

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA24LA227

METEOROLOGY

Specialist's Factual Report

August 8, 2024

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A. ACCIDENT

Location: Panacea, Florida
Date: May 25, 2024
Time: 2155 eastern daylight time
0155 coordinated universal time (UTC) on May 26
Airplane: Glasair 1 RG; Registration: N446KW

B. METEOROLOGY SPECIALIST

Paul Suffern
Senior Meteorologist
National Transportation Safety Board
Washington, DC

C. DETAILS OF THE INVESTIGATION

The NTSB's Senior Meteorologist did not travel for this investigation but gathered all data remotely. Data for this investigation were collected from official National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) sources including the Weather Prediction Center (WPC) and the National Center for Environmental Information (NCEI). This Specialist's Factual Report contains the meteorological factors pertinent to the weather surrounding the accident time. All times are eastern daylight time (EDT) and are based upon the 24-hour clock, where local time is -4 hours from UTC. Directions are referenced to true north and distances are in nautical miles. Heights are above mean sea level (msl) unless otherwise noted. Visibility is in statute miles and fractions of statute miles. NWS station identifiers use the standard International Civil Aviation Organization 4-letter station identifiers versus the International Air Transport Association 3-letter identifiers, which deletes the initial country code designator "K" for U.S. airports.

The accident site was located at approximate latitude 29.91185° N, longitude 84.19295° W, at sea level.

D. FACTUAL INFORMATION

1.0 Synoptic Situation

The synoptic or large-scale migratory weather systems influencing the area were documented using standard NWS charts issued by the National Center for Environmental Prediction and the WPC, located in College Park, Maryland. These are the base products used in describing synoptic weather features and in the creation of forecasts and warnings for the NWS. Reference to these charts can be found in the Federal Aviation Administration (FAA) "Aviation Weather Handbook", FAA-H-8083-28.¹

1.1 Surface Analysis Chart

The NWS Surface Analysis Chart centered over the southeastern United States for 2300 EDT is provided as figure 1 with the location of the accident site within the black circle. The chart depicted a high-pressure system over northern Georgia at 1013-hectopascals (hPa). There were no frontal boundaries or low-pressure systems in the vicinity of the accident site.

The station model closest to the accident site depicted an air temperature of 81°F, a dew point temperature of 72°F, sky cover missing (but clear skies reported over other adjacent station models), and a calm wind.

¹ [FAA-H-8083-28](#)

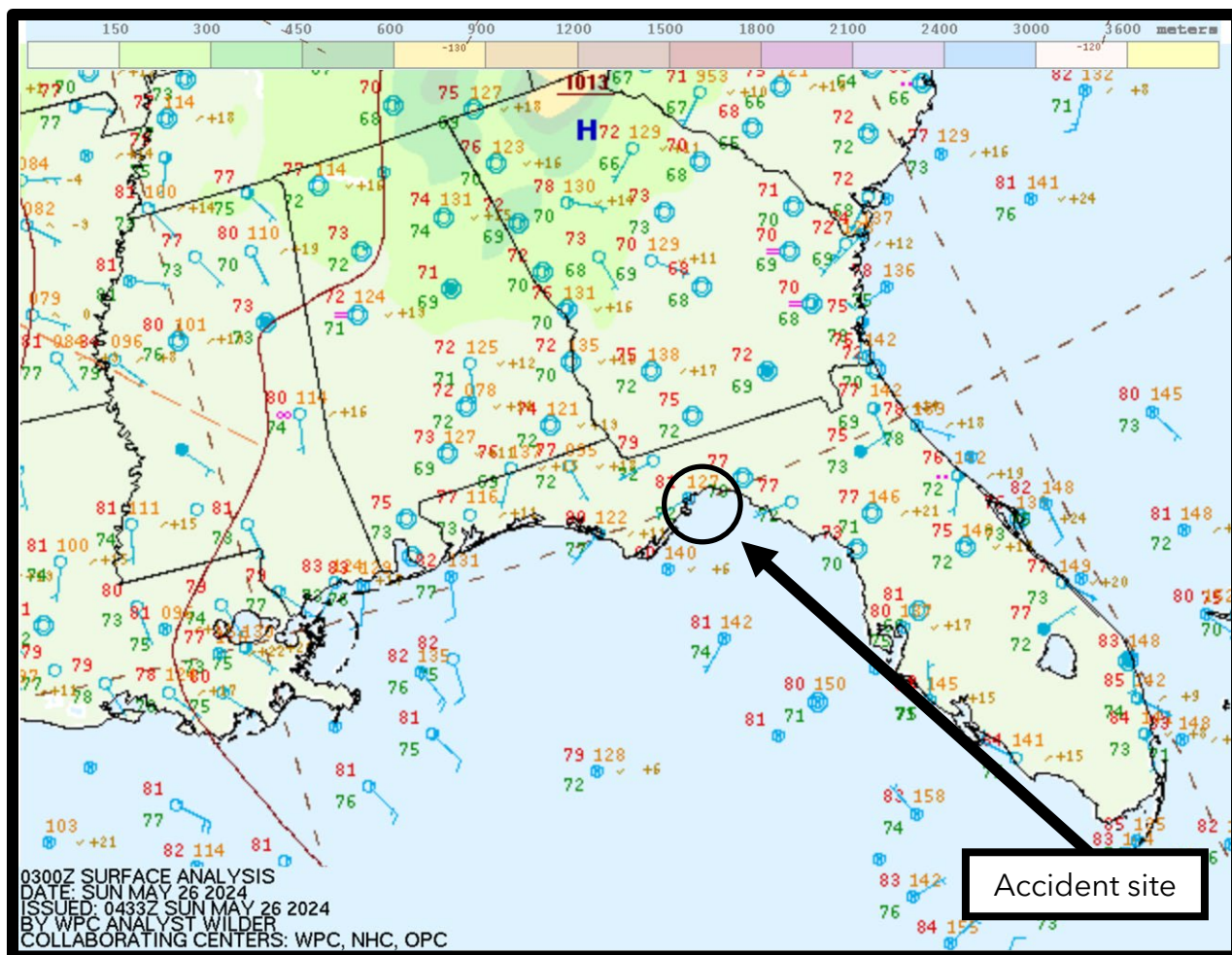


Figure 1. NWS Surface Analysis Chart for 2300 EDT.

1.2 Upper Air Charts

The NWS Storm Prediction Center (SPC) Constant Pressure Charts for 2000 EDT at 925-, 850-, and 700-hPa are presented in figures 2 through 4. The charts indicated a low- and mid-level trough² at 850- through 700-hPa (figures 3 and 4) near the accident site. Troughs can act as lifting mechanisms to help produce clouds and precipitation if sufficient moisture is present. The 925-hPa constant pressure chart depicted a west wind around 15 knots (figure 2) becoming a northwest 5- to 20-knot wind by 700-hPa (figure 4).

² Trough - An elongated area of relatively low atmospheric pressure or heights.

