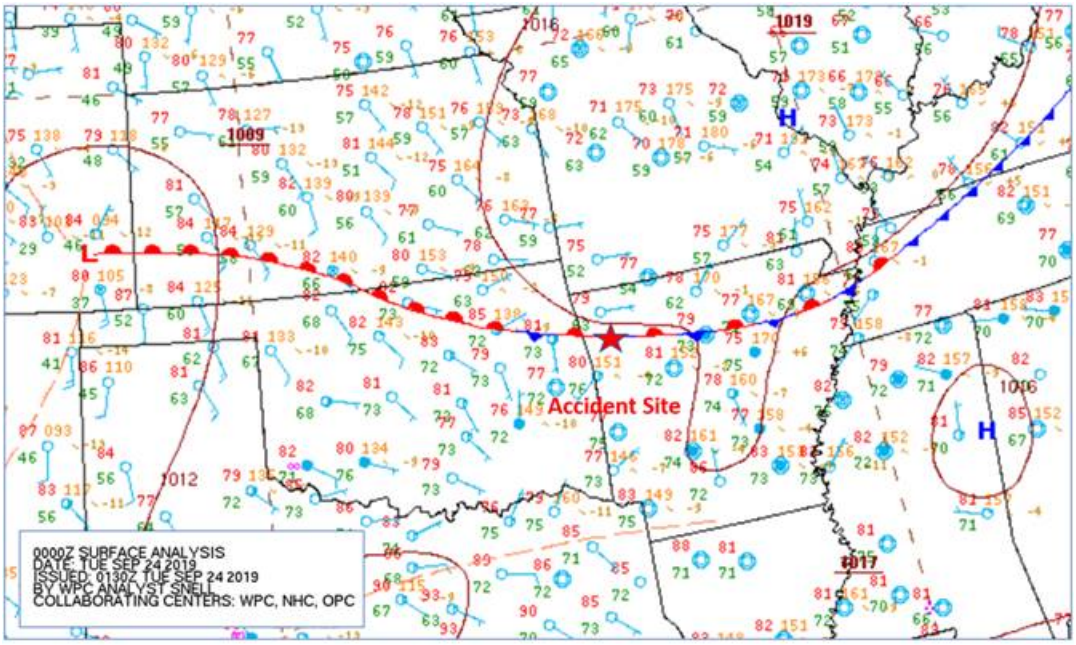
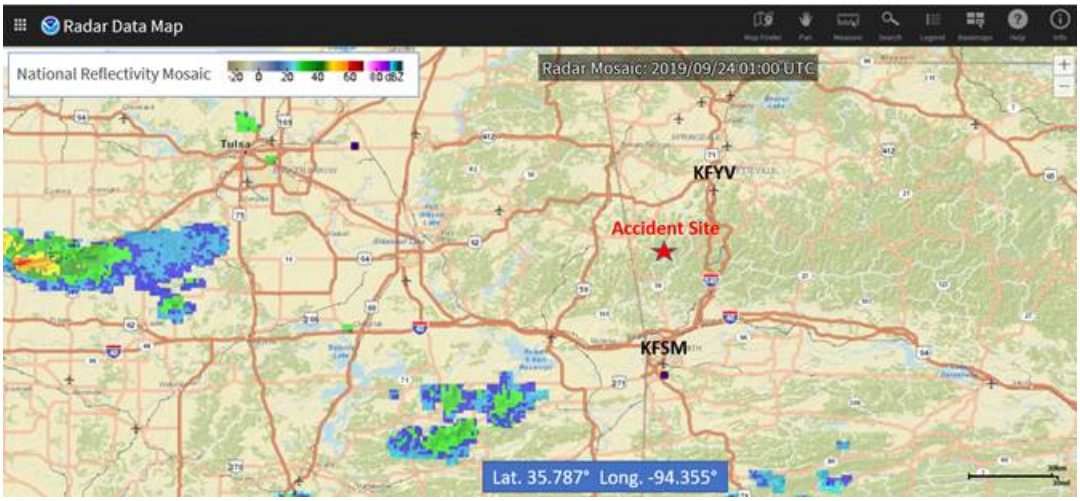
Aguilera Jason

