



National Transportation Safety Board

Aviation Accident Data Summary

Location:	Modesto, CA	Accident Number:	LAX07LA263
Date & Time:	09/01/2007, 1748 PDT	Registration:	N13WA
Aircraft:	Piper PA-22-150	Injuries:	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot reported that within minutes following takeoff on each of the two flights that preceded the accident flight, he had experienced smoke in the cockpit and promptly landed. The accident occurred following the pilot's attempted repairs to his airplane and during the third attempted flight. The pilot reported that within minutes after takeoff, he observed smoke in the cabin and saw flames near his feet. With diminishing visibility due to smoke filling the cockpit, the pilot returned to the airport and landed. The passenger exited the airplane before it rolled to a stop, and the pilot followed shortly thereafter. The airplane was consumed by the fire. The pilot had attempted to investigate the first and second smoke in the cockpit events, with the assistance of personnel from a local fixed base operator, and found a loose hose. The pilot opted to purchase a hose attachment clamp from a neighborhood consumer supply store, and thereafter proceeded with its installation. No maintenance entry was accomplished for the work. The subsequent investigation revealed that the precipitating smoke event was not related to the hose, but rather was due to a burn through of the airplane's exhaust muffler. FAA inspectors examined the airplane and found that the engine exhaust muffler had burned through at the bottom left end and the hole permitted engine exhaust gasses and flames to be directed into the engine compartment and toward the firewall. The exhaust heat had also ruptured an aluminum hydraulic brake line, mounted on the firewall, which added to the fire. An examination of the airplane's maintenance records revealed that an annual inspection had been performed on July 6, 2007, 2.5 operating hours prior to the accident. The airplane's listed time in service was 3,104.3 hours. The logbook signoff included the statement that the airplane was found to be in an airworthy condition, and airworthiness directive 68-05-01 (exhaust inspection) had been complied with. Airworthiness Directive 68-05-01 became effective in 1968, and it requires inspections of exhaust mufflers installed in specific models of airplanes, including the accident airplane. The inspection directs that muffler assemblies (with over 950 hours in service) be examined for signs of cracks, corrosion, burn-throughs, heat damage, collapsed stack, or weld separations. According to Piper Service Letter number 324C, which was incorporated in the airworthiness directive, an exhaust and heat exchange system, which has been permitted to deteriorate due to age, poor inspection and maintenance, can conceivably cause "engine compartment originated fires in flight."

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the airplane's exhaust muffler during takeoff that was due to an inadequate annual inspection. Contributing to the accident were the pilot's inadequate inspection to isolate the smoke source, and the pilot's decision to continue flight with an unresolved maintenance problem.

Findings

Occurrence #1: FIRE

Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (C) EXHAUST SYSTEM,MUFFLER - FAILURE
2. (C) MAINTENANCE,ANNUAL INSPECTION - INADEQUATE - OTHER MAINTENANCE PERSONNEL
3. (F) MAINTENANCE,COMPLIANCE WITH AD - NOT PERFORMED - OTHER MAINTENANCE PERSONNEL
4. (F) REMEDIAL ACTION - IMPROPER - PILOT IN COMMAND
5. (F) IMPROPER DECISION - PILOT IN COMMAND
6. (F) OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - CONTINUED - PILOT IN COMMAND

Pilot Information

Certificate:	Private	Age:	52
Airplane Rating(s):	Single-engine Land	Instrument Rating(s):	None
Other Aircraft Rating(s):	None	Instructor Rating(s):	None
Flight Time:	350 hours (Total, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N13WA
Model/Series:	PA-22-150	Engines:	1 Reciprocating
Operator:	William A. Supan	Engine Manufacturer:	Lycoming
Operating Certificate(s) Held:	None	Engine Model/Series:	O-320-A1A
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	MOD, 97 ft msl	Weather Information Source:	Weather Observation Facility
Lowest Ceiling:	None	Wind Speed/Gusts, Direction:	10 knots / , 330°
Temperature:	39° C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Modesto, CA (MOD)	Destination:	(MOD)

Airport Information

Airport:	Modesto City (MOD)	Runway Surface Type:	Asphalt
Runway Used:	28R	Runway Surface Condition:	Dry
Runway Length/Width:	5911 ft / 150 ft		

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Serious	Aircraft Fire:	In-Flight
Ground Injuries:	N/A	Aircraft Explosion:	None
Latitude, Longitude:	37.625833, -120.954444		

Administrative Information

Investigator In Charge (IIC):	Wayne Pollack	Adopted Date:	07/30/2008
Investigation Docket:	NTSB accident and incident docket 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 pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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