National Transportation Safety Board
Aviation Accident Final Report

Location:	FINDLAY TWNSHP, PA	**Accident Number:**	IAD96FA147
Date & Time:	09/16/1996, 2200 EST	**Registration:**	N10DA
Aircraft:	Short Brothers SC7	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The pilot had flown this route in make and model airplane for nearly 4 years. He calculated 900 pounds of fuel were required for the flight, and saw 956 pounds on the fuel totalizer. The pilot was told by the ground controller of weather delays to his destination that ranged up to 2.5 hours. En route he was issued holding instructions with an EFC of 50 minutes later. After released from holding, 52 minutes after takeoff, the pilot was told that he was being vectored for a 35 mile final approach. The pilot then told the controller that he was fuel critical and the controller vectored him ahead of other airplanes. Ten minutes later, 84 minutes after takeoff, the controller asked his fuel status, and the pilot responded 'pretty low, seems like I'm losing oil pressure.' The pilot then advised the controller, 85 minutes after takeoff, that he shut down the right engine. He then declared an emergency and advised that he was not going to make the airport. Examination of the wreckage revealed the fuel tanks were intact, the fuel caps were secured, and the amount of fuel recovered from both tanks was 1.5 gallons, which was less than the specified unusable quantity. Company records showed that similar flights took about 48 minutes, and the airplane's average fuel flow was 580 pounds per hour.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper in-flight decision to continue to his destination when known en route delays were encountered which resulted in fuel exhaustion.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: APPROACH - FAF/OUTER MARKER TO THRESHOLD (IFR)

Findings
1. 2 ENGINES
2. (C) FLUID,FUEL - EXHAUSTION
3. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND

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

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

Findings
4. OBJECT - UTILITY POLE

Factual Information

HISTORY OF FLIGHT On September 16, 1996, approximately 2200 eastern daylight time, a Shorts SC7, N10DA, was destroyed during a forced landing and collision with terrain while on an instrument approach to the Pittsburgh International Airport, Pittsburgh, Pennsylvania. The certificated airline transport pilot was uninjured. The airplane was operated by North Star Air Cargo, Inc., Milwaukee, Wisconsin. Night visual meteorological conditions prevailed and a instrument flight plan was filed for the cargo flight conducted under 14 CFR Part 135.

The pilot flew this route for nearly 4 years in make and model airplane and stated that he calculated 900 pounds as the required fuel for the flight. During his preflight inspection, the pilot saw 956 pounds indicated on the fuel totalizer. Using a call sign of "SNC 1215", the pilot was given his clearance to his destination and told that there were weather delays all day, ranging from 30 minutes to 2.5 hours. SNC 1215 originated from Benedum Airport in Clarksburg, West Virginia, approximately 20:35. Once airborne, the pilot was issued holding instructions with an Expected Further Clearance (EFC) of 2125. Times with associated information from the recorded transcript between SNC1215 and the controllers was summarized below:

2123 - SNC was issued a revised EFC of 21:45. 2127 - SNC was vectored for runway 10R ILS and told to expect a 35 mile final. 2148 - SNC declared fuel critical. The controller vectored several airplanes off the ILS to accommodate SNC 1215. 2155 - SNC was cleared for the ILS Runway 10R approach. 2159 - SNC was asked for his fuel status and the pilot replied "pretty low, seems like I'm losing oil pressure". The controller advised him that his position was 7 miles from the runway and the pilot advised the controller that he had shutdown the right engine. 2159 - SNC was cleared to land on runway 10R 2200 - SNC declared an emergency, and advised the controller he was losing fuel. 2200 - SNC advised the controller he was not going to make it to the airport.

The airplane struck power lines and telephone poles, and came to rest across a narrow secondary road. No fire ensued.

The accident occurred during night hours, at an approximate location of 40 degrees, 29 minutes north latitude, and 80 degrees, 19 minutes west longitude.

AIRCRAFT INFORMATION The airplane's fuel system consisted of two tanks, capable of carrying a total of 672 US gallons or approximately 4368 pounds of fuel. The airplane's maximum design take-off weight was 12,500 pounds. The weight and balance load manifest completed by the pilot for this flight indicated that the gross takeoff weight was 11,275 pounds. The cargo load weight for this flight was 1876 pounds and the total fuel weight in both tanks was 959 pounds, or approximately 130 US gallons. No discrepancies on the fuel system were recorded in the maintenance logbooks.

A North Star Air Cargo, Inc. flight log dated September 13, 1996, was reviewed. The log depicted a flight from Clarksburg to Pittsburgh that was completed in 0.8 hours. It also depicted an average fuel flow for both engines at a cruise altitude of 8,000 feet, to be 290 pounds an hour per engine, or a total of 580 pounds per hour.

WRECKAGE INFORMATION The landing gear and both wings outboard of each engine were separated from the fuselage. The forward and aft fuel tanks maintained their integrity throughout the accident sequence. The fuel caps were secure and still in place. No fuel

streaking was found near fuel drain areas located along the sides of the fuselage, nor on top of the fuselage where the fuel caps were located. Both fuel tanks were drained into separate containers. The total amount of fuel drained from both tanks was 1.5 gallons, which according to the operating handbook was unusable fuel.

ADDITIONAL INFORMATION The wreckage was released to the insurance representative for the company on September 17, 1996.

Pilot Information

Certificate:	Airline Transport; Commercial	**Age:**	50, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	**Last Medical Exam:**	10/19/1995
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	11000 hours (Total, all aircraft), 1100 hours (Total, this make and model), 8000 hours (Pilot In Command, all aircraft), 79 hours (Last 90 days, all aircraft), 35 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Short Brothers	**Registration:**	N10DA
Model/Series:	SC7 SC7	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	SH1873
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	08/01/1996, AAIP	**Certified Max Gross Wt.:**	12500 lbs
Time Since Last Inspection:	44 Hours	**Engines:**	2 Turbo Prop
Airframe Total Time:	18553 Hours	**Engine Manufacturer:**	Garrett
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	TPE331-2-201A
Registered Owner:	AVIATION SPECIALISTS, INC	**Rated Power:**	715 hp
Operator:	NORTH STAR AIR CARGO, INC	**Air Carrier Operating Certificate:**	Air Cargo
Operator Does Business As:		**Operator Designator Code:**	NSAC

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Night/Dark
Observation Facility, Elevation:	PIT, 1204 ft msl	**Observation Time:**	2151 EDT
Distance from Accident Site:	3 Nautical Miles	**Direction from Accident Site:**	100°
Lowest Cloud Condition:	Scattered / 1100 ft agl	**Temperature/Dew Point:**	14°C / 13°C
Lowest Ceiling:	Overcast / 2600 ft agl	**Visibility**	10 Miles
Wind Speed/Gusts, Direction:	9 knots, 60°	**Visibility (RVR):**	0 ft
Altimeter Setting:	29 inches Hg	**Visibility (RVV):**	0 Miles
Precipitation and Obscuration:			
Departure Point:	CLARKSBURG, WV (CKB)	**Type of Flight Plan Filed:**	IFR
Destination:	PITTSBURGