



National Transportation Safety Board Aviation Accident Preliminary Report

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| Location: | Stevens Point, WI | Accident Number: | CEN14FA266 |
| Date & Time: | 06/01/2014, 1222 CDT | Registration: | N176FD |
| Aircraft: | YAKOVLEV YAK-55M | Injuries: | 1 Fatal |
| Flight Conducted Under: | Part 91: General Aviation - Air Race/Show | | |

On June 1, 2014, about 1222 central daylight time, a Yakovlev model YAK-55M airplane, N176FD, was substantially damaged when it impacted terrain during an aerobatic flight over the Stevens Point Municipal Airport (STE), Stevens Point, Wisconsin. The airline transport pilot was fatally injured. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 without a flight plan. Day visual meteorological conditions prevailed for the local airshow demonstration flight that departed about 1220.

The flight team manager, who also provided the public-announcement during the accident flight, reported that the accident flight began with the airplane rolling inverted shortly after liftoff, followed by a shallow inverted climb past show-center. The airplane then rolled upright before entering a 90-degree turn away from show-center and the crowd. The airplane continued to climb, while on the opposite heading used for the takeoff, before it turned back to the runway heading and reentered the aerobatic box. The airplane then rolled inverted before it entered a 45-degree dive toward show-center. The airplane then completed several descending aileron rolls before it rolled wings level and entered a near vertical climb. At the apex of the climb/loop, the airplane entered an inverted flat spin.

Ground-based video footage showed that the airplane completed 3-1/2 rotations in the inverted flat spin before it entered a near vertical dive. The video footage then showed a momentary increase in airplane pitch, achieving a positive deck angle of about 20-degrees, before the airplane entered a rapid left roll. The airplane then entered a nose-down left descending spiral into terrain.

A postaccident examination established that the airplane impacted terrain in a near vertical attitude. Flight control continuity was confirmed from all flight control surfaces to their respective cockpit controls. The engine was located in a 2-1/2 feet deep impact crater and remained partially connected to the firewall. Three engine cylinders had partially separated from the crankcase, which prevented the engine from being rotated. After removing several cylinders, an internal examination did not reveal any mechanical discontinuities within the engine drivetrain. The No. 1 magneto exhibited impact damage that prevented a functional test. The No. 2 magneto provided a spark on all leads when rotated. All three propeller blades

exhibited damage consistent with the engine producing power at the time of impact. The postaccident examination of the airplane did not reveal any mechanical anomalies that would have prevented normal operation. A handheld GPS and GoPro video camera were recovered from the wreckage and were sent to the National Transportation Safety Board (NTSB) Vehicle Recorder Laboratory for readout.

Aircraft and Owner/Operator Information

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| Aircraft Manufacturer: | YAKOVLEV | Registration: | N176FD |
| Model/Series: | YAK-55M | Aircraft Category: | Airplane |
| Amateur Built: | No | | |
| Operator: | William M. Cowden | Air Carrier Operating Certificate: | None |

Meteorological Information and Flight Plan

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|---|--------------------------|-------------------------------------|-------------------------|
| Observation Facility, Elevation: | STE, 1110 ft msl | Observation Time: | 1215 CDT |
| Lowest Cloud Condition: | | Conditions at Accident Site: | Visual Conditions |
| Lowest Ceiling: | Broken / 2900 ft agl | Temperature/Dew Point: | 26° C / 19° C |
| Wind Speed/Gusts, Direction: | 14 knots/ 21 knots, 200° | Visibility | 10 Miles |
| Altimeter Setting: | 29.9 inches Hg | Type of Flight Plan Filed: | None |
| Departure Point: | Stevens Point, WI (STE) | Destination: | Stevens Point, WI (STE) |

Wreckage and Impact Information

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|----------------------------|---------|----------------------------|-------------|
| Crew Injuries: | 1 Fatal | Aircraft Damage: | Substantial |
| Passenger Injuries: | N/A | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 1 Fatal | | |

Administrative Information

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| Investigator In Charge (IIC): | Andrew T Fox |
| Additional Participating Persons: | Darrell C McCullion; Federal Aviation Administration - Milwaukee FSDO; Milwaukee, WI |