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Date: February 22, 2024
Subject: CEN24LA076
Contact: Carburetor Icing - Weather Review

This is a summary of an email received regarding a weather data request to NTSB Meteorology for a temperature and dewpoint data review at the time of the accident.

HRRR model atmosphere was retrieved for [42.77,-96.94] at 18Z on 29 December 2023 and I used the RAwinsonde OBservation Program (RAOB) to perform some analysis. An elevation of 1,141 feet was used.

RAOB retrieved the following Temp/Dewpoint Temp (DT) information for the lowest 4,000 feet of the atmosphere:

Feet (MSL)	Temp(°C)	DT(°C)
1200	-2.6	-6.9
1300	-3.0	-7.2
1400	-3.2	-8.3
1500	-3.3	-9.1
1600	-3.4	-9.8
1700	-2.8	-10.8
1800	-2.0	-11.9
1900	-1.3	-13.1
2000	-0.4	-14.0
2100	0.9	-14.0
2200	2.1	-14.0

Feet (MSL)	Temp(°C)	DT(°C)
2300	3.4	-14.0
2400	4.7	-14.0
2500	5.6	-14.2
2600	6.0	-14.8
2700	6.5	-15.4
2800	6.9	-16.0
2900	7.3	-16.6
3000	7.7	-17.2
3100	8.0	-17.9
3200	7.9	-19.0
3300	7.7	-20.2
3400	7.6	-21.3
3500	7.5	-22.5
3600	7.4	-23.6
3700	7.3	-24.7
3800	7.2	-25.6
3900	7.0	-25.6
4000	6.8	-25.6

RAOB also determined there was a carb icing threat at a few levels in the lower atmosphere. You can blend these levels together to form a consistent layer. The light icing severity would be the "glide or cruise power" on the standard chart.

1142 feet MSL - light carb icing (glide or cruise power)

1169 feet MSL - light carb icing (glide or cruise power)

1249 feet MSL - light carb icing (glide or cruise power)

1356 feet MSL - light carb icing (glide or cruise power)

1626 feet MSL - trace carb icing

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