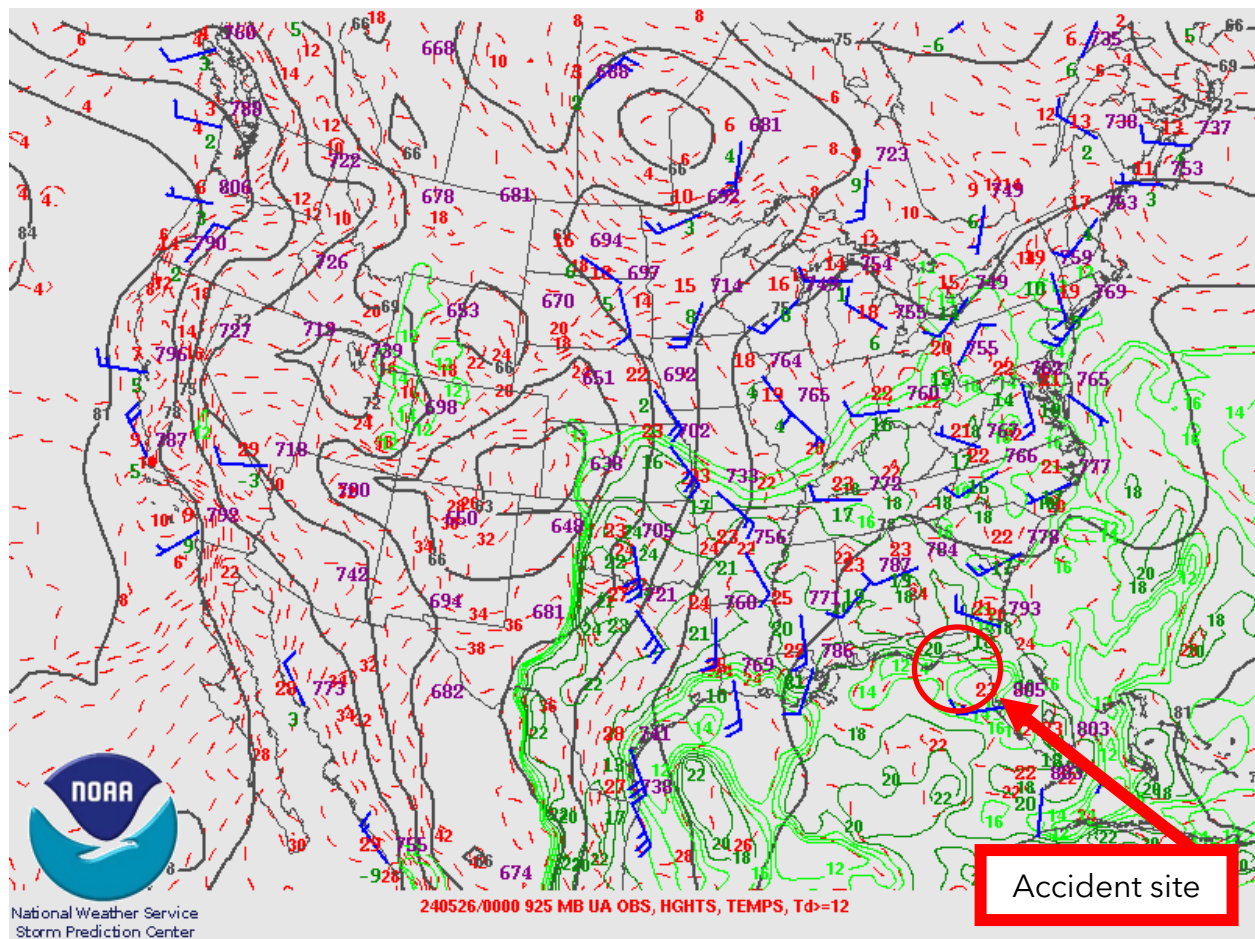


Figure 2. 925-hPa Constant Pressure Chart for 2000 EDT.

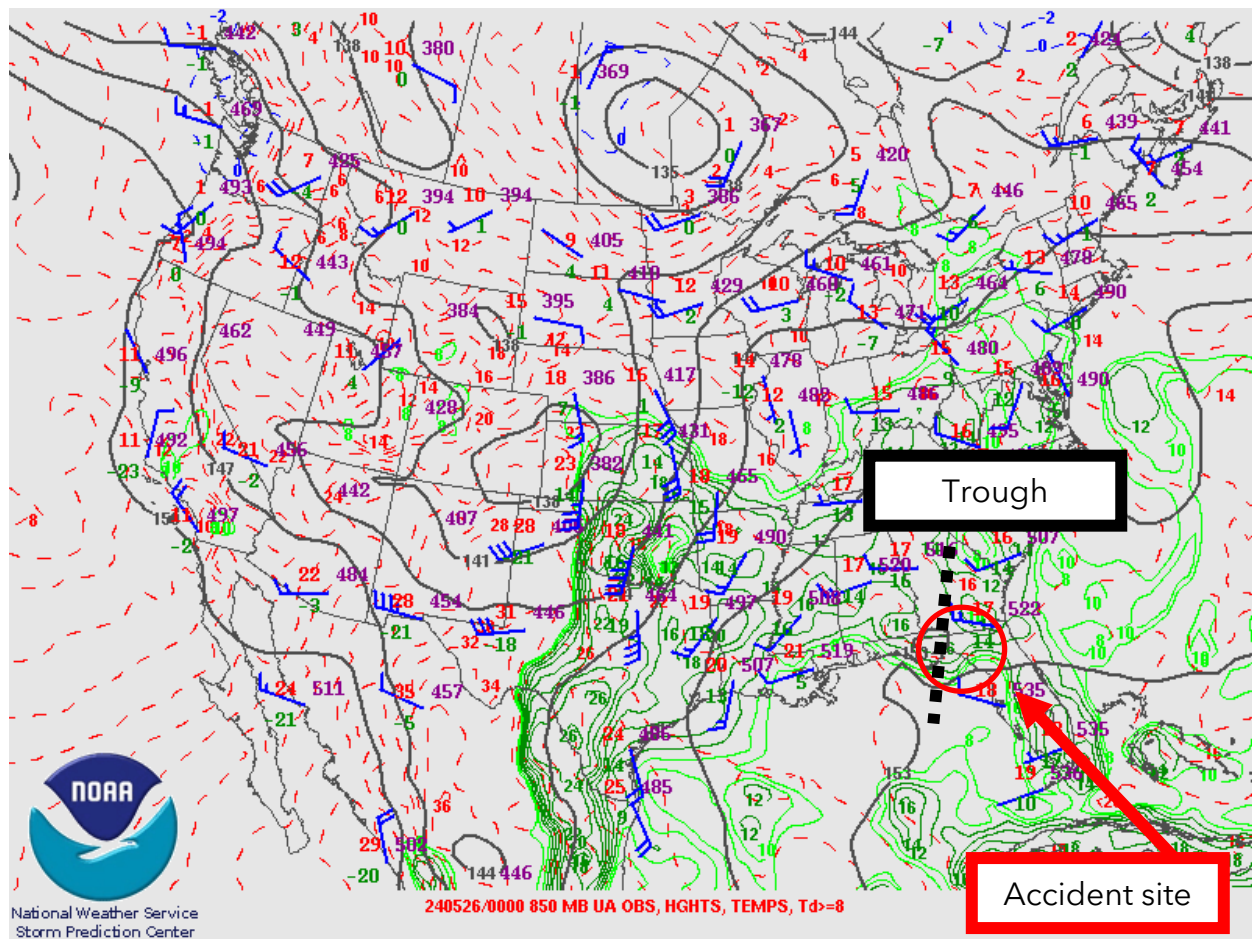


Figure 3. 850-hPa Constant Pressure Chart for 2000 EDT.

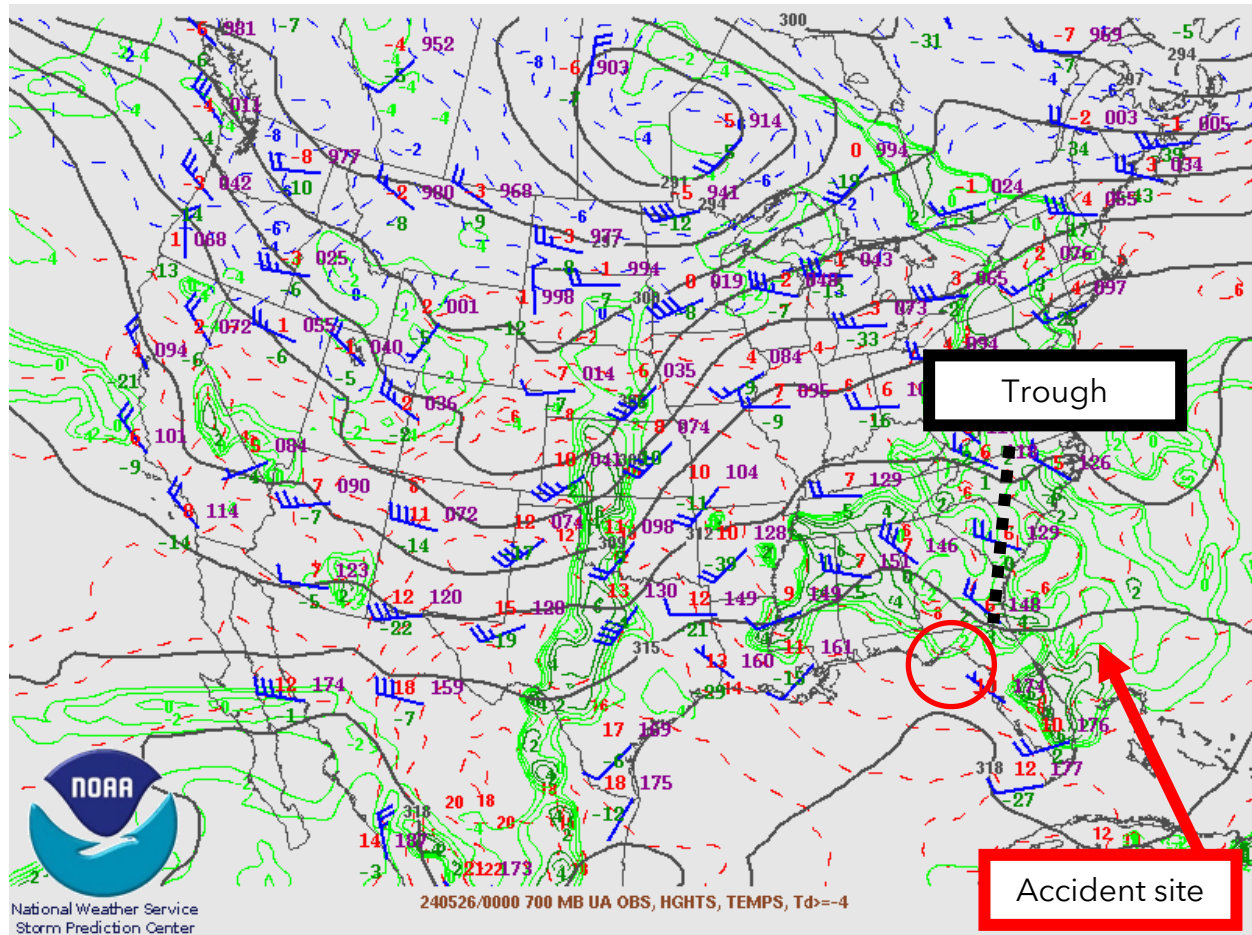


Figure 4. 700-hPa Constant Pressure Chart for 2000 EDT.

