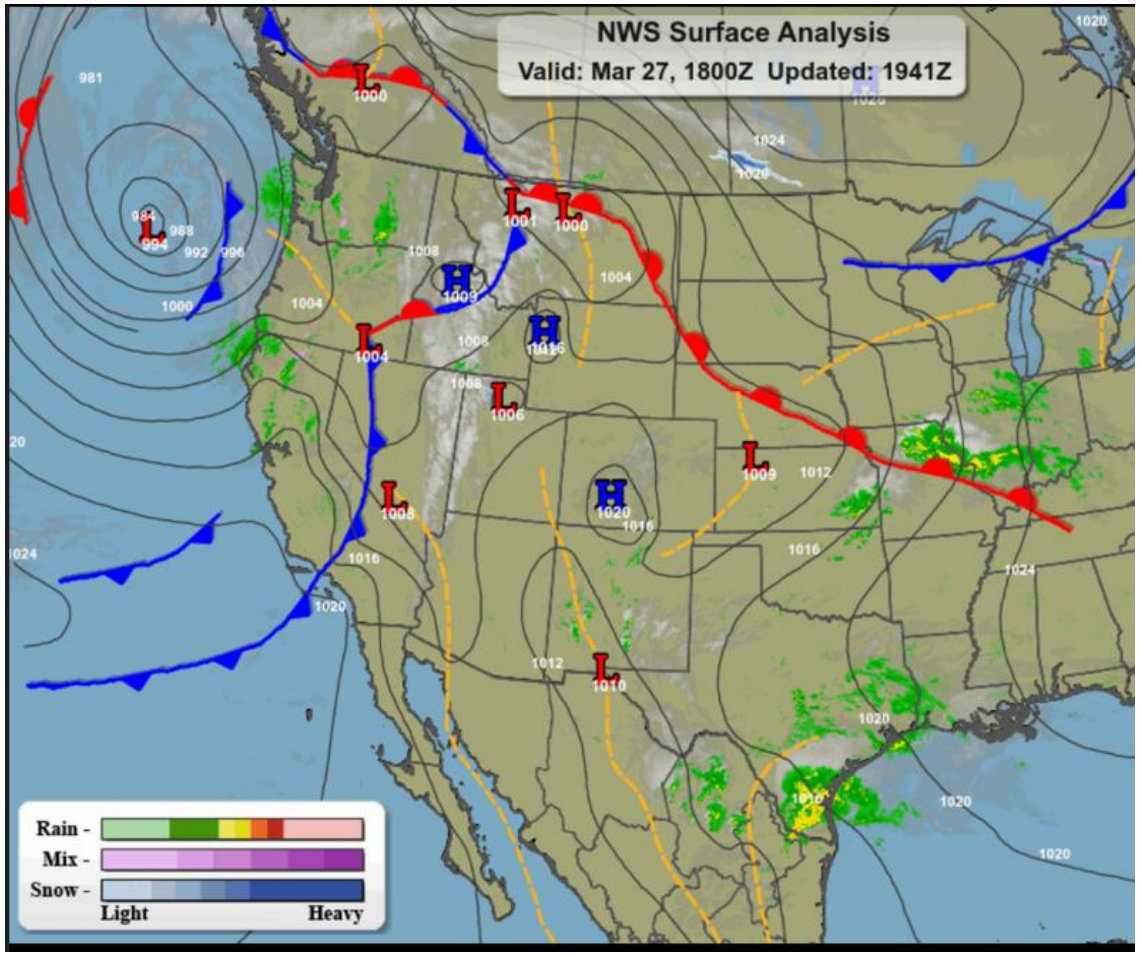
Note: *If K3 is selected, the evaluator must assess the applicant's knowledge of at least three sub-elements.*

