

# Truckee Winter Flying Operations & Hazards

Presented By:

Chris Barbera

833-MLGOFLY

[flightschool@mountainlion.aero](mailto:flightschool@mountainlion.aero)



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



**CIRRUS**  
AUTHORISED  
TRAINING

# Topics

- I. Icing
- II. Fog @ TRK
- III. Forecasting TRK Weather
- IV. Flight Training
- V. Mitigation techniques



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



**CIRRUS**  
AUTHORISED  
TRAINING

# Icing

## I. Regulatory consideration

### §91.527 Operating in icing conditions.

(a) No pilot may take off an airplane that has frost, ice, or snow adhering to any propeller, windshield, stabilizing or control surface; to a powerplant installation; or to an airspeed, altimeter, rate of climb, or flight attitude instrument system or wing, except that takeoffs may be made with frost under the wing in the area of the fuel tanks if authorized by the FAA.

(b) No pilot may fly under IFR into known or forecast light or moderate icing conditions, or under VFR into known light or moderate icing conditions, unless—

(1) The aircraft has functioning deicing or anti-icing equipment protecting each rotor blade, propeller, windshield, wing, stabilizing or control surface, and each airspeed, altimeter, rate of climb, or flight attitude instrument system;

(2) The airplane has ice protection provisions that meet section 34 of Special Federal Aviation Regulation No. 23; or

(3) The airplane meets transport category airplane type certification provisions, including the requirements for certification for flight in icing conditions.

(c) Except for an airplane that has ice protection provisions that meet the requirements in section 34 of Special Federal Aviation Regulation No. 23, or those for transport category airplane type certification, no pilot may fly an airplane into known or forecast severe icing conditions.

(d) If current weather reports and briefing information relied upon by the pilot in command indicate that the forecast icing conditions that would otherwise prohibit the flight will not be encountered during the flight because of changed weather conditions since the forecast, the restrictions in paragraphs (b) and (c) of this section based on forecast conditions do not apply.

[Docket No. 18334, 54 FR 34314, Aug. 18, 1989; as amended by Amdt. 91-310, 74 FR 62696, Dec. 1, 2009]



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



CIRRUS  
AUTHORISED  
TRAINING

# Icing

## I. Known Icing Definition (AC 91-74B)

- Actual ice that is observed visually to be on the aircraft by the flight crew or identified by onboard sensors.

## I. Forecast Icing Definition (AC 91-74B)

- Environmental conditions expected by an NWS or an FAA approved weather provider to be conducive to the formation of inflight icing on aircraft.



