



MEMORANDUM FOR RECORD

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Eastern Region Aviation

February 27, 2019

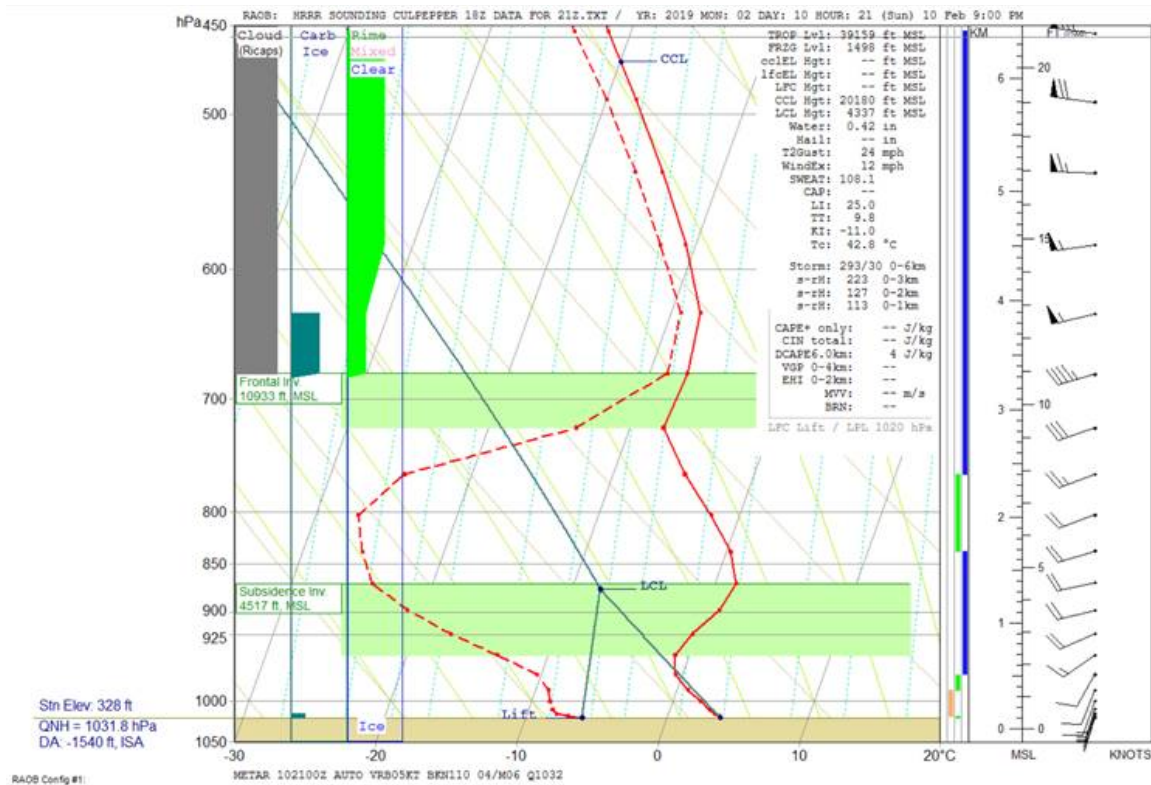
Subject: N7414N, Cessna 172E, 02/10/19, Lignum, Virginia, NTSB Investigation ERA19TA098
Weather Reports and Records

On 2/27/19, NTSB Sr. Meteorologist Don Eick provided the following information via email:

The following conditions for February 10, 2019 in the vicinity of Culpepper, VA.

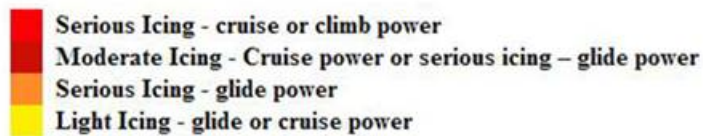
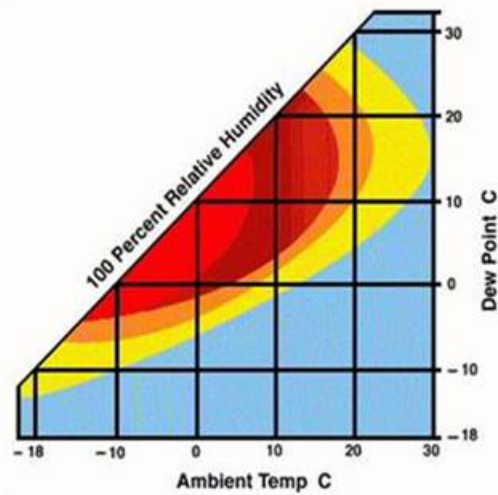
Sounding Data

A High-Resolution Rapid Refresh (HRRR) numerical model was run from archive data from the NOAA Air Resource Laboratory archive data for the period and over the accident site coordinates. The sounding for 1600 EST (2100Z) is included below.



The HRRR sounding indicated expected surface conditions with an elevation of 328 ft, with winds variable at 5 knots or less, visibility unrestricted at 10 miles or more, ceiling broken at 11,000 ft, with a temperature of 4° C (38.8° F) , dew point temperature -6° C (21° F), with a relative humidity of 49%. The density altitude was -1,540 ft from the international standard atmosphere. The sounding depicted a defined temperature inversion due to subsidence between 2,200 and 4,517 ft, where temperatures increased with height and drier conditions were noted, with decreasing relative humidity's. Above the inversion, the freezing level was at 5,650 ft.

At 3,000 ft msl, the sounding indicated wind from 250° 18 knots with a temperature of -0.2° C, dew point near -17° C, with a relative humidity of 26%. The potential for carburetor icing was low at that altitude.



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METARs

A review of the Culpeper Regional Airport (KCJR), Culpeper, Virginia, at an elevation of 316 ft, Automated Weather Observation System (AWOS) observations during the period indicated the following:

METAR KCJR 102055Z AUTO 20005KT 10SM OVC110 04/M11 A3049 RMK AO2 T00381107=

METAR KCJR 102115Z AUTO 22004KT 10SM OVC110 04/M11 A3048 RMK AO2 T00381106=

METAR KCJR 102135Z AUTO 00000KT 10SM OVC110 04/M10 A3047 RMK AO2 T00361105=

The METARs verified the HRRR model data for the surface conditions with regards to the temperature of 4° C, while the dew point was reported at -11° C, with a relative humidity of 33%, or lower relative humidity than the model. The cloud layer was consistent with the HRRR expected ceiling height. A low probability of carburetor icing existed during the period.

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