Aviation Investigation Final Report

Location:	Oshkosh, Wisconsin	**Accident Number:**	CEN14FA399
Date & Time:	July 31, 2014, 08:57 Local	**Registration:**	N3AZ
Aircraft:	ZIMMERMAN BREEZY	**Aircraft Damage:**	Substantial
Defining Event:	Runway excursion	**Injuries:**	1 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The accident pilot flew a passenger on a 10-minute flight during the Experimental Aircraft Association Airventure Oshkosh 2014. During landing, the pilot lost airplane control and subsequently struck a parked ground vehicle. A pilot in another airplane that had been cleared to land reported that he saw two airplanes in front of his airplane: a light-colored high-wing airplane that was turning from the right base to the final leg of the traffic pattern, and a high-wing airplane, which was the accident airplane, directly in front of him on the right downwind leg. The pilot of the trailing airplane stated that the air traffic controller was providing instructions to the pilots of the other two airplanes simultaneously and that it appeared that the controller was concerned about the spacing between the two airplanes ahead of him and the fact that his airplane was a faster airplane than the other two airplanes. The pilot heard the controller tell the accident airplane pilot while he was on short final to "pick it up a bit" and inform hit that a faster airplane was behind him. The accident airplane touched down and then become airborne again, and the controller subsequently stated to the accident pilot that "he could set it down." The airplane landed again and veered left on the runway. The pilot appeared to correct the airplane's ground track back on the centerline for a short time before the airplane veered right off the runway and onto the grass. The airplane then became airborne again and was in a nose-high, right-wing-low attitude; the pilot was likely attempting to clear a row of vehicles parked in the grass outside of the safety area. However, the airplane's tail hit one of the vehicles, and a small ground fire ensued. The pilot of the trailing airplane did not see any debris on the runway nor anything fall off the accident airplane before it hit the parked vehicle, and no debris or separated parts were found on the runway. An examination of the wreckage did not reveal any preimpact anomalies that would have precluded normal operation.

The tower communications were consistent with the air traffic controller simultaneously coordinating the landing of three airplanes on the same runway. Photographs revealed that, after the accident airplane landed behind the first airplane, the separation between the two airplanes decreased before the accident airplane exited the runway. It is likely that after the accident pilot landed the airplane, he observed that the separation between his airplane and the airplane ahead of him was decreasing, which led to his loss of airplane control.

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 airplane control during landing while the air traffic controller was simultaneously coordinating the landing of three airplanes on the same runway, which resulted in the airplane exiting the runway and impacting a parked ground vehicle.

Findings

Personnel issues	Aircraft control - Pilot
Environmental issues	Equipment/operational - Contributed to outcome
Environmental issues	(general) - Not specified
Aircraft	Airspeed - Not attained/maintained
Environmental issues	Ground vehicle - Contributed to outcome

Factual Information

History of Flight

Landing-landing roll	Runway excursion (Defining event)
Landing-landing roll	Collision during takeoff/land
Post-impact	Fire/smoke (post-impact)

On July 31, 2014, about 0857 central daylight time, an experimental amateur-built Zimmerman Breezy airplane, N3AZ, exited runway 36R at the Wittman Regional Airport (OSH), near Oshkosh, Wisconsin, and impacted parked vehicles east of the runway. A ground fire subsequently occurred. The pilot was fatally injured and the passenger sustained serious injuries. The airplane sustained substantial wing and fuselage damage. The airplane was registered to A Z Air Lease Inc. and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as personal flight. Day visual flight rules conditions prevailed for the flight, which did not operate on a flight plan. The local flight originated from OSH.

The rear seat passenger was a volunteer at Experimental Aircraft Association (EAA) Airventure Oshkosh 2014. She asked for a ride in the Breezy. During an interview, she said that Federal Aviation Administration (FAA) and volunteer staff get priority for flights. She stated that prior to the ride she signed a waiver in reference to the flight and recalled getting a safety brief on where to keep hands and feet placed. The brief included a warning not to have loose items. When asked how she was told to sit, she replied that she was told to keep feet on either side of seat and not to interfere with the control stick. She indicated the stick was marked, "Do not touch." She further said that she was told to keep her hands on her lap. She reported she wore headphones during the flight, which lasted about 10 minutes and subsequently said that it was a great flight. She reported that the airplane landed and indicated that it was a good landing. The airplane turned immediately to the right. The pilot pulled up and was able to land the plane for a second time, which was a good landing as well. The pilot pulled up and went in for another landing. The airplane turned right again. She stated that the airplane hit a taxiway light. She felt the lenses from the taxiway light hit her leg. She recalled seeing a truck and the airplane pull up. She thought the airplane was not going to clear the truck. She recalled that the airplane hit the truck and felt being separated from the airplane. She recalled flying through the air and waking up on the ground. She could not move her left arm and remembered asking for help. She then remembered waking up in the ambulance.