2.0 Storm Prediction Center Convective Outlook

The SPC Day 1 Convective Outlook issued at 2117 EDT (figure 5) noted the accident site was located in an area where a chance of general thunderstorms was predicted. The SPC defines the “TSTM” area as an area where a 10% or higher probability of thunderstorms is forecast during the valid period. Similar SPC forecasts for the accident site were also issued for previous SPC Day 1 Convective Outlooks on May 25.

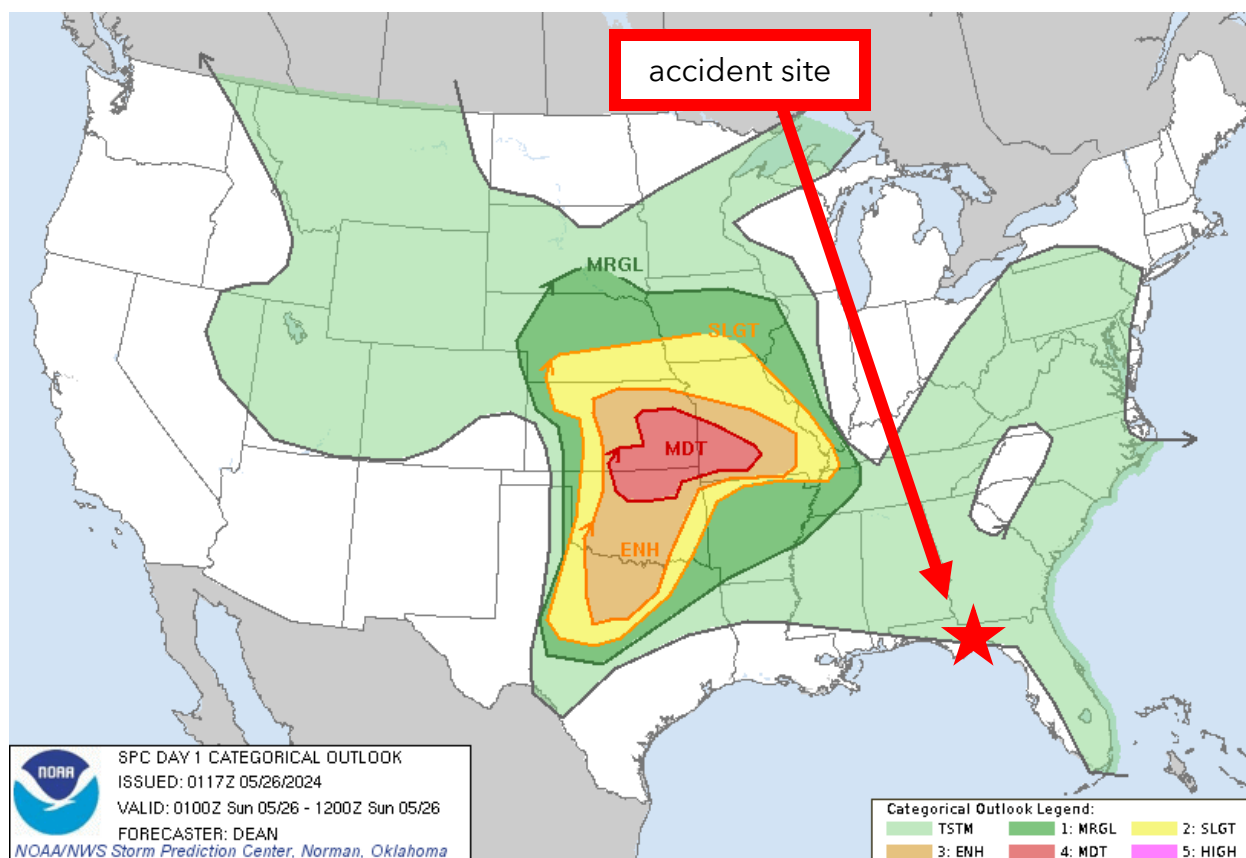


Figure 5. SPC day 1 Convective Outlook valid at the time of the accident.

3.0 Surface Observations

The area surrounding the accident site was documented using official Aviation Routine Weather Reports (METARs) and Special Reports (SPECIs)³. The following observations were taken from standard code and are provided in plain language. Figure 6 is a local sectional chart with the accident site and the closest weather reporting location marked. A magnetic variation⁴ of 5° west was indicated over the area.

³ Latest criteria for SPECIs can be found in the Federal Meteorological Handbook: [Federal Meteorological Handbook Number 1, Surface Weather Observations and Reports \(icams-portal.gov\)](https://www.federalmeteorologicalhandbook.com/)

⁴ Magnetic variation - The angle (at a particular location) between magnetic north and true north. Latest measurement taken from <https://skyvector.com/>

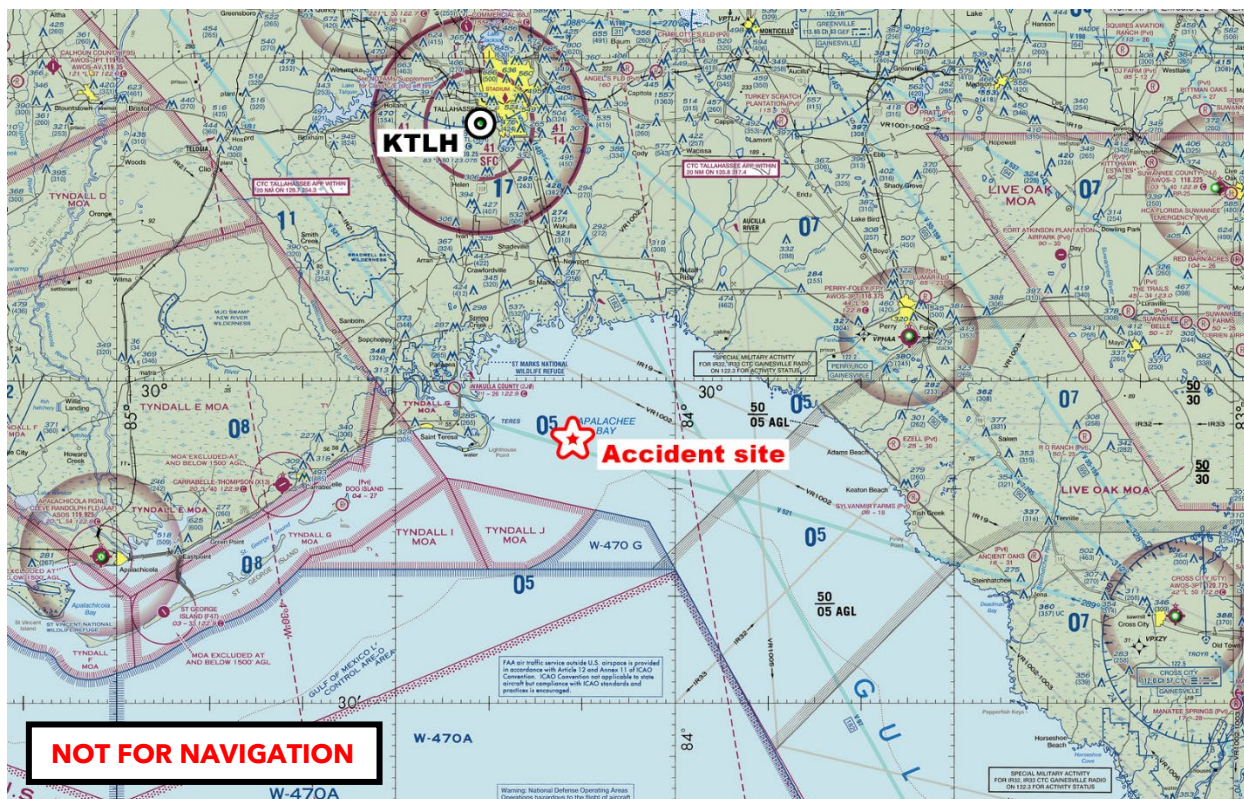


Figure 6. FAA sectional aeronautical chart of the accident area with the location of the accident site and surface observation site noted.

Tallahassee International Airport (KTLH) had the closest official weather station to the accident site. KTLH had an Automated Surface Observing System (ASOS⁵) and its longline reports⁶ were augmented by air traffic control (ATC) when the tower was in operation⁷. The KTLH ASOS was located 30 miles north-northwest of the accident site (figure 6) at an elevation of 83 ft, and issued the following observations surrounding the accident time:⁸

[1753 EDT] METAR KTLH 252153Z 17008KT 10SM SCT040CB SCT060
BKN140 31/24 A2990 RMK AO2 SLP123 CB S MOV SE T03060239

⁵ ASOS - Automated Surface Observing System is equipped with meteorological instruments to observe and report wind, visibility, weather phenomena, ceiling, temperature, dewpoint, altimeter, and barometric pressure. ASOS are maintained by the NWS.

⁶ "Longline" refers to the dissemination of weather observations with the intent that they are available in near-real time to national databases 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 weather observations are distributed.

⁷ ATC hours of operation between 0600 and 2300 local.

⁸ The bold sections of products in this report are intended to highlight the text that directly reference the weather conditions that affected the accident region around the accident time. The local times in this section next to the METARs are provided for quick reference between UTC and local times.

[1853 EDT] METAR KTLH 252253Z 15006KT 10SM SCT045CB BKN065
BKN110 31/23 A2990 RMK AO2 SLP124 CB W-NW MOV SE TCU E AND
S T03060228

[1953 EDT] METAR KTLH 252353Z 18004KT 10SM FEW045 SCT065
BKN200 29/23 A2988 RMK AO2 SLP117 T02890228 10344 20289
58003

[2053 EDT] METAR KTLH 260053Z 00000KT 10SM FEW065 FEW110
BKN250 28/23 A2989 RMK AO2 SLP120 T02830233

**[2153 EDT] METAR KTLH 260153Z 26003KT 10SM FEW065 SCT250
28/22 A2991 RMK AO2 SLP127 T02780217**

ACCIDENT TIME 2155 EDT

**[2236 EDT] SPECI KTLH 260236Z 22004KT 10SM FEW050 SCT160
27/21 A2992 RMK AO2 T02670211**

[2253 EDT] METAR KTLH 260253Z 00000KT 10SM FEW050 SCT160
27/21 A2992 RMK AO2 SLP132 T02670211 53014

The bold type observations decoded in plain language were as follows:

KTLH weather at 2153 EDT, wind from 260° at 3 knots, visibility 10 miles or greater, few clouds at 6,500 ft above ground level (agl), scattered clouds at 25,000 ft agl, temperature of 28°C, dew point temperature of 22°C, and an altimeter setting of 29.91 inches of mercury (inHg). Remarks, automated station with a precipitation discriminator, sea-level pressure 1012.7-hPa, temperature 27.8°C, dew point temperature 21.7°C.

KTLH weather at 2236 EDT, wind from 220° at 4 knots, visibility 10 miles or greater, few clouds at 5,000 ft agl, scattered clouds at 16,000 ft agl, temperature of 27°C, dew point temperature of 21°C, and an altimeter setting of 29.92 inHg. Remarks, automated station with a precipitation discriminator, temperature 26.7°C, dew point temperature 21.1°C.

The observations from the KTLH indicated VFR⁹ conditions were prevailing at the time of the accident.

⁹ The NWS and the FAA Aeronautical Information Manual (AIM) section 7-1-7 defines the following general flight categories:

- Low Instrument Flight Rules (LIFR*) - ceiling below 500 ft above ground level (agl) and/or visibility less than 1 statute mile.

4.0 Upper Air Sounding

A High-Resolution Rapid Refresh (HRRR)¹⁰ model sounding was created¹¹ for the approximate accident site coordinates for 2200 EDT. The HRRR sounding was plotted on a standard Skew-T Log P diagram¹² from the surface to 600-hPa (or approximately 14,000 ft) using the RAOB¹³ software package and is included as figure 7. The sounding depicted an elevation of sea-level over the grid point. The sounding depicted the lifted condensation level (LCL)¹⁴ at 939 ft, the level of free convection (LFC)¹⁵ at 2,627 ft, and the convective condensation level (CCL)¹⁶ at 4,418 ft. The freezing level was located above 14,000 ft. The precipitable water value was 1.67 inches.

-
- Instrument Flight Rules (IFR) - ceiling between 500 to below 1,000 feet agl and/or visibility 1 to less than 3 miles.
 - Marginal Visual Flight Rules (MVFR**) - ceiling from 1,000 to 3,000 ft agl and/or visibility 3 to 5 miles.
 - Visual Flight Rules (VFR) - ceiling greater 3,000 ft agl and visibility greater than 5 miles.

* By definition, IFR is a ceiling less than 1,000 ft agl and/or visibility less than 3 miles while LIFR is a sub-category of IFR.

**By definition, VFR is a ceiling greater than or equal to 3,000 ft agl and visibility greater than 5 miles while MVFR is a sub-category of VFR.

¹⁰ 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.

¹¹ HRRR sounding was created using NOAA Air Resource Laboratory: [READY Archived Meteorology \(noaa.gov\)](https://ready.noaa.gov/).

¹² Skew T log P diagram - is a standard meteorological plot using temperature and the logarithmic of pressure as coordinates, used to display winds, temperature, dew point, and various indices used to define the vertical structure of the atmosphere.

¹³ RAOB - (The complete Rawinsonde Observation program) is an interactive sounding analysis program developed by Esonde Research Services, The Villages, Florida.

¹⁴ LCL - The height at which a parcel of moist air becomes saturated when it is lifted dry adiabatically.

¹⁵ LFC - The level at which a parcel of saturated air becomes warmer than the surrounding air and begins to rise freely. This occurs most readily in a conditionally unstable atmosphere.

¹⁶ CCL - The level in the atmosphere to which an air parcel, if heated from below, will rise dry adiabatically, without becoming colder than its environment just before the parcel becomes saturated.

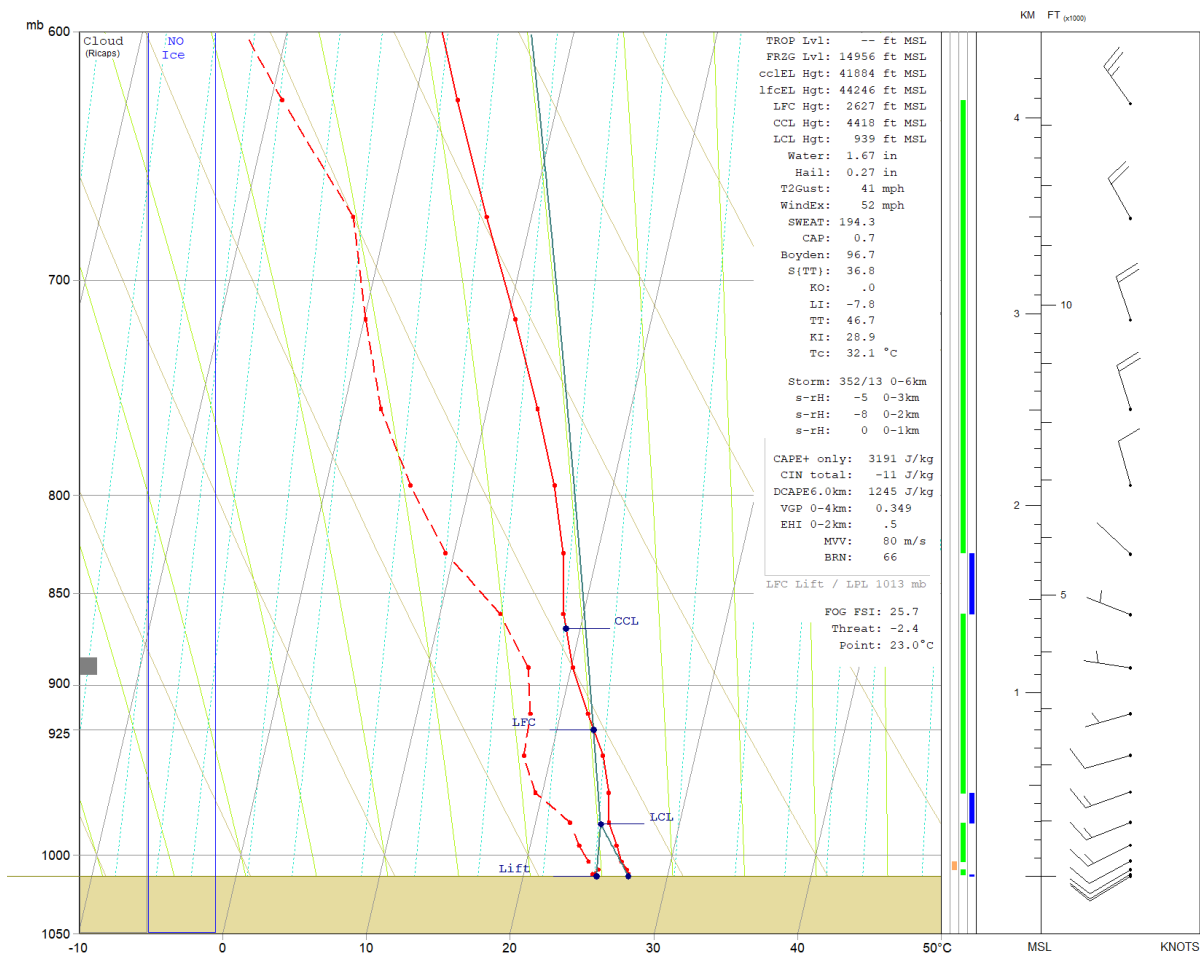


Figure 7. 2200 EDT HRRR sounding.

The 2200 EDT HRRR sounding identified a mostly conditionally unstable environment from the surface through 14,000 ft with two stable layer areas approximately 500 ft thick around 2,250 and also around 5,000 ft. RAOB indicated a 500 ft thick cloud layer around 4,000 ft. No icing was indicated below 14,000 ft. There was a Convective Available Potential Energy (CAPE)¹⁷ value of 3,191 Joules/kilogram (J/kg) and the maximum vertical velocity (MVV) for this atmosphere was calculated as 80 meters/second (about 15,748 ft per minute) in rain shower and thunderstorm updrafts.¹⁸

¹⁷ Convective Available Potential Energy (CAPE) - CAPE is a measure of the amount of energy available for convection and is directly related to the maximum potential vertical speed within an updraft.

¹⁸ MVV is not usually considered a realistic estimate for maximum vertical velocity in a storm. Anecdotes suggest considering a value of MVV/2, however it is not well understood when or where such a half-value should be applied.

The 2200 EDT HRRR sounding wind profile indicated a near-surface wind from 240° at 11 knots with the wind remaining southwesterly to westerly through 6,000 ft. The wind speed decreased to 5 knots by 4,000 ft. The wind veered¹⁹ to the northwest above 6,000 ft with the wind speed increasing to 20 knots by 8,000 ft. At the accident aircraft's altitude immediately prior to descent²⁰ (approximately 6,700 ft) the wind was from 345° at 10 knots, the temperature was 15.9°C, and the dew point temperature was 5.9°C.

5.0 Satellite Data

Geostationary Operational Environmental Satellite number 16 (GOES-16) visible and infrared data were obtained from an archive at the Space Science Engineering Center at the University of Wisconsin-Madison in Madison, Wisconsin, and processed using the Man-computer Interactive Data Access System software. Visible and infrared imagery (GOES-16 bands 2 and 13, respectively) at wavelengths of 0.64 microns (μm) and 10.3 μm, respectively, were retrieved for the period from 1500 EDT through 2345 EDT and reviewed, and the closest images to the time of the accident were documented.

Figure 8 presents the GOES-16 infrared image at 2156 EDT at 7X magnification with the accident site highlighted with a red square. Cloud cover was indicated to the northwest through southeast of the accident site with lower brightness temperatures (yellow colors; higher cloud tops) located northwest of the accident site. The brightness temperature of 295 Kelvin²¹ would have been between the surface and 2,000 ft based on the vertical temperature profile provided by the 2200 EDT HRRR sounding. It should be noted these figures have not been corrected for any parallax error. Animation of the visible satellite imagery during the evening timeframe on May 25 through sunset indicated cloud cover moving southward with time. The Air Mass Red, Green, Blue (RGB) imagery indicated a tan or salmon color across the majority of the Florida Panhandle and northeast Gulf of Mexico throughout the evening timeframe and that tan or salmon area was across the accident site at the accident time and moving southward (attachments 2 and 3).

¹⁹ Veered - Wind turning clockwise with height.

²⁰ For more information please see the ATC and track data in the docket for this accident.

²¹ around 22°C

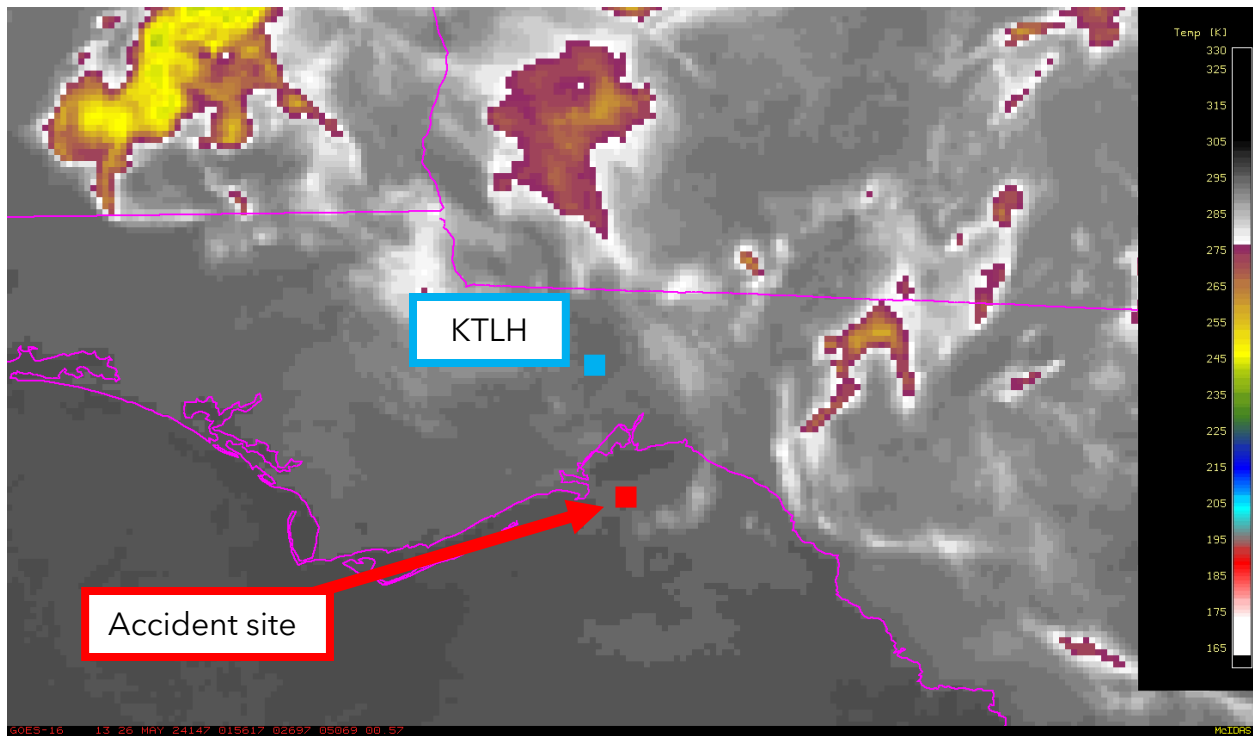


Figure 8. GOES-16 infrared image at 2156 EDT.

6.0 National Radar Imagery

A regional view of the NWS National Reflectivity Mosaic is included as figure 9 for 2155 EDT with the approximate location of the accident site marked by a red circle. The mosaic imagery depicted no echoes above the accident site.

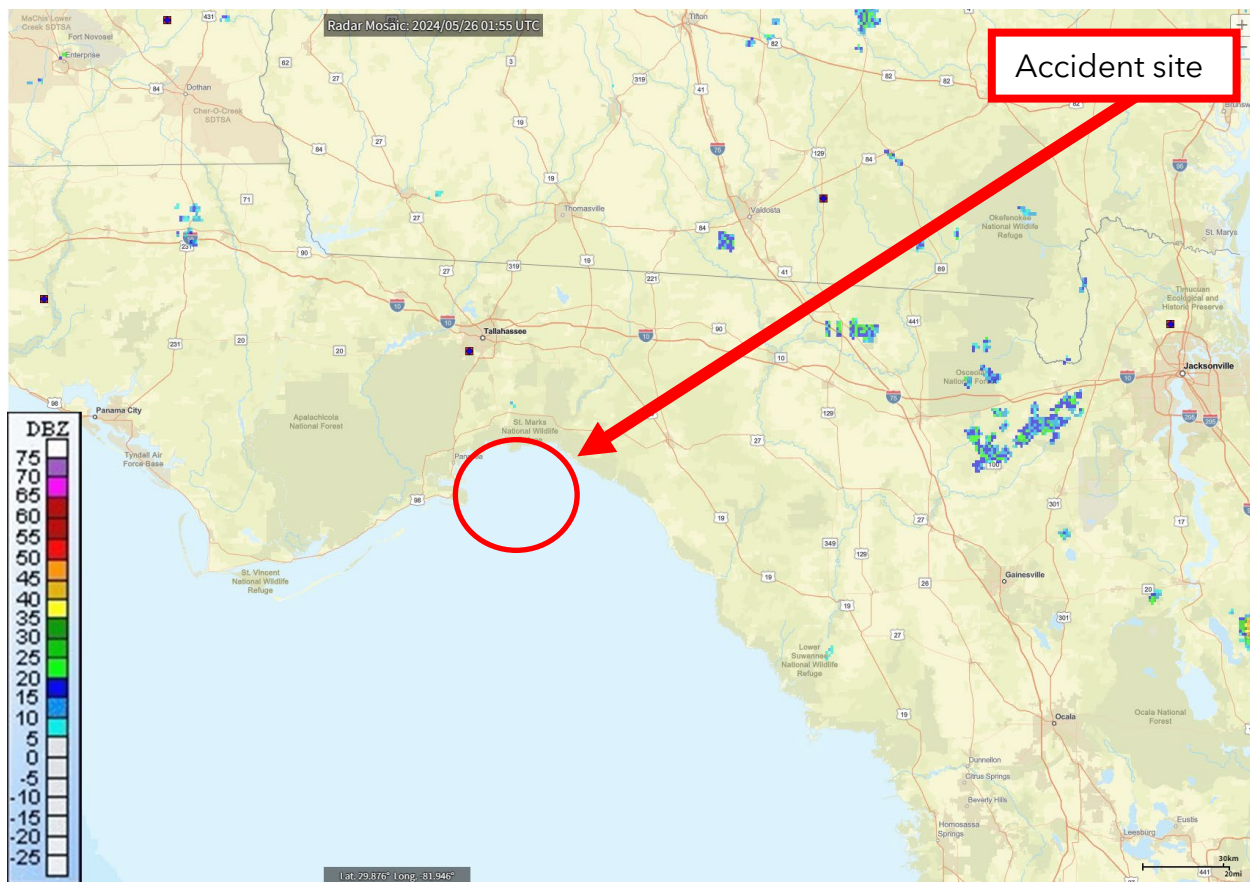


Figure 9. National Reflectivity Mosaic for 2155 EDT.

7.0 Pilot Reports

The longline-disseminated pilot reports²² (PIREPs) distributed into the national airspace system (NAS) within 3 hours of the accident time and within 150 miles of the accident site are shown here for below 18,000 ft:

TLH UA /OV TLH120005/TM 0144/FL020/TP BE36/WX HZ/RM NO BASES REPORTED

TLH UA /OV SZW165080/TM 0138/FL070/TP C172/TB NEG

TLH UA /OV 5 W/TM 0011/FL025/TP CRJ9/WX VMC

TLH UA /OV TLH120010/TM 2336/FL030/TP E170/SK SKC/WX HZ/RM NO BASES
REPORTED

JAX UA /OV GNV/TM 2327/FLDURGD/TP E145/WX HZ

TLH UA /OV TLH320010/TM 2312/FL050/TP E170/SK SCT035

²² Only PIREPs with the World Meteorological Organization headers UBAL**, UBGA**, and UBFL** were considered. These do not include pilot reports only broadcast via radio.

8.0 Significant Meteorological Information

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

9.0 Center Weather Service Advisories

The Jacksonville (ZJX) Air Route Traffic Control Center (ARTCC) Center Weather Service Unit (CWSU) was responsible for the accident region. There was no Center Weather Advisory (CWA) valid for the accident site at the accident time.

10.0 Graphical Forecasts for Aviation

The Graphical Forecasts for Aviation (GFA) products issued by the NWS Aviation Weather Center (AWC) around 0900 EDT and valid at 2000 and 2300 EDT are shown in figures 10 through 13 (additional GFA forecast products produced after 0900 EDT were not available due to AWC archiving constraints). The GFA surface forecast applicable at 2000 and 2300 EDT for the accident site indicated VFR conditions with no precipitation and a southwest wind of 5 knots with gusts to 15 knots. The GFA cloud forecast applicable to the accident site for 2000 EDT indicated few to broken cloud cover at the accident site with cloud bases around 4,000 ft and cloud tops above 16,000 ft. Sky clear was forecast by the GFA cloud forecast for 2300 EDT (figure 13).

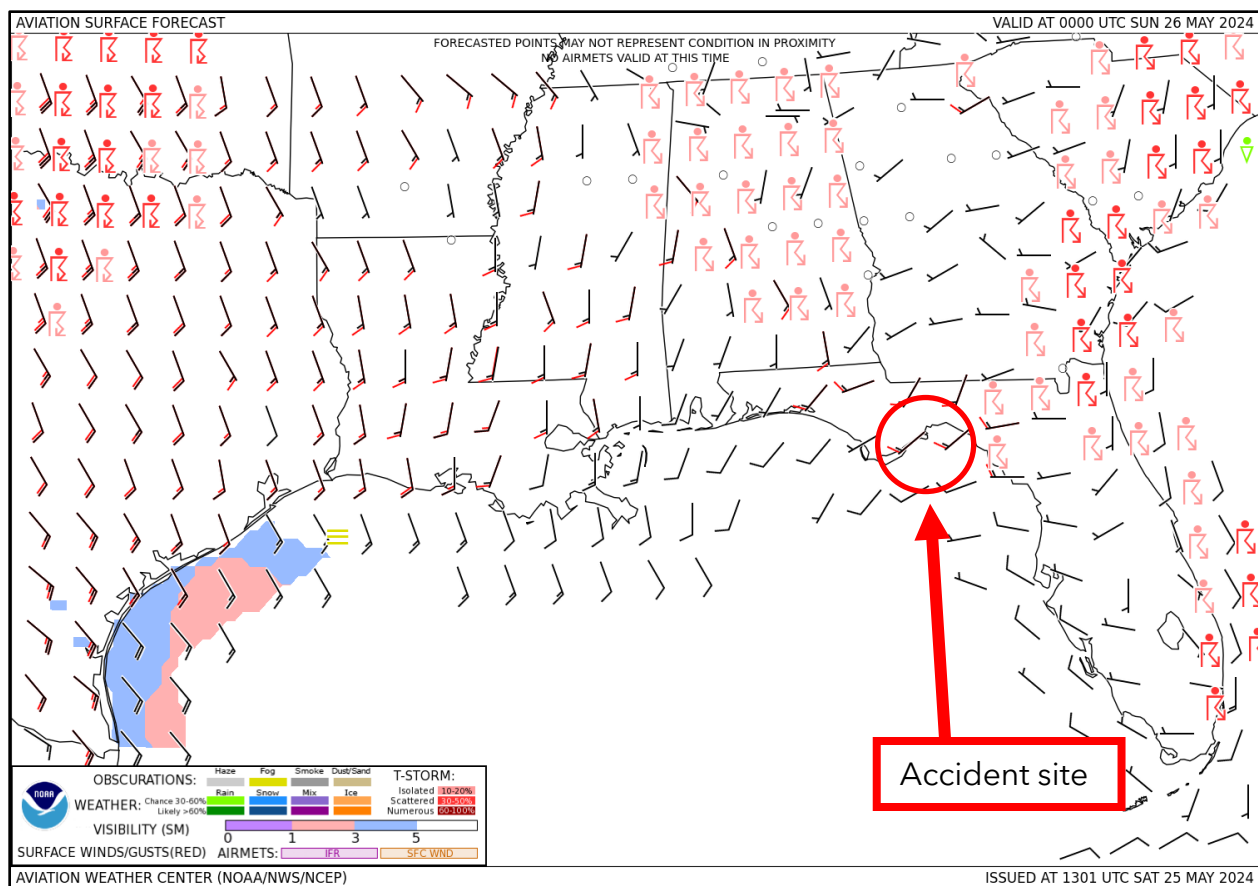


Figure 10. GFA Surface Forecast valid at 2000 EDT with forecast issued at 0901 EDT.

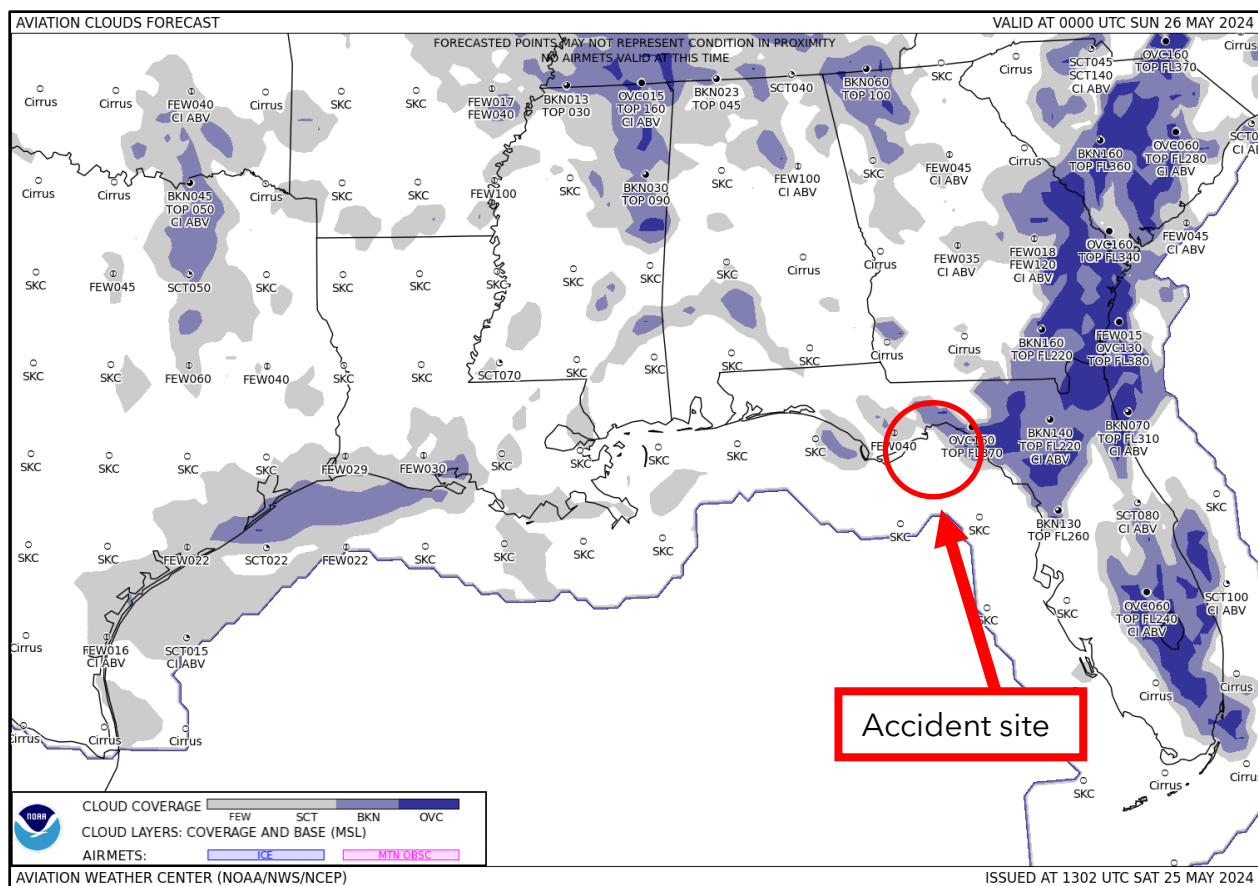


Figure 11. GFA Aviation Clouds Forecast valid at 2000 EDT with forecast issued at 0902 EDT.