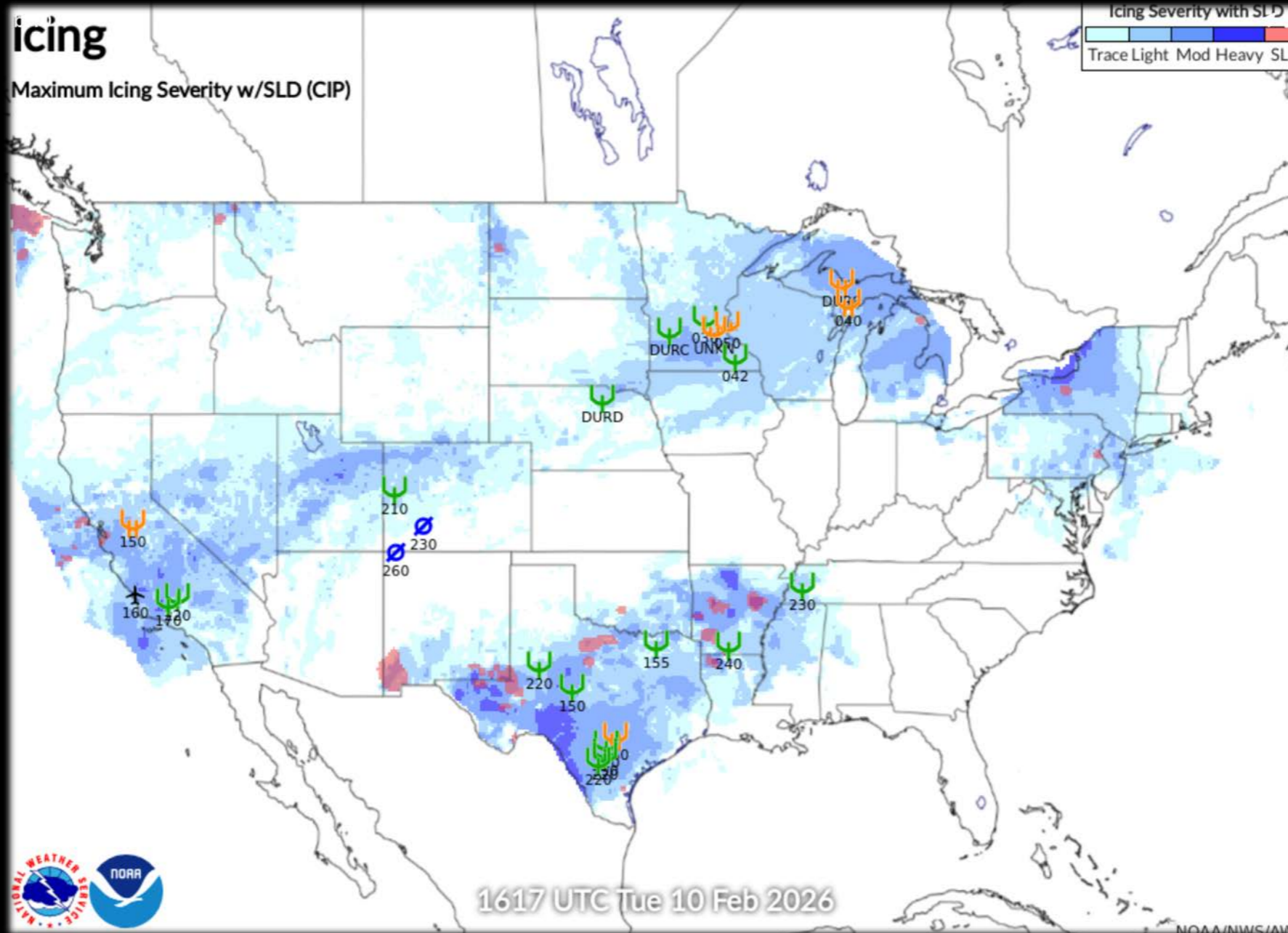
MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



