



Aviation Investigation Final Report

Location:	Crystal River, Florida	Accident Number:	MIA04LA097
Date & Time:	June 14, 2004, 09:45 Local	Registration:	N4516V
Aircraft:	Gulfstream American AA5B	Aircraft Damage:	Substantial
Defining Event:		Injuries:	4 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot stated that he was en route to Athens, Georgia, and the airplane was in level cruise flight at 8,000 feet, when all of a sudden the engine started running roughly. He stated that he was unable to maintain altitude, so he declared an emergency with FAA Jacksonville Air Route Traffic Control Center, and was given vectors for Crystal River Airport, Crystal River, Florida. He stated that he flew the subsequent approach to a forced landing with too much speed, and was unable to stop the airplane on the runway. As he was nearing the end of the runway, he stated that he thought he had enough power to execute a go-around, but as he was attempting to do so, he was able to avoid the fence, but collided with some trees. Post crash examination of the airplane's engine showed no compression was noted in the No. 3 cylinder. Further examination revealed that the No. 3 cylinder exhaust valve head was missing and that the cylinder head and top of the piston had incurred mechanical damage. The center electrode of No. 3's upper spark plug showed evidence of physical contact, and was found pushed against the side electrodes. Two pieces of metal appearing to be pieces of the valve head were found in the exhaust system. According to information obtained from the pilot, the engine had accumulated a total of 1,547 total flight hours since overhaul, and 56 flight hours since its last annual inspection, which had been conducted in October 2003.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the number three cylinder exhaust valve which resulted in the partial loss of engine power. The pilot's misjudgment of speed and distance resulted in an overrun of the runway.

Findings

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

Phase of Operation: CRUISE

Findings

1. (F) ENGINE ASSEMBLY, VALVE, EXHAUST - FAILURE

Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: OVERRUN

Phase of Operation: LANDING - ROLL

Findings

2. (F) DISTANCE/SPEED - MISJUDGED - PILOT IN COMMAND

Occurrence #4: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: GO-AROUND (VFR)

Findings

3. (C) OBJECT - TREE(S)

Factual Information

On June 14, 2004, about 0945 eastern daylight time, a Gulfstream American AA5B, N4516V, registered to and operated by a private individual, as a Title 14 CFR part 91 personal flight, collided with trees while attempting a go-around at Crystal River, Florida. Visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed. The private-rated pilot and three passengers were not injured, and the airplane incurred substantial damage. The flight originated in Sarasota, Florida, the same day, about 0900.

The pilot stated that he was en route to Athens, Georgia, and the airplane was in level cruise flight at 8,000 feet, when all of a sudden the engine started running roughly. He stated that he was unable to maintain altitude, so he declared an emergency with FAA Jacksonville Air Route Traffic Control Center, and was given vectors for Crystal River Airport, Crystal River, Florida. He stated that he flew the subsequent approach to a forced landing with too much speed, and was unable to stop the airplane on the runway. As he was nearing the end of the runway, he stated that he thought he had enough power to execute a go-around, but as he was attempting to do so, he was able to avoid the fence, but collided with some trees.

On June 23, 2004, the accident airplane's engine was examined and no compression was noted in the No. 3 cylinder. Further examination revealed that the No. 3 cylinder exhaust valve head was missing and that the cylinder head and top of the piston had incurred mechanical damage. The center electrode of No. 3's upper spark plug showed evidence of physical contact, and was found pushed against the side electrodes. Two pieces of metal appearing to be pieces of the valve head were found in the exhaust system. According to information obtained from the pilot, the engine had accumulated a total of 1,547 total flight hours since overhaul, and 56 flight hours since its last annual inspection, which had been conducted in October 2003.

Pilot Information

Certificate:	Private	Age:	41, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	May 8, 2003
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	June 5, 2004
Flight Time:	314 hours (Total, all aircraft), 58 hours (Total, this make and model), 297 hours (Pilot In Command, all aircraft), 46 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Gulfstream American	Registration:	N4516V
Model/Series:	AA5B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal; Utility	Serial Number:	AA5B-1022
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	October 1, 2003 Annual	Certified Max Gross Wt.:	2400 lbs
Time Since Last Inspection:	56 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1547 Hrs	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-360-A4K
Registered Owner:	Arthur L Kaiser	Rated Power:	180 Horsepower
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	OCF,89 ft msl	Distance from Accident Site:	
Observation Time:	09:55 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	110°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.05 inches Hg	Temperature/Dew Point:	26°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Satasota-Bradén, FL (SRQ)	Type of Flight Plan Filed:	IFR
Destination:	Athens, GA (AHN)	Type of Clearance:	IFR
Departure Time:	09:00 Local	Type of Airspace:	Class E

Airport Information

Airport:	Crystal River CGC	Runway Surface Type:	Asphalt
Airport Elevation:	9 ft msl	Runway Surface Condition:	Dry
Runway Used:	09	IFR Approach:	None
Runway Length/Width:	4700 ft / 75 ft	VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	3 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 None	Latitude, Longitude:	28.867221,-82.571113

Administrative Information

Investigator In Charge (IIC):	Lovell, John
Additional Participating Persons:	Robert Anderson; FAA FSDO; Tampa, FL
Original Publish Date:	March 30, 2005
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=59467

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).