

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN23FA057

METEOROLOGY

Specialist's Factual Report

December 22, 2022

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A. ACCIDENT

Location: Cleburne, Texas

Date: 4 December 2022

Time: 2056 central standard time (0256 UTC¹ on 5 December 2022)

Aircraft: Type - Cessna 210-5(205); Registration - N8149Z

B. METEOROLOGY INVESTIGATOR

Mike Richards

Senior Meteorologist

Office of Aviation Safety

Operational Factors Division (AS-30)

National Transportation Safety Board

C. DETAILS OF THE INVESTIGATION

The National Transportation Safety Board's meteorological specialist did not travel in support of this accident investigation and gathered all weather data remotely. Unless otherwise noted, all times are in central standard time for December 4, 2022 (based upon the 24-hour clock), directions are referenced to true north, distances are in nautical miles and heights are above mean sea level (msl). The accident site was located at about: 32.323764° north latitude; 97.431479° west longitude at an elevation of about 790 feet.

This report provides information on the weather conditions and forecasts applicable to the accident time and location.

D. WEATHER INFORMATION

1.0 Surface Observations

An Automated Weather Observing System (AWOS) was located at Cleburne Regional Airport (CPT²) in Cleburne, Texas, which was located about 2 miles north of the

¹ UTC - abbreviation for Coordinated Universal Time

² This report uses the 3-digit International Air Transport Association format for airport identification, which does not use the geographic designating digit (e.g., "K" for stations in the continental U.S. and "P" for U.S. stations in Alaska and the Pacific region) as found in the 4-digit International Civil Aviation Organization (ICAO) identifier format. Weather observations from airports in this report are referenced by their reporting station's identifier (using ICAO format that includes the geographic designating digit), not by the airport at which the reporting station is located.

accident location and was at an elevation of about 855 feet. It had a magnetic variation of about 3°30' east. Automated longline³ reports from the CPT AWOS during the times surrounding the accident time are presented here, and the observation closest in time to the accident time is highlighted by bold text.

[1955] KCPT 050155Z AUTO 14006KT 3SM BR BKN004 OVC009 10/10 A3010
RMK A01

[2015] KCPT 050215Z AUTO 15005KT 2 1/2SM BR OVC003 10/10 A3010 RMK
A01

[2035] KCPT 050235Z AUTO 15006KT 5SM BR OVC003 10/10 A3010 RMK A01

**[2055] KCPT 050255Z AUTO 16007KT 2 1/2SM BR OVC003 10/10 A3010
RMK A01**

[2115] KCPT 050315Z AUTO 17006KT 1/2SM BR OVC002 10/10 A3009 RMK A01

[2135] KCPT 050335Z AUTO 17009KT 1/4SM FG OVC002 10/10 A3009 RMK
A01

At 2055, the CPT AWOS reported a wind from 160° at 7 knots, visibility 2 1/2 statute miles, mist, ceiling overcast at 300 feet above ground level (agl), temperature of 10° Celsius (C) and dew point temperature of 10°C, altimeter setting of 30.10 inches of mercury; Remarks included: automated station without a precipitation discriminator.

2.0 Weather Radar

WSR-88D⁴ Level-II base reflectivity weather radar imagery from the Dallas/Fort Worth, Texas, site (KFWS) is presented in Figure 1. KFWS was located approximately 16 miles north-northeast of the accident location with an antenna elevation of about 775 feet. Assuming standard refraction and considering the 0.95° beam width⁵ for the WSR-88D radar beam, the KFWS 0.484° tilt would have “seen” altitudes above the accident location of between about 950 and 2,550 feet.

³ “Longline” refers to the dissemination of weather observations with the intent that they are available in near-real time to national databases (effectively, the whole world) and accessible to the general global public from a large number of vendors. This does not include public accessibility to observations from a reporting station’s Very High Frequency (VHF; line-of-site) or telephone broadcast, where applicable. Longline-dissemination of weather observations is the primary vehicle through which the general global public has access to surface weather observations, particularly outside of the aviation community.

⁴ Weather Surveillance Radar 88 Doppler (WSR-88D)

⁵ Here we define the angular width of the radar beam as the region of transmitted energy that is bounded by one-half the maximum power. The maximum power lies along the beam centerline and decreases outward from the radar antenna.