**CIRRUS**  
AUTHORISED  
TRAINING

# Icing



MOUNTAIN LION  
AVIATION

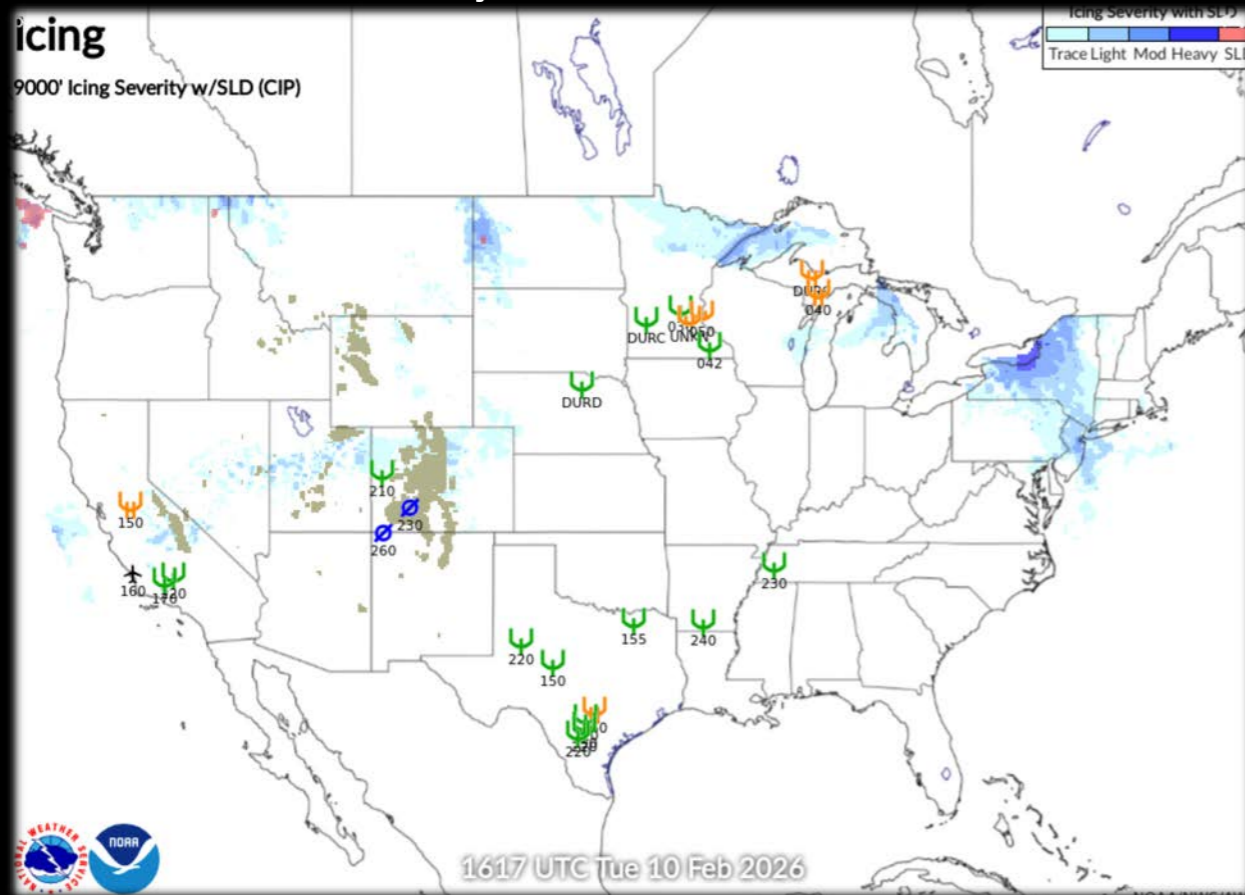
Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



