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Date: October 30, 2023

Subject: NTSB Investigation DCA23LA411, N776MS, Embraer RJ 170-100SE, Envoy Air Flight 3788 (dba American Eagle), Eleroy, Illinois, August 14, 2023 at 0636 central daylight time. Weather Reports and Records.

On October 30, 2023, the NTSB Operational Factors Division provided the following information via email:

The following images depict weather radar reflectivity in the vicinity of and about the time of the accident. The first (plan view) image depicts light to extreme precipitation in the accident region. The purple dot denotes the accident location. The second images is a north-to-south vertical cross-section of reflectivity through the accident location. The maximum height of the reflectivity is around 25,000ft above mean sea level (msl) with some variation.

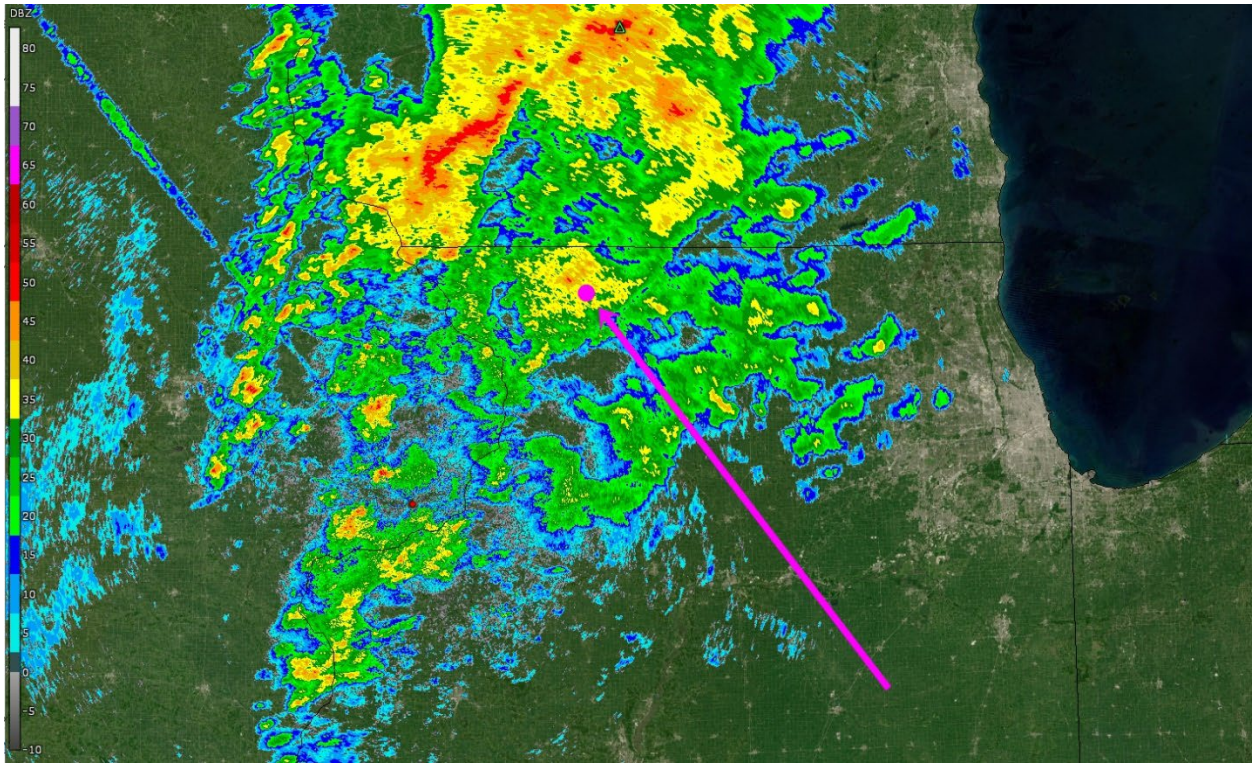


Figure 1 - Radar Reflectivity - Plan View

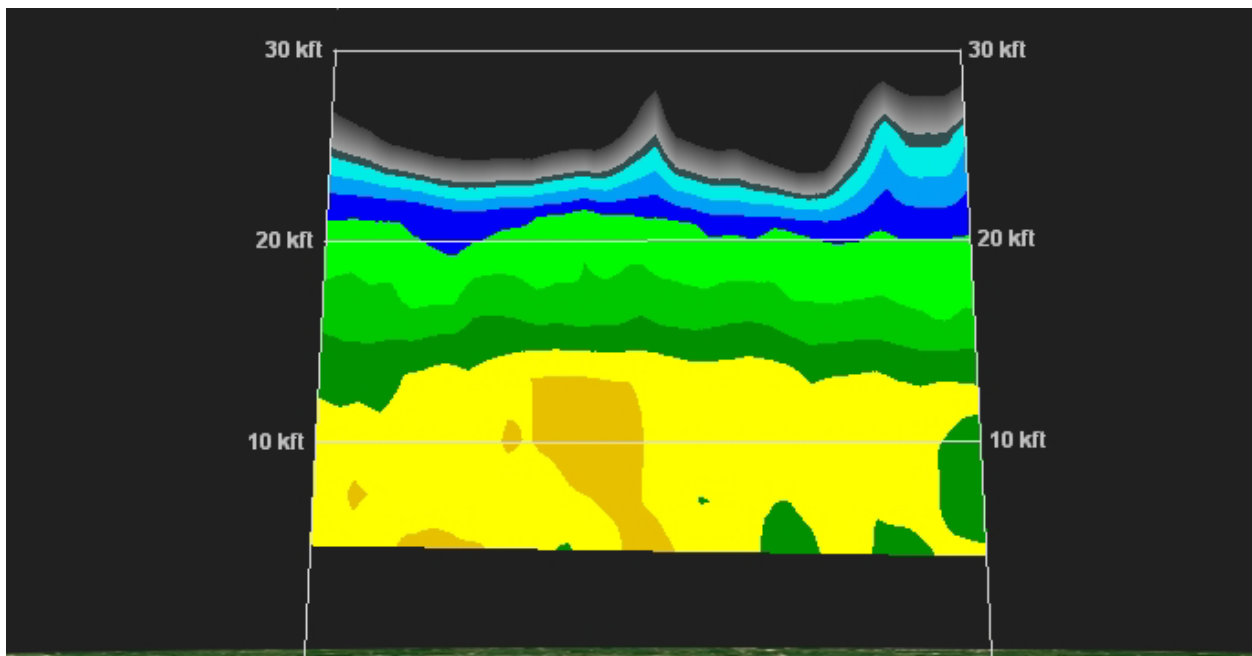


Figure 2 - North-to-South Vertical Cross-Section of Reflectivity Through the Accident Location