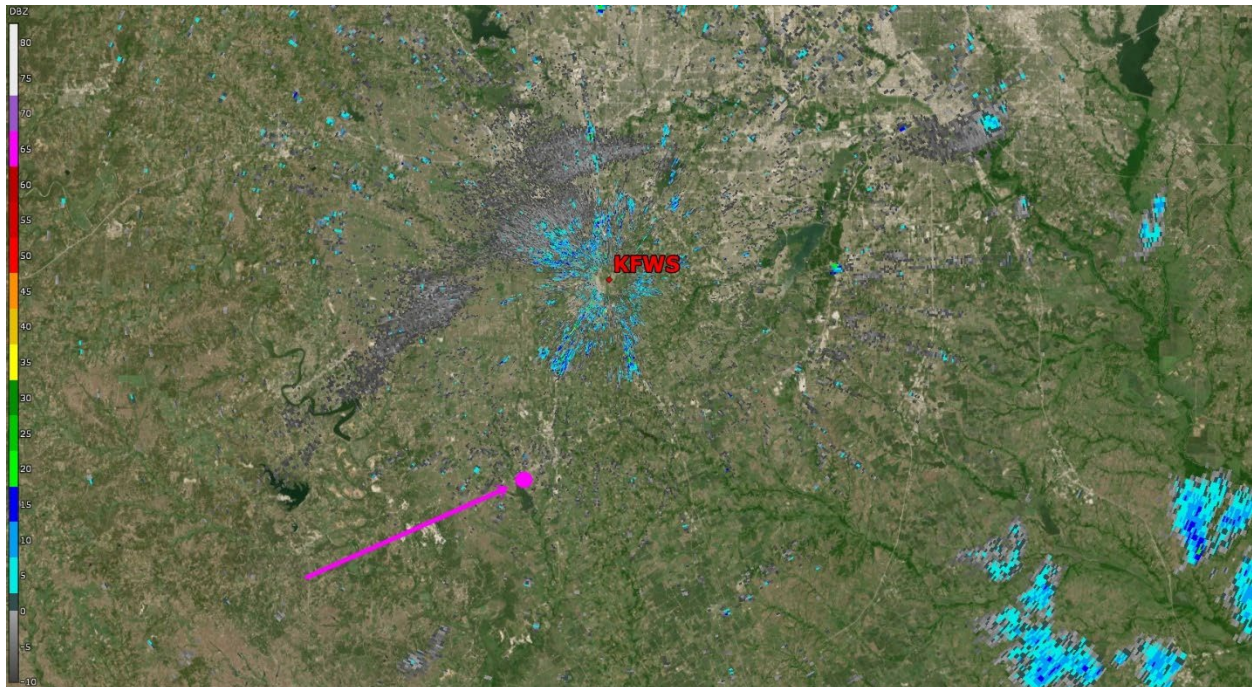


Figure 1 - KLWX 0.484° Level-II base reflectivity product from a sweep initiated at 2054:45. The accident location is identified by the purple dot.

3.0 Pilot Reports

The following are the longline-disseminated pilot reports⁶ (PIREPs) reported between 1900 and 2300 that were applicable within about 50 miles of the accident location.

FTW UA /OV FTW/TM 0101/FLDURD/TP C560/SK OVC021

DFW UA /OV 8 S DFW/TM 0104/FLDURC/TP E170/SK TOPS OVC070

*ADS UA /OV ADS336002/TM 0106/FL020/TP C172/SK OVC025/RM DURD
KADS RWY 16*

ADS UA /OV 6 E ADS/TM 0109/FL026/TP P28A/SK OVC025

DFW UA /OV DFW/TM 0115/FL019/TP CRJ7/SK OVC019/RM DURD RWY 13R

DAL UA /OV KDAL 31003/TM 0130/FLDURD/TP B737/SK OVC017

DAL UA /OV 4 N DAL/TM 0133/FL017/TP B737/SK OVC

DFW UA /OV 7 W DFW/TM 0144/FL030/TP C750/SK TOPS 030 OVC

ADS UA /OV KADS340005/TM 0158/FLDURD/TP C421/SK OVC020

⁶ These do not include pilot reports only broadcast via radio.

DFW UA /OV 350003/TM 0201/FL013/TP CRJ7
FTW UA /OV FTW350001/TM 0214/FLDURD/TP LJ75/SK 003 OVC
DAL UA /OV DAL/TM 0225/FL010/TP B738/SK OVC010-TOPUNKN
DAL UA /OV KDAL/TM 0225/FL010/TP B737/SK OVC010
DFW UA /OV DFW/TM 0238/FL011/TP B772/SK BKN005/RM FAP RWY 18R
DFW
ADS UA /OV KADS340001/TM 0252/FLDURD/TP C56X/SK OVC015
DFW UA /OV 350001/TM 0253/FL010/TP BCS1
DFW UA /OV DFW/TM 0303/FL008/TP CRJ9/SK OVC003/RM FAP RWY 18R
DFW
ADS UA /OV ADS337001/TM 0330/FL014/TP P28A/SK OVC014/RM DURD ILS
RY16 ADS

4.0 HRRR Model Sounding

A High-Resolution Rapid Refresh (HRRR) model⁷ sounding (Figure 2) for near the accident site⁸ at 2100 using an elevation of 763 feet was retrieved from the National Oceanic and Atmospheric Administration's Air Resources Laboratory and analyzed by the RAOB program. Cloudy conditions were identified by RAOB in the lower atmosphere from about 1,300 feet through 4,200 feet. The freezing level was noted at about 14,000 feet. The wind nearest the surface was from the south-southeast at a magnitude of about 5 knots, but the wind increased in magnitude to a southwest wind of about 30 knots near 2,800 feet. RAOB identified light low-level wind shear throughout most of a layer between about 800 and 2,200 feet. Light or moderate turbulence was noted between about 1,250 and 7,400. Temperature inversions were noted between about 1,250 and 3,500 feet and between about 4,250 and 7,350 feet.

⁷ 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.

⁸ Coordinates used for the model were 32.32, -97.43.

