Aviation Investigation Final Report

Location:	Oshkosh, Wisconsin	**Accident Number:**	CEN24FA277
Date & Time:	July 22, 2024, 12:13 Local	**Registration:**	N18BG
Aircraft:	Lancair ES	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was flying the airplane on an arrival route when the air traffic controller instructed the pilot to widen the turn to allow for two warbird airplanes to land in front of him. The pilot acknowledged the transmission and stated that he had the two airplanes in sight. Wind was recorded as variable at 4 kts. According to ADS-B data, the airplane turned south, consistent with a modified downwind, then back to the east, and then toward the north, consistent with a base-to-final turn. The airplane was about 975 ft mean sea level (msl) and 84 kts ground speed when it started a turn to the north toward the airport. The last data point recorded from the airplane was about 975 ft msl and 70 kts ground speed, 1.5 miles from the approach end of the runway. According to the airframe pilot operating handbook, the stall speed varies from 59 to 74 kts indicated airspeed at zero degrees of bank.

The airplane impacted a soybean field upright and was destroyed by a postimpact fire. An examination of the airplane, engine, and flight control system revealed no mechanical anomalies or failures that would have precluded normal operations.

Further review of the ADS-B data from the warbird flight showed that the landing Aero L-39 airplane passed well to the east and above the flight path of the accident airplane. A review of the wake vortices generated by the L-39 revealed that the accident airplane would not have encountered the wake of the L-39 before impact.

It is most likely that the pilot did not maintain adequate airspeed while maneuvering to ensure spacing from the L-39 that landed ahead while completing his turn toward final. This resulted in an inadvertent stall and subsequent impact with terrain.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain adequate airspeed which resulted in an exceedance of the airplane's critical angle of attack and an aerodynamic stall while maneuvering for traffic spacing.

Findings

Aircraft	Airspeed - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Aircraft	Angle of attack - Not attained/maintained

Factual Information

History of Flight

Approach-VFR pattern base	Loss of control in flight (Defining event)

On July 22, 2024, about 1213 central daylight time a Lancair ES, N18BG, was destroyed when it was involved in an accident near Oshkosh, Wisconsin. The pilot and pilot-rated passenger were fatally injured. The airplane was operated under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight.

According to ADS-B data, the airplane departed Trenton-Mercer Airport (TTN), Trenton, New Jersey, about 0704 and flew to Hartford Municipal Airport (HXF), Hartford, Wisconsin. The airplane departed HXF about 1145.

A review of air traffic control recordings and ADS-B data indicated that the airplane was on the Fisk arrival when the air traffic controller instructed the pilot to widen his turn for an Aero L-29 and an Aero L-39 that were landing ahead. The pilot acknowledged “in sight.” The pilot was then cleared to land on runway 36L, with instructions to land on or after the yellow dot, and he acknowledged the clearance. The ADS-B track data shows the airplane on an east heading, followed by a turn to the south, then back toward the east, and then toward the north. According to ADS-B data, the airplane was about 975 ft msl and 84 kts groundspeed when it began a turn to the north toward the airport. The last data point recorded from the airplane was about 975 ft msl and 70 kts ground speed, 1.5 miles from the approach end of the runway. The flight path for the L-39 passed to the east of and in front of the accident airplane.

A review of ADS-B data for the accident airplane and a preceding Aero L-39, along with wake vortex modeling, was conducted. The L-39 turned onto final approach about 30 seconds before the accident airplane. At that time, the L-39 was descending through about 1,300 ft, while the accident airplane was about 1,000 ft. The accident airplane reached final approach about 20 seconds behind the L-39.

Modeling indicated that the L-39 wake vortices, which descended about 300 ft per minute, would have remained above the accident airplane’s flight path. With the reported light and variable wind conditions, the vortices also would not have drifted laterally into the accident airplane’s path before impact.

The airplane impacted a soybean field in an upright attitude south of County Road N, about 1.5 miles from the approach end of runway 36L. A postimpact fire ensued, which destroyed the airplane.

Pilot Information

Certificate:	Airline transport; Commercial	**Age:**	35,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	August 15, 2022
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 31, 2021
Flight Time:	(Estimated) 2433 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Lancair	**Registration:**	N18BG
Model/Series:	ES	**Aircraft Category:**	Airplane
Year of Manufacture:	2001	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	02G
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	June 4, 2024 Continuous airworthiness	**Certified Max Gross Wt.:**	3550 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	362 Hrs as of last inspection	**Engine Manufacturer:**	Continental Motors
ELT:	Installed	**Engine Model/Series:**	IO-550 N (7)
Registered Owner:	On file	**Rated Power:**	
Operator:	On file	**Operating Certificate(s) Held:**	None

According to the airframe pilot operating handbook, the stall speed varies from 59 kts (flaps down, power on) to 74 kts (flaps up, power off) indicated airspeed at zero degrees of bank.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KOSH,785 ft msl	**Distance from Accident Site:**	3 Nautical Miles
Observation Time:	11:53 Local	**Direction from Accident Site:**	1°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/ None	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.05 inches Hg	**Temperature/Dew Point:**	27°C / 15°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hartford, WI (HXF)	**Type of Flight Plan Filed:**	None
Destination:	Oshkosh, WI (OSH)	**Type of Clearance:**	Traffic advisory;None
Departure Time:	11:45 Local	**Type of Airspace:**	Class D

Wind at the time of the accident was recorded as light and variable at 4 kts.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	43.94234,-88.55685

The airplane impacted a soybean field about 1.5 miles south of the approach end of runway 36L. The airplane came to rest in an upright attitude on a heading of about 060°. Debris extended from the initial impact point to the main wreckage over a distance of about 35 ft. The entire airplane was accounted for at the accident site and was impacted and fire damaged.

The wings remained attached, and both ailerons remained attached to their respective wings. Aileron flight control continuity was confirmed from each aileron inboard to the cabin flight control yoke. Both rudder cables remained attached at the rudder control horn and were continuous from the rudder inboard to respective rudder pedals. Elevator control continuity was confirmed through impact damage.

The three-blade wooden propeller was splintered and separated. The upper bank of spark plugs was removed, and the engine was rotated through at the propeller. Engine continuity was confirmed through the entire powertrain.

Medical and Pathological Information

An autopsy was conducted on the pilot by the Fond du Lac County Medical Examiner, Fond du Lac, Wisconsin. The cause of death was “multiple injuries.” Toxicological testing of the pilot’s specimens was conducted by the FAA Office of Forensic Sciences, Oklahoma City, Oklahoma. The results were negative for all conducted tests.

Additional Information

According to FAA Order JO 7360.1E, both the Lancair ES and the Aero L39 are classified as a “Small” aircraft weight class and “Light” wake turbulence category. Air traffic controllers were not required to provide wake turbulence separation between the two landing airplanes.

Administrative Information

Investigator In Charge (IIC):	Rodi, Jennifer
Additional Participating Persons:	Tim Spreen; FAA FSDO; Milwaukee, WI Peter Hupfer; FAA FSDO; Milwaukee, WI
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