



# Aviation Investigation Final Report

<b>Location:</b>	Key West, Florida	<b>Accident Number:</b>	ERA19LA073
<b>Date &amp; Time:</b>	December 15, 2018, 09:33 Local	<b>Registration:</b>	N55FN
<b>Aircraft:</b>	Learjet 35	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Windshear or thunderstorm	<b>Injuries:</b>	4 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Positioning		

## Analysis

The flight crew conducted an instrument approach to their destination airport that terminated in a missed approach. Air traffic control provided radar vectors for a second approach, and during that time, the wind shifted due to the passage of a cold front and favored the opposite direction runway. The subsequent approach was uneventful; however, during the landing flare, the airplane touched down hard and was substantially damaged. Review of a weather sounding taken shortly before the accident revealed the potential for low-level windshear activity between the surface and 1,000 feet. Given this information, it is most likely that the flight crew encountered windshear during the landing flare, which resulted in a hard landing.

## Probable Cause and Findings

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

The flight crew’s encounter with windshear during the landing flare, which resulted in a hard landing.

## Findings

<b>Environmental issues</b>	Windshear - Contributed to outcome
<b>Aircraft</b>	Landing flare - Not attained/maintained



## Factual Information

### History of Flight

<b>Landing</b>	Windshear or thunderstorm (Defining event)
<b>Landing-flare/touchdown</b>	Hard landing

On December 15, 2018, about 0933 eastern standard time, a Learjet 35A, N55FN, was substantially damaged when it was involved in an accident during landing at Key West International Airport (EYW), Key West, Florida. The flight was operated by Medway Air Ambulance as a Title 14 *Code of Federal Regulations* Part 91 positioning flight.

According to the operator, the first officer flew the initial approach to runway 9 at EYW. The crew visually acquired the runway but were not in a position to land the airplane and performed a missed approach. During the missed approach, they encountered turbulence, and the captain took the flight controls. While being radar-vectoring for the second approach, air traffic control advised the crew that the wind had shifted and was favoring runway 27. The subsequent approach to runway 27 was uneventful. During the landing flare, the crew were unable to arrest the airplane's descent, and the airplane landed hard. After taxiing to the ramp, they realized that the airplane was damaged during the landing.

According to pictures provided by a Federal Aviation Administration (FAA) inspector, the airplane sustained substantial damage to the left engine pylon, left wing, and main landing gear.

According to available weather information, a cold front moved across EYW around the time of the accident, followed by a second cold front that was approaching the area. The EYW upper air sounding, launched at 0700, indicated a surface wind from 220° at 6 knots with little directional variation with height and with wind speed increasing with height. At 1,000 ft a low-level wind maximum was identified from 210° at 18 knots, which resulted in a slight risk or "light" low-level wind shear condition below this level and potential surface wind gusts.

## Pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight instructor	<b>Age:</b>	24, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	February 20, 2018
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	April 21, 2018
<b>Flight Time:</b>	1950 hours (Total, all aircraft), 1150 hours (Total, this make and model), 997 hours (Pilot In Command, all aircraft), 145 hours (Last 90 days, all aircraft), 35 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

## Co-pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	41, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 With waivers/limitations	<b>Last FAA Medical Exam:</b>	September 9, 2018
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	April 11, 2018
<b>Flight Time:</b>	1634 hours (Total, all aircraft), 320 hours (Total, this make and model), 1255 hours (Pilot In Command, all aircraft), 129 hours (Last 90 days, all aircraft), 38 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Learjet	<b>Registration:</b>	N55FN
<b>Model/Series:</b>	35 A	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1978	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	202
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	8
<b>Date/Type of Last Inspection:</b>	July 12, 2018 Continuous airworthiness	<b>Certified Max Gross Wt.:</b>	18001 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Turbo fan
<b>Airframe Total Time:</b>	22533 Hrs at time of accident	<b>Engine Manufacturer:</b>	Honeywell
<b>ELT:</b>	C126 installed, not activated	<b>Engine Model/Series:</b>	TFE731-2-2B
<b>Registered Owner:</b>	Med Air Llc	<b>Rated Power:</b>	3500 Lbs thrust
<b>Operator:</b>	Medway Air Ambulance	<b>Operating Certificate(s) Held:</b>	On-demand air taxi (135)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	Y6WA

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Instrument (IMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	EYW, 21 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	09:25 Local	<b>Direction from Accident Site:</b>	63°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	
<b>Lowest Ceiling:</b>	Broken / 600 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	13 knots / 19 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	330°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.09 inches Hg	<b>Temperature/Dew Point:</b>	23°C / 22°C
<b>Precipitation and Obscuration:</b>	Moderate - None - Rain		
<b>Departure Point:</b>	Lawrenceville, GA (LZU)	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Key West, FL (EYW)	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	07:30 Local	<b>Type of Airspace:</b>	Class D

## Airport Information

<b>Airport:</b>	KEY WEST INTL EYW	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	2 ft msl	<b>Runway Surface Condition:</b>	Wet
<b>Runway Used:</b>	27	<b>IFR Approach:</b>	RNAV
<b>Runway Length/Width:</b>	4801 ft / 100 ft	<b>VFR Approach/Landing:</b>	Full stop

## Wreckage and Impact Information

<b>Crew Injuries:</b>	4 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	4 None	<b>Latitude, Longitude:</b>	24.55611,-81.753608(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Hill, Millicent
<b>Additional Participating Persons:</b>	Juan Garcia; FAA/FSDO; Miramar, FL
<b>Original Publish Date:</b>	March 4, 2022
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 3</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=98796">https://data.ntsb.gov/Docket?ProjectID=98796</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).