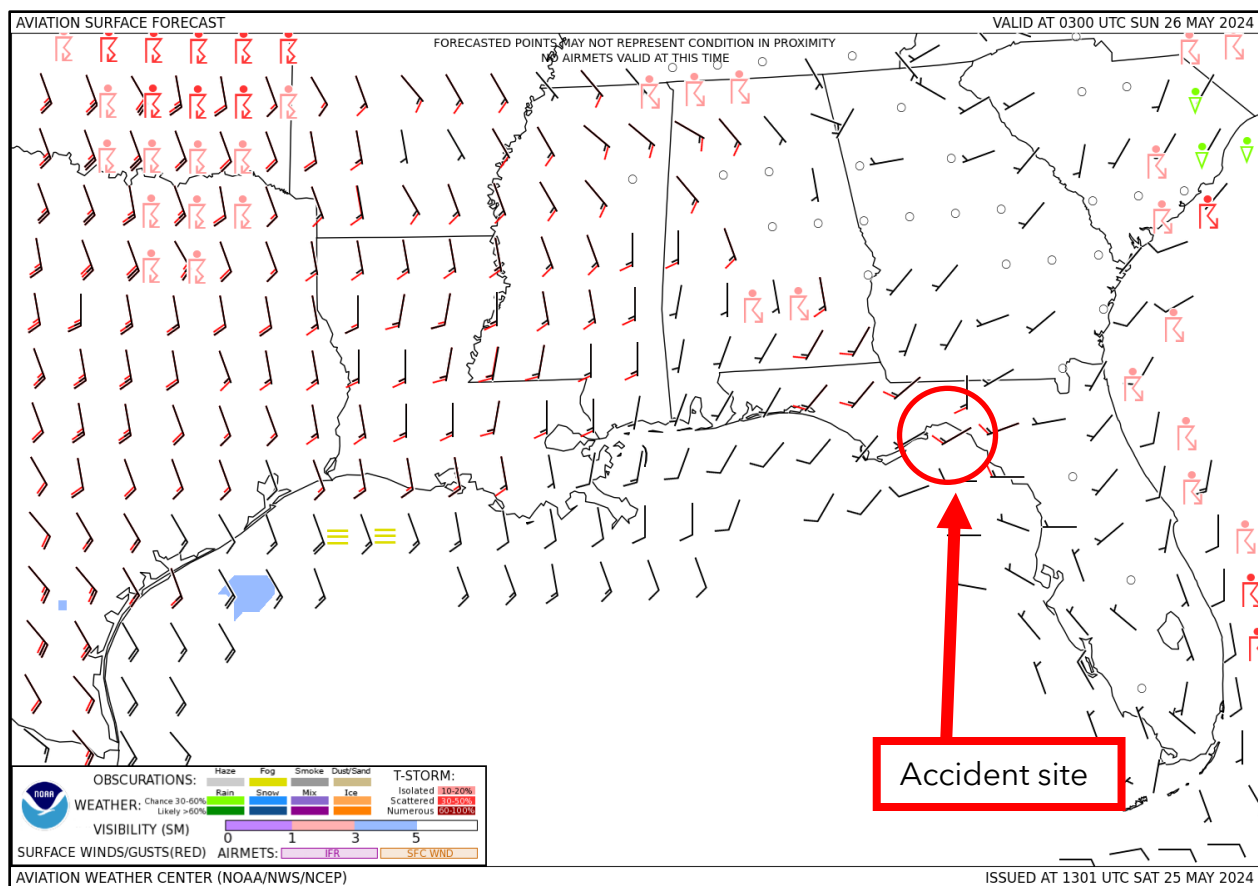


Figure 12. GFA Surface Forecast valid at 2300 EDT with forecast issued at 0901 EDT.

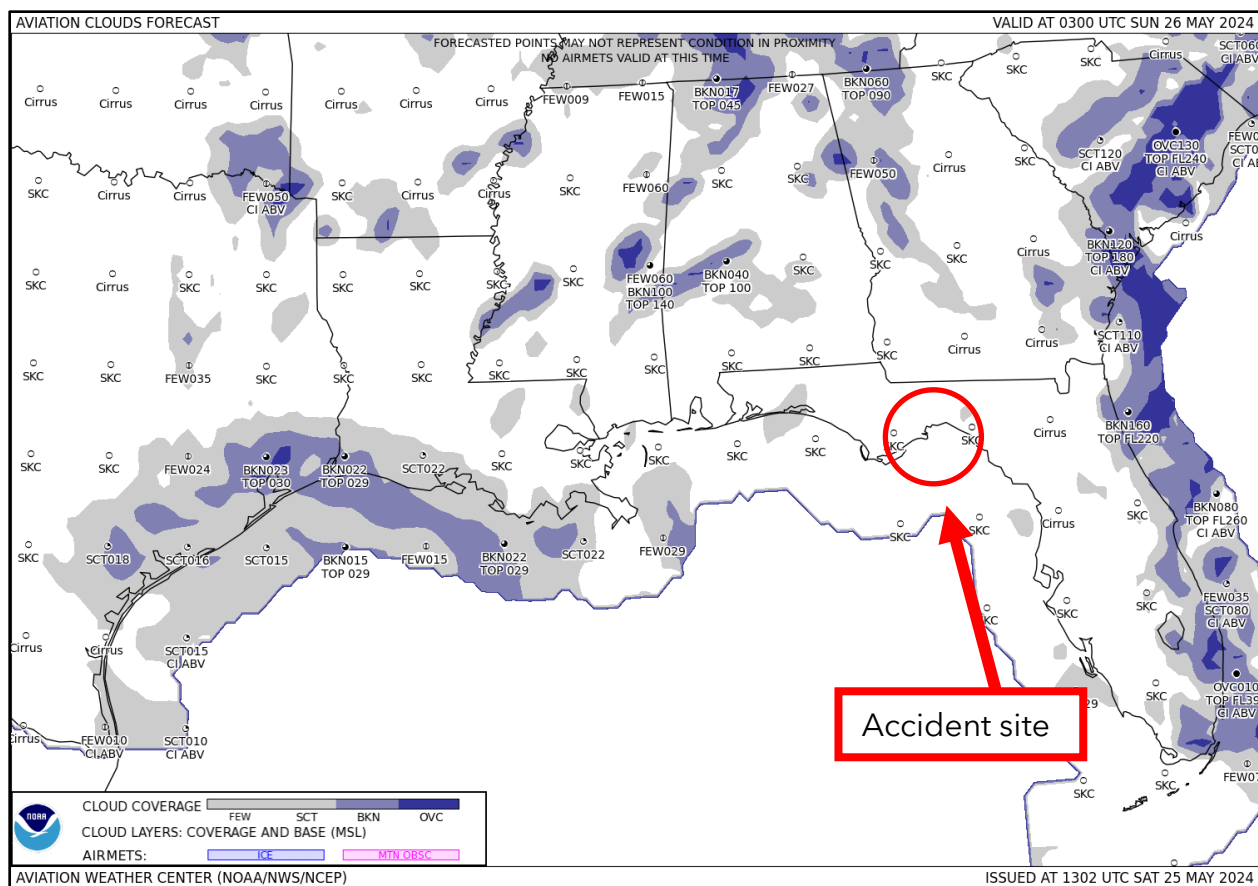


Figure 13. GFA Aviation Clouds Forecast valid at 2300 EDT with forecast issued at 0902 EDT.

11.0 Text Airmen's Meteorological Information

There were no AWC text Airmen's Meteorological Information (AIRMET) advisories valid for the accident site for below 20,000 ft.

12.0 Terminal Aerodrome Forecast

There were no sites within 25 miles of the accident site with an NWS Terminal Aerodrome Forecast²³ (TAF).

²³ According to NWS Instruction 10-813: "An NWS TAF consists 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."

