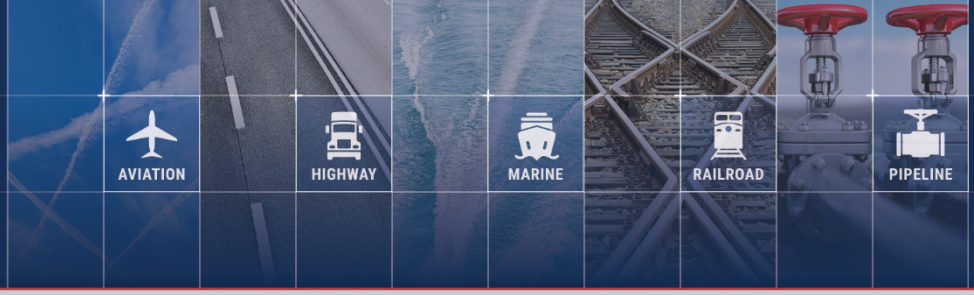

Aviation Investigation Final Report

Location:	DYER, Tennessee	**Accident Number:**	MIA95LA233
Date & Time:	September 23, 1995, 18:45 Local	**Registration:**	N5095S
Aircraft:	AIR TRACTOR 301	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

THE PILOT WAS MANEUVERING ON A SWATH RUN AT ABOUT 100 TO 140 FEET AGL WHEN THE AIRPLANE EXPERIENCED A TOTAL LOSS OF ENGINE POWER. DURING THE FORCED LANDING THE AIRPLANE COLLIDED WITH TREES AND CRASHED IN A CORN FIELD. BEFORE THE FLIGHT THIRTY-FIVE GALLONS OF FUEL WAS ADDED TO THE LEFT FUEL TANK. NO FUEL WAS ADDED TO THE RIGHT FUEL TANK. THE AIRPLANE FLEW 25 MINUTES, LANDED, DEPARTED 5 MINUTES LATER, AND FLEW AN ADDITIONAL 20 MINUTES BEFORE THE ENGINE QUIT. EXAMINATION OF THE ENGINE ASSEMBLY AND ACCESSORIES BY THE FAA REVEALED NO EVIDENCE OF A PRECRASH FAILURE OR MALFUNCTION. FOUR OR FIVE DROPS OF FUEL WAS PRESENT IN THE CARBURETOR BOWL. NO FUEL WAS PRESENT IN THE ENGINE DRIVEN FUEL PUMP, AIRFRAME FUEL VALVE, FUEL MANIFOLD OR WOBBLE PUMP.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT-IN-COMMAND'S FAILURE TO PROPERLY MANAGE THE FUEL REQUIRED FOR THE FLIGHT, RESULTING IN A TOTAL LOSS OF ENGINE POWER DUE TO FUEL EXHAUSTION AND SUBSEQUENT IN FLIGHT COLLISION WITH TREES AND TERRAIN.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings
1. FLUID,FUEL - EXHAUSTION
2. (C) FUEL MANAGEMENT - IMPROPER - PILOT IN COMMAND

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

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - EMERGENCY

Findings
3. TERRAIN CONDITION - GROUND

Factual Information

On September 23, 1995, about 1845 central daylight time, an Air Tractor, 301, N5095S, registered to a private owner, operating as a 14 CFR Part 137 aerial application flight, experienced a reported total loss of engine power while maneuvering on a swath run. The airplane collided with trees and sustained substantial damage. Visual meteorological conditions prevailed and no flight plan was filed. The pilot reported no injuries. The airplane departed from a private strip in the vicinity of Kenton, Tennessee, about 20 minutes before the accident.

The pilot stated his loader added 35 gallons of fuel to the left fuel tank before he departed on an aerial application flight. No fuel was added to the right tank. He flew 25 minutes and returned to the private strip, landed, and taxied to the ramp. The loader added more chemicals to the airplane with the engine running at idle power. He departed on the second flight about 5 minutes later. He had been flying about 20 minutes when the airplane experienced a total loss of engine power at about 100 to 140 feet agl on a swath run. The airplane collided with trees and crashed in a corn field. He further stated that during the flight he flew the airplane at 2,100 rpm and 32 inches of manifold pressure. He would reduce his power to 2,000 rpm and 31 inches of manifold pressure as he decreased his load of chemicals on the swath run.

Examination of the airplane by the FAA revealed no evidence of a precrash failure or malfunction of the airframe or flight control system. A faint odor of fuel was present at the crash site. The left and right fuel tanks were not ruptured. No fuel was present in the fuel tanks. The drain plug was removed from the carburetor bowl, and four or five drops of fuel came out.

Examination of the engine assembly and accessories was conducted by an airframe and powerplant mechanic in the presence of the FAA. There was no evidence of a precrash failure or malfunction. No fuel was present in the engine-driven fuel pump, airframe fuel valve, fuel manifold and wobble pump.(See FAA Aviation Safety Inspector's Statement.)

Review of Air Tractor Airplane Flight Manual for the 301 indicates the airplane has a maximum fuel capacity of 76 gallons. Six gallons of fuel are unusable.

Review of Pratt & Whitney Specific Operating Instructions for the WASP S3H1 and S3H1-6 engines revealed at 2,100 rpm and 32 inches of manifold pressure, the approximate fuel burn rate per hour is 45 gallons. At 2,000 rpm and 31 inches of manifold pressure the approximate fuel burn rate per hour is 41.4 gallons.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	48,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	Glider	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	June 29, 1995
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	14000 hours (Total, all aircraft), 700 hours (Total, this make and model), 13000 hours (Pilot In Command, all aircraft), 250 hours (Last 90 days, all aircraft), 75 hours (Last 30 days, all aircraft), 8 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AIR TRACTOR	**Registration:**	N5095S
Model/Series:	301 301	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	301-0118
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	Annual	**Certified Max Gross Wt.:**	5000 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	P&W
ELT:	Not installed	**Engine Model/Series:**	R-1340-AN1
Registered Owner:	LARRY B. RUSSELL	**Rated Power:**	600 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
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:	UCY ,341 ft msl	**Distance from Accident Site:**	
Observation Time:	17:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	20 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	20°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	18°C / 5°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	UNION CITY (UCY)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	18:25 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**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 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	36.070682,-88.989273(est)

Administrative Information

Investigator In Charge (IIC):	Smith, Carrol
Additional Participating Persons:	MICHAEL L ELLIOTT; MEMPHIS , TN
Original Publish Date:	January 19, 1996
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=37831