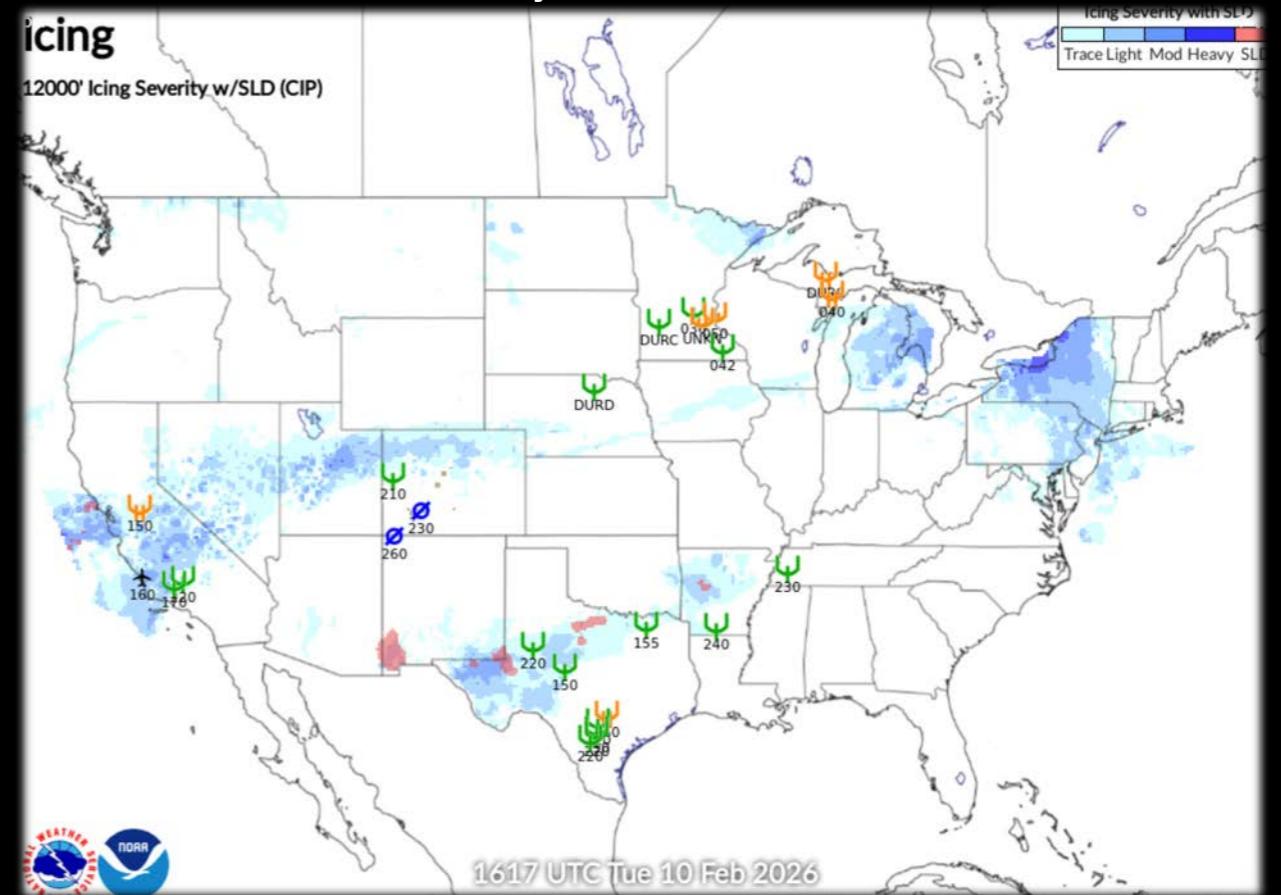
CIRRUS  
AUTHORISED  
TRAINING

# Icing

- 9,000 MSL



- 12,000 MSL



MOUNTAIN LION  
AVIATION

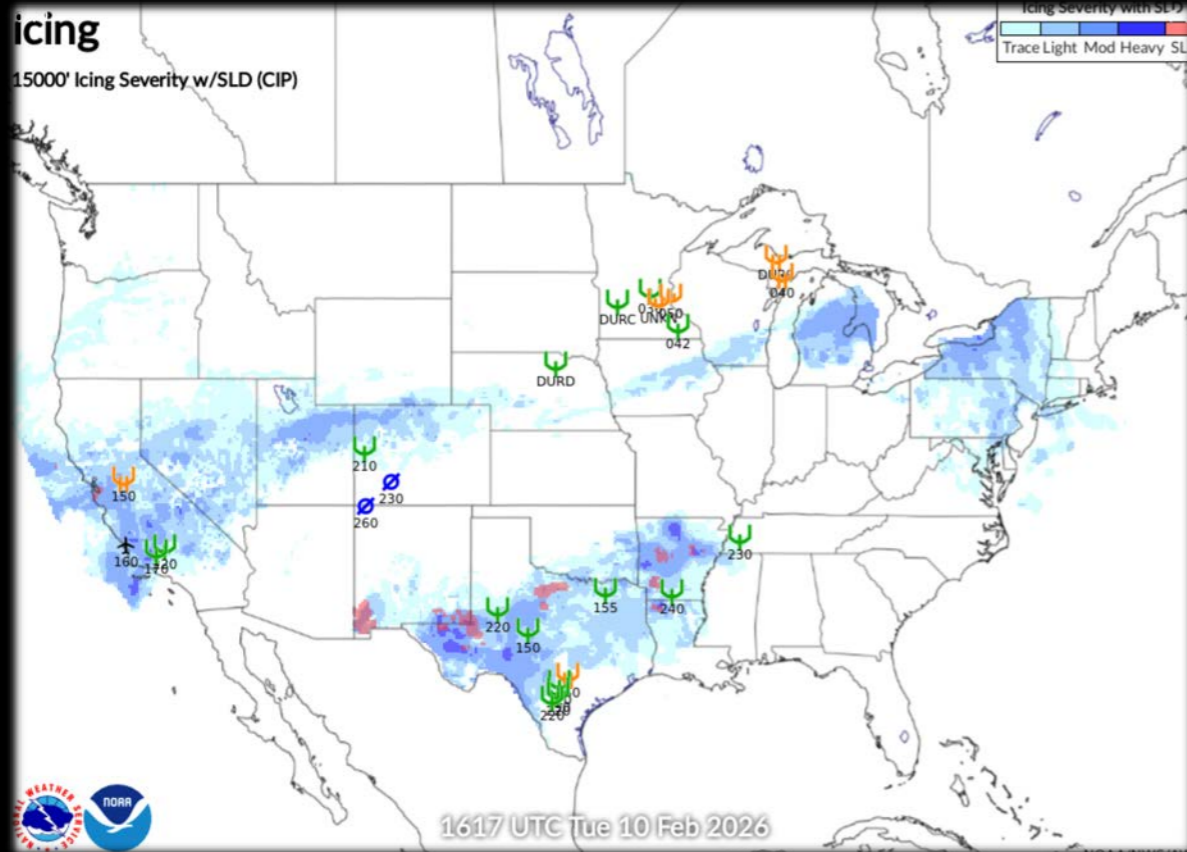
Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