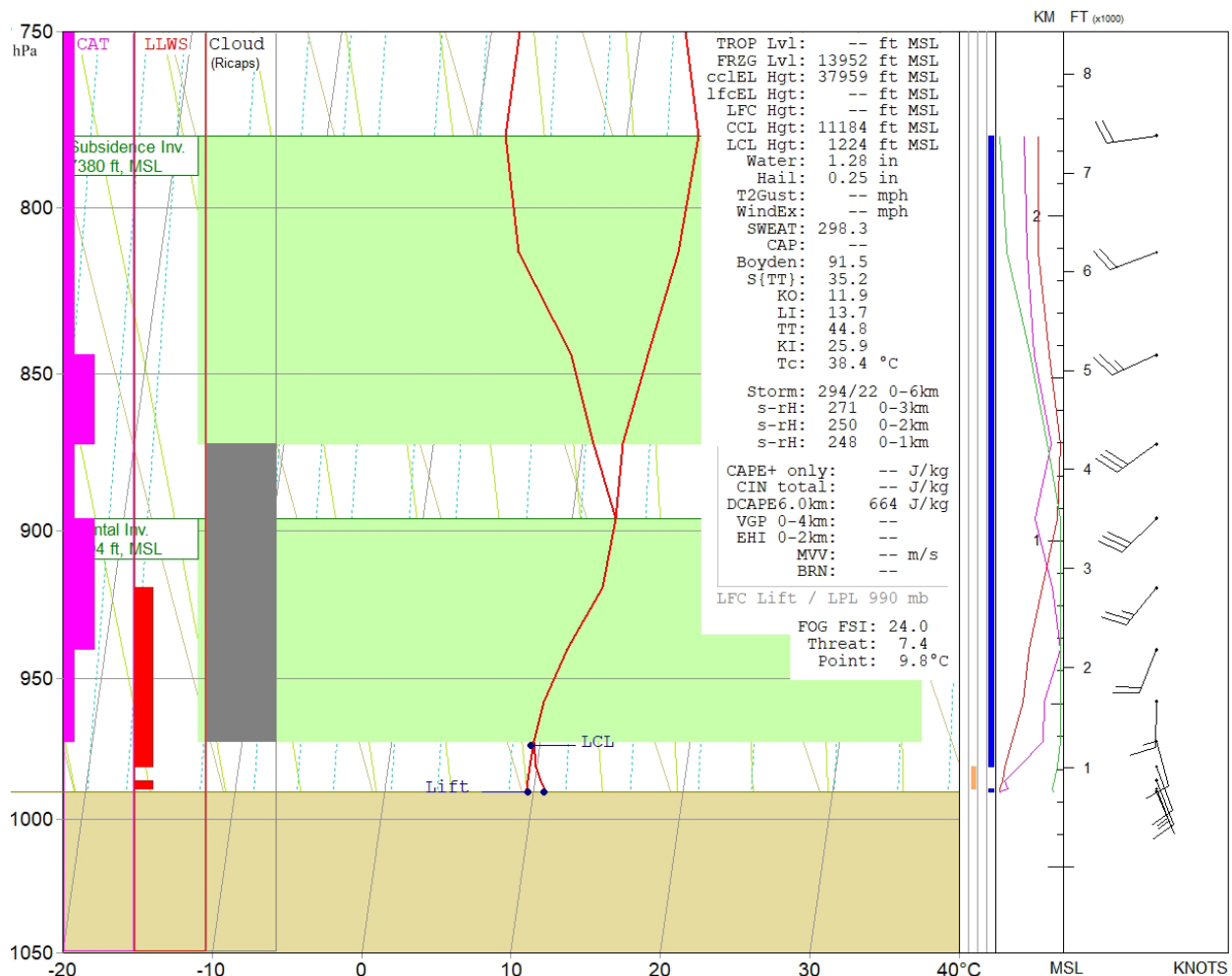


Figure 2 - HRRR model sounding data in SkewT/LogP format for 2100 near the accident site, surface to 750 hectopascals.

Meteorological data that included moisture information from an AMDAR-reporting⁹ aircraft on arrival to/departure from the Dallas/Fort Worth, Texas, area below 15,000 feet within about 1 hour of the accident time, are presented here. Each table is data retrieved from a unique flight. Altitude is pressure altitude in feet¹⁰, wind direction (W-Dir) is degrees referenced to true north, wind magnitude (W-Mag) is in knots, and temperature (Temp) and dew point temperature (D_Temp) are in degrees C.

⁹ AMDAR has been a generally-accepted, worldwide term for automated weather reports from commercial aircraft.

¹⁰ These altitudes are calculated from the aircraft's static pressure according to the International Standard Atmosphere regardless of altitude (1013.25 hPa is always surface pressure).

<u>Time</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Altitude</u>	<u>W-Dir</u>	<u>W-Mag</u>	<u>Temp</u>	<u>D Temp</u>
2004	32.874	-96.670	9290	278	30	10.0	3.0
2004	32.901	-96.664	10410	270	36	7.0	1.8
2005	32.929	-96.657	10810	271	36	5.3	1.1
2005	32.961	-96.649	11480	278	37	4.5	-3.7
2005	32.992	-96.652	12560	280	39	2.3	-11.0
2006	33.021	-96.664	13640	277	41	-0.5	-6.5
2006	33.052	-96.677	14610	274	42	-3.3	-7.8

<u>Time</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Altitude</u>	<u>W-Dir</u>	<u>W-Mag</u>	<u>Temp</u>	<u>D Temp</u>
2004	32.817	-96.780	2750	208	24	11.0	11.0
2004	32.817	-96.776	2780	209	25	11.0	11.0
2004	32.815	-96.771	2790	210	24	10.7	10.7
2004	32.813	-96.765	2820	211	25	11.0	11.0
2004	32.797	-96.736	2830	214	26	11.3	11.3
2004	32.808	-96.755	2850	214	26	11.3	11.3
2005	32.780	-96.728	3020	219	26	11.5	11.5
2005	32.762	-96.728	3850	239	30	12.7	12.7
2005	32.743	-96.728	5220	237	32	11.8	11.6
2006	32.725	-96.726	6600	241	28	9.5	9.5
2006	32.705	-96.728	7330	255	25	13.0	4.4
2006	32.683	-96.738	7930	262	27	12.3	4.7
2007	32.662	-96.750	9020	270	29	10.5	3.8
2007	32.637	-96.761	10280	268	35	7.8	1.9
2007	32.612	-96.773	10900	271	34	5.5	0.1
2008	32.583	-96.788	11570	277	37	4.5	-2.3