From: Eick Donald
Sent: Wednesday, September 25, 2019 2:55 PM
To: Aguilera Jason
Cc: Helson David; Soper Brian; Rodi Jennifer
Subject: CEN19FA332 - Praire Grove, AR Weather

Synoptic Conditions – The NWS Surface Analysis Chart for 1900 CDT (0000Z September 24) is included with the approximate accident site marked by a red star. The chart depicted a stationary front extending over northern Arkansas and in the vicinity of the accident site. The station models depicted relatively clear skies north of the frontal boundary with winds form the east to northeast at 10 knots or less. To the south of the front the winds were from the south at 5 knots or less with broken cloud coverage. Temperatures were near 80° F, with dew point near 76° F. No significant weather was depicted in the immediate vicinity.



The National Composite Radar Mosaic for 2000 CDT (0100Z) is included with the approximate accident site marked. Several strong echoes associated with thunderstorms and rain showers were depicted to the west and southwest of the accident site over Oklahoma, with no significant echoes in the vicinity of the accident site.



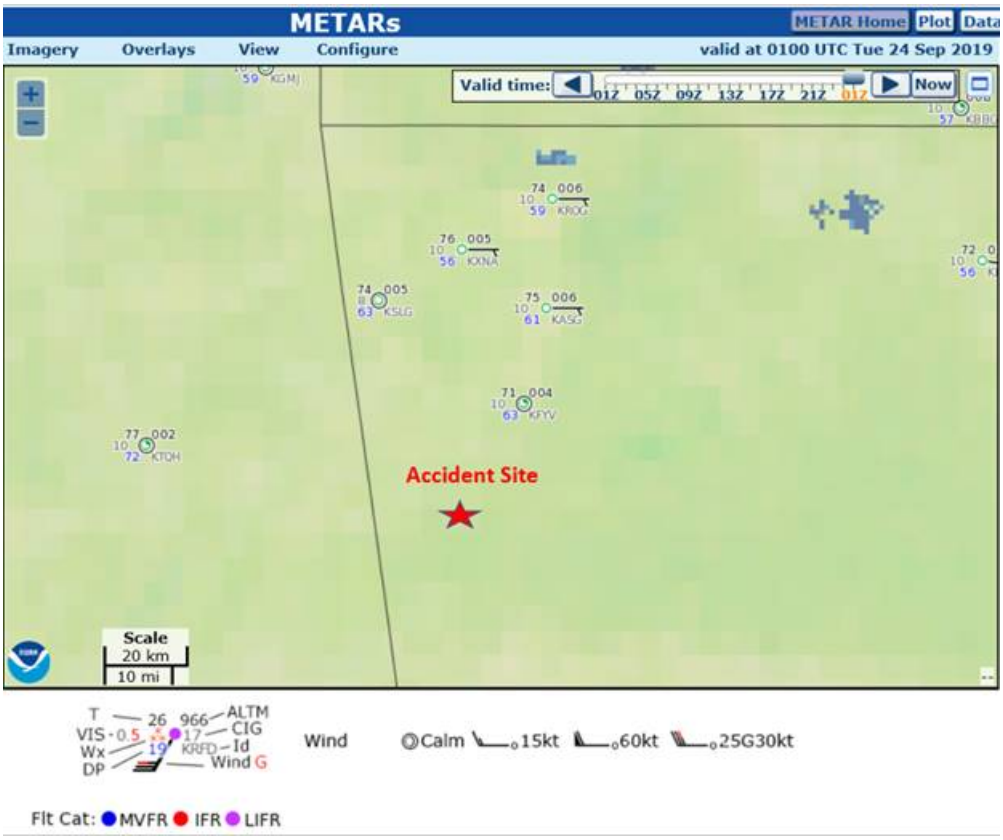
Observations – The closest NWS reporting location to the accident site was from Drake Field Airport (KFYV), Fayetteville, AR, located approximately 18 miles northeast of the accident site at an elevation of 1,252 ft. The airport had an ASOS and reported the following conditions surrounding the period:

METAR KFYV 232153Z 06007KT 010V080 10SM FEW036 29/22 A3004 RMK AO2 SLP157 T02890217=
METAR KFYV 232253Z 06008KT 10SM CLR 28/17 A3004 RMK AO2 SLP160 T02780167=
METAR KFYV 232353Z 07005KT 10SM CLR 25/16 A3004 RMK AO2 SLP160 T02500156 10306 20250 56001=
METAR KFYV 240053Z 00000KT 10SM SCT048 22/17 A3004 RMK AO2 SLP162 T02170172=
Accident 0100Z (2000 CDT)
METAR KFYV 240153Z 00000KT 10SM CLR 21/17 A3005 RMK AO2 SLP162 T02110172=
METAR KFYV 240253Z AUTO 00000KT 10SM CLR 20/18 A3006 RMK AO2 SLP166 T02000178 53004=

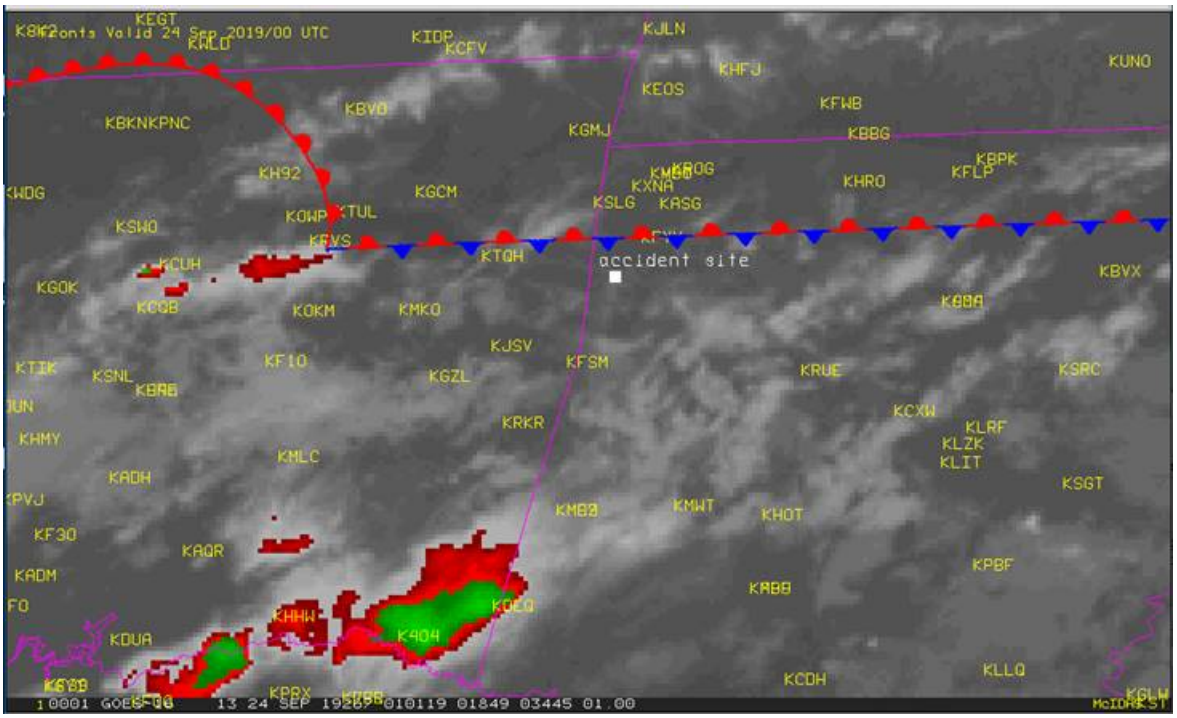
The next closest location was Fort Smith Regional Airport (KFSM), Fort Smith, AR, approximately 23 miles south of the accident site at an elevation of 469 ft. The airport had an ASOS and reported the following conditions:

METAR KFSM 232253Z 24005KT 10SM FEW026 BKN120 28/24 A3000 RMK AO2 SLP154 TCU N-NE MOV E T02780244=
METAR KFSM 232353Z 23004KT 10SM CLR 27/24 A2999 RMK AO2 SLP151 T02670244 10300 20267 58004=
METAR KFSM 240053Z 19003KT 10SM OVC095 26/25 A2999 RMK AO2 SLP151 T02560250=
Accident 0100Z
SPECI KFSM 240117Z 00000KT 10SM BKN019 OVC095 26/25 A3000 RMK AO2 T02560250=
SPECI KFSM 240148Z 00000KT 10SM SCT018 BKN085 26/24 A3000 RMK AO2=
METAR KFSM 240153Z 00000KT 10SM FEW018 BKN085 26/24 A3000 RMK AO2 SLP155 T02560244=
METAR KFSM 240253Z 00000KT 10SM BKN080 26/24 A3001 RMK AO2 SLP157 T02560244 51006=

The NWS Aviation Weather Center's METAR display for 2200 CDT (0100Z) depicted general VFR conditions over the area.



Satellite Imagery – the GOES-16 infrared image for 2201 CDT is included at 4X magnification with a standard MB temperature enhancement curve applied, and the fronts from 1900 CDT overlaid. The image showed a small area of low stratiform type clouds over the accident site. The cloud top temperature over the accident site was 13.8° C which corresponded to cloud tops near 8,000 ft.



Model Sounding – A HRRR numerical model was plotted for the accident site and indicated light surface winds at 3 knots, a few clouds at 1,1000 ft agl, scattered clouds at 2,600 ft. With a conditional unstable atmosphere, with no indications of any turbulence, icing, or other low-level hazards.

Forecasts – The closest Terminal Aerodrome Forecasts (TAFs) to the accident site were as follows:

TAF KFYV 232349Z 2400/2424 ***34005KT P6SM SCT030 SCT250***
FM240900 15007KT P6SM BKN050
PROB30 2410/2412 14010G20KT 4SM -TSRA BR BKN025CB
FM241200 14010G20KT 4SM -TSRA BR OVC015CB
TEMPO 2412/2416 14015G25KT 2SM TSRA BKN010CB OVC020
FM241800 18007KT P6SM VCSH BKN010 OVC030
TEMPO 2418/2422 17012G25KT 4SM -TSRA BKN010CB OVC025=

TAF KFSM 232349Z 2400/2424 ***18005KT P6SM SCT025 BKN120***
FM240300 08006KT P6SM OVC025
PROB30 2410/2412 09010G20KT 4SM -TSRA BR BKN015CB
FM241200 09010G20KT P6SM VCTS OVC007CB
TEMPO 2412/2416 09015G25KT 3SM TSRA BR OVC007CB
FM242000 14005KT P6SM VCSH OVC007
PROB30 2420/2422 14010G20KT 4SM -TSRA BR OVC007CB=

Inflight Weather Advisories – a search of NWS Convective SIGMETs, SIGMETs, and AIRMETs indicated no advisories in effect for the area at the time of the accident for any adverse weather, no AIRMETs for IFR conditions were in effect during the period for the area.

Winds and Temperatures Aloft Forecast – the winds aloft data were as follows:

WINDS ALOFT FORECASTS
DATA BASED ON 240000Z
VALID 240600Z FOR USE 0200-0900Z. TEMPS NEG ABV 24000

FT	*3000*	*6000*	*9000*	*12000*	*18000*	*24000*	*30000*	*34000*	*39000*
FSM	*1712*	*2213+16*	*2611+11*	*2911+06*	*2517-06*	*2621-17*	*263331*	*253341*	*253753*
TUL	*1717*	*2016+16*	*2312+11*	*2514+06*	*2619-06*	*2623-17*	*254031*	*254741*	*254652*
SGF	*1616*	*9900+17*	*3210+12*	*3014+05*	*2721-06*	*2730-17*	*264932*	*276041*	*266053*

Astronomical Conditions – from the United States Naval Observatory for Fayetteville, Washington County, AR, on September 23, 2019:

Moonset	1554 CDT
Sunset	1912 CDT
End civil twilight	1938 CDT
Accident	***2200 CDT***
Moonrise	0202 CDT September 24

At the time of the accident both the Sun and the Moon were more than 15° below the horizon and provided no illumination. The phase of the Moon was a waning crescent with approximately 23% of the disk visible once it rose.

Donald Eick
NTSB Senior Meteorologist

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[redacted]