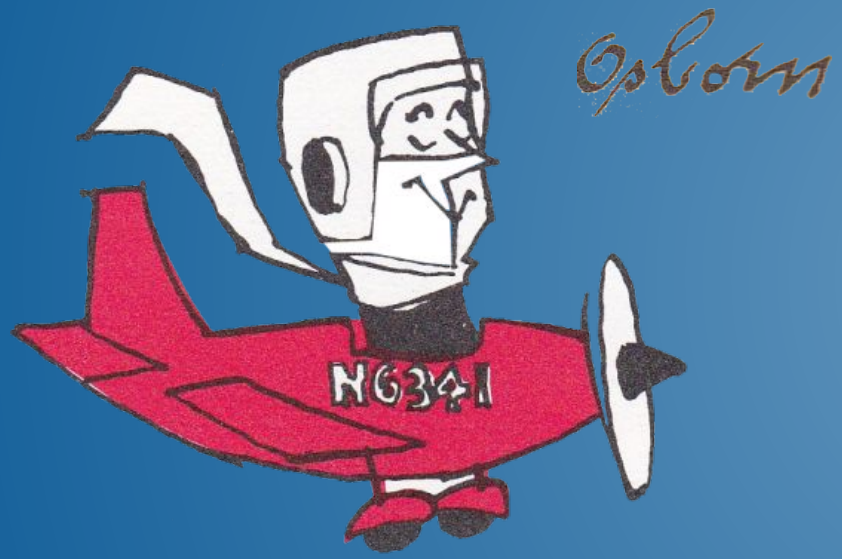
How to obtain a ~~legal~~ compliant weather briefing.



Developed

by

Terry Lankford

Reality Check

"Every theory of the course of events in nature is necessarily based on some process of simplification of the phenomena and is to some extend therefore a fairy tale."

Sir William Napier Shaw
Manual of Meteorology, 1926

Overview

- Weather is *complex* and *dynamic*.
- Watch out for absolutes. There are few, if any, *never* or *always* when it comes to the weather.
- Be careful of *oversimplification* and *generalizations*.

Regulatory Requirements

§91.103 Preflight action."..., before beginning a flight, become familiar with all available information concerning that flight.

(a) For a flight under IFR or a flight not in the vicinity of an airport, *weather reports and forecasts*, fuel requirements, alternatives...

(b) ...runway lengths...takeoff and landing distance information:..."

§ 91.9 Civil aircraft flight manual, marking, and placard requirements.

(a) "...no person may operate a(n)...aircraft without complying with the operating limitations specified in the approved...Flight Manual...."

Pilot Briefing Services

- In the 1960s Pilot Weather Briefing services were transfer to FSS.

- In 1978, with the evolution of computer technologies, FSS began implementation of the LSAS. In 1989 the FAA began certifying private contractors to provide briefing services.

- In the 1990s commercial vendors began providing General Aviation with weather and flight plan services—including graphic products. FSS implemented M1FC computer system.

- In 2005 Lockheed Martin (now Leidos Flight Services) assumed FSS functions.

Self-Briefing Issues

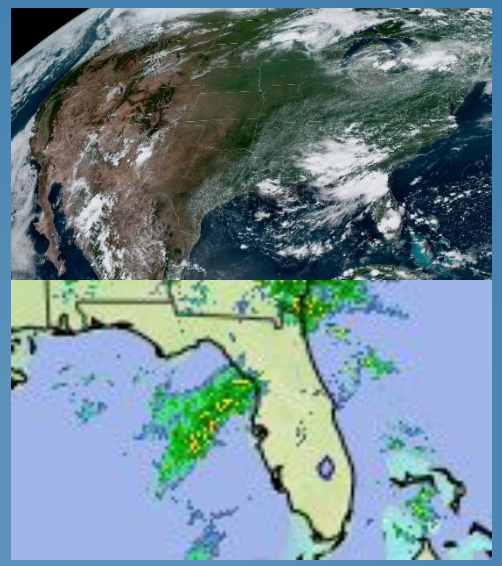
- FAA policy acknowledges that government sponsored sources are not the only “compliant” means for obtaining weather and encourages pilots to use self-briefing services.
- With the almost limitless sources and amount of information, how do we fulfill our obligation—and teach learners—”compliant” self-briefing methods?
- Which products should be considered *compliant* (mandatory); which are supplementary/outlook—provide additional insight into the weather.
- How do we document compliance?

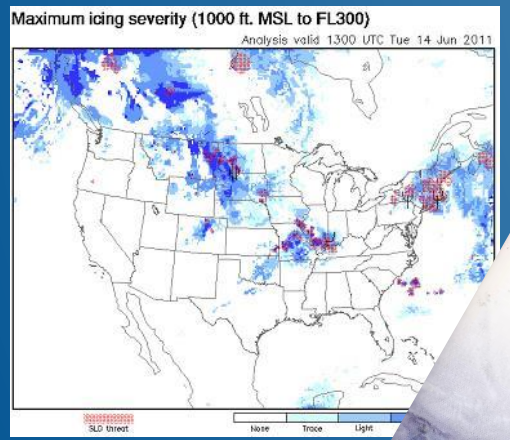
Supplemental/Outlook Products

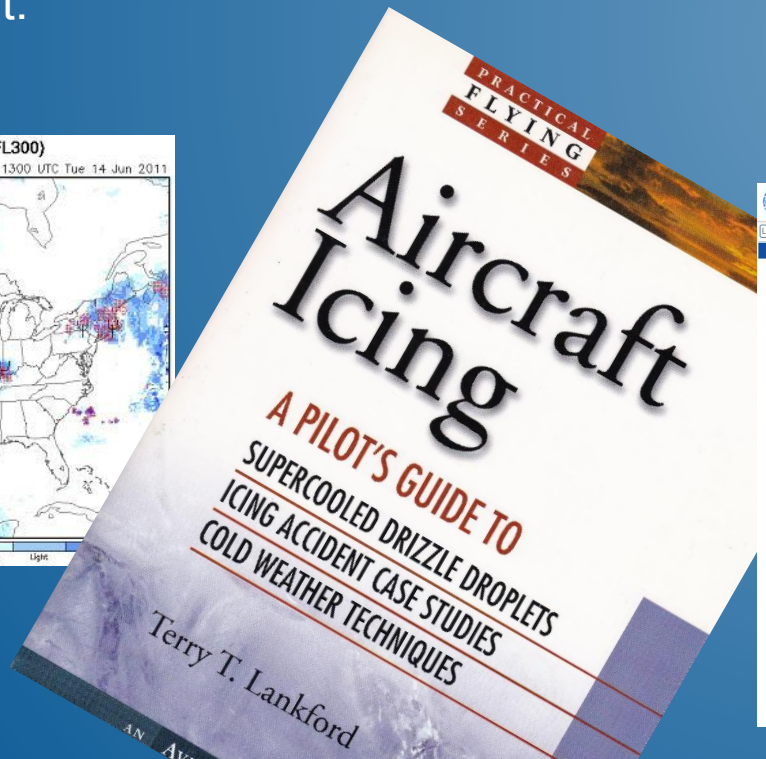
No Forecaster Input–Automated

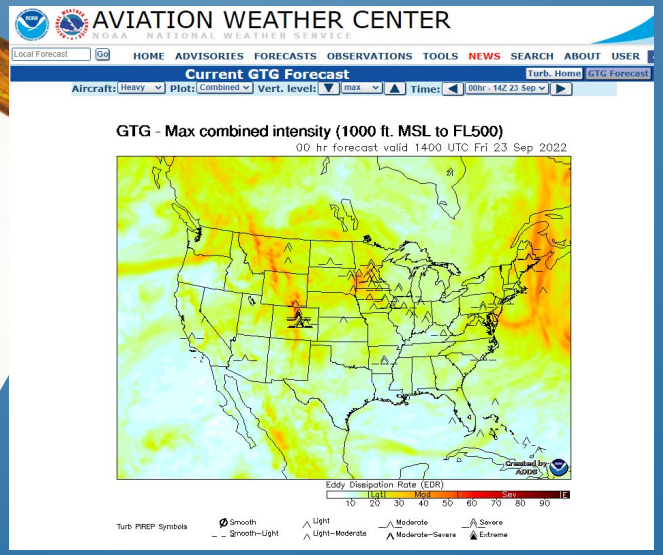
WARNING

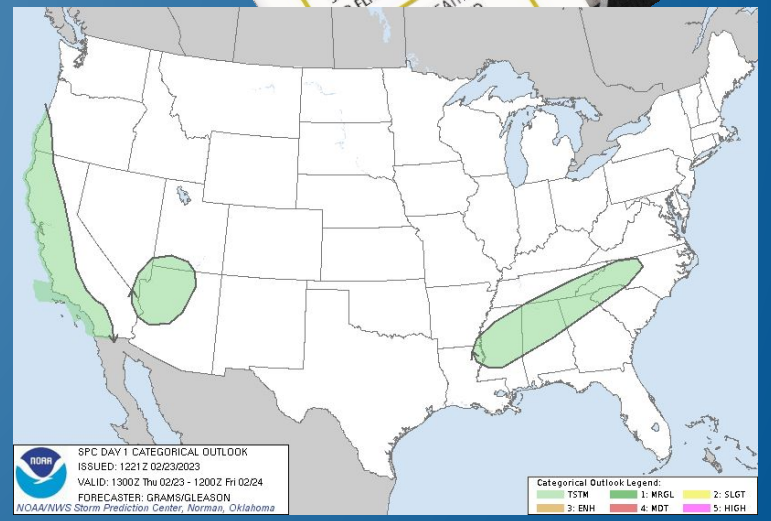
All products have *limitations* that must be understood to be applied in an operational environment.











FAA Handbook 7110.10 *Flight Services*

U.S. Department
of Transportation
Federal Aviation Administration

7110.10R
Flight Services

Albuquerque AFSS

An electronic version of this publication is on the Internet at
http://www.faa.gov/atpubs

Distribution: ZAT-712; ZAT-423 (External) **February 19, 2004** **Initiated by: ATP-300**

FAA Handbook 7110.10 *Flight Services* specifies the “briefing elements” for the delivery of an FAA Weather Briefing.

FAA/Compliant Briefing Elements

FAA STANDARD WEATHER BRIEFING (LEIDOS FAA/WEB PORTAL)		COMPLIANT WEATHER BRIEFING	
Briefing Element	**Products[1]**	**Briefing Element**	**Products**
1. Adverse Weather Conditions[2]	Weather Advisories: WA,WS,WST,CWA,SAW, AC	1. Weather Advisories	WA,WS,WST,CWA
	PIREPs: UUA		
	NOTAMs: TFR, Closed/Unsafe		
2. (VNR) 3. (Check Density Altitude)			
4. Synopsis[3]	SFC ANALYSIS; PROG Charts	2. Synopsis[3]	SFC/500mb Analysis; PROG Charts
5. Current Conditions[4]	Reported Weather Conditions METAR, SPECI, UA, Satellite, Radar, Weather Camera	3. Current Conditions	METAR, SPECI, UA
6. Forecasts	AVI SFC/CLDS FCST—GFA[3,5] TAF[5], Winds Aloft[6]	4. Forecasts	AVI SFC/CLDS FCST—GFA[3,5] TAF[4], Winds and Temperatures Aloft
7. Aeronautical Information		5. Aeronautical Information	

[1]"If available...." (7110.10 para 5-3-3).
[2]May contain other weather elements.
[3]Requires the availability of graphic products.
[4]May be omitted with ETD beyond 2 hours.
[5]ETA ±1 hour (ETA ±2 hours).
[6]Temperature on request.

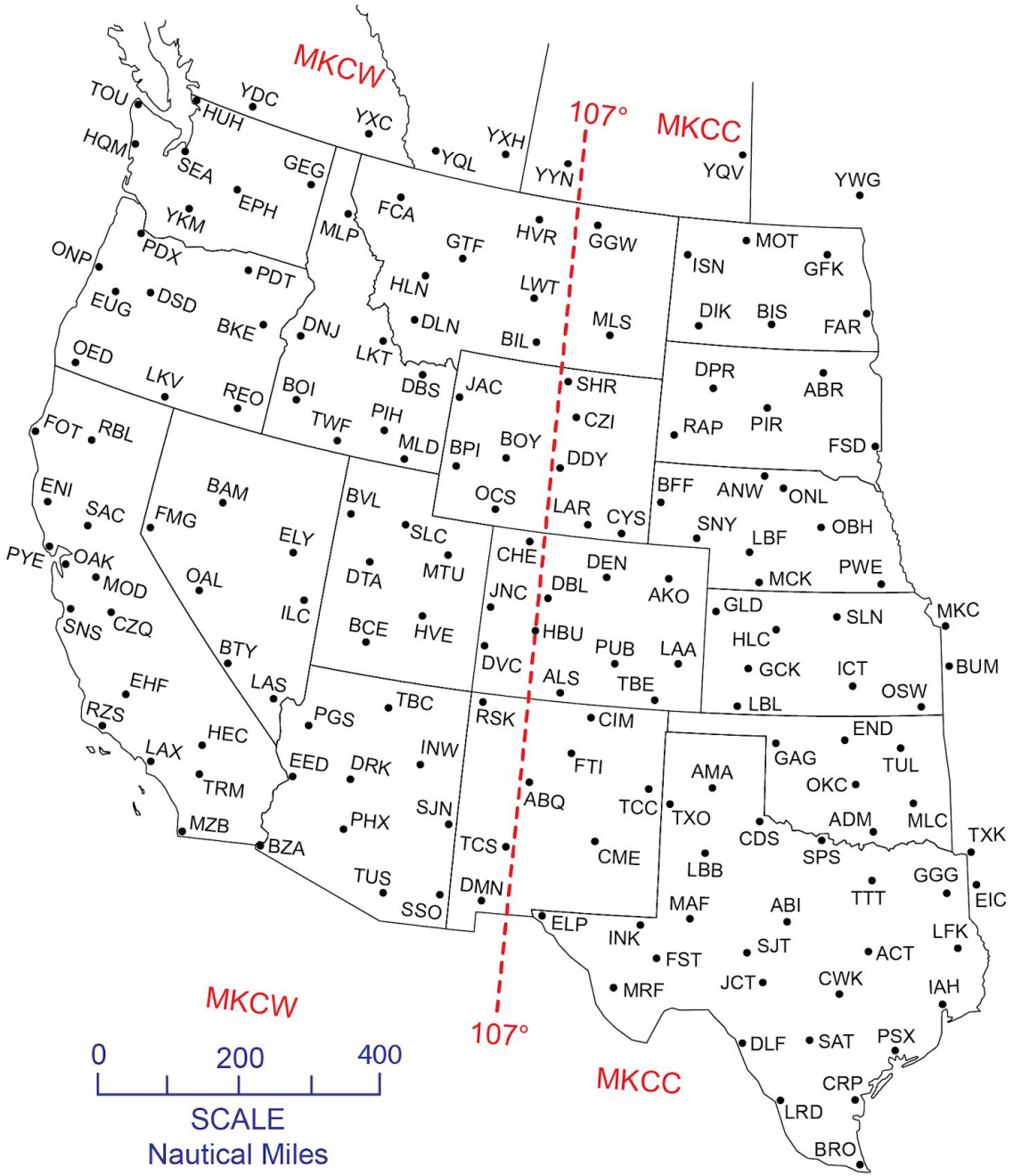
Documentation: Leidos Flight Service briefings are recorded and logged—easy. Commercial weather providers may document products—check with the vendor. Make a copy and save pertinent briefing material.

Compliant Briefing Products and Sources

[1]Not a substitute for Weather Advisories.
[2]Products have forecast input.
[3]Not part of Flight Service Web briefing.
[4]SFC/CLDS forecasts-GFA Suite.

Compliant (Leidos) FS/AWC		**Supplemental/Outlook Products[1]**	
Aviation Hazards[2]		Product	Source
Ceiling/Visibility (WA/WS/WST/CWA)	IFR	FCST CAT DISPLAY	Flight Service/AWC
	MTN OBSCN		
	VA	VAAC	www.ospo.noaa.gov
Turbulence (WA/WS/WST/CWA)	Intensity	GTG-CAT, MTN WAVE, LLWS	AWC
	SFC WINDS	SFC WIND SPEED	AWC
	LLWS		
Icing (WA/WS/WST/CWA)	Intensity	FIP-SLD, Probability,	Flight Service/AWC
	Z LEVEL	Z LEVEL	Flight Service/AWC
Thunderstorms (WST/CWA)	Location/Coverage	AC-SAW	Flight Service/ www.spc.noaa.gov/ www.nhc.noaa.gov
	Intensity/Intensity Trend		
	Movement	NWS WFO Weather Warning	AWC/www.alerts.weather .gov
Current Conditions		Product	Source
METAR/SPECI		Satellite	Flight Service[3]/AWC
		Radar	Flight Service[3]/AWC
		Weather Cameras	Flight Service[3]
PIREPS			
Forecasts			
Product	Soutce		
GFA[4]	Flight Service/AWC		
TAF	Flight Service/AWC		
Winds Aloft	Flight Service/AWC		

WEATHER LOG - WEST



- ❑ Weather Advisories
- ❑ Synopsis
- ❑ Current Weather
- ❑ Forecast Weather
- ❑ Winds Aloft
- ❑ NOTAMS

Personal Minimums/Acceptable Risk

PILOT	CROSS COUNTRY[1]		SURFACE WINDS				LOCAL[2]		PATTERN[2]	
	DAY	NIGHT	WINDS ALOFT	CROSS WIND	SUS-TAINED	GUSTS	DAY	NIGHT	DAY	NIGHT
STUDENT	5000/7	NA	25 KT	7 KT	15 KT	NONE	3000/5	NA	2000/3	NA
PRIVATE	4000/5	7000/7	25 KT	POH[3]	20 KT	10 KT	FAR[4]	4000/3	FAR[4]	1500/3
COMMERCIAL*	FAR[4]	4000/3	35 KT	POH[3]	25 KT	10 KT	FAR[4]	4000/3	FAR[4]	1500/3
Dual VFR	FAR[4]	4000/5	35 KT	POH[3]	PD[7]	PD[7]	FAR[4]	4000/4	FAR[4]	1500/3
Dual IFR	FAR[4]	800/2	35 KT	POH[3]	PD[7]	PD[7]				
Instrument	600/2[5]	1000/2[6]								

Notes: All heights are AGL; all visibilities SM.
NA—Not Authorized
*Commercial Pilot or Private Pilot with Instrument Rating.

[1]Maximum allowable fuel.
[2]ETE plus 1 hour reserve or 2 hours, whichever is more.
[3]Pilots Operating Handbook (POH) maximum demonstrated crosswind component.
[4]14 CFR Part 91 minimums.
[5]Or, FAA published minimums, including climb gradients, whichever is greater.
[6]Night circling Not Authorized.
[7]Instructor Pilot's discretion (PD).

Flight Category		Ceiling	Visibility	Alternate	Fuel[1]
VFR	Night[2]				+1:15
Special VFR[3]	Departure			≥3000/5	+1:30
	Arrival			≥3000/5	+1:30
IFR	New[4]	+400	+1 SM	≥3000/5	+1:00
	<10 HR in Type	+400	+1 SM	≥3000/5	+1:00
	<5 HR PIC Inst.	+400	+1 SM	≥1000/3	+1:00
	Good to Poor			≥1000/3	+1:00
	TAA[5]	+400	+1 SM	≥1000/3	+1:00
	Recent[6]	+400	+1 SM	≥1000/3	+1:00
	Night Circling[2]	+500	+1 SM	≥2000/3	+1:00

[1]Above FAA minimums.
[2]NA over scarcely populated areas.
[3]NA until pilot receives training in SVFR weather.
[4]Less than 10 hours PIC in type and/or less than 5 hours PIC actual instrument.
[5]Or, training/certification in TAA, flying analog or non-TAA aircraft.
[6]Less than double FAA recent flight experience requirements.

Illness

Stress

Medication

Emotion

Alcohol

Fatigue

I'm Safe

Operational Considerations—Preflight

- Monitor weather patterns—up to 7 days—prior to the planned flight.
- Obtain an FAA Standard/Compliant Weather Briefing:
  - Including (route generated) reported enroute weather and forecasts; and,
  - forecasts for locations without a TAF.
  - The lack of Weather Advisories does not guarantee the absence of hazardous weather.
- Minimize latency by obtaining a briefing as close to departure time as possible. Especially, when there are weather issues.
- Develop contingency plans based on reported and forecast weather.

Self-Briefing Pitfalls

- Failure to check all Weather Advisory categories.
- Avoid the use of departure/destination METARs/TAFs ONLY.
  - Use computer generated route.
- Avoid using METAR/TAF categorical reports/forecasts ONLY.
  - OK for overview.
- Failure to obtain and apply enroute forecasts (GFA).
- Proper use of GFA for destination/alternate forecast when appropriate.

Operational Considerations—Enroute

- Update weather enroute.
  - Check METARs for destination and alternates.
  - Check TAFs—especially at TAF update times.
  - Whether or not an advisory is in effect, never overlook "real time" sources, including pilot observations, METARs, PIREPs, and Radar and Satellite products.
  - Get into the IFR system well before encountering IMC.
- Monitor fuel reserves.
- Land short or divert should conditions approach, or deteriorate below, regulatory or (*realistic*) personal minimums—including fuel and surface winds.
- Do not hesitate to execute a missed approach should circumstances warrant.

Abnormal Situation

ABNORMAL SITUATION
A Change has Occurred
An Expected Change has NOT Occurred

↓

Alternates Available

↓

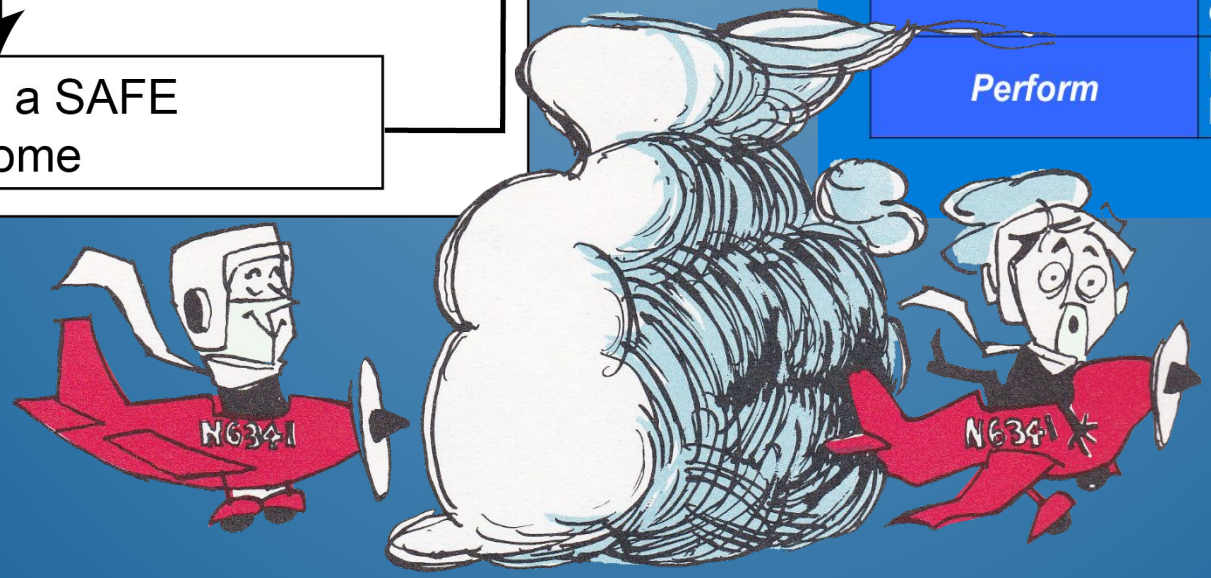
Action/Decision

↓

Results in a SAFE Outcome

The "3 P" Model

Perceive	Perceive a hazards that could adversely affect the flight.
Process	Process the information to determine whether the hazards create risk, which is the potential impact of a hazard that is not controlled or eliminated.
Perform	Perform by acting to eliminate the hazard or mitigate the risk.



Enforcement Action

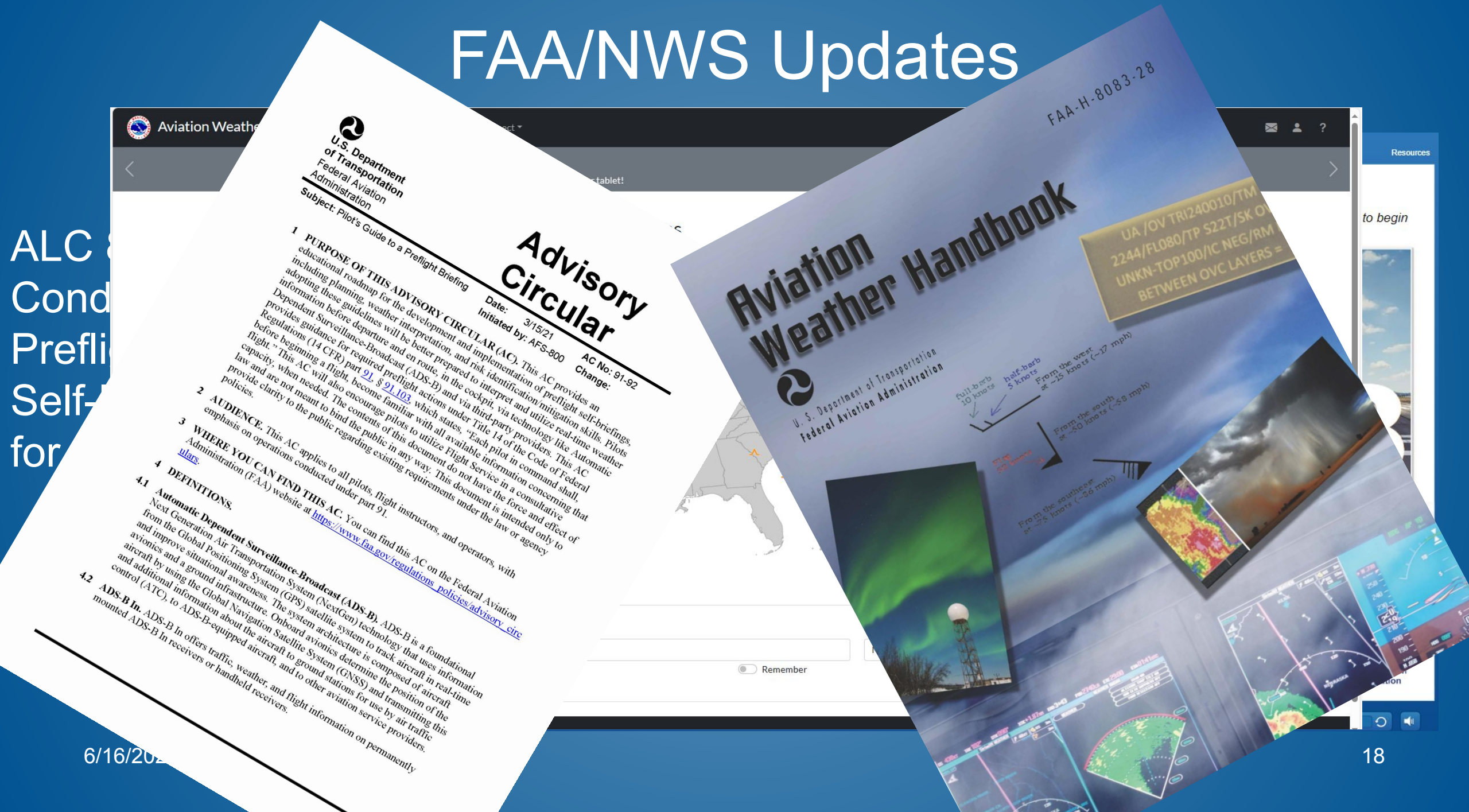
Enforcement actions may be considered when a pilot fails to obtain or ignores compliant briefing items, exceeds pilot experience/training, or aircraft operating limitations. (For example, VFR or IFR limitations, winds, icing, density altitude, etc.)

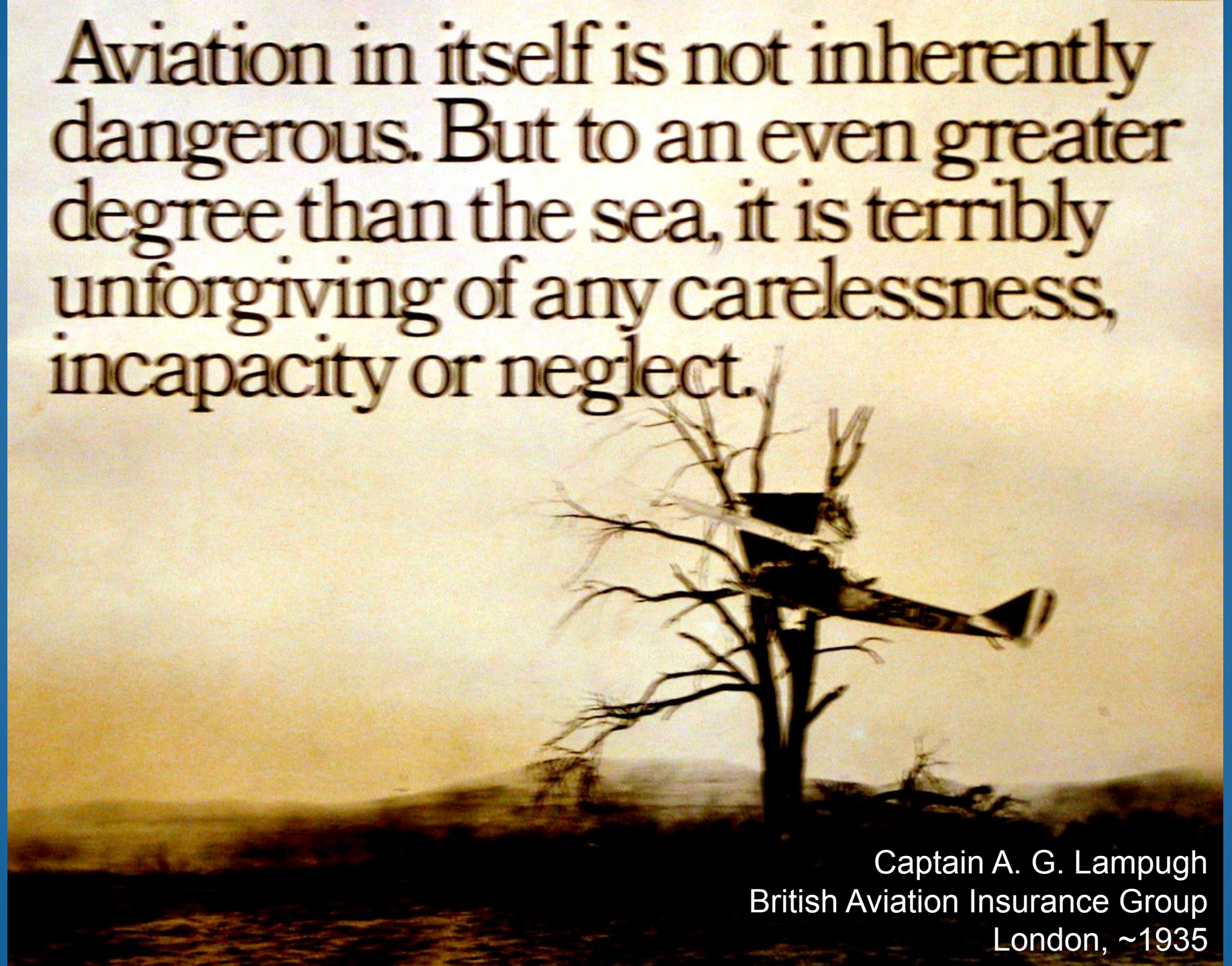
Enforcement may be considered (including application of the FAA's "Compliance Program") when a pilot could reasonably expect the likelihood of encountering hazardous weather. Relevant regulatory sections include:

14 CFR §91.103 Preflight Action.
14 CFR §91.9 ...Aircraft Flight Manuals....
14 CFR §91.13 Careless or Reckless Operation.

FAA/NWS Updates

ALC
Cond
Prefli
Self-
for





Captain A. G. Lampugh
British Aviation Insurance Group
London, ~1935

LEGAL does not necessarily mean SAFE.

Send questions, comments, or suggestions to:

Terry Lankford
231 Snowberry CT.
Murphys, CA 95247

WeatherTheory@comcast.net

Aviation Forecast Products

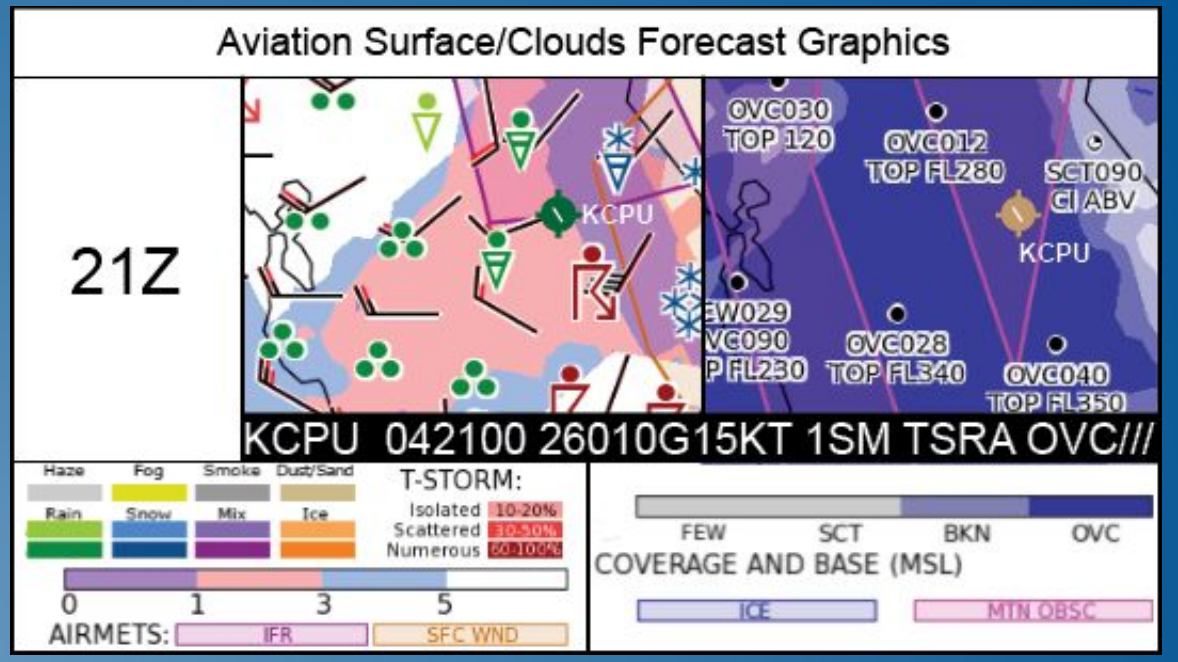
Aviation Forecast Products

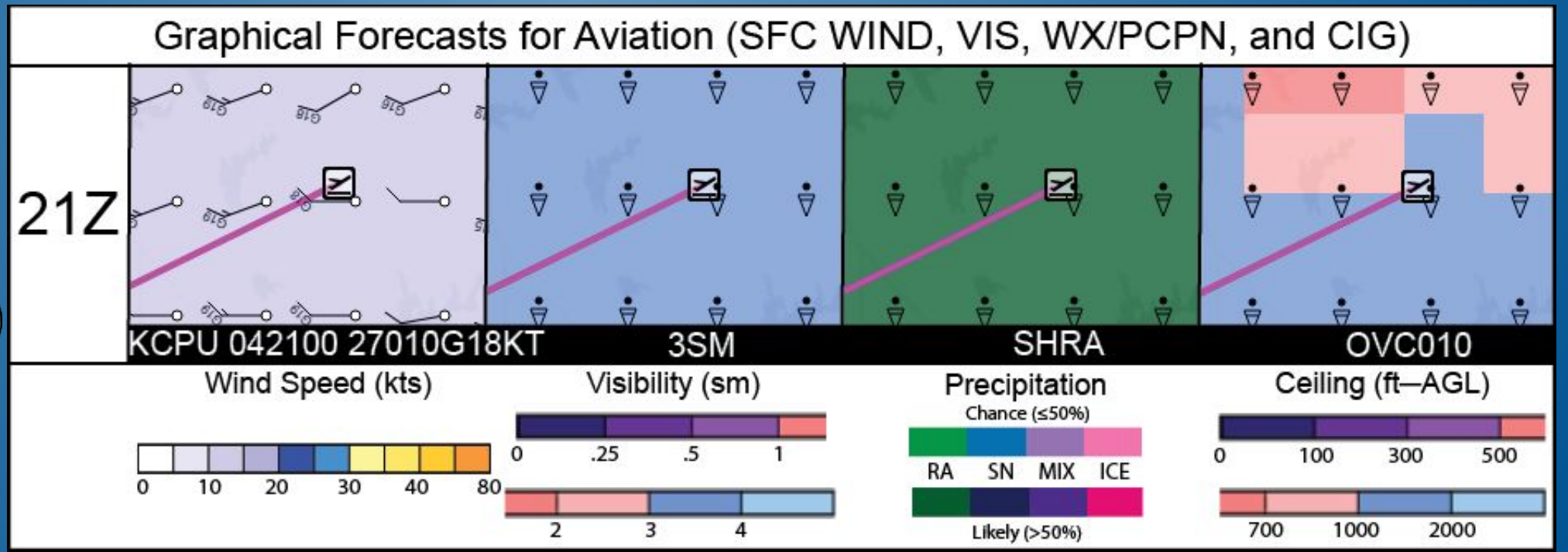
Product	Issuance	Resolution	Valid/Outlook—CONT BYD Hours														
			1	2	3	4	5	6	7	8	9	10	11	12	18	24	30
WA	Scheduled	6 Hours															
G-AIRMET	Scheduled	3 Hours															
WS	Unscheduled	4 Hours															
WST	Unscheduled	2 Hours															
CWA	Unscheduled	2 Hours															
SFC/CLDS	Scheduled	3 Hours															
GFA	Scheduled	1 Hour															
FB	Scheduled	6/12/24 Hr															
TAF	Scheduled	24/30 Hr															

Graphical Forecasts for Aviation

- Aviation Surface Forecasts
- Aviation Clouds Forecasts

- Graphical Forecast for Aviation (GFA)





6/16/2024