<u>Time</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Altitude</u>	<u>W-Dir</u>	<u>W-Mag</u>	<u>Temp</u>	<u>D Temp</u>
2005	32.846	-96.841	440	133	4	10.2	8.7
2006	32.843	-96.837	690	131	5	9.8	8.6
2006	32.839	-96.834	950	152	5	9.0	8.5
2006	32.836	-96.831	1200	159	6	8.3	8.3
2006	32.833	-96.827	1460	165	7	7.8	7.8
2006	32.829	-96.824	1680	180	10	8.3	8.1
2006	32.826	-96.819	1810	210	13	9.8	9.8
2006	32.823	-96.816	1910	214	15	10.0	10.0
2006	32.819	-96.812	2050	220	17	10.7	10.7
2006	32.814	-96.807	2170	219	18	11.3	11.3
2006	32.811	-96.802	2280	215	18	11.3	11.3
2007	32.806	-96.799	2450	211	19	11.0	11.0
2007	32.801	-96.794	2700	208	21	11.0	11.0

2007	32.799	-96.791	2850	210	23	11.0	11.0
2007	32.798	-96.789	3000	216	24	11.5	11.5
2007	32.793	-96.784	3230	227	28	12.0	12.0
2007	32.784	-96.776	3580	233	29	12.3	12.3
2007	32.768	-96.757	4060	239	33	12.5	12.5
2008	32.749	-96.737	4850	236	34	12.0	12.0
2008	32.734	-96.712	5760	235	33	10.2	10.0
2008	32.734	-96.681	6770	235	27	12.3	5.0
2009	32.751	-96.654	7680	253	24	13.0	3.8

<u>Time</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Altitude</u>	<u>W-Dir</u>	<u>W-Mag</u>	<u>Temp</u>	<u>D Temp</u>
2039	29.571	-95.566	3680	224	17	14.3	13.3
2040	29.551	-95.484	2810	219	16	16.8	15.3
2041	29.539	-95.416	2220	207	15	17.5	15.9
2042	29.566	-95.362	1750	182	15	18.0	17.3
2043	29.599	-95.326	910	155	16	16.8	16.8
2044	29.626	-95.296	170	174	6	16.8	16.8

<u>Time</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Altitude</u>	<u>W-Dir</u>	<u>W-Mag</u>	<u>Temp</u>	<u>D Temp</u>
2039	33.048	-96.814	3810	232	34	14.8	13.3
2040	33.016	-96.868	2830	216	25	13.8	13.1
2041	32.993	-96.916	2170	202	24	13.5	13.4
2042	32.958	-96.938	1820	200	19	12.3	11.5
2043	32.918	-96.929	1740	200	20	11.5	11.2
2044	32.891	-96.899	1370	165	14	11.3	9.4

<u>Time</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Altitude</u>	<u>W-Dir</u>	<u>W-Mag</u>	<u>Temp</u>	<u>D Temp</u>
2041	32.824	-96.819	1780	209	17	11.0	11.0
2042	32.821	-96.816	1900	206	18	11.0	11.0
2042	32.817	-96.811	2070	204	19	11.0	11.0
2042	32.812	-96.807	2210	203	20	11.0	11.0
2042	32.809	-96.802	2360	202	21	10.7	10.7
2042	32.804	-96.799	2570	206	24	11.0	11.0
2042	32.802	-96.796	2740	212	25	11.3	11.3
2042	32.801	-96.794	2830	215	26	11.3	11.3
2042	32.796	-96.789	3070	226	28	11.8	11.8
2042	32.791	-96.784	3260	233	28	12.3	12.3
2042	32.787	-96.779	3440	236	29	12.3	12.3
2043	32.767	-96.771	3950	237	31	11.5	11.5
2043	32.746	-96.769	4640	235	34	12.3	12.3

2043	32.722	-96.769	5520	235	31	10.0	10.0
2044	32.697	-96.769	6480	242	26	12.0	7.0
2044	32.672	-96.771	7270	259	27	14.0	4.2

<u>Time</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Altitude</u>	<u>W-Dir</u>	<u>W-Mag</u>	<u>Temp</u>	<u>D Temp</u>
2130	41.081	-89.060	14810	295	56	-12.6	-42.5
2131	41.141	-88.948	12890	273	35	-11.0	-41.3
2132	41.198	-88.840	11040	267	30	-6.8	-45.5
2133	41.253	-88.738	9990	265	29	-4.5	-41.0
2134	41.301	-88.646	8920	262	26	-3.0	-36.1
2135	41.348	-88.555	7520	259	29	-1.0	-27.4
2148	41.826	-87.581	2280	242	30	0.3	-15.7
2149	41.828	-87.635	2080	239	33	-0.8	-9.5
2150	41.823	-87.676	1720	232	36	-0.5	-8.6
2151	41.813	-87.715	1150	227	24	-0.8	-7.7