Knowledge:	The applicant demonstrates understanding of:
PA.I.C.K1	Sources of weather data (e.g., National Weather Service, Flight Service) for flight planning purposes.
PA.I.C.K2	Acceptable weather products and resources required for preflight planning, current and forecast weather for departure, en route, and arrival phases of flight such as:
PA.I.C.K2a	a. Airport Observations (METAR and SPECI) and Pilot Observations (PIREP)
PA.I.C.K2b	b. Surface Analysis Chart, Ceiling and Visibility Chart (CVA)
PA.I.C.K2c	c. Terminal Aerodrome Forecasts (TAF)
PA.I.C.K2d	d. Graphical Forecasts for Aviation (GFA)
PA.I.C.K2e	e. Wind and Temperature Aloft Forecast (FB)
PA.I.C.K2f	f. Convective Outlook (AC)
PA.I.C.K2g	g. Inflight Aviation Weather Advisories including Airmen's Meteorological Information (AIRMET), Significant Meteorological Information (SIGMET), and Convective SIGMET
PA.I.C.K3	Meteorology applicable to the departure, en route, alternate, and destination under visual flight rules (VFR) in Visual Meteorological Conditions (VMC), including expected climate and hazardous conditions such as:
PA.I.C.K3a	a. Atmospheric composition and stability
PA.I.C.K3b	b. Wind (e.g., windshear, mountain wave, factors affecting wind, etc.)

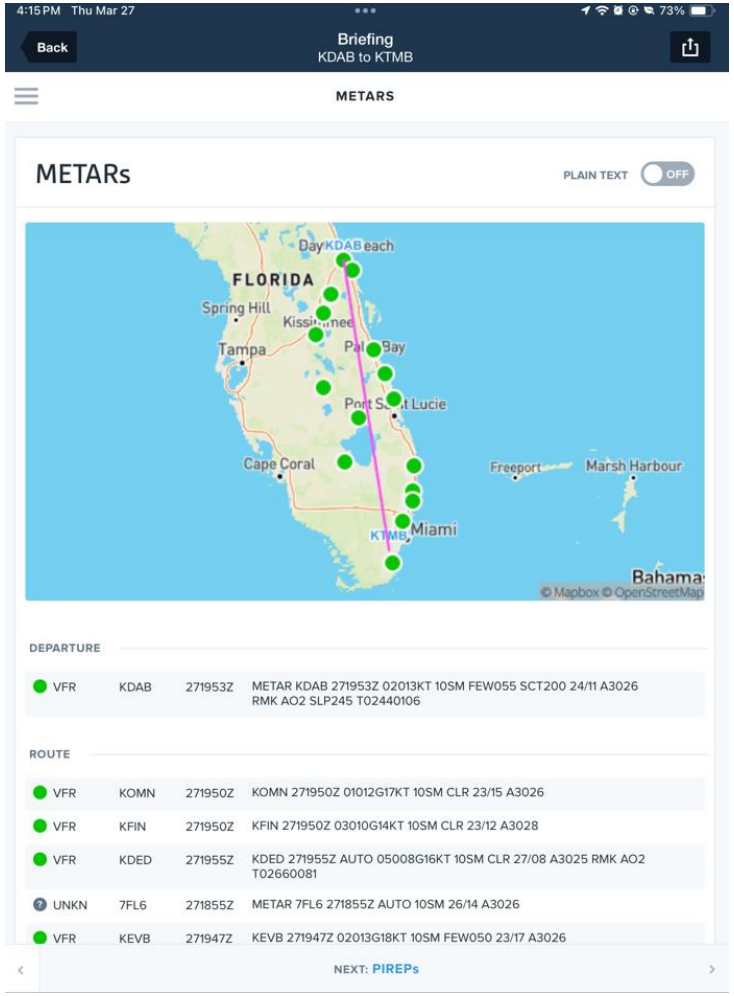
Private Pilot for Airplane Category ACS (FAA-S-ACS-6C) 3

The Classroom

- Weather is an overwhelming topic
  - So many products
  - Complicated dynamics
- How do we connect the classroom and the flight training environment?
- We typically start with shorter cross country flight planning scenarios



