



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Cayey, PR	<b>Accident Number:</b>	MIA03LA177
<b>Date &amp; Time:</b>	09/04/2003, 1708 AST	<b>Registration:</b>	N630VC
<b>Aircraft:</b>	Britten-Norman BN-2A-27	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	6 Minor
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Executive/Corporate		

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## Analysis

While on descent, the pilot reported that the airplane's left engine had lost power. He secured the left engine, and when he added power to the right engine, he believed it was not developing full power. He could not maintain altitude and elected to perform a forced landing in an open field. The airplane touched down long and with excessive speed on to the field striking trees, power lines and collided with the ground. A maintenance action entry in the aircraft's maintenance logbook indicate that the wing tip fuel tanks had the drain valve o-rings removed and replaced on the day before the accident. The maintenance entry states wing tip tanks were empty. The pilot stated he elected not to fuel either one of the wing tip tanks, due to the fact that maintenance was performed on them and did not select fuel from the wing tip tanks on the day of the accident. Excerpts from Airworthiness Directive (AD) 83-23-1, which is applicable to the accident airplane, states "This is a tip-tanked aircraft. Tip-tanks are to be filled first-used last. Before take-off check both main and tip-tank contents". AD 83-23-1 instructs to place a placard in clear view of the pilot on the instrument panel referring to the protocol of fueling and takeoff processors with regards to fuel tank contents. The mechanic who perform the maintenance to the wing tip tanks stated the placard was installed and in plain view of the pilot. The pilot stated he fueled the airplane with 50 gallons of aviation gasoline for a total of 90 gallons in both main tanks for the flight to Culebra from Ponce. The pilot went on to state prior to the return flight to Ponce from Culebra he checked his fuel quantity, which indicated he had 35 gallons in each main fuel tank for a total of 70 gallons aboard the airplane before departure. Fuel samples from both the FAA and the port authorities from the facility where the airplane was fueled for the flight showed no contamination as per the FAA Inspector statement.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:  
The loss of power on the left engine and partial loss of power on the right engine for undetermined reasons resulting in a force landing and impact with wires, tree, and terrain during subsequent force landing.

### Findings

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Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - NONMECHANICAL  
Phase of Operation: DESCENT

#### Findings

1. (C) REASON FOR OCCURRENCE UNDETERMINED

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

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

#### Findings

2. OBJECT - WIRE,STATIC  
3. OBJECT - TREE(S)

## Factual Information

On September 4, 2003, about 1708 Atlantic standard time, a Britten-Norman BN-2A-27, N630VC, owned and operated by Venagas Construction Corporation, experienced failure of both engines and impacted in an open field during the resultant forced landing, near Cayey, Puerto Rico. Visual meteorological conditions prevailed at the time, and no flight plan was filed. The business flight was conducted under Title 14 CFR Part 91. The airplane was destroyed by postcrash fire. The commercial-rated pilot and one passenger reported minor injuries, and the other four passengers reported no injuries. Two people on the ground reported minor injuries. The flight had originated about 1625 from Isla de Culebra, and was en route to Ponce, Puerto Rico.

The pilot stated while on descent from 6,500 feet the airplane's left engine lost power. He secured the left engine, and when he added power to the right engine, he said that he believed it was "not developing full power." He could not maintain altitude, and knew that he would not reach the intended airport. He elected to perform a forced landing in an open field, next to a runner's track. The pilot stated the airplane touched down long and with excessive speed on the field. The pilot took the airplane back into the air to clear trees and power lines separating the field from the runner's track. The airplane struck the trees, power lines and collided with the ground. Everyone on board escaped out moments before the airplane was consumed by postaccident fire.

An FAA oversight examination on the left and right engine and propellers were conducted. According to the FAA, both engines were checked for continuity with no defects found. Cylinder compression checks on both engines revealed that they all produced compression except for the number 5 cylinder on the right engine, according to the FAA inspector it was due to impact damage to the push rods. The right propeller did not show evidence of rotation at impact and both blades were found in low pitch. The left propeller was found in the feathered position.

A maintenance action entry in the aircraft's maintenance logbook indicate that the wing tip fuel tanks had the drain valve o-rings removed and replaced on the day before the accident. The maintenance entry states wing tip tanks were empty. In an interview with the FAA inspector the pilot stated that he did not utilize the wing tip tanks the morning of the accident, as he normally does. He elected not to fuel either one for the flight, due to the fact that maintenance was performed to the wing tip tanks. The pilot was asked if he selected fuel from the wing tip tanks on the day of the accident? The pilot stated, he was aware of the wing tip tanks being empty and did not select them.

Excerpts from Airworthiness Directive (AD) 83-23-1, which is applicable to the accident airplane, states "This is a tip-tanked aircraft. Tip-tanks are to be filled first-used last. Before take-off check both main and tip-tank contents. Take-off and landings are prohibited on main tanks when gauge reads less than three gallons above zero." The mechanic who performed the wing tip tanks maintenance stated "all placards for the operation of the fuel system management were in the airplane cabin in plain view of the pilot."

The pilot stated before the flight to Culebra he serviced the airplane with 50 gallons of aviation gasoline, 25 gallons to each main tank, plus the 20 gallons that was already in each main tank making a total of 90 gallons on the airplane for the flight. The pilot went on to state prior to the return flight to Ponce from Culebra he checked his fuel quantity, which indicated he had 35

gallons in each main fuel tank for a total of 70 gallons aboard the airplane before departure. The flight from Ponce to Culebra consumed 20 gallons as per the pilot's statement. Port authority personnel took fuel samples from the facility where the airplane was fueled for the flight on the day of the accident; more so, the FAA took fuel samples as well. FAA inspector statement state both fuel samples showed no contamination.

#### Pilot Information

<b>Certificate:</b>	Flight Instructor; Commercial	<b>Age:</b>	28, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 None	<b>Last FAA Medical Exam:</b>	01/27/2003
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	04/01/2003
<b>Flight Time:</b>	3400 hours (Total, all aircraft), 400 hours (Total, this make and model), 3200 hours (Pilot In Command, all aircraft), 120 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Britten-Norman	Registration:	N630VC
Model/Series:	BN-2A-27	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	868
Landing Gear Type:	Tricycle	Seats:	10
Date/Type of Last Inspection:	07/14/2003, Annual	Certified Max Gross Wt.:	6300 lbs
Time Since Last Inspection:	55 Hours	Engines:	2 Reciprocating
Airframe Total Time:	10608 Hours at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-540-E4C5
Registered Owner:	Venagas Construction Corp.	Rated Power:	260 hp
Operator:	Venagas Construction Corp.	Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	TJMZ, 29 ft msl	Distance from Accident Site:	55 Nautical Miles
Observation Time:	1450 EDT	Direction from Accident Site:	95°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	Broken / 3000 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.9 inches Hg	Temperature/Dew Point:	31° C / 23° C
Precipitation and Obscuration:			
Departure Point:	ISLA DE CULEBRA, PR (CPX)	Type of Flight Plan Filed:	None
Destination:	PONCE, PR (PSE)	Type of Clearance:	None
Departure Time:	1625 EDT	Type of Airspace:	Class E

## Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Destroyed
Passenger Injuries:	5 Minor	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	6 Minor	Latitude, Longitude:	18.108333, -66.158333

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Alan J Yurman	<b>Report Date:</b>	06/02/2004
<b>Additional Participating Persons:</b>	Rafael E Gilestra; San Juan FSDO; San Juan, PR		
<b>Publish Date:</b>			
<b>Investigation Docket:</b>	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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