

MEMORANDUM FOR RECORD

Timothy W. Monville
Sr. Air Safety Investigator
Office of Aviation Safety-Eastern Region

Date: October 24, 2024

Subject: ERA24LA178, Temperature and Dew Point Aloft

Contact: NTSB Staff Meteorologist

An NTSB staff meteorologist provided the following weather product in support of the investigation:

A High Resolution Rapid Refresh (HRRR)¹ model sounding was created² for the approximate time and location where the pilot reduced power and the airplane began descending from 5,500 ft mean sea level in accordance with instructions from the controller (Attachment 1). The HRRR modeled surface elevation was 495 ft msl. At an elevation of 5,069 ft msl, the HRRR sounding indicated the temperature and dew point were about 16.8° C and about 0.4° C, respectively, with a relative humidity of 33 percent, and the wind from 254° at 41 kts.

At an elevation of 6,076 ft msl, the HRRR sounding indicated the temperature and dew point were about 13.7° C and about -0.6° C, respectively, with a relative humidity of 37 percent, and the wind was from 256° at 43 kts.

¹ The HRRR is a NOAA real-time three-kilometer resolution, hourly-updated, cloud-resolving, convection-allowing atmospheric model, initialized by three-kilometer grids with three-kilometer radar assimilation. Radar data is assimilated in the HRRR every 15 minutes over a one-hour period.

² HRRR sounding was created using NOAA Air Resource Laboratory: [READY Archived Meteorology \(noaa.gov\)](https://ready.arl.noaa.gov/).

Using interpolation, the temperature and dew point at 5,573 ft msl were 15.25°C or about 59.5°F³ and -0.1°C or about 31.8°F⁴, respectively.

³ The pilot advised that the temperature at 5,500 ft msl was 60°F. Refer to NTSB Record of Conversation in the public docket for this investigation.

⁴ The conversion to Fahrenheit was needed to utilize the Carburetor Icing Probability Chart found in the public docket for this investigation.

ATTACHMENT 1

00 RAOB: 0000UTCHRRRSOUDINGDATA.TXT // YR: 2024 MON: 04 DAY: 15 HOUR:

Data Type: RAW Integrated data levels: 47

Lat: N Lon: W Elev: 151 meters

	Height	Pres	T	Td	RH	DD/FF	CAT	LLWS	Icing - Type
WAVE/x---W---turb--	Level (ft-MSL)	(mb)	(C)	(C)	(%)	(deg/kts)			
	nm	fpm							

1	495	990	24.1	6.9	33	204/10			
2	524	989	25.5	7.9	33	203/10	MDT	STRNG	
3	612	986	26.0	8.0	32	206/19	LGT	LIGHT	
4	788	980	25.9	7.4	31	207/23	MDT	LIGHT	
5	1054	971	25.8	7.0	30	210/30	MDT	LIGHT	
6	1472	957	25.1	6.6	31	213/36	LGT		
7	2017	939	23.8	6.3	32	217/39			
8	2663	918	22.2	6.1	35	221/40	MDT		
9	3352	896	20.8	5.0	36	232/39	SVR		
10	4152	871	19.1	2.5	33	247/38	LGT		
11	5069	843	16.8	0.4	33	254/41			
12	6076	813	13.7	-0.6	37	256/43			
13	7250	779	10.2	-1.3	45	259/44	LGT		
14	8533	743	6.5	-2.3	53	265/43	LGT		

	15	9976	704	3.0	-5.2	55	272/43	LGT
	16	11641	661	-0.5	-9.4	51	283/44	LGT
	17	13435	617	-4.6	-12.2	55	293/41	
	18	15394	572				298/36	
	19	15509	569	-9.5	-15.8	60	n/	
	20	17487	526				300/34	
	21	17627	523	-14.4	-23.9	44	n/	
	22	19491	485				297/36	
	23	19639	482	-19.3	-32.8	29	n/	
	24	21407	448				294/38	
	25	21569	445	-24.3	-37.0	30	n/	
	26	23232	415				290/38	
	27	23394	412	-29.1	-39.6	36	n/	
	28	24993	385				291/39	
	29	25212	381	-33.5	-43.3	37	n/	LGT
	30	26673	357				299/42	
	31	26891	354	-37.5	-47.5	35	n/	LGT
	32	28278	333				306/42	
	33	28537	329	-41.2	-52.8	28	n/	
	34	31240	291				306/34	
	35	31539	287	-47.7	-58.6	27	n/	
	36	33953	256				296/32	
	37	34236	253	-53.5	-62.2	34	n/	LGT
	38	36470	227				307/37	
4.98	146	LIGHT						
	39	36778	224	-58.3	-66.2	36	n/	

40	39180	199				300/39	
41	39521	196	-60.5	-69.6	29	n/	LGT
42	42316	171				280/42	
43	42678	168	-59.6	-77.0	9	n/	
44	46056	143				278/32	
45	46436	140	-57.7	-83.6	2	n/	
46	50673	114				290/38	
47	51081	112	-55.4	-86.8	1	n/	