



National Transportation Safety Board Aviation Accident Data Summary

Location:	BRAWLEY, CA	Accident Number:	LAX00LA087
Date & Time:	02/02/2000, 1500 PST	Registration:	N23043
Aircraft:	Air Tractor AT-301	Injuries:	1 Serious
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot was spraying sulfur on a carrot field when he lost engine power and made a forced landing in an alfalfa field, coming to rest inverted. The pilot had noted an increase in oil consumption the day of the accident. A witness observed two puffs of black smoke emanate from the airplane prior to making the forced landing. During the engine inspection it was noted that the number 5 exhaust rocker arm was found broken. Further disassembly of the number 5 cylinder revealed that the exhaust push rod was bent; due to the appearance and length it was determined that it was the intake push rod. When the exhaust push rod and the intake push rod were placed side-by-side, the intake push rod was the longer of the two and the one that was bent. Maintenance personnel stated that the only way an intake push rod could be installed in the exhaust side of the cylinder was to loosen the cylinder and pull it away from the case to allow for an increased distance between the rocker arm and lifter. When the cylinder was re-torqued, with the push rods in a switched configuration, the intake push rod would bend in the exhaust housing due to its length. After replacement of the pushrods and broken rocker arm, an engine run was conducted with no anomalies noted. Review of the engine logbook revealed that a major overhaul had been conducted on the engine approximately 3 months prior to the accident. Records indicated a mechanic and inspector conducted an inspection of the cylinders and associated components; the engine was test run with no discrepancies and then inspected by a different mechanic and inspector and signed off by all four individuals as being in airworthy condition and returned to service. A review of the engine logbooks also revealed that maintenance had been performed on the airplane since the overhaul, but not in the area of the number 5 cylinder.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Failure of the engine due to improper installation of the intake and exhaust push rods (components were switched) by unknown maintenance personnel.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. (C) ENGINE ASSEMBLY,PUSH ROD - BENT
2. (C) MAINTENANCE,OVERHAUL - IMPROPER - OTHER MAINTENANCE PERSONNEL
3. (C) ENGINE ASSEMBLY,ROCKER ARM/TAPPET - FAILURE,TOTAL

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

4. TERRAIN CONDITION - DITCH

Pilot Information

Certificate:	Commercial	Age:	44
Airplane Rating(s):	Single-engine Land	Instrument Rating(s):	None
Other Aircraft Rating(s):	None	Instructor Rating(s):	None
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Air Tractor	Registration:	N23043
Model/Series:	AT-301 AT-301	Engines:	1 Reciprocating
Operator:	VAL AIR CO. INC.	Engine Manufacturer:	P&W
Operating Certificate(s) Held:		Engine Model/Series:	AN1-R-1340
Flight Conducted Under:	Part 137: Agricultural		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	IPL, 0 ft msl	Weather Information Source:	Weather Observation Facility
Lowest Ceiling:	None / 0 ft agl	Wind Speed/Gusts, Direction:	Calm / ,
Temperature:	24° C	Visibility	25 Miles
Precipitation and Obscuration:			
Departure Point:		Destination:	

Airport Information

Airport:	PVT DIRT STRIP	Runway Surface Type:	
Runway Used:	0	Runway Surface Condition:	
Runway Length/Width:			

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Latitude, Longitude:			

Administrative Information

Investigator In Charge (IIC): TEALEYE C CORNEJO

Adopted Date: 07/02/2001

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 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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