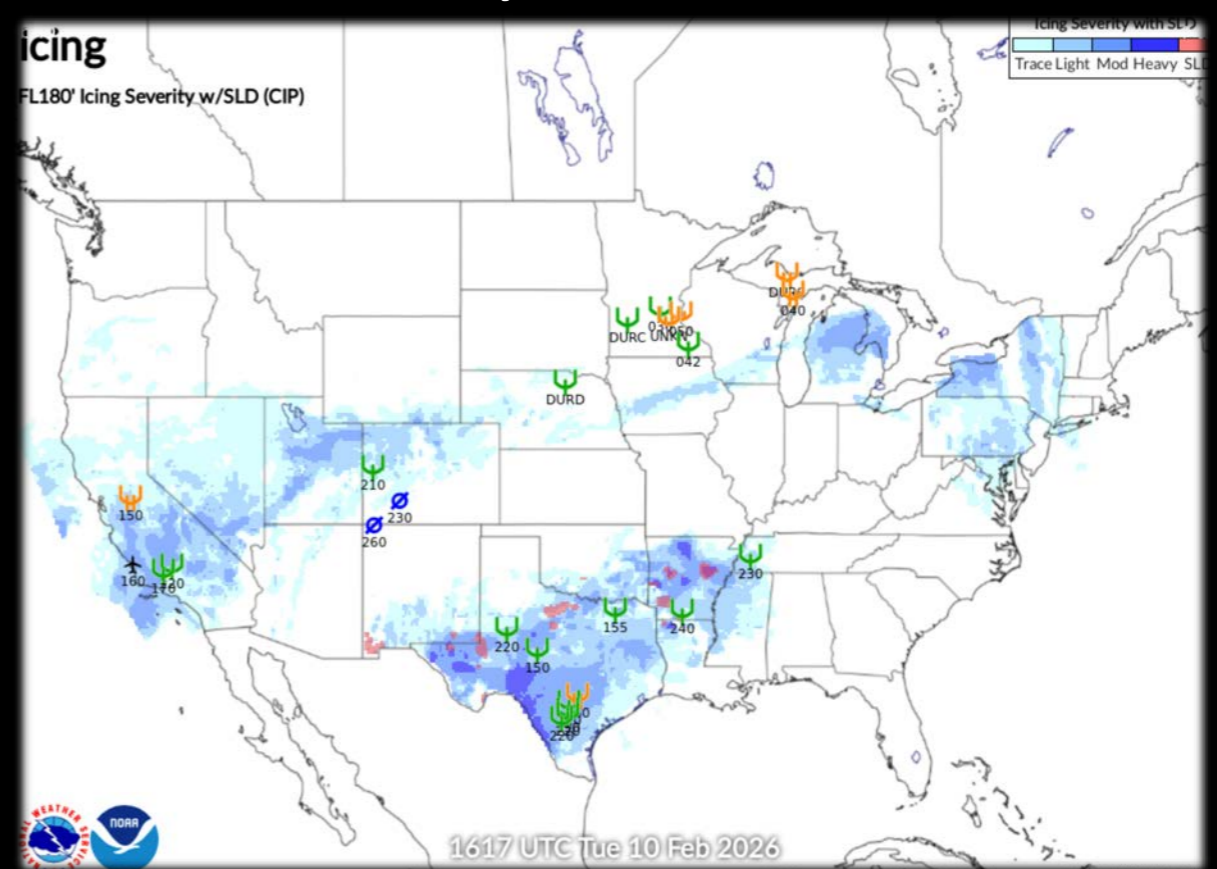
CIRRUS  
AUTHORISED  
TRAINING

# Icing

- 15,000 MSL



- 18,000 MSL



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'

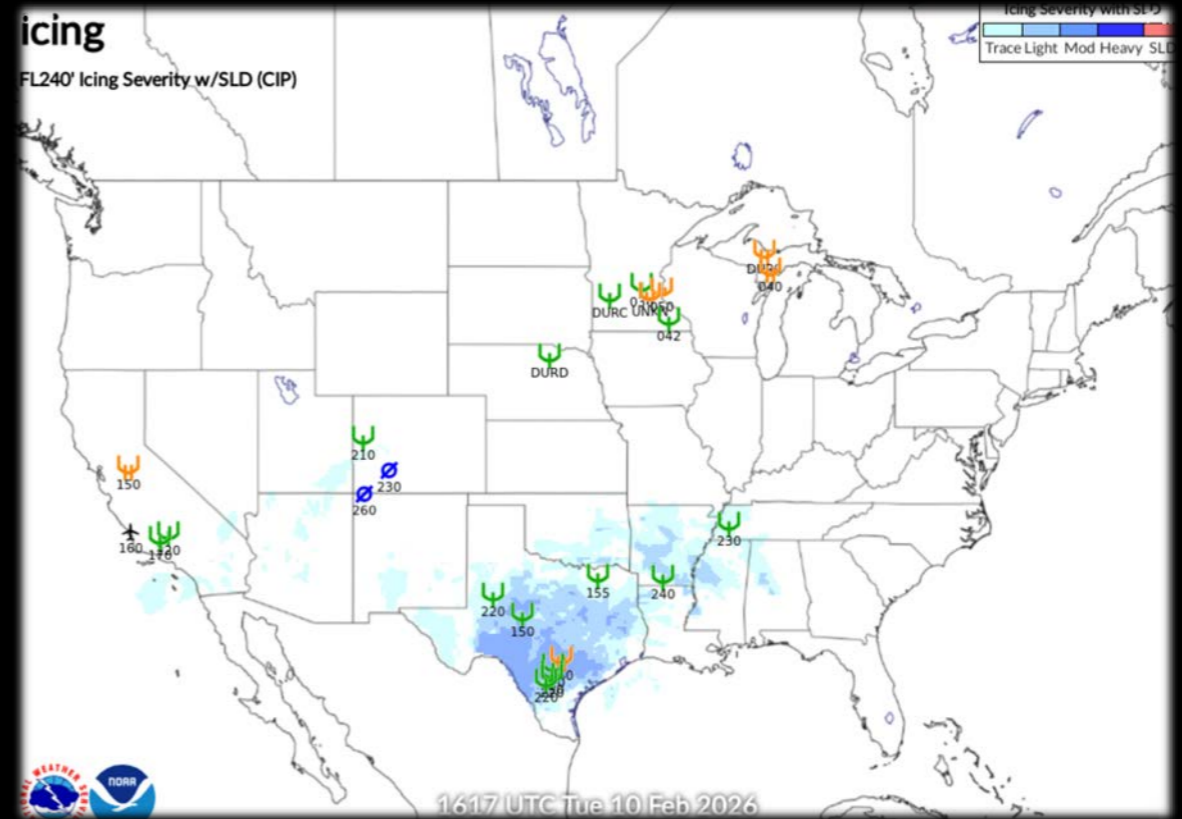
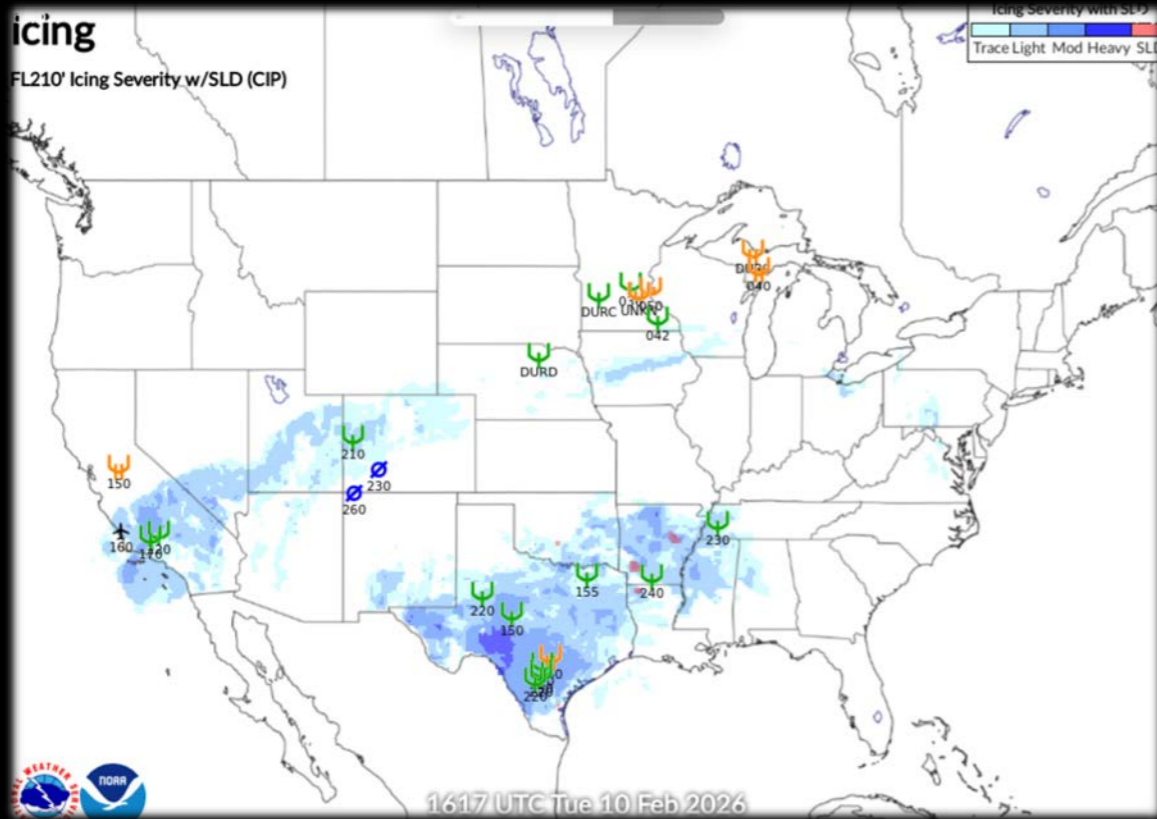