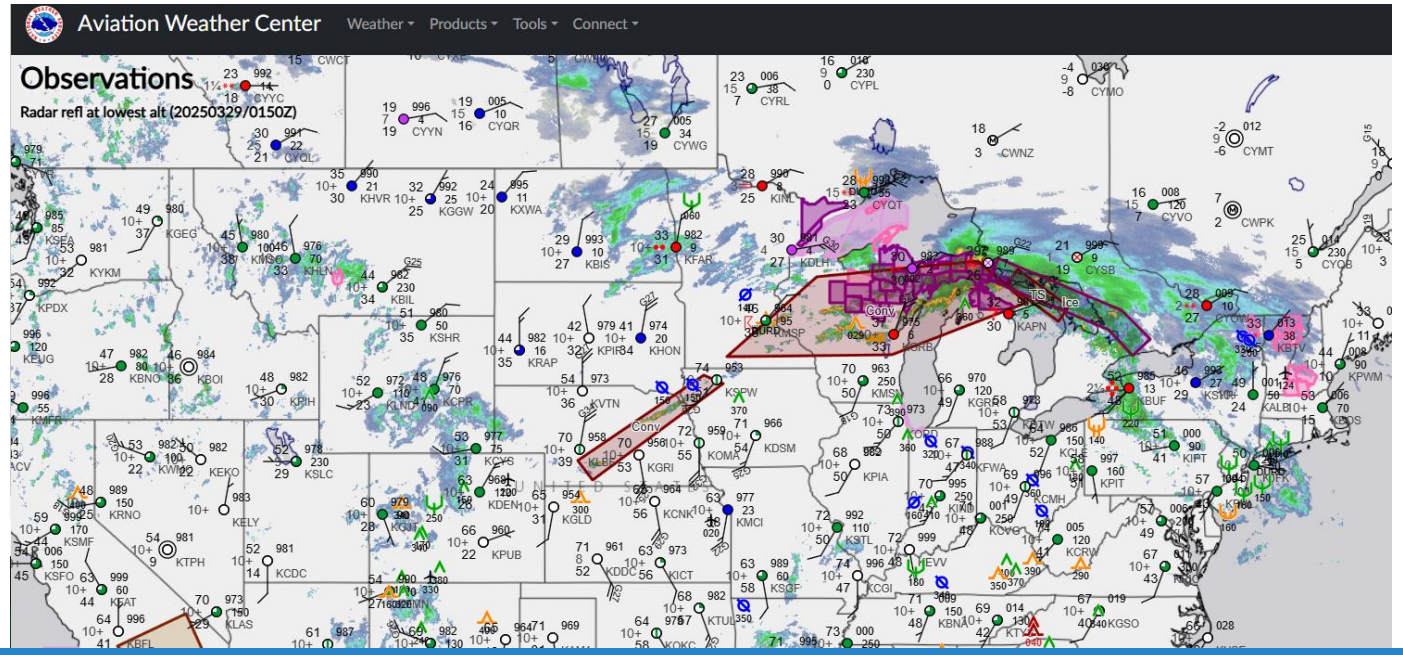
The Classroom

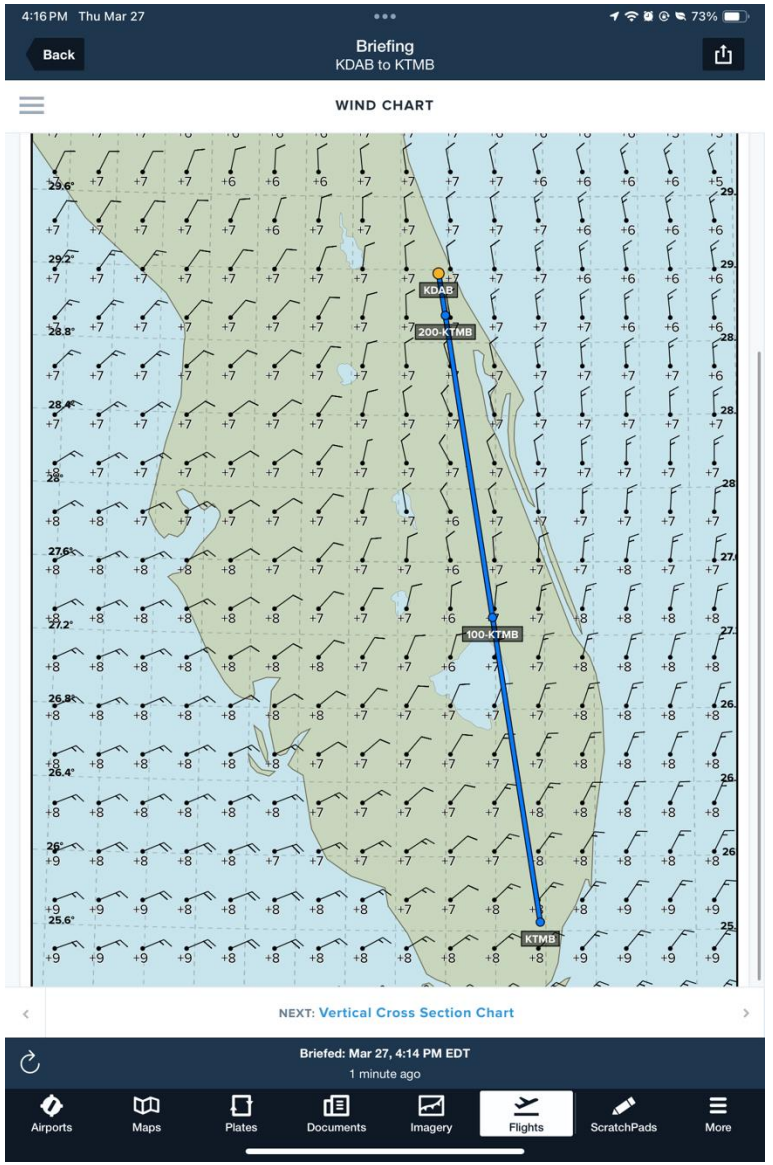


- What examples are helpful?
- How to make it a relevant discussion?
- Does your own experience matter?
- How do we teach the regional weather differences?