A pilot in the airplane trailing the Breezy stated that he was cleared to land while flying a left base to runway 36R from FISKE [an intersection south of OSH]. He saw two airplanes in front of his airplane. One was a white or light colored high wing airplane that was just turning from a right base to final for 36R, and the second was a high wing airplane, a Breezy, on right downwind. He turned final behind the Breezy. The controller was giving instructions to the high wing and the Breezy. It appeared to the pilot that the controller was concerned about the high wing airplane and Breezy spacing and the fact that his airplane was a faster airplane behind both of them. The controller referred to the pilot's airplane as a Mooney, which the pilot did not "pick up on right away." However, his passenger did recognize the reference to Mooney. When the pilot was on short final, he heard the controller tell the Breezy to "pick it

up a bit" or words to that affect, and that a Mooney was behind him. The pilot's statement, in part, said:

At that point, just prior to my touching down on the numbers, the Breezy became airborne again and flew no more than 10 feet off the ground for a couple hundred feet. Once I was on the ground, I heard the controller tell the Breezy he could set it down. The Breezy landed again, and quickly veered to the left, but stayed on the runway. The Breezy then corrected his ground track and appeared to be back on the centerline for a short time before veering off the right side of the runway and onto the grass. He seemed to correct his course again and was able to travel straight ahead and in parallel with the runway but on the grass for a short time, but he then became airborne again. He left the ground and travelled nose high and right wing low towards the east where a row of military vehicles were parked. These vehicles were facing the airport and in a row paralleling the runway from north to south.

As the Breezy attempted to clear the military vehicles in a nose high attitude, it appeared that the tail of the aircraft hit a vehicle causing the aircraft to flip over. The aircraft became to rest on its back on top of the military vehicles. I was about 100 yards behind the Breezy at the time he impacted the vehicles. As we taxied by the Breezy I could see a small fire had started away from the aircraft to the north east approximately 20 feet or so. I did see the pilot hanging upside down in his harness still attached to the aircraft. I only saw his upper torso and legs. I did not see his head. I also did not see the passenger and was unaware there was one until later that day.

I did not see anything fall off the Breezy during the time it was flying or on the ground prior to it hitting the military vehicle. I saw no debris on the runway. I lost sight of the light colored high wing just prior to touching down.

The airplane impacted parked armored Oshkosh vehicles and a ground fire occurred where the airplane came to rest. First responders extinguished the fire and transported the pilot and passenger to local hospitals. The pilot subsequently died from the injuries sustained during the accident.

Pilot Information

Certificate:	Commercial	**Age:**	74
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	Glider	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	May 21, 2014
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 2490 hours (Total, all aircraft)		

Passenger Information

Certificate:		**Age:**	
Airplane Rating(s):		**Seat Occupied:**	Rear
Other Aircraft Rating(s):		**Restraint Used:**	Lap only
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	No
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

The 74-year-old pilot held a FAA commercial pilot certificate with airplane single-engine land, multiengine land, single-engine sea, glider, and instrument airplane ratings. The pilot held a FAA third-class medical certificate, dated May 21, 2014, with a limitation to wear corrective lenses. On the application for that certificate, he reported that he had accumulated 2,490 hours of total flight time and 15 hours of flight time in six months prior to the medical certificate.

Aircraft and Owner/Operator Information

Aircraft Make:	ZIMMERMAN	**Registration:**	N3AZ
Model/Series:	BREEZY NO SERIES	**Aircraft Category:**	Airplane
Year of Manufacture:	1998	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	JD1
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	July 10, 2014 Condition	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	O-235-C1
Registered Owner:	A Z AIR LEASE INC	**Rated Power:**	115 Horsepower
Operator:	Pilot	**Operating Certificate(s) Held:**	None

N3AZ was an experimental amateur-built Zimmerman Breezy high-wing, propeller-driven, fixed landing gear, tandem two-seat airplane with serial number JD1. A review of the airplane's logbooks revealed that the airplane had accumulated a total time of 1,230.6 hours at the last condition inspection, dated July 10, 2014, which was endorsed by the airplane builder who held a repairman certificate for the accident airplane. The airplane was powered by a Lycoming O-235-C1 with serial number 5795-15. The engine data plate indicated that it was rated at 108 horsepower at 2,600 rpm. The logbook endorsement revealed that the engine had accumulated 94.2 hours total time at the last condition inspection.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KOSH,839 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	08:53 Local	**Direction from Accident Site:**	350°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	300°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	20°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Oshkosh, WI (OSH)	**Type of Flight Plan Filed:**	None
Destination:	Oshkosh, WI (OSH)	**Type of Clearance:**	VFR
Departure Time:		**Type of Airspace:**	

At 0853, the recorded weather at OSH was: Wind 300 degrees at 6 knots; visibility 10 statute miles; sky condition clear; temperature 20 degrees C; dew point 16 degrees C; altimeter 30.00 inches of mercury.

Airport Information

Airport:	WITTMAN RGNL OSH	**Runway Surface Type:**	Concrete
Airport Elevation:	808 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	36R	**IFR Approach:**	None
Runway Length/Width:	5500 ft / 50 ft	**VFR Approach/Landing:**	Full stop

OSH, located approximately two miles south of downtown Oshkosh, Wisconsin, was a towered airport, owned by Winnebago County, with a surveyed field elevation of 808 feet above mean sea level. The airport's primary runways are runway 9/27 (6,178 feet by 150 feet, asphalt) and runway 18/36 (8,002 feet by 150 feet). However, during AirVenture, permission has been granted to allow the use of its parallel taxiway as a runway. Runway 18/36 becomes 18R/36L and taxiway A becomes 18L/36R under special flight procedures that were effective from 0600 on July 25 to Noon on August 4, 2014. The temporary runway was about 50 feet wide and was about 5,500 feet in length from its threshold to the A2 intersection. The temporary runway was about 2,750 feet in length from its threshold to the A3 intersection and was about 1,325feet in length from its threshold to the A4 intersection.

The EAA website, www.airventure.org, provided pilots with information about air traffic control procedures and aircraft movement on the ground. The website listed approximate available runway lengths associated with colored dots on runway 36L. The website did not list the approximate runway lengths associated with intersections on temporary runway 36R.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 Serious	**Latitude, Longitude:**	43.972221,-88.554168(est)

The airplane fuselage was found resting on its right side on the rear section of an armored Oshkosh vehicle parked in a grass area east of runway 36R and north of the A4 taxiway. This armored vehicle's rear passenger-side tire and chassis was charred and discolored. Other armored Oshkosh vehicles parked south of this vehicle exhibited witness marks that were oriented in the direction of the resting fuselage. Debris, consisting of pieces of fuselage frame tubing, a section of left main landing gear structure, and laminated wood shards, were located between the other armored vehicles and the airplane fuselage.

The airplane's right wing, engine, and right main landing gear structure were found resting on the ground behind the charred rear passenger-side tire. The right wing was fabric was consumed by fire and its aileron control cables were traced to its bellcrank. The engine throttle linkage was intact and the mixture control was safety wired in the full rich position. The carburetor heat linkage was intact on the intake bracket. The wooden propeller hub remained attached to the engine propeller flange. However, its blades were not in place.

The left wing separated from the fuselage and was found about 25 feet north of the fuselage. Its aileron control cable ends were found outside the wing, separated in a broomstraw appearance consistent with overload. The aileron moved when the separated cables were pulled by hand. The empennage separated from the fuselage and the empennage was found about 55 feet north of the fuselage.

Flight control cables were traced and all observed breaks were consistent with overload. Examination of the engine controls cables revealed no pre-impact anomalies.

An examination of runway 36R revealed no debris or separated parts on the runway. The grass infield area east of runway 36R and north of the A4 taxiway exhibited a path of disturbed grass from the edge of the runway through the infield in a northeast direction toward parked armored Oshkosh vehicles. There was a section of runway abeam the start of the path in the grass that exhibited a depression consistent with spalling. An airport edge light consistent with a taxiway light was found separated from its base. The light's separated support stem was found on the ground in the disturbed grass path through the infield.

The wreckage was relocated and further examined. The engine was lifted by a hoist and a sparkplug was removed from each cylinder. The removed sparkplugs did not exhibit any anomalies. The propeller hub was turned by hand and all cylinders produced a thumb compression. The right magneto produced spark at its four distributor cap lead towers when its impulse coupling was rotated by hand. The left magneto exhibited internal heat damage when it was disassembled. It produced spark at its center electrode when

its impulse coupling was rotated by hand. The carburetor fuel screen was removed and no debris was found in it. The gascolator housing exhibited a soot colored discoloration. Its bowl was not in place. All three wheels were rotated by hand and they exhibited no binding. The Hobbs meter indicated 1,251.3 hours.

