



NTSB MEMORANDUM FOR RECORD

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Date: 12/10/2021
NTSB Accident Number: ERA22FA083

Narrative:

The following weather information and data was obtained from the National Weather Service (NWS) and other weather sources by an NTSB meteorological specialist.

Synoptic Conditions

The NWS Surface Analysis Chart for the southeast for 2200 eastern standard time (EST) on December 7, 2021, is included as Figure 1. The chart depicted a low-pressure system off the South Carolina at 1016-hectopascals (hPa) with a stationary front extending westward and turning into a warm front across extreme southern South Carolina and Georgia, and then southwestward into the Florida Panhandle. The accident site was located in the general vicinity of the warm front.

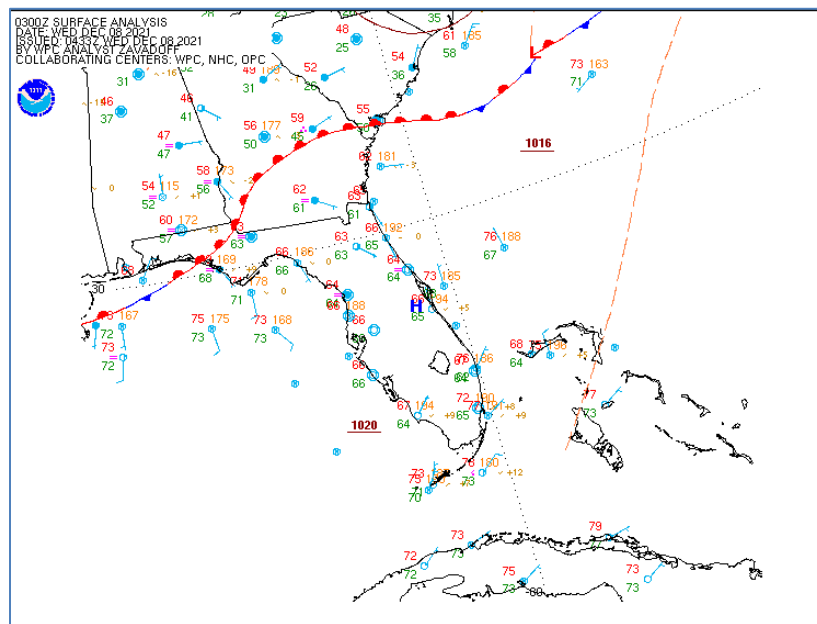


Figure 1: Surface Analysis Chart



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A review of the NWS Composite Radar Mosaic for 2130 EST depicted no meteorological echoes within 50 mile radius of Statesboro, GA.

METAR Observations

The accident location was about 2 miles south of Statesboro-Bulloch County Airport (TBR), Statesboro, Georgia. The airport lists an elevation of 187 ft and had an Automated Weather Observation System (AWOS) that was not augmented by any human observer. The following conditions were reported at the approximate time of the accident.

Routine weather observation for KTBR at 2135 EST, automated, wind from 150° at 4 knots, visibility 7 statute mile, ceiling overcast at 600 ft agl, temperature 15° Celsius (C) (59° F), dew point temperature 13° C (55° F), altimeter setting 30.26 inches of mercury. Remarks: automated station with a precipitation discriminator. Remarks; automated station with a precipitation discriminator, temperature 15.0° C, dew point temperature 13.4° C.

The general flight conditions and raw METAR observations surrounding the period were as follows.

MVFR METAR KTBR 080115Z AUTO 15004KT 10SM OVC011 16/13 A3008 RMK AO2 T01550125=

IFR METAR KTBR 080135Z AUTO 14004KT 10SM OVC008 15/13 A3008 RMK AO2 T01530130=

IFR METAR KTBR 080155Z AUTO 14004KT 10SM OVC008 15/13 A3008 RMK AO2 T01520132=

IFR METAR KTBR 080215Z AUTO 15004KT 7SM OVC006 15/13 A3008 RMK AO2 T01510133=

Accident 0224Z (2124 local ET)

IFR METAR KTBR 080235Z AUTO 16006KT 7SM OVC006 15/13 A3008 RMK AO2 T01500134=

IFR METAR KTBR 080255Z AUTO 14004KT 10SM OVC006 15/13 A3009 RMK AO2 T01470130=

IFR METAR KTBR 080315Z AUTO 14003KT 10SM OVC006 15/13 A3009 RMK AO2 T01460125=

MVFR METAR KTBR 080335Z AUTO 16003KT 10SM OVC010 15/12 A3008 RMK AO2 T01460123=

MVFR METAR KTBR 080355Z AUTO 15003KT 10SM OVC012 15/12 A3006 RMK AO2 T01450124=

Sounding

A High-Resolution Rapid Refresh (HRRR) numerical model over KTBR was obtained from the NOAA Air Resource Laboratory. The HRRR model data was then plotted on a standard skew T log P diagram using the RAOB Analysis software for 2100 EST (0200Z December 8, 2021). The sounding depicted an elevation of 210 ft over the grid point, with a near surface temperature of 15.6°C (60° F), with a dew point temperature of 14.1°C (57° F), a relative humidity of 91 %, with a density altitude of 353 ft. The lifted condensation level (LCL) was



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identified at 628 ft agl, with the convective condensation level (CCL) at 1,956 ft agl. The sounding was saturated supporting clouds from the LFC through 7,000 ft msl. The precipitable water content was 1.28 inches. The freezing level was identified at approximately 12,200 ft agl. The atmosphere was characterized as stable with a Lifted Index of 6.4, with no convective available potential energy (CAPE) values, and supported nimbostratus type clouds capable of producing light rain.

