Aviation Investigation Final Report

Location:	LAWRENCEBURG, Tennessee	**Accident Number:**	ATL00LA046
Date & Time:	April 22, 2000, 15:00 Local	**Registration:**	N6096P
Aircraft:	Air Tractor AT-401-B	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot stated that, while on an aerial application run, he heard a loud pop and observed black smoke coming from the engine exhaust. The pilot selected an area for a forced landing. While maneuvering for the landing, the airplane collided with trees. Examination of the engine disclosed that, the number 3 cylinder's exhaust valve was stuck in the open position

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power due to a stuck exhaust valve that resulted in the collision with a tree while maneuvering for the forced landing.

Findings

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

Findings
1. (C) ENGINE ASSEMBLY,ROCKER ARM/TAPPET - JAMMED

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: DESCENT - EMERGENCY

Findings
2. OBJECT - TREE(S)

Factual Information

On April 22, 2000, at 1500 central daylight time, an Air Tractor AT-401-B, N6096P, collided with trees while maneuvering for a forced landing near Lawrenceburg, Tennessee. The aerial application flight was operated by Thornton Aerial Application under the provisions of 14 CFR Part 137, with no flight plan filed. Visual weather conditions prevailed at the time of the accident. The airplane sustained substantial damage, and the commercial pilot was not injured. The flight departed Lawrenceburg, Tennessee, at 1450.

The pilot stated that he had made an application run and was pulling up when he heard a loud pop and observed black smoke coming from the engine exhaust system. The pilot selected an area for a forced landing, and while maneuvering for the landing, the airplane collided with trees. According to the pilot, "due to the low altitude of this type of operation a suitable landing spot could not be chosen."

During a subsequent examination of airframe systems, the carburetor model NAY91E1 S/N 5962942 was installed on another engine and tested for proper operation. The engine was operated at 700, 1200, 1400, 1600, and 2000 rpm for five minutes at each point. The engine was leaned with the mixture control and a normal magneto check was performed. The propeller lever was also cycled to various rpm. All operations of the carburetor were normal. Examination of the engine off of the airplane, S/N ZP10053, revealed that the number 3 cylinder's exhaust valve was stuck in the open position.

Weather conditions reported in the area at the time of the accident were favorable for the formation of carburetor ice as indicated by the icing probability curves chart.

Pilot Information

Certificate:	Commercial	**Age:**	30,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	
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:**	March 23, 2000
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	4120 hours (Total, all aircraft), 1315 hours (Total, this make and model), 3984 hours (Pilot In Command, all aircraft), 38 hours (Last 90 days, all aircraft), 21 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Air Tractor	**Registration:**	N6096P
Model/Series:	AT-401-B AT-401-B	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	0999
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	7000 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	P&W
ELT:	Not installed	**Engine Model/Series:**	R-1340
Registered Owner:	THORNTON AERIAL APPLICATION	**Rated Power:**	600 Horsepower
Operator:		**Operating Certificate(s) Held:**	
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	BNA ,599 ft msl	**Distance from Accident Site:**	75 Nautical Miles
Observation Time:	15:00 Local	**Direction from Accident Site:**	200°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	Broken / 25000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	310°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	19°C / 4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		**Type of Flight Plan Filed:**	Unknown
Destination:		**Type of Clearance:**	None
Departure Time:	14:50 Local	**Type of Airspace:**	

Airport Information

Airport:	LAWRENCE COUNTY AIRPORT 2M2	**Runway Surface Type:**	Asphalt
Airport Elevation:	936 ft msl	**Runway Surface Condition:**	
Runway Used:	35	**IFR Approach:**	None
Runway Length/Width:	4800 ft / 100 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	35.23949,-87.330558(est)

Administrative Information

Investigator In Charge (IIC):	Powell, Phillip
Additional Participating Persons:	MIKE LONAS; NASHVILLE , TN
Original Publish Date:	March 2, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49030