Communications

A transcription, which covered the OSH Airport Traffic Control Tower (ATCT) radio communications for the time period from July 31, 2014 , 0847, to July 31, 2014 ,0909 was reviewed. The transcript, in part, stated:

Agencies Making Transmissions Abbreviations
Breezy N3AZ
Local Control South LCS
...

0852:44 N3AZ breezy ready papa three

0852:47 LCS breezy ah roger hold short of runway three six left

0852:50 N3AZ breezy

0853:57 LCS breezy runway three six left ah line up and wait

0854:00 N3AZ line up

0854:28 LCS breezy cleared for takeoff runway three six left

0857:08 N3AZ breezy turning base ah following the tail dragger

0857:12 LCS okay breezy thank you sir you're going to follow that taildragger runway three six right you are cleared to land

0857:16 N3AZ breezy

0857:29 LCS mooney left base ah you're cleared to land you're following the breezy just turning the ah base for runway three six right mooney three six right you're cleared to land mooney

0858:14 LCS aeroshell ah runway three six left you're cleared to land breezy go ahead and set it down now that that tail dragger's going to set it down here shortly

0858:31 LCS cirrus or mooney type go ahead and ah keep a high speed

taxi you're following that breezy ahead breezy go ahead and set it down now taildragger on the runway keep it ah keep the speed up for me please sir keep the speed up for me please

0858:41 N3AZ (unintelligible)

0859:00 LCS okay ah ford go around for me ah mooney ah just keep it ah just keep it goin down the taxiway for me please ford go around and ah aeroshell team go around for me p lease all aircraft inbound from fisk ah we're going to be ah ah you're we' re going to have to turn back up to ripon for me all aircraft inbound from fisk turn to ripon for me please ah big ford ah go ahead and take it ah take it south ah just continue on the upwind now and ah you turn right abeam the tower for me please

0859:31 LCS cher cherokee in the aeroshell team there cherokee just sidestep to the right for me please and go around keep the up wind turn ah just keep the upwind for me

Flight recorders

A GoPro camera, belonging to the passenger, was found in the wreckage. It was shipped to the National Transportation Safety Board Vehicle Recorder Laboratory. The camera video files were corrupt and were recovered. The recovered camera files did not contain data associated with the accident.

Medical and Pathological Information

An autopsy was performed on the pilot by the Winnebago County Coroner's Office. The autopsy listed multiple blunt force injuries as the cause of death.

The FAA Civil Aerospace Medical Institute prepared a Final Forensic Toxicology Accident Report. The report was negative for the tests performed.

Fire

The airplane's right wing and a ground vehicle's rear passenger side exhibited discoloration, charring, and deformation consistent with a ground fire. Witness statements confirmed the fire was consistent with a ground fire.

Tests and Research

Pictures supplied to the NTSB investigator in charge revealed that there was a high wing airplane, which was landing in front of the Breezy airplane. The images revealed the separation between the high wing airplane and the Breezy was decreasing prior to the Breezy exiting the runway.

Additional Information

During the interview, the rear seat passenger stated that she did not see anything fall off the airplane and did not see anything break. She said that the pilot did not do preflight inspections between flights. He shut down the engine, the passenger would get off the airplane, and the next would get on the airplane. She did not recall an airplane in front of the Breezy during the landing. She stated that the engine did not sputter or have any unusual sounds. The passenger asked if there is "any way to get these parked trucks moved?" She said a Mooney previously hit similarly parked trucks in a prior accident at OSH.

The impacted vehicles were parked outside of the safety area associated with the temporary runway.

The information provided to pilots on the EAA website, in part, stated:

Change of Plans
Be prepared! The control instructions may change from what you were initially told. For instance you may have been instructed to "land on the numbers". This would have been issued if there was another aircraft ahead of you landing at the Purple Dot, however by the time you reach the runway…

The other aircraft has exited the runway, therefore the controller may now instruct you to "land on the Purple Dot" which will allow for another aircraft to land behind you (on the numbers) and still provide for allowable runway separation.

These "last minute" adjustments will probably occur no matter what runway you land on. The only difference will be the description of the touchdown point ("the numbers" or Purple Dot).

Stay alert for traffic ahead of you on final and also for any potential traffic that may be sequenced from the right base.

Administrative Information

Investigator In Charge (IIC):	Malinowski, Edward
Additional Participating Persons:	Ray P Yank; Federal Aviation Administration; Milwaukee, WI
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Note:	
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