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-Braden, 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.ntsb.gov/Docket?ProjectID=59467