



# Aviation Investigation Final Report

<b>Location:</b>	COVINGTON, Tennessee	<b>Accident Number:</b>	ATL88LA252
<b>Date &amp; Time:</b>	September 15, 1988, 13:00 Local	<b>Registration:</b>	N2833M
<b>Aircraft:</b>	PIPER PA-12	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Aerial observation		

## Analysis

THE PLT REPORTED THAT THE ENGINE SUDDENLY BEGAN TO RUN ROUGH AND BACKFIRE DURING A PIPELINE PATROL FLIGHT AT 300 FT AGL. THE ROUGHNESS WORSENERD AND THE PLT MADE A FORCED LDG ON A DIRT ROAD. DURING ROLLOUT, ONE OF THE WINGS CAUGHT VEGETATION BORDERING THE ROAD AND THE AIRPLANE VEERED OFF THE ROAD INTO A DITCH. EXAM OF THE AIRPLANE REVEALED THAT IT WAS SUPPLEMENTAL TYPE CERTIFICATED FOR THE USE OF AUTOMOTIVE GASOLINE, AND THAT IT WAS FUELED WITH AUTO GAS. EXAM OF THE LYC 0-290-D2 ENGINE REVEALED THAT THE #4 EXHAUST VALVE WAS STUCK OPEN, AND HEAVY CARBON DEPOSITS WERE PRESENT ON THE VALVE. THE VALVES IN THE #3 CYL WERE FOUND TO BE BURNED. LYCOMING DOES NOT RECOMMEND THE USE OF AUTO GAS IN LYCOMING ACFT ENGINES. SERVICE LETTER L199 NOTES THAT GUMS CAN FORM IN AUTO FUELS WHICH CAN CAUSE STICKING VALVES. FAA AC 91.33A CONTAINS SEVERAL CAUTIONS ON THE USE OF THE AUTO FUEL CONCERNING QUALITY CONTROL, GUM FORMATION, VOLATILITY & CARB ICING.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

### Findings

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

Findings

1. (C) ENGINE ASSEMBLY, VALVE, EXHAUST - CONTAMINATION
2. (C) ENGINE ASSEMBLY, VALVE, EXHAUST - SEIZED
3. (C) FLUID, FUEL GRADE - IMPROPER
4. (F) INSUFFICIENT STANDARDS/REQUIREMENTS - FAA(ORGANIZATION)
5. (F) INADEQUATE CERTIFICATION/APPROVAL - FAA(ORGANIZATION)

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Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

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Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: LANDING - ROLL

Findings

6. (F) TERRAIN CONDITION - HIGH VEGETATION
7. TERRAIN CONDITION - DITCH

## Factual Information

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	44, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Rear
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical-w/ waivers/lim	<b>Last FAA Medical Exam:</b>	September 1, 1988
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	13000 hours (Total, all aircraft), 11000 hours (Total, this make and model), 13000 hours (Pilot In Command, all aircraft), 300 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	PIPER	<b>Registration:</b>	N2833M
<b>Model/Series:</b>	PA-12 PA-12	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal; Utility	<b>Serial Number:</b>	12-1270
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	September 10, 1988 100 hour	<b>Certified Max Gross Wt.:</b>	1750 lbs
<b>Time Since Last Inspection:</b>	5 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	6568 Hrs	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed, activated, aided in locating accident	<b>Engine Model/Series:</b>	O-290-D2
<b>Registered Owner:</b>	NORTHEAST PATROL, INC	<b>Rated Power:</b>	135 Horsepower
<b>Operator:</b>	NE PATROL, INC.	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	25 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	5 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	90°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	29°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	GREENVILLE , MS (NONE)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	COVINGTON , TN (M04 )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	08:20 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>		<b>Runway Surface Type:</b>	Dirt
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	Vegetation
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	35.55928,-89.640205(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Strickland, Scott
<b>Additional Participating Persons:</b>	LARRY H DOMBROWSKI; MEMPHIS , TN ROY MENARD; MEMPHIS , TN
<b>Original Publish Date:</b>	January 4, 1990
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=7814">https://data.ntsb.gov/Docket?ProjectID=7814</a>

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).