



# Aviation Investigation Final Report

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<b>Location:</b>	Myrtle Beach, South Carolina	<b>Accident Number:</b>	ERA19LA043
<b>Date &amp; Time:</b>	November 12, 2018, 14:15 Local	<b>Registration:</b>	N840JC
<b>Aircraft:</b>	Aero Commander 690	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Turbulence encounter	<b>Injuries:</b>	1 Serious
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The pilot was approaching the airport to land in instrument meteorological conditions when he encountered heavy turbulence. He continued the approach and the airplane started to descend rapidly. Although he added full power in an attempt to climb, the airplane continued to descend until it collided with the Atlantic Ocean. The forward portion of the fuselage, which included the cockpit separated from the airplane. The pilot did not report any anomalies with the airplane before the accident.

Review of weather information for the area of the airport about the time of the accident revealed light to moderate precipitation with a high potential for moderate turbulence and low-level wind shear below about 2,000 ft. Radar imagery did not reveal signatures typically associated with microburst activity. Based on the available information, it is likely that the pilot encountered low-level windshear and turbulence during the approach, which resulted in a loss of airplane control.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

An encounter with low-level windshear and turbulence during the landing approach, which resulted in a loss of airplane control.

## Findings

<b>Environmental issues</b>	Clear air turbulence - Contributed to outcome
<b>Aircraft</b>	(general) - Not attained/maintained
<b>Personnel issues</b>	Aircraft control - Pilot

## Factual Information

On November 12, 2018, about 1415 eastern standard time, a Gulfstream American (Aero Commander) 690C, N840JC, was substantially damaged when it was involved in an accident near Myrtle Beach, South Carolina. The commercial pilot was seriously injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he was following radar vectors for the downwind leg of the traffic pattern to runway 36 at MYR. He turned onto final approach and was inside the outer marker when he encountered heavy turbulence. As he continued the approach, he described what he believed to be a microburst and the airplane started to descend rapidly. The pilot added full power in an attempt to climb, but the airplane continued to descend until it collided with the Atlantic Ocean 1 mile from the approach end of runway 36.

A witness stated that the airplane looked "relatively low." He watched the airplane for about 10 seconds before it impacted the water about 150-300 ft from the shore. He stated that the airplane was not doing anything erratic and he could not remember if he heard the engines running. After impact, the forward portion of the fuselage which included the cockpit separated from the airplane. The witness swam out to the airplane and assisted the pilot to the shore.

In addition to the fuselage damage, the airplane also sustained substantial damage to the left wing and right horizontal stabilizer.

The 1456 weather recorded at MYR included overcast clouds at 500 ft above ground level (agl) and wind from 360° at 10 knots. The temperature was 13°C and the dew point was 13°C. The altimeter setting was 30.16 inches of mercury.

Between 1356 and 1456, the visibility was restricted in some form, likely in rain and/or mist, but the weather phenomena were not reported. Precipitation accumulation was noted during this period in the remark section. It is unknown why the system did not report or why the tower observer did not record or augment the observation. Rain was later officially reported after 1550.

The next closest official weather reporting station was about 12 miles northeast at Grand Strand Airport (CRE), North Myrtle Beach, South Carolina. The airport had an automated surface observation system (ASOS) augmented by tower personnel. At the time of the accident, wind was from 350° at 4 knots, visibility was 1 1/2 miles in moderate rain and mist, and the ceiling was overcast at 500 ft agl.

The following figure shows the accident airplane's flight track overlaid on base reflectivity radar imagery. The flight track showed the last radar target at 650 ft mean sea level near the accident site. Echoes of 5 to 15 dBZ extended over the flight track and accident site. No strong reflectivity echoes or gradients were noted over or in the vicinity of the accident site to indicate any thunderstorms and the radial velocity data did not detect any divergent couplets typically associated with microbursts.

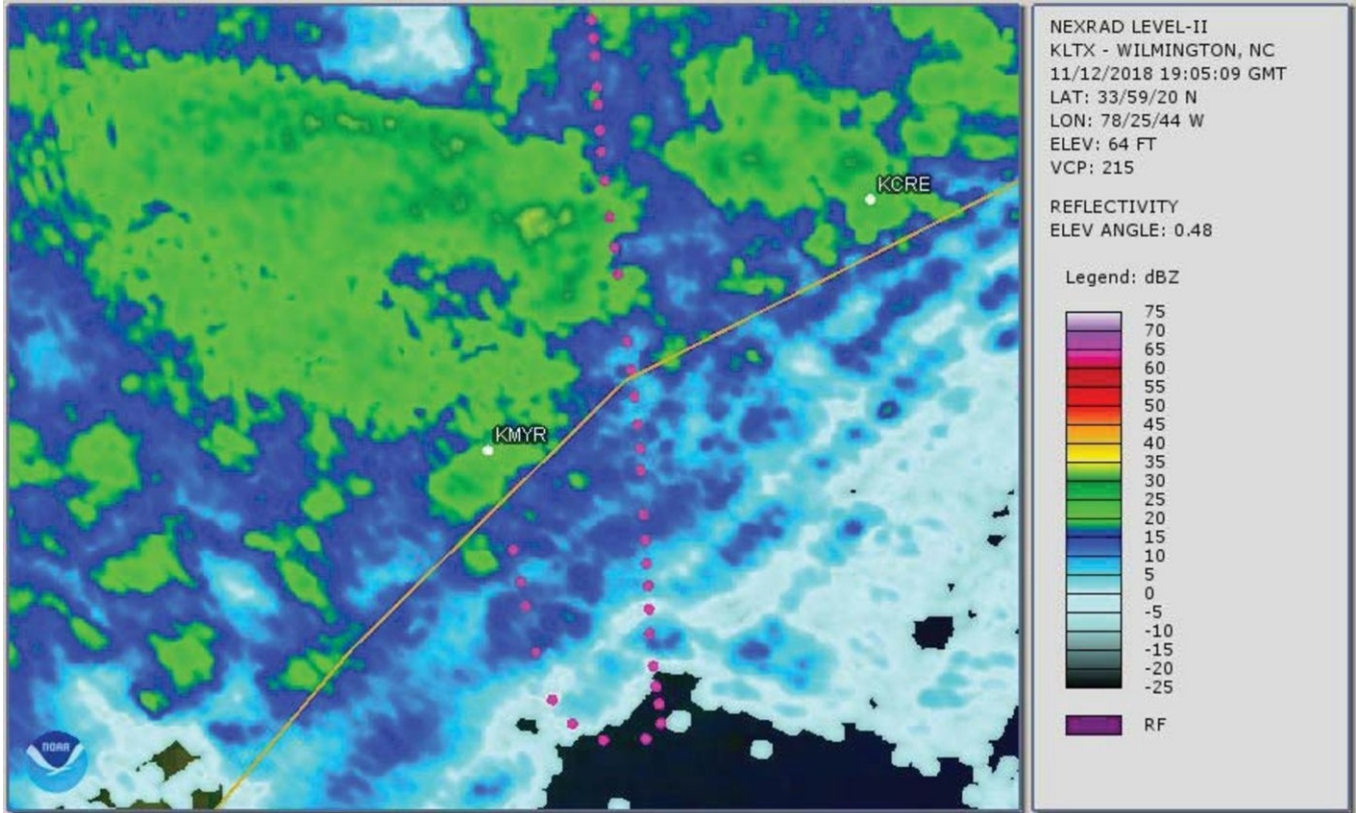


Figure -Base reflectivity image with flight track overlay

The NAM sounding wind profile indicated a surface wind from the ENE at 7 knots with wind veering to the south and southwest above the frontal inversion with wind speeds increasing with height. The mean 18,000 ft wind was from 240° at 35 knots. At 2,000 ft, the wind was estimated from 120° at 30 knots. The sounding supported a high potential for moderate turbulence below 2,000 ft and low-level wind shear in the inversion layer.

### History of Flight

Approach-IFR final approach	Turbulence encounter (Defining event)
Approach-IFR final approach	Loss of control in flight
Approach-IFR final approach	Collision with terr/obj (non-CFIT)

## Pilot Information

<b>Certificate:</b>	Airline transport; Commercial	<b>Age:</b>	68, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	July 2, 2018
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 22335 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Aero Commander	<b>Registration:</b>	N840JC
<b>Model/Series:</b>	690 C	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1981	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	11676
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	13
<b>Date/Type of Last Inspection:</b>	August 14, 2018 Annual	<b>Certified Max Gross Wt.:</b>	4635 lbs
<b>Time Since Last Inspection:</b>	4 Hrs	<b>Engines:</b>	2 Turbo prop
<b>Airframe Total Time:</b>	8441.1 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Airesearch
<b>ELT:</b>	C91 installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	TPE33110T511K
<b>Registered Owner:</b>		<b>Rated Power:</b>	750 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KMYR,25 ft msl	<b>Distance from Accident Site:</b>	2 Nautical Miles
<b>Observation Time:</b>	18:56 Local	<b>Direction from Accident Site:</b>	344°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	4 miles
<b>Lowest Ceiling:</b>	Overcast / 500 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	10 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	360°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	30.15 inches Hg	<b>Temperature/Dew Point:</b>	13°C / 13°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Cumberland, MD (CBE )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Myrtle Beach, SC (MYR )	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	12:29 Local	<b>Type of Airspace:</b>	Class C

## Airport Information

<b>Airport:</b>	MYRTLE BEACH INTL MYR	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	25 ft msl	<b>Runway Surface Condition:</b>	Wet
<b>Runway Used:</b>	36	<b>IFR Approach:</b>	ILS
<b>Runway Length/Width:</b>	9503 ft / 150 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious	<b>Latitude, Longitude:</b>	33.643611,-78.919441(est)

## Administrative Information

**Investigator In Charge (IIC):** Alleyne, Eric

**Additional Participating Persons:** Marjorie V Jake; FAA/FSDO; Baltimore, MD  
Dana S Metz; Honeywell; Phonix, AZ

**Original Publish Date:** February 9, 2022

**Investigation Class:** 3

**Note:** The NTSB did not travel to the scene of this accident.

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=98628>

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).