



National Transportation Safety Board Aviation Accident Data Summary

Location:	Escalon, CA	Accident Number:	WPR10LA126
Date & Time:	02/02/2010, 1400 PST	Registration:	N9286U
Aircraft:	ARROW FALCON EXPORTERS INC OH-58A	Injuries:	1 Serious
Flight Conducted Under:	Part 91: General Aviation - Positioning		

Analysis

The pilot had reported to his mechanic prior to the accident flight that the helicopter was not producing full power, was vibrating heavily, and that the DC generator caution light had illuminated. He also reported that his work load was heavy, and that he would continue onwards to return the helicopter to its home base. Shortly after takeoff the engine lost power, the pilot performed a forced landing, and the helicopter collided with terrain. Examination of the engine revealed that a stainless steel pneumatic fuel-to-governor control line had failed at its fitting. Witness marks on the line revealed that it had been rubbing against an adjacent oil line. Additionally, the pneumatic line had been bent during installation such that its surface was in contact with the connector ferrule. Analysis of the line's fracture surface revealed indications of high cycle fatigue. The fuel controller was replaced about 26 flight hours prior to the accident; replacement of the controller would have required the removal and installation of the failed line. The engine manufacturer provided installation guidance in multiple publications, and specifically cautioned against improper installations of engine lines. Examination of the DC starter-generator revealed that it had experienced a partial mechanical failure, which was likely the reason the pilot felt a vibration and observed a dc generator caution light. During the investigation the failed line was replaced, and the engine was successfully run in a test cell throughout its power range.

Flight Events

Prior to flight - Aircraft maintenance event
Enroute - Powerplant sys/comp malf/fail
Enroute - Loss of engine power (partial)
Emergency descent - Collision with terr/obj (non-CFIT)

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power during cruise flight due to the fatigue failure of the pneumatic fuel-to-governor control line. Also causal was the inadequate installation of the pneumatic line by maintenance personnel, and the pilot's decision to continue flight with a known discrepancy.

Findings

Aircraft-Aircraft handling/service-Maintenance/inspections-(general)-Incorrect service/maintenance - C
Aircraft-Aircraft power plant-Engine fuel and control-(general)-Fatigue/wear/corrosion - C
Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Pilot - C

Pilot Information

Certificate:	Commercial	Age:	68
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Instrument Rating(s):	Airplane
Other Aircraft Rating(s):	Helicopter	Instructor Rating(s):	None
Flight Time:	12928 hours (Total, all aircraft), 3010 hours (Total, this make and model), 30 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	ARROW FALCON EXPORTERS INC	Registration:	N9286U
Model/Series:	OH-58A	Engines:	1 Turbo Shaft
Operator:	On file	Engine Manufacturer:	Rolls-Royce
Air Carrier Operating Certificate:		Engine Model/Series:	T63-A-720
Flight Conducted Under:	Part 91: General Aviation - Positioning		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	KMOD, 97 ft msl	Weather Information Source:	Weather Observation Facility
Conditions at Accident Site:	Visual Conditions	Lowest Ceiling:	Broken / 1300 ft agl
Condition of Light:	Day	Wind Speed/Gusts, Direction:	4 knots, 10°
Temperature:	12° C / 8° C	Visibility	4 Miles
Precipitation and Obscuration:	Haze; No Precipitation		
Departure Point:	Escalon, CA	Destination:	Modesto, CA

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	Eliott Simpson	Adopted Date:	10/21/2010
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=75333		

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