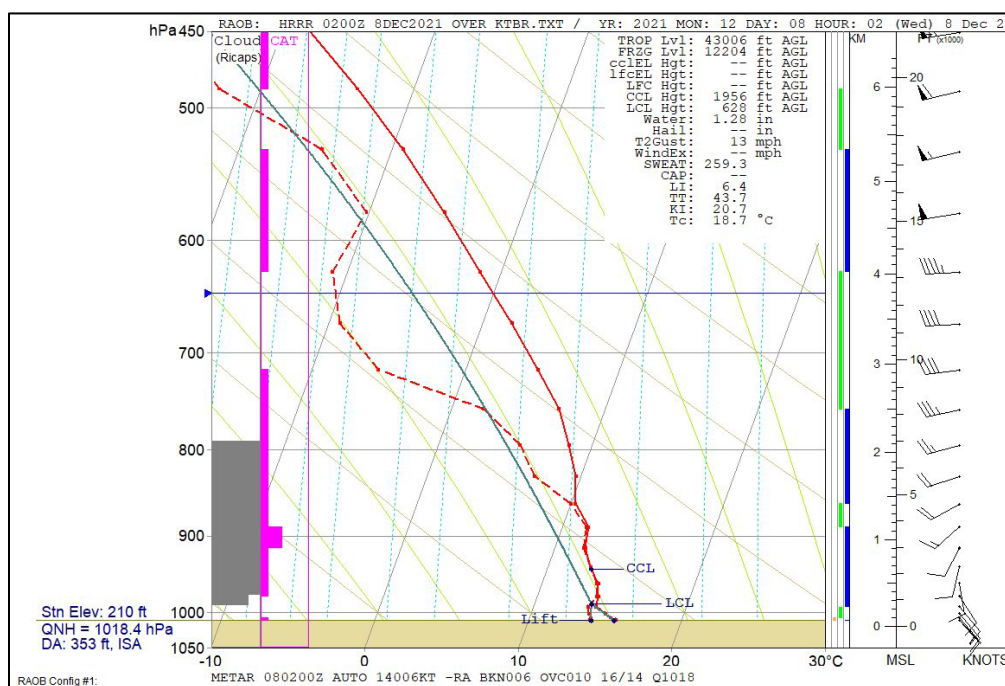


Figure 2: High-Resolution Rapid Refresh (HRRR) numerical model over KTBR obtained from the NOAA Air Resource Laboratory

The HRRR wind profile indicated a surface wind from the southeast or from 140° at 6 knots with winds veering to the west with height with slowly increasing winds speeds. The mean 0 to 6 kilometer (or 18,000 ft) wind was from 255° at 35 knots.

Satellite Imagery

The Geostationary Operational Environmental Satellite number 16 (GOES-16) data were obtained from an archive at the Space Science Engineering Center (SSEC) at the University of Wisconsin-Madison in Madison, Wisconsin, and processed using the Man-computer Interactive Data Access System (McIDAS) software. The GOES-16 infrared band 15 image for 2126 EST at 4X magnification with a standard temperature enhancement curve applied as well as the fronts from 2200 EST is included as figure X. The image depicted an overcast area of low clouds over KTBR and the accident site, with a radiative cloud top temperature of 277 Kelvin or 3.8° C, which corresponded to cloud tops near 8,000 ft.



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a Graphic-AIRMET for IFR conditions due to low ceilings below 1,000 ft agl and visibility below 3 miles in mist and fog over southern Georgia immediately south of the accident site.

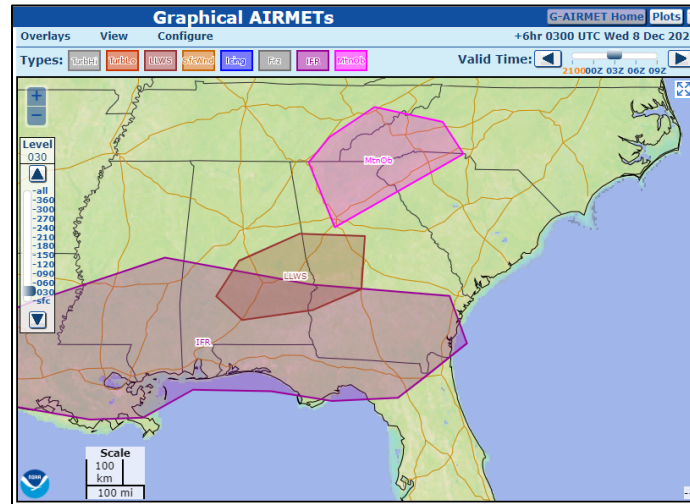


Figure 4: Graphic-AIRMET for IFR conditions

Astronomical Conditions

The United States Naval Observatory astronomical conditions over Statesboro, GA indicated the following conditions. The time of the accident has been included for reference in bold italic type.

<u>Sun</u>	<u>Time (EST)</u>	
Begin civil twilight	0648	December 7, 2021
Sunrise	0715	
Culminative	1218	
Sunset	1721	
End civil twilight	1748	
<i>Accident Time</i>	<i>2124</i>	

<u>Moon</u>		
Moonrise	1050	December 7, 2021
Mon culmination	1556	
Moon set	2105	
<i>Accident Time</i>	<i>2124</i>	

At the time of the accident the Sun was more than 30° below the horizon, and the moon was about 4.7° below the horizon at an azimuth of 245°. The phase of the moon was a waning crescent with 20% of the moon's disk illuminated.

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