<u>Time</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Altitude</u>	<u>W-Dir</u>	<u>W-Mag</u>	<u>Temp</u>	<u>D Temp</u>
2134	32.841	-96.846	500	131	9	15.2	10.2
2134	32.840	-96.843	710	143	12	13.8	10.1
2134	32.836	-96.840	910	153	12	12.5	9.9
2134	32.833	-96.836	1150	157	13	11.5	9.7
2134	32.830	-96.833	1420	161	16	11.0	9.5
2134	32.828	-96.830	1700	173	17	11.5	9.5
2134	32.825	-96.826	1890	188	18	12.0	10.3
2134	32.821	-96.821	2010	195	21	12.5	11.2
2135	32.818	-96.818	2140	198	23	12.5	11.7
2135	32.815	-96.813	2250	203	24	12.5	12.1
2135	32.811	-96.810	2340	209	27	12.7	12.4
2135	32.806	-96.805	2440	213	28	13.2	13.0
2135	32.803	-96.800	2610	217	29	13.2	13.2
2135	32.798	-96.793	2890	225	29	13.8	13.5
2135	32.798	-96.793	2940	226	29	13.8	13.5
2135	32.795	-96.788	3160	232	30	14.3	14.0
2135	32.783	-96.775	3720	235	36	14.8	14.0
2136	32.768	-96.755	4130	233	36	14.3	13.6
2136	32.750	-96.735	5080	227	33	12.5	12.0
2136	32.733	-96.713	6110	236	30	12.5	9.3
2137	32.726	-96.681	6900	252	27	15.8	4.7
2137	32.738	-96.650	7690	259	24	14.0	5.2
2137	32.761	-96.631	8340	264	25	13.0	5.0
2138	32.786	-96.616	8860	269	26	11.8	3.8

2138	32.810	-96.600	8870	268	26	11.8	3.8
2138	32.831	-96.576	8870	271	27	11.5	3.8
2139	32.823	-96.515	8860	272	27	11.5	3.7
2139	32.838	-96.543	8860	272	27	11.5	3.6

5.0 Satellite Imagery

Geostationary Operational Environmental Satellite (GOES)-16 infrared (10.3 μ m) data were obtained from an archive at the Space Science Engineering Center at the University of Wisconsin-Madison. Imagery from 2056 is presented in Figure 3. Infrared cloud-top temperatures over the accident site were about 9°C, which, when considering the 2100 HRRR sounding, corresponded to cloud top heights of either about 10,000 or 1,100 feet.

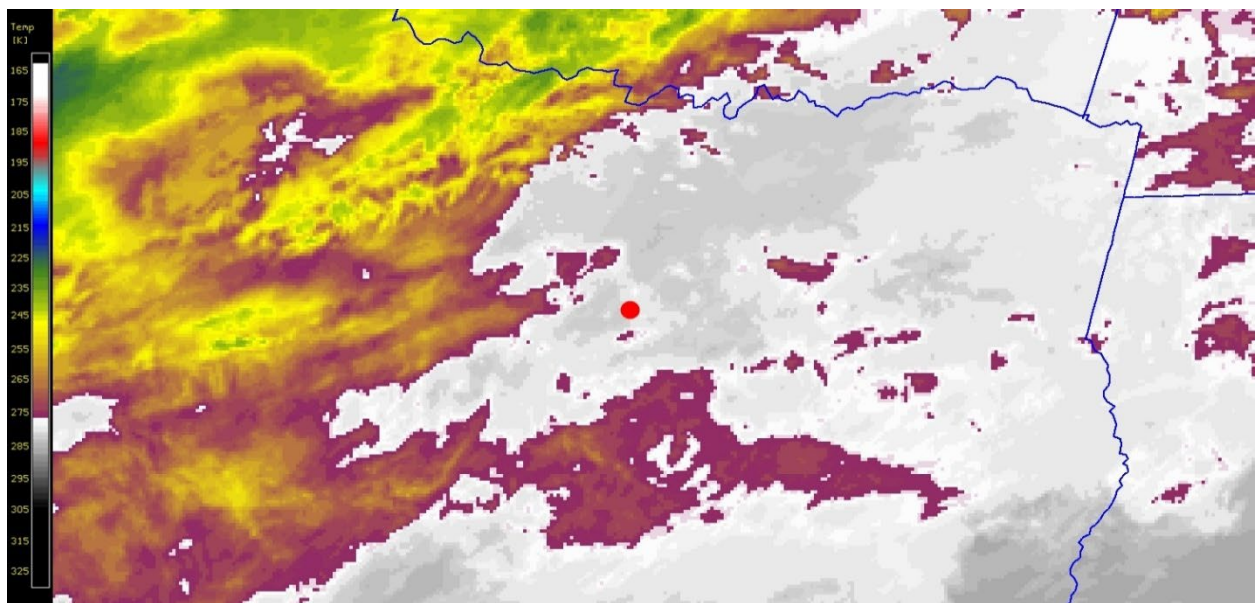


Figure 3 - GOES-16 infrared imagery from 2056. Accident location denoted by the red dot. Image is not corrected for parallax error.

Advanced Very-High-Resolution Radiometer (AVHRR) infrared (10.8 μ m) data from the NOAA-19 platform were obtained from the National Oceanic and Atmospheric Administration (NOAA). Imagery from 2100 is presented in Figure 4. Infrared cloud-top temperatures over the accident site were about 1°C, which, when considering the 2100 HRRR sounding, corresponded to cloud top heights of about 14,000 feet.

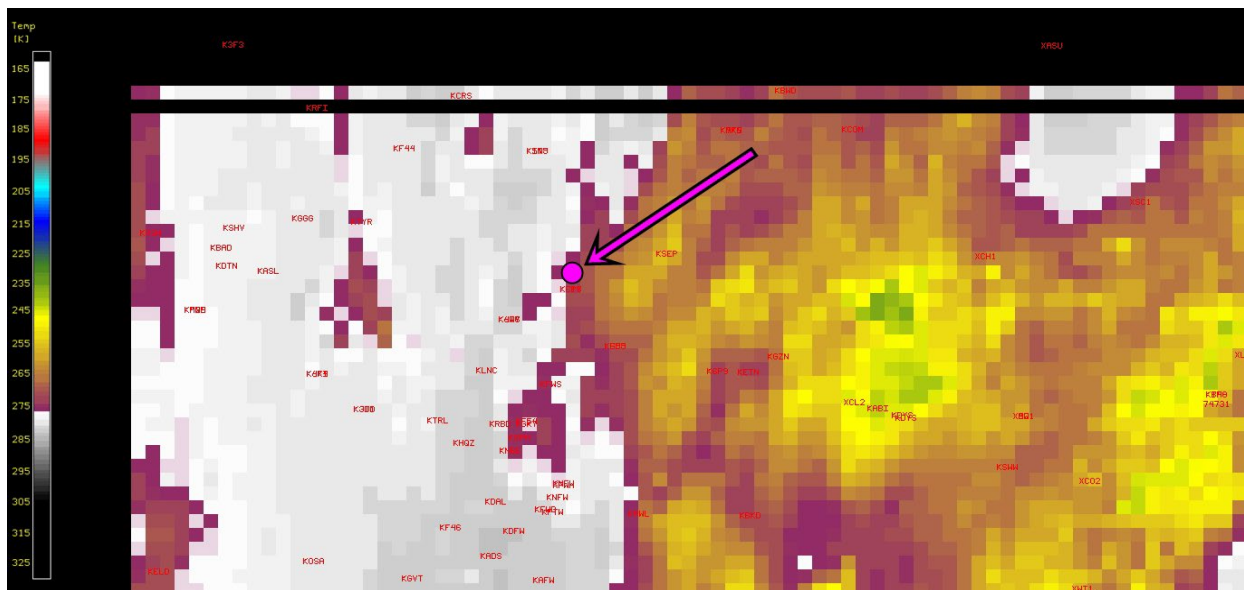


Figure 4 - NOAA-19 infrared imagery from 2100. Accident location denoted by purple dot.

6.0 Terminal Aerodrome Forecasts

The closest airport to the accident site for which a National Weather Service (NWS) Terminal Aerodrome Forecasts (TAF) was produced was Arlington Municipal Airport (GKY), which was located about 26 miles northeast of the accident location at an elevation of about 630 feet. According to NWS Instruction 10-813: "NWS TAFs consist of the expected meteorological conditions significant to aviation at an airport for a specified time period. For the U.S., this is the area within five (5) statute miles (SM) of the center of an airport's runway complex."¹¹

At 1922 a TAF was issued by the NWS for GKY that forecasted for the accident time: a wind from 150° at 7 knots, visibility greater than 6 statute miles, scattered clouds at 700 feet agl, ceiling overcast at 1,200 feet agl; temporary conditions¹² between 2000 and 0000 (the following day) of visibility of 4 statute miles, light drizzle, mist, ceiling broken at 800 feet agl.

*KGKY 050122Z 0501/0524 **15007KT P6SM SCT007 OVC012**
 TEMPO 0502/0506 **4SM -DZ BR BKN008**
 FM051200 19010KT P6SM OVC008
 FM051600 19013G23KT P6SM BKN013
 FM051800 22017G27KT P6SM BKN021
 FM052100 20016KT P6SM BKN070=*

¹¹ www.nws.noaa.gov/directives/sym/pd01008013curr.pdf

¹² Temporary conditions - fluctuations to forecast conditions which are expected to last less than one hour in each instance and, in the aggregate, to cover less than half of the indicated period.

7.0 Area Forecast Discussion

The NWS Dallas/Fort Worth Weather Forecast Office issued the following Aviation section of an Area Forecast Discussion at 1841, applicable for a region that included the accident location.

FXUS64 KFWD 050041

AFDFWD

Area Forecast Discussion

National Weather Service Fort Worth TX

641 PM CST Sun Dec 4 2022

.AVIATION... /Issued 523 PM CST Sun Dec 4 2022/

/00z TAFs/

Challenges remain the same regarding flight restrictions with cigs/vsbys already starting to take hold as we approach 00z. High MVFR cigs arrived much sooner across the DFW D10 airports with IFR already showing up at Waco Regional Airport.

I have sped up trends with MVFR cigs this evening by a good 4-6 hrs as a slower warm frontal passage is expected. Low MVFR cigs will arrive across most DFW terminals by 03z, with DZ/BR/patchy FG possible after 06z...continuing through 13z-14z, along with cigs dropping into IFR for several hours with spotty LIFR conditions possible at all airports.

Gradual improvement occurs as we progress toward/beyond 15z-18z Monday with eventual VFR returning in the wake of the slow-moving surface warm front. Breezy SW winds 13-18 kts with a few gusts 25-30 kts are expected Monday afternoon into Monday night.

Until then, sustained surface winds will bounce around in direction between ESE and SSE with speeds generally 10 kts or less through 12z Monday (relevant to warm frontal position). A few sprinkles or light passing -SHRA will be possible as well.

8.0 SIGMETs

There were no non-convective or Convective Significant Meteorological Information (SIGMET) advisories active for the accident location at the accident time.

9.0 CWSU Products

At 1955, the NWS Center Weather Service Unit at the Fort Worth Air Route Traffic Control Center issued the following Center Weather Advisory (CWA) that was valid until 2100. The CWA advised of low instrument flight rule (LIFR) conditions¹³ with ceilings at or below 400 feet agl, visibility at or below 3 statute miles and mist/drizzle with conditions continuing beyond 2100 for an area that included the accident location.

*FAUS21 KZFW 050155
ZFW1 CWA 050155
ZFW CWA 101 VALID UNTIL 050300
FROM 30WSW TTT-40W GGG-70E ACT-20ESE ACT-40WNW ACT-30WSW TTT
DVLPG AREA LIFR CONDS. CIGS AOB 004. VIS AOB 3SM BR/DZ. CONDS
CONTG BYD 050300Z. NO UPDT AFT 050300Z. TX*

10.0 G-AIRMETs

A Graphical Airmen's Meteorological Information (G-AIRMET) is a graphical advisory of weather that may be hazardous to aircraft but are less severe than SIGMETs. They are only valid at specific time "snapshots". G-AIRMETs include forecasts for discrete times that are three hours apart for a period of up to 12 hours into the future (i.e., when G-AIRMETs are issued, they include 00-, 03-, 06-, 09- and 12-hour forecasts). This suite of forecasts is issued about 0300 UTC, 0900 UTC, 1500 UTC and 2100 UTC (the G-AIRMET issuance times), with updates issued as necessary.

A G-AIRMET for instrument meteorological conditions (IFR)¹⁴ that was issued at 2045 and was valid at 2100 was applicable for the accident location.

11.0 Graphical Forecasts for Aviation

The Graphical Forecasts for Aviation (GFA) are intended to provide the necessary aviation weather information to give users a complete picture of the weather that might impact flight in the continental United States. Hourly model data and forecasts, including information on clouds, flight category, precipitation, icing, turbulence, wind, and other output from the NWS are available, however only certain imagery are archived by the NWS. Figures 5 and 6 depict GFA forecast information on sky

¹³ LIFR conditions - Ceilings less than 500 feet agl and/or visibility less than 1 statute mile.

¹⁴ IFR conditions - Ceilings less than 1,000 feet agl and/or visibility less than three statute miles.

condition, icing, mountain obscuration, IFR condition and surface wind G-AIRMET advisories, surface visibility, surface wind, precipitation, and other obscurations and hazards, valid for a times near the accident time.

The GFA forecast imagery valid at 2100 (Figure 5) depicted overcast sky conditions over the accident site with a nearby point identifying overcast clouds at 2,400 feet with cloud tops to 5,000 feet. The GFA surface forecast valid at 2100 (Figure 6) depicted a southerly surface wind of 5 knots with gusts to 15 knots, along with a surface visibility of greater than 5 statute miles in the immediate accident region. A G-AIRMET for IFR conditions was active nearby.

