



National Transportation Safety Board Aviation Accident Factual Report

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

On February 2, 2000, at 1500 hours Pacific standard time, an Air Tractor AT-301, N23043, lost engine power while maneuvering to spray sulfur on a carrot field near Brawley, California. The airplane made a forced landing in an open dirt field and came to rest inverted in an irrigation ditch after colliding with a concrete wall. The aircraft, operated by Val Air, Inc. under the provisions of 14 CFR Part 137, was destroyed by postimpact fire. The commercial pilot sustained serious injuries. Visual meteorological conditions existed for the local area agricultural operation, and no flight plan was filed. The flight had departed from a private dirt strip near the alfalfa field, and was scheduled to terminate at the same private dirt strip.

Federal Aviation Administration (FAA) inspectors interviewed the pilot. The pilot informed the FAA that he was spraying sulfur, approximately 7 feet above ground level (agl), when the engine quit. He did a magneto check, but did not receive a response and made a forced landing. During the forced landing he noted a high rate of airspeed on touchdown, and ran out of open landing area. The airplane struck a concrete wall and nosed over into an irrigation ditch. The pilot stated that the airplane had recently received a 100-hour inspection and had to be returned to the overhaul facility due to "problems," and he had noted an increase in engine oil consumption, approximately 3 gallons every 2 hours, during operations on the day of the accident.

The FAA also interviewed the ground spotter/radio man, who was in contact with the pilot. He stated that the pilot had radioed that he (the pilot) was in trouble, but did not elaborate as to the nature of the problem. The spotter observed two puffs of black smoke emanate from the airplane and then saw it crash. The spotter and two bystanders, who saw the airplane burning, aided the pilot in his egress from the airplane. The spotter was unable to put out the fire.

TESTS AND RESEARCH

A Safety Board Investigator conducted a review of the airplane's engine logbook. The review revealed that on November 17, 1999, the major overhaul for the engine was signed off by the overhaul facility, Aero Engines, Inc., and the engine was returned to the owner on December 7, 1999. A compression check was completed on January 31, 2000; however, there was not an

indication as to why a compression check was conducted.

On February 23, 2000, the engine was inspected at Aero-Engines Inc. in Los Angeles, California, by an airworthiness inspector from the Los Angeles Flight Standards District Office. The examination revealed that the magneto timing was off by 3 degrees; the timing should have been 25 degrees and was found to be 28 degrees. The number 1 cylinder was removed to verify that it was not damaged, no abnormalities were found. Fuel drained from the system appeared to be yellow in color and smelled like automobile fuel. Inspection of the carburetor revealed that it was damaged. To facilitate an engine run, the carburetor shaft was straightened. The rocker arm covers were removed from the remaining cylinders, and the number 5 exhaust rocker arm was found broken. Further disassembly showed that the exhaust push rod was bent. Upon removal of the exhaust push rod, it was noted that it had been switched with the intake push rod. The exhaust push rod is shot peened, making it dull in color, and is shorter than the intake push rod. According to the overhaul facility, the only way the push rods could be installed in a switched orientation would be for the cylinder to be loosened and pulled away from the case to allow for an increased distance between the rocker arm and lifter. However, after tightening the push rods in the switched configuration, the intake push rod would show a bend after tightening. The exhaust rocker arm was found to have shiny and peened surface at the fatigue origin. The cylinder was removed to inspect for valve piston contact with no anomalies noted. The cylinder and new exhaust and intake rocker arms, as well as push rods, were replaced and the engine was test run. The engine was run at 2,200 rpm and a magneto check was conducted at 1,800 rpm; no discrepancies were noted with the run or the magneto check.

According to records obtained from Aero-Engines, an engine inspection was completed on November 10, 1999. Records further indicate that the valves were adjusted and signed off by the mechanic, and then inspected and signed off by an inspector. The engine was placed on a test stand for an engine run. After completion of the engine run, a different mechanic and a different inspector inspected the valve installation and clearance. No discrepancies were noted, and the engine was shipped to the operator.

An FAA Airworthiness inspector from the San Diego Flight Standards District Office examined the airplane engine logbook and noted that there had been maintenance performed on the airplane since the overhaul, but not in the area of the number 5 cylinder.

Pilot Information

Certificate:	Commercial	Age:	44, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Unknown
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 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	07/01/1999
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Air Tractor	Registration:	N23043
Model/Series:	AT-301 AT-301	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Restricted	Serial Number:	301-0352
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	01/10/2000, 100 Hour	Certified Max Gross Wt.:	7000 lbs
Time Since Last Inspection:	41 Hours	Engines:	1 Reciprocating
Airframe Total Time:	5693 Hours	Engine Manufacturer:	P&W
ELT:		Engine Model/Series:	AN1-R-1340
Registered Owner:	VAL AIR CO. INC.	Rated Power:	600 hp
Operator:	VAL AIR CO. INC.	Operating Certificate(s) Held:	
Operator Does Business As:		Operator Designator Code:	LSVG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	IPL, 0 ft msl	Distance from Accident Site:	14 Nautical Miles
Observation Time:	1450 PDT	Direction from Accident Site:	170°
Lowest Cloud Condition:	Scattered / 2000 ft agl	Visibility	25 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	24° C / -1° C
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	
Departure Time:	0000	Type of Airspace:	Class G

Airport Information

Airport:	PVT DIRT STRIP	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced Landing

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
Total Injuries:	1 Serious	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	TEALEYE C CORNEJO
Additional Participating Persons:	JIM MCNAMARA; SAN DIEGO, CA
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/ .