CIRRUS  
AUTHORISED  
TRAINING

# Icing

- 21,000 MSL

- 24,000 MSL



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



CIRRUS  
AUTHORISED  
TRAINING



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



**CIRRUS**  
AUTHORISED  
TRAINING



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



**CIRRUS**  
AUTHORISED  
TRAINING



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



**CIRRUS**  
AUTHORISED  
TRAINING

# Icing

## I. Icing Mitigation

- Have a properly equipped aircraft, or
- Avoid visible moisture below 5 C
- Know where icing is expected
- Know where to go if you get hit with ice
  - Change altitude (warmer / lower if able),
  - Exit area(s) of precipitation



**Maintain minimum airspeed for icing (POH)**

MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



**CIRRUS**  
AUTHORISED  
TRAINING

# Fog

## I. Likely times of Fog

- Mornings after Precipitation event(s)
- December - February (freezing)
- Look at low temps and dewpoint
- TAF's - GOOD LUCK



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



CIRRUS  
AUTHORISED  
TRAINING

# Fog

## I. Fog Mitigation

- **WAIT!!!!**
- **Pre flight in hangar**
- **TKS application**
- **IFR Clearance via phone**
- **Anti - Ice systems**
- **Departure contingencies / Alternates**



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



**CIRRUS**  
AUTHORISED  
TRAINING

# TRK FOG



NORMAL CATEGORY AIRPLANE  
NO AEROBATIC MANEUVERS,  
INCLUDING SPINS, APPROVED  
ABOVE 17,500 V NE AND V NO  
REDUCE LINEARLY WITH ALTITUDE:  
V NE V NO  
17,500 205 175 130S  
25,000 175 150 120S  
MANEUVERING SPEED: 180 KIAS