  - Mountains
  - Convection
  - Icing

Gathering Weather Information

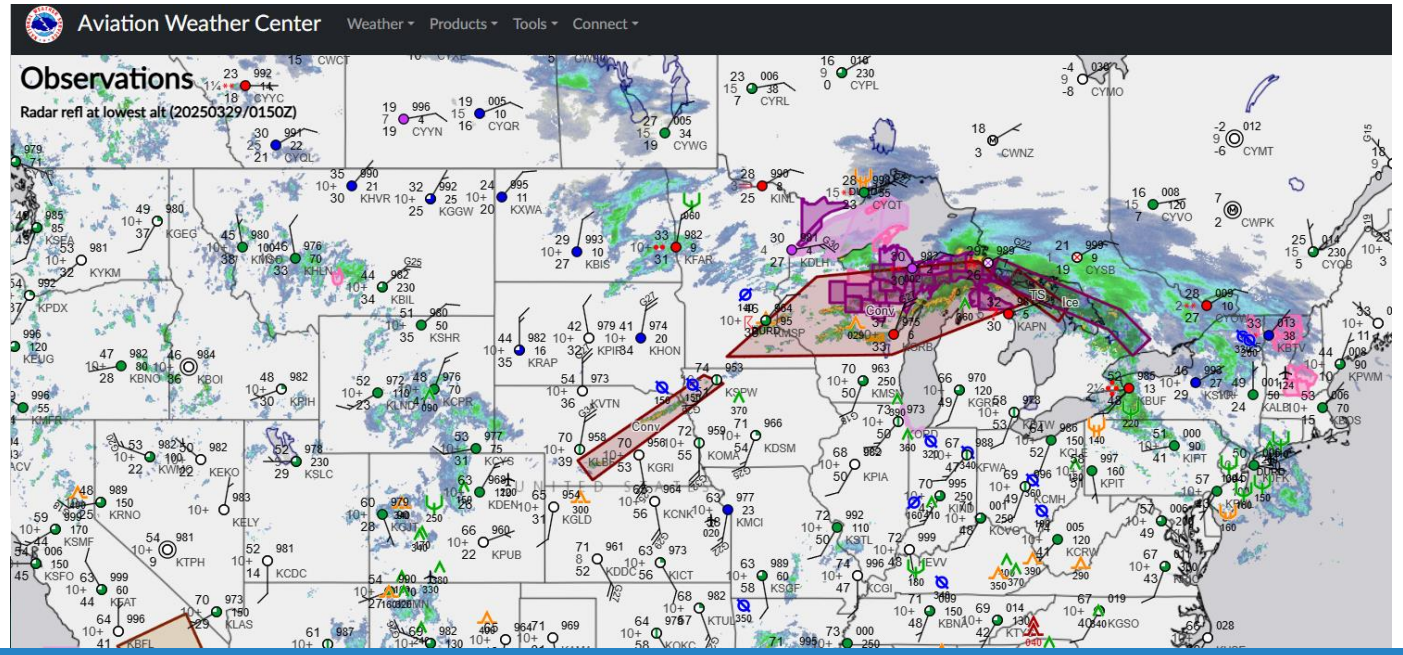
- Weather Briefings (800-WXBRIEF)
- Foreflight
- Aviation Weather Center
  - Aviationweather.gov