Review of a High-Resolution Rapid Refresh (HRRR) model sounding for 1200 UTC at the accident site revealed vertical shearing of the horizontal wind (speed shear) between 25,000 ft and 30,000 ft msl. The following wind values were interpolated from the HRRR model data.

Height (feet)	Wind Dir (true)	Wind Mag (knots)
25000	235°	41
25500	234°	43
26000	235°	48
26500	237°	55
27000	238°	61
27500	240°	68
28000	242°	73
28500	243°	78
29000	245°	83
29500	245°	87
30000	245°	90

The visible satellite imagery for the area and near the time of the accident depicted cloudy conditions over the accident location. Infrared brightness temperatures for the coldest cloud tops in the immediate vicinity of the accident location were -25°C , which, in conjunction with the HRRR model, are consistent with cloud tops at about 26,000 ft msl.

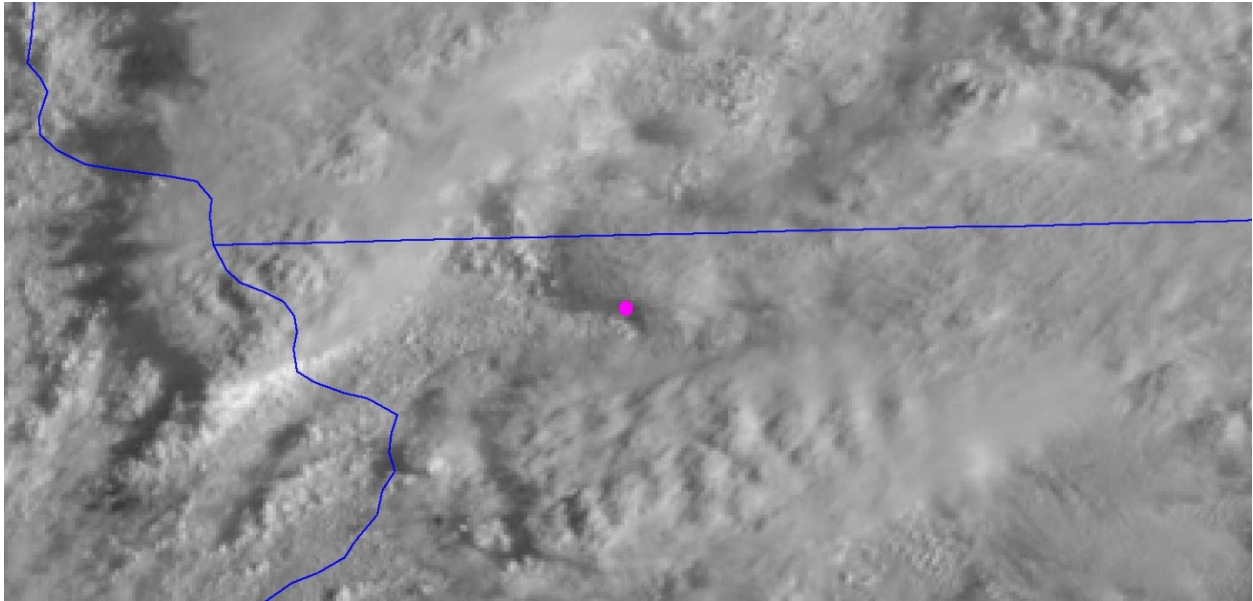


Figure 3 - Visible Satellite Imagery

There were no SIGMETs active for the accident location.

The following PIREPs were issued for turbulence within 40 miles of the accident location between 1000 and 1300 UTC:

DBQ UA /OV DBQ045035/TM 1208/FL310/TP B739/TB MOD CHOP

RFD UA /OV RFD135010/TM 1223/FL200/TP B738/TB INTMT-CONS LGT CHOP-OCNL
LGT