



National Transportation Safety Board Aviation Incident Final Report

Location:	Orlando, FL	Incident Number:	NYC07IA164
Date & Time:	07/11/2007, 1215 EDT	Registration:	N105GC
Aircraft:	Piper PA-31-350	Aircraft Damage:	Minor
Defining Event:		Injuries:	1 None

Flight Conducted Under: Part 91: General Aviation - Positioning

Analysis

The airplane had undergone routine maintenance, and was returned to service on the day prior to the incident flight. The mechanics who performed the maintenance did not secure the right engine cowling using the procedure outlined in the airplane's maintenance manual. The mechanic who had been working on the outboard side of the right engine could not remember if he had fastened the three primary outboard cowl fasteners before returning the airplane to service. During the first flight following the maintenance, the right engine's top cowling departed the airplane. The pilot secured the right engine, but the airplane was unable to maintain altitude, so he then identified a forced landing site. The airplane did not have a sufficient glidepath to clear a tree line and buildings, so he landed the airplane in a clear area about 1,500 yards short of the intended landing area. The airplane came to rest in a field of scrub brush, and about 5 minutes after the pilot deplaned, the grass under the left engine ignited. The subsequent brush fire consumed the airplane. Examination of the right engine cowling revealed that the outboard latching fasteners were set to the "open" position. When asked about the security of the cowling during the preflight inspection, the pilot stated that he "just missed it."

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: The mechanic's failure to secure the right engine cowling fasteners. Contributing to the incident was the pilot's inadequate preflight inspection.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: CRUISE

Findings

1. COOLING SYSTEM,COWLING - NOT SECURED
2. (C) PROCEDURES/DIRECTIVES - NOT FOLLOWED - COMPANY MAINTENANCE PERSONNEL
3. (F) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Factual Information

On July 11, 2007, about 1215 eastern daylight time, a Piper PA-31-350, N105GC, was undamaged following a forced landing to a field near Orlando, Florida. The certificated airline transport pilot was not injured. Visual meteorological conditions prevailed, and the airplane was operating on an instrument flight rules flight plan, destined for Orlando International Airport (MCO), Orlando, Florida. The positioning flight, which departed Melbourne International Airport (MLB), Melbourne, Florida, at 1143, was conducted under 14 Code of Federal Regulations (CFR) Part 91.

According to the operator, the airplane had undergone routine maintenance, and was returned to service on the day prior to the incident flight. The purpose of the incident flight was to reposition the airplane to MCO and pick up passengers for a 14 CFR Part 135 revenue flight. The incident flight was the first since the airplane was returned to service.

While in cruise flight at 4,000 feet msl, the pilot heard a "loud bang," and saw that the right forward windscreen and right side window had broken. He then saw that the right engine's top cowling was missing, and felt the aircraft "shudder" as it began to descend. The "strong vibration" of the airframe continued, and the pilot elected to secure the right engine, and continued to the airplane toward MCO, the nearest suitable airport. Although full power was applied to the left engine, the airplane would not maintain altitude, so the pilot attempted to land the airplane on a paved site he had identified. The pilot subsequently realized, while attempting to land, that the airplane did not have a sufficient glidepath to clear a tree line and buildings, and landed the airplane in a clearing about 1,500 yards short of the intended landing area.

The airplane came to rest in a field of scrub brush, and about 5 minutes after the pilot deplaned, the grass under the left engine ignited. The subsequent brush fire consumed the airplane.

The pilot held an airline transport pilot certificate with ratings for airplane single and multiengine land, and instrument airplane. He reported 13,000 total hours of flight experience, 200 hours of which were in the incident airplane make and model.

Examination of the remaining portion of the right engine cowling, by Federal Aviation Administration inspectors, revealed that the outboard latching fasteners were set to the "open" position.

During an interview with company personnel, the mechanics who had performed the most recent maintenance on the airplane stated that they were comfortable with the cowling installation procedure, and did not reference the aircraft maintenance manual. A subsequent review of the maintenance manual revealed that the procedure the mechanics used was not the one described in the manual. The mechanic who had been working on the outboard side of the engine stated that he was not certain that he fastened the three primary outboard cowl fasteners before he left the airplane during the installation to retrieve a step ladder. Additionally, when asked about the security of the cowling during the preflight inspection, the pilot stated that he "just missed it."

Pilot Information

Certificate:	Airline Transport	Age:	54, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 With Waivers/Limitations	Last FAA Medical Exam:	11/01/2006
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	04/01/2007
Flight Time:	13 hours (Total, all aircraft), 200 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N105GC
Model/Series:	PA-31-350	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	31-7652130
Landing Gear Type:	Retractable - Tricycle	Seats:	10
Date/Type of Last Inspection:	07/01/2007, AAIP	Certified Max Gross Wt.:	7388 lbs
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	TIO-540
Registered Owner:	Baercraft Leasing LLC	Rated Power:	350 hp
Operator:	Baer Air, Inc.	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	BP5A

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	MCO, 96 ft msl	Distance from Accident Site:	12 Nautical Miles
Observation Time:	1153 EDT	Direction from Accident Site:	310°
Lowest Cloud Condition:	Scattered / 2800 ft agl	Visibility	10 Miles
Lowest Ceiling:	Broken / 3500 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.12 inches Hg	Temperature/Dew Point:	32° C / 26° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Melbourne, FL (MLB)	Type of Flight Plan Filed:	IFR
Destination:	Orlando, FL (MCO)	Type of Clearance:	None
Departure Time:	1143 EDT	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Minor
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	28.366667, -81.083333

Administrative Information

Investigator In Charge (IIC):	Dennis J Diaz	Report Date:	02/28/2008
Additional Participating Persons:	Steven Brady; FAA/FSDO; Orlando, FL		
Publish Date:	02/11/2009		
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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