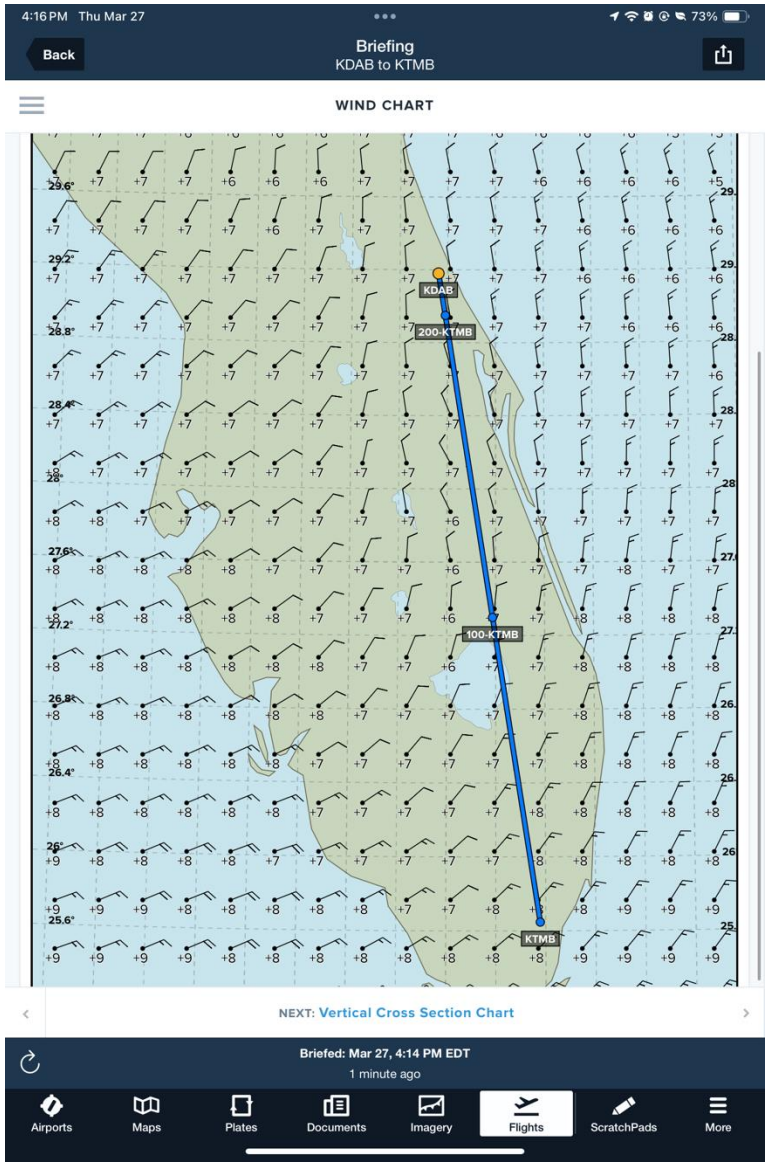




Gathering Weather Information

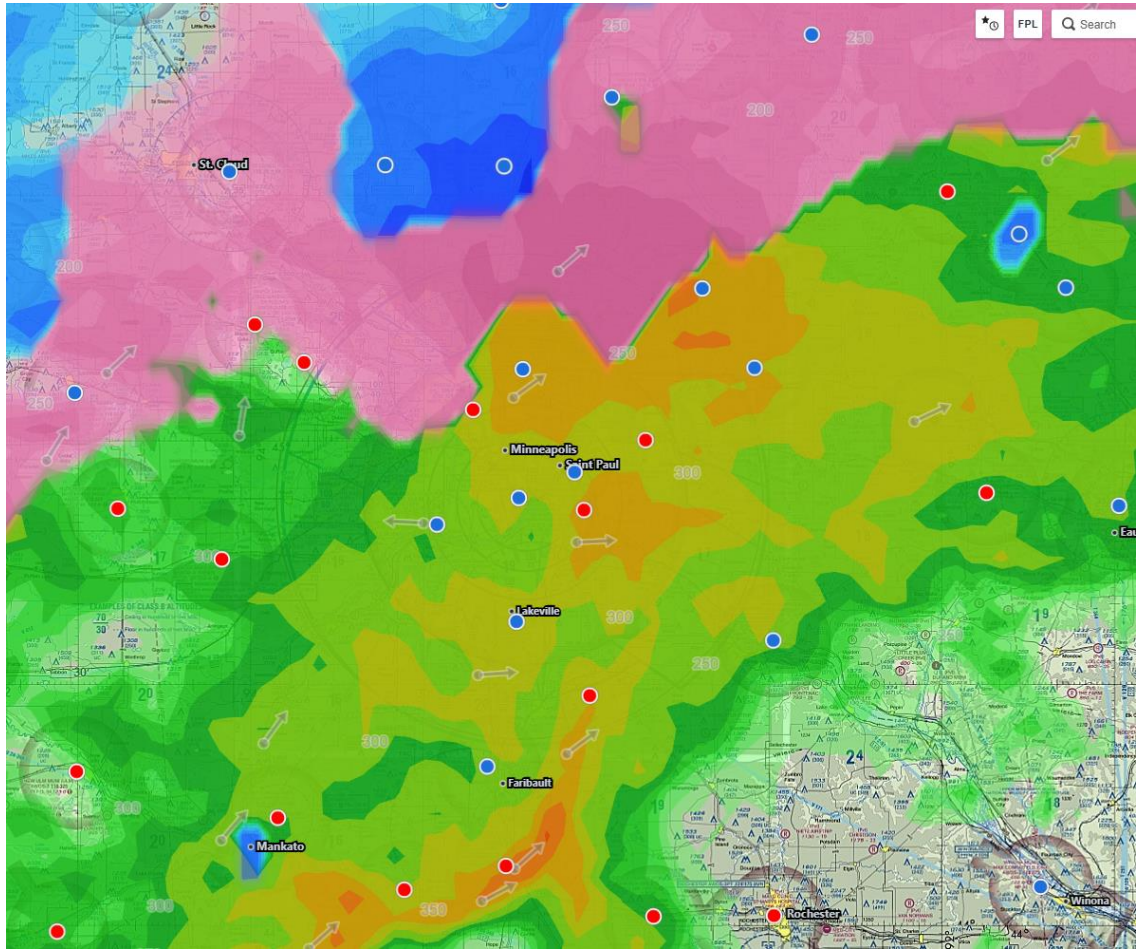
- How do we use all of these sources together?
- Or do we just stick with one source and ignore the rest?