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

13.0 National Weather Service Area Forecast Discussion

The NWS weather forecast office in Tallahassee, Florida, (WFO TAE) was responsible for the public forecast in the region of the accident site. WFO TAE issued the following Area Forecast Discussion (AFD) at 2059 EDT. This was the AFD issued closest to the accident time with an aviation section:

FXUS62 KTAE 260059
AFDTAE

Area Forecast Discussion
National Weather Service Tallahassee FL
859 PM EDT Sat May 25 2024

...New UPDATE...

.UPDATE...
Issued at 859 PM EDT Sat May 25 2024

Updated the forecast to show current conditions. Convective storms have ended, and not expecting any redevelopment. Patchy fog may develop during the early morning hours.

&&

.NEAR TERM...
(Through Sunday)
Issued at 215 PM EDT Sat May 25 2024

The severe weather risk has increased some this afternoon compared to earlier outlooks. There is a level 2 out of 5 risk of severe weather for the rest of this afternoon into the early evening hours. The environment is characterized by SBCAPE values near 3000 j/kg range with deep layer shear values around 30 knots. An upper level vort max diving southeastward in the northwest flow aloft will aid in providing the lift needed to generate scattered thunderstorms. Fortunately, low level shear values are on the weak side, so the tornado risk looks to be below 2%. However, gusty winds and perhaps some hail could occur in this environment with some of the stronger storms, particularly the storms that can congeal into clusters. Activity should diminish after sunset this evening with lows dipping down around 70.

On Sunday, a dry day is expected with westerly flow aloft and above average temperatures. After some patchy morning fog, skies are expected to clear with highs reaching into the 90s away from the coast.

&&

.SHORT TERM...
(Sunday night through Monday night)

Issued at 215 PM EDT Sat May 25 2024

Another shortwave embedded in west to northwest flow moves across the forecast area during the day Monday, bringing another shot at showers and thunderstorms to the forecast area Monday afternoon. There will be ample mid-level dry air in place, resulting in DCAPE values near 1,000 J/kg in the afternoon overlaid with about 30-40 kt of deep layer shear. Of note are also steeper mid-level lapse rates noted on forecast soundings. The question is the coverage of storms. Regardless, if storms can get going Monday, then they'll be in an environment supportive of strong to severe storms. Wet Microburst Severity Index values are quite high as well. Damaging winds and large hail would be the primary severe hazards with frequent lightning possible in all storms. The Storm Prediction Center has a Marginal Risk of severe weather (level 1 of 5) from roughly Panama City Beach to Lakeland northward. It's not totally out of the realm of possibilities to see an expansion or upgrade to this risk in later outlooks, especially if the environment continues to look as favorable as it does.

Outside of storms, it will be quite warm with highs in the lower 90s and lows in the 70s. Heat index values Monday afternoon could approach or exceed 100 in spots.

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.LONG TERM...

(Tuesday through Friday)

Issued at 215 PM EDT Sat May 25 2024

Ridging off to our west continues to place our forecast area in northwest flow through Wednesday. However, the forecast for Tuesday and Wednesday really depend on the placement of the shortwaves and a "cold" front. Looking at ensemble data, while we will be in northwest flow on Tuesday, we could in between shortwaves. This would mean our rain chances Tuesday could be more dominated by the sea breeze, confining our best rain chances to the southern and eastern half of the forecast area. However, the environment could still be supportive of strong to briefly severe storms Tuesday afternoon given good DCAPE values and deep-layer shear around 25 kt.

Wednesday is even more tricky as the placement of a southward moving cold front makes all the difference. The GFS ensemble suite generally keeps the front near or over our Florida counties while the European ensemble suite drops the front south of our forecast area. The GFS suite would result in better rain chances for Wednesday while the European suite would be a dry forecast. Thus, rain chances are a very uncertain 20% across the southern half of the area Wednesday. Temperatures during this time period will be quite hot with middle 90s common. Tuesday in particular could be quite humid which may result in heat index values of 100-105, especially in the Florida counties.

Behind the "cold" front, drier weather returns with highs falling back into the upper 80s to lower 90s and lows in the middle 60s to lower 70s.

&&

.AVIATION...

(00Z TAFS)

Issued at 722 PM EDT Sat May 25 2024

It is possible for a couple of stray showers to develop over the next hour yet, they should be light and chances for thunder at this point is NIL. We will have light to calm winds tonight; however, we remain in a similar pattern as the past few nights with low stratus and patchy fog possible during the overnight and predawn hours, affecting all terminals. VFR cigs will return by mid- morning Sunday and clearing skies across all terminals through the rest of the TAF period.

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.MARINE...

Issued at 215 PM EDT Sat May 25 2024

Generally light west to southwest winds continue through Tuesday with seas around 1 to 2 feet. The exception will be if storms over land this evening, Monday, and Tuesday make it to the waters, which could result in gusty winds. A cold front passes through the area Wednesday night, with light winds becoming more northwesterly for the end of the week. Seas will still generally remain 2 feet or less.

&&

.FIRE WEATHER...

Issued at 215 PM EDT Sat May 25 2024

On Sunday, the combination of southwest transport winds and moderately high mixing heights will lead to high dispersions during the afternoon across much of southwest Georgia and portions of southeast Alabama. High dispersions are possible again on Monday and Tuesday. Relative humidity values are expected to remain above critical levels.

&&

.HYDROLOGY...

Issued at 215 PM EDT Sat May 25 2024

The flood wave continues down the Withlacoochee River with the river falling at Quitman and beginning to fall at Pinetta. These forecast points should fall below flood stage in about the next 24

to 30 hours. Farther downstream along the Suwannee, the river at Ellaville continues to trend slightly lower than forecast, which affects downstream locations. Thus, forecasts from Luraville downstream have generally trended downward, and it'll be seen whether or not these points reach flood stage over the next 3 to 6 days.

The additional rainfall during the next several days is not forecast to contribute much more to the river flooding. Some locally heavy downpours are possible in some storms, which could cause brief nuisance flooding, but flash flood concerns are fairly low.

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.SPOTTER INFORMATION STATEMENT...

Spotter activation is not requested. However, spotters are always encouraged to safely report significant weather conditions when they occur by calling the office or tweeting us @NWSTallahassee.

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.PRELIMINARY POINT TEMPS/POPS...

Tallahassee	72	93	72	92	/	20	0	0	20
Panama City	75	86	76	86	/	10	0	0	10
Dothan	72	91	73	90	/	20	0	0	40
Albany	72	92	71	91	/	10	0	0	50
Valdosta	72	94	71	93	/	20	0	0	30
Cross City	71	91	69	90	/	20	0	0	10
Apalachicola	75	85	76	85	/	0	0	0	0

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.TAE WATCHES/WARNINGS/ADVISORIES...

FL...High Rip Current Risk until 4 AM CDT Sunday for FLZ112.

GA...None.

AL...None.

GM...None.

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14.0 Winds and Temperature Aloft Forecast

The NWS 1558 EDT Winds and Temperature Aloft forecast, which was intended for use between 1600 and 2300 EDT and was valid for the closest point to the accident site, is included below:

FBUS31 KWNO 251958

FD1US1

DATA BASED ON 251800Z

VALID 260000Z FOR USE 2000-0300Z. TEMPS NEG ABV 24000

FT 3000 6000 9000 12000 18000 24000 30000 34000 39000

TLH 2408 3014+16 3317+12 3430+06 3235-07 3035-19 303435 313443 314554

15.0 Pilot Weather Information

Title 14 CFR 91.103 states that "Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight." FAA AC 91-92 "Pilot's Guide to a Preflight Planning" (dated March 15, 2021) provided pilot guidance on preflight self-briefings, including planning, weather interpretation, and risk identification/mitigation skills. The AC further stated in part:

Pilots adopting these guidelines will be better prepared to interpret and utilize real-time weather information before departure and en route, in the cockpit, via technology like Automatic Dependent Surveillance-Broadcast (ADS-B) and via third-party providers.²⁴

A search of archived information indicated that the accident pilot did not request weather information from Leidos Flight Service or ForeFlight. It is unknown what weather information, if any, the accident pilot checked or received before or during the accident flight.

²⁴ https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_91-92.pdf. The AC also listed multiple online FAA resources for aviation flight planning services for adverse weather.

16.0 Astronomical Data

The astronomical data obtained²⁵ for the accident site on May 25, 2024, indicated the following:

SUN

Begin civil twilight	0612 EDT
Sunrise	0638 EDT
Sun transit	1334 EDT
Sunset	2030 EDT
End civil twilight	2056 EDT
Accident time	2155 EDT ²⁶

At the time of the accident the Sun was below the horizon.

MOON

Accident time	2155 EDT ²⁷
Moonrise	2302 EDT

At the time of the accident the Moon was below the horizon.

E. LIST OF ATTACHMENTS

Attachment 1 - GOES-16 visible animation from 1756 to 2026 EDT

Attachment 2 - GOES-16 Air Mass RGB animation from 1701 to 2236 EDT

Attachment 3 - Air Mass RGB Quick Guide

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²⁵ <https://www.suncalc.org/> and <https://www.mooncalc.org/>

²⁶ Inserted accident time for reference and context.

²⁷ Inserted accident time for reference and context.