National Transportation Safety Board
Aviation Accident Final Report

Location:	St. Louis, MO	**Accident Number:**	CEN09LA335
Date & Time:	06/02/2009, 1820 CDT	**Registration:**	N76456
Aircraft:	CESSNA 140	**Aircraft Damage:**	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The accident occurred during the second flight since the airplane had undergone maintenance on the left flap assembly. The pilot reported hearing a loud bang shortly after liftoff, which was followed by repeated banging from behind his position. He performed an immediate landing, touching down with about 50 feet of runway remaining. The airplane overran the end of the runway and nosed over in a wheat field. A post-accident inspection revealed that the upper half of the left inboard wing fairing was bent upward and aft. The one-piece fairing was properly secured to the lower wing structure, but none of the five upper screws were located. The fairing upper screw holes did not exhibit any damage. This lack of damage was not consistent with a progressive loss of the upper screws during flight. The fairing had been removed during the recent flap maintenance. According to the mechanic who performed the maintenance, the fairing was reinstalled in the presence of several individuals, including the pilot, and that all of the screws were installed before he returned the airplane to service. According to the pilot, during his preflight inspection he visually confirmed that the screws were installed, although he did not verify their security.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The improper installation of the wing fairing during recent maintenance, which resulted in the partial separation of the fairing shortly after takeoff.

Findings

Aircraft	Aerodynamic fairings structure - Incorrect service/maintenance (Cause)
Personnel issues	Installation - Maintenance personnel (Cause)
Environmental issues	Rough terrain - Contributed to outcome

Factual Information

On June 2, 2009, about 1820 central daylight time, a Cessna 140, N76456, owned and piloted by a private pilot was substantially damaged when it nosed over during an aborted takeoff at the Creve Coeur Airport (1H0), near St. Louis, Missouri. Visual meteorological conditions prevailed at the time of the accident. The personal flight was operating under the provisions of 14 Code of Federal Regulations Part 91 without a flight plan. The pilot was not injured. The local area flight departed about 5 minutes before the accident.

The accident occurred during the second flight since the airplane had undergone maintenance on the left flap assembly. The first flight was performed within an hour of the accident and consisted of four landings at 1H0. The airplane was refueled between the two flights.

The pilot stated that he departed on runway 16 and entered a right traffic pattern for runway 25 (3,120 feet by 220 feet, grass) to perform two additional landings. The first landing was uneventful and he back-taxied to the approach end of runway 25 before initiating his second takeoff. He reported hearing a loud bang shortly after liftoff, about 30 feet above the runway, which was followed by repeated banging from behind his position. He performed an immediate landing, touching down with about 50 feet of runway remaining. The airplane overran the end of the runway, crossed over a taxiway and runway 16, before entering a wheat field. The airplane nosed over as it decelerated in the wheat crop, substantially damaging the vertical stabilizer, rudder, and aft fuselage. The propeller, spinner, engine mounts, both flaps, and the right aileron were also damaged.

Examination of the wreckage revealed that the upper half of the left inboard wing fairing was bent upward and aft. The one-piece aluminum fairing forms the trailing edge and is located between the inboard edge of the flap and the fuselage. The fairing is secured to the upper and lower wing structure with screws. The fairing remained attached to the lower wing structure by its corresponding screws. None of the five upper screws were located. The upper screw holes on the fairing sheet metal and their corresponding holes and nut-plates on the wing structure did not exhibit any damage.

The fairing had been removed during the recent flap maintenance. According to the mechanic who performed the maintenance, the fairing was reinstalled in the presence of several individuals, including the pilot, and that all of the screws were installed before he returned the airplane to service. According to the pilot, during his preflight inspection he visually confirmed that the screws were installed, although he did not verify their security.

History of Flight

Prior to flight	Aircraft maintenance event
Takeoff	Sys/Comp malf/fail (non-power) (Defining event)
Landing-landing roll	Runway excursion Nose over/nose down

Pilot Information

Certificate:	Private	**Age:**	48, Male
Airplane Rating(s):	Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With Waivers/Limitations	**Last Medical Exam:**	04/09/2009
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	07/05/2008
Flight Time:	596 hours (Total, all aircraft), 224 hours (Total, this make and model), 564 hours (Pilot In Command, all aircraft), 5 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	**Registration:**	N76456
Model/Series:	140	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	10888
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	09/15/2008, Annual	**Certified Max Gross Wt.:**	1450 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3762 Hours	**Engine Manufacturer:**	Teledyne Continental Motors
ELT:	Installed, not activated	**Engine Model/Series:**	C85-12
Registered Owner:	Richard L. Fiser	**Rated Power:**	85 hp
Operator:	Richard L. Fiser	**Air Carrier Operating Certificate:**	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	KSTL, 654 ft msl	**Observation Time:**	1751 CDT
Distance from Accident Site:	7 Nautical Miles	**Condition of Light:**	Day
Direction from Accident Site:	90°	**Conditions at Accident Site:**	Visual Conditions
Lowest Cloud Condition:	Clear	**Temperature/Dew Point:**	26°C / 17°C
Lowest Ceiling:	None	**Visibility**	10 Miles
Wind Speed/Gusts, Direction:	5 knots, 190°	**Visibility (RVR):**	
Altimeter Setting:	29.91 inches Hg	**Visibility (RVV):**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	St. Louis, MO (1H0)	**Type of Flight Plan Filed:**	None
Destination:	St. Louis, MO (1H0)	**Type of Clearance:**	None
Departure Time:	1815 CDT	**Type of Airspace:**	Class G

Airport Information

Airport:	Creve Coeur Airport (1H0)	**Runway Surface Type:**	Grass/turf
Airport Elevation:	463 ft	**Runway Surface Condition:**	Dry
Runway Used:	25	**IFR Approach:**	None
Runway Length/Width:	3120 ft / 220 ft	**VFR Approach/Landing:**	Touch and Go

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	Andrew T Fox	**Adopted Date:**	10/19/2009
Additional Participating Persons:	Douglas Makurat; Federal Aviation Administration; St. Ann, MO		
Publish Date:	10/20/2009		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=73958		