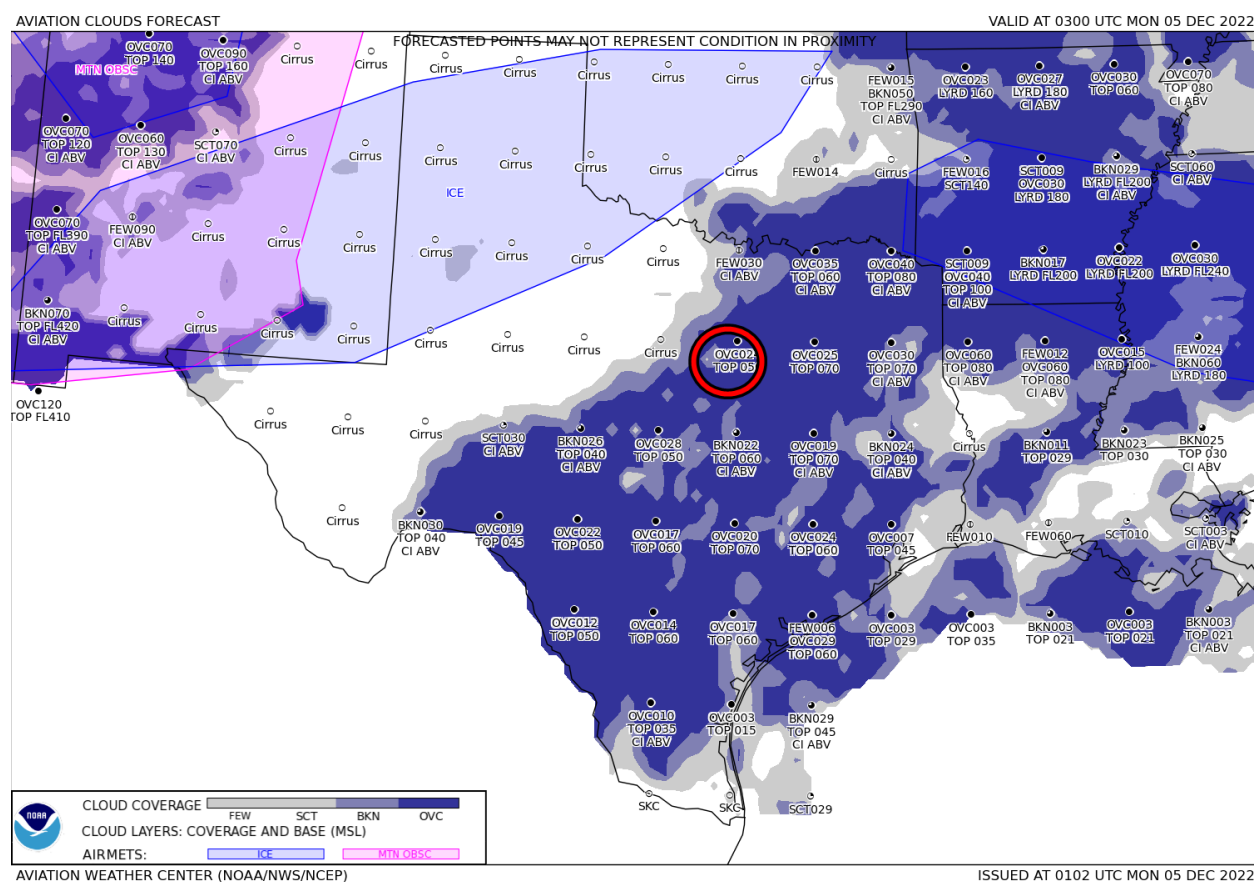


Figure 5 - GFA forecast imagery depicting sky condition and icing and mountain obscuration G-AIRMETs issued about 1900 and valid for 2100. The accident location is located within the red circle.

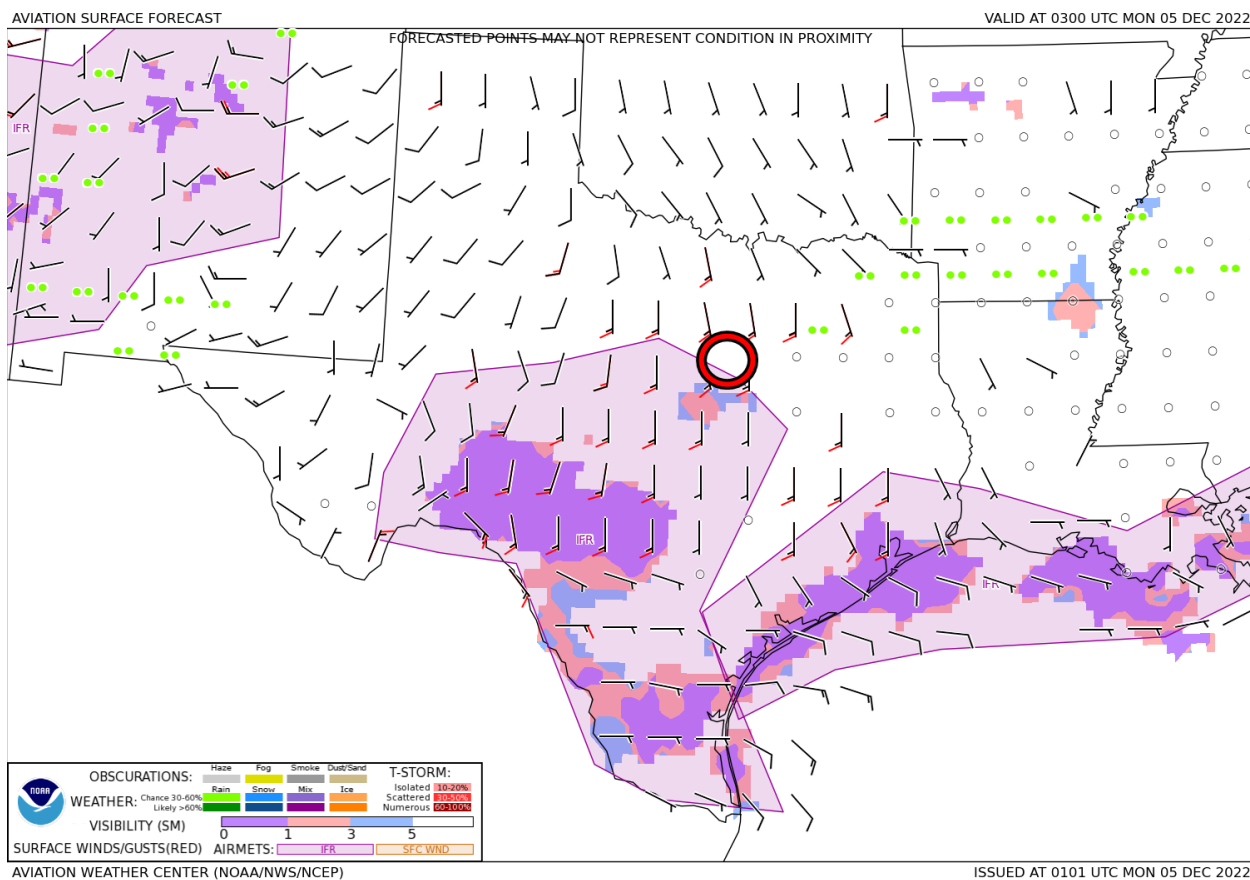


Figure 6 - GFA forecast imagery depicting IFR conditions and surface wind G-AIRMETs, surface visibility, surface wind, precipitation, and other obscurations and hazards. Issued about 1900 and valid for 2100. The accident location is located within the red circle.

Submitted by:

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