N217ML

SAFETY P  
REMOVE  
BEFORE



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



CIRRUS  
AUTHORISED  
TRAINING

# Forecasts

AT&T LTE 8:33 PM 50%

KTRK

Search

**Truckee-Tahoe**  
Truckee, California, US  
Elevation: 5,904'  
6:40 AM 4:48 PM PST

3D View Taxiways FBOs Comments

Info **Weather** Runway Procedure NOTAM

METAR **TAF** MOS Daily Winds

KTRK TAF 4h 58m ago

112335Z 1200/1224 VRB04KT P6SM BKN180  
FM120800 20007KT P6SM SCT120 BKN150  
WS020/26035KT  
FM121400 25006KT P6SM VCSH BKN040 BKN100  
WS020/26035KT  
PROB30 1215/1219 4SM -SHSN OVC025

Forecast Discussion

4:00 PM PST (CURRENT)

● VFR

Wind Variable at 4 kts

Airports Maps Flights Plates More



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



CIRRUS  
AUTHORISED  
TRAINING

# Forecasts

## I. Mountain Forecasts

- Timing of reports
- Trend in conditions
- Reading between the lines
- Have an exit strategy in place
- PIREPS

13:28 KRNO

Info Weather Runway Procedure NOTAM

METAR TAF MOS Daily Winds

KRNO TAF 4h 8m ago

12:00 PST (CURRENT)

● Marginal VFR

Wind 230° at 22 - 33 kts

Visibility 4 sm

Clouds (AGL) Broken 2,500'  
Overcast 4,000'

Weather Light Snow Showers

Wind Shear 2000 ft  
230° at 45 kts

Expires 16:00 PST

12:00 PST (CURRENT)

● IFR

Wind 230° at 22 - 33 kts

Visibility 1 sm

Clouds (AGL) Broken 1,500'

Airports Maps W&B ScratchPads More

13:27 KRNO

Info Weather Runway Procedure NOTAM

METAR TAF MOS Daily Winds

● Marginal VFR 25m ago

KRNO 012102Z 22008KT 6SM -RA BKN026 OVC050  
04/01 A2964

Time 13:02 PST

Wind 220° at 8 kts

Visibility 6 sm

Clouds (AGL) Broken 2,600'  
Overcast 5,000'

Weather Light Rain

Temperature 4°C (39°F)

Dewpoint 1°C (34°F)

Altimeter 29.64 inHg

Humidity 81%

Density Altitude 4,580'

NEARBY WEATHER

KRST Reno/Stead 12m

Airports Maps W&B ScratchPads More



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



CIRRUS  
AUTHORISED  
TRAINING

# Forecasts

	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	WEDNESDAY	
TIME	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	01:00
WEATHER													
FLYING	VFR	MVFR	MVFR	MVFR	IFR	MVFR	IFR	LIFR	LIFR	LIFR	LIFR	IFR	LIFR
CEILING	5,000'	4,500'	3,700'	3,400'	4,000'	4,000'	3,000'	3,000'	3,000'	3,000'	2,500'	1,300'	2,000'
SM	7 sm	5 sm	5 sm	4 sm	2.9 sm	4 sm	1.4 sm	0.8 sm	0.4 sm	0.6 sm	1 sm	1.6 sm	1.0 sm
WIND	Calm	114° 3 kts	146° 3 kts	113° 5 kts	Calm	148° 3 kts	Calm	Calm	Calm	Calm	Calm	Calm	Calm
TEMP	39°F	41°F	41°F	41°F	41°F	36°F	34°F	33°F	32°F	32°F	31°F	31°F	31°F
HUMIDITY	65%	68%	64%	79%	70%	72%	*76%	*78%	*93%	*89%	*74%	*58%	*58%



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



CIRRUS  
AUTHORISED  
TRAINING

# Flight Training

## I. Training techniques

- Experience, Experience, Experience
- Train in real conditions with an Experienced CFI in the target conditions
- Train for the unexpected
- Know your equipment
- Push on your weaknesses / Infrequent Items



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



CIRRUS  
AUTHORISED  
TRAINING

Questions, Comments,  
Discussions  
???????



MOUNTAIN LION  
AVIATION

Truckee, California - 5901' • Dallas-Fort Worth, Texas - 723'



CIRRUS  
AUTHORISED  
TRAINING