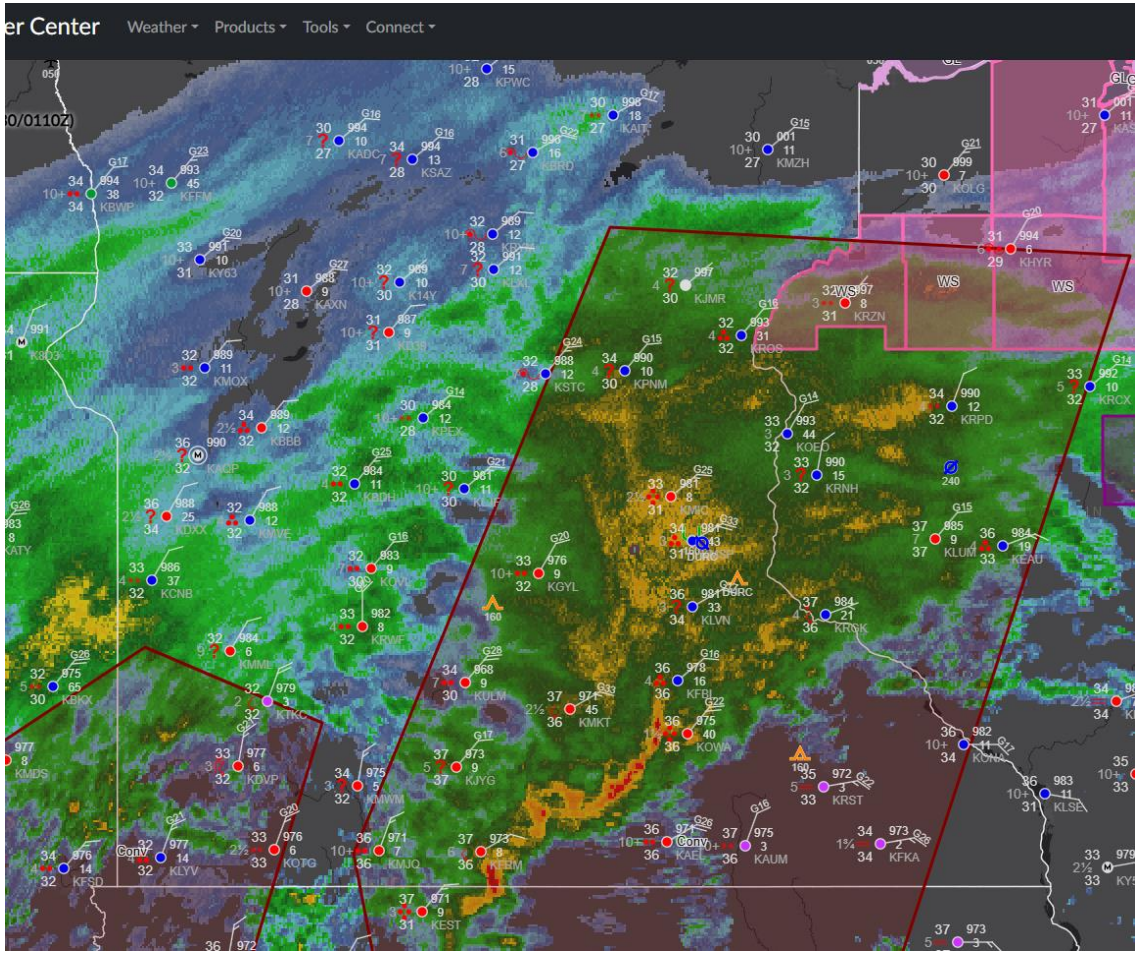




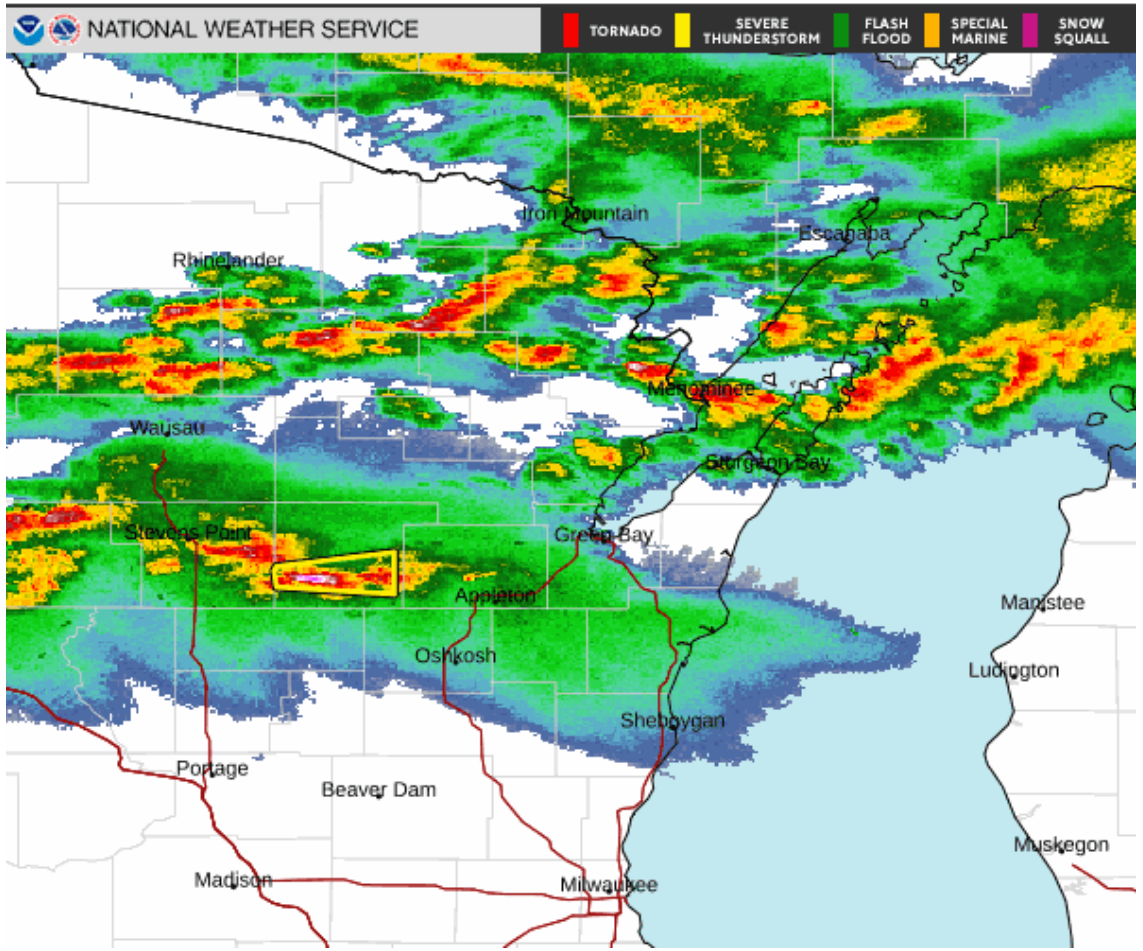
Foreflight & Aviation Weather Center – Similarities and Differences?

How do we recognize standardization in Colors, symbols, etc.





Finding other useful sources



- What (Trustworthy) sources can supplement this information
- A good example:
  - Single site NEXRAD radar
- Others?
- How do these differ or supplement weather briefings/Foreflight

Looking forward

- What are problems and weak points
  - It is hard to simulate or save “bad” weather scenarios that are not a quick “no-go” decision
  - How to balance personal minimums vs regulatory minimums
- Can we challenge students to use different sources while training and break the routine?
- How to tie this information to the future?
  - GA vs Airlines

Conclusion

- Pilot Weather Knowledge and Product Interpretation is a challenging topic
- Hands on flight planning is a key step
- Try to not focus on one area/region to provide some different experiences
- While it is easy to say “no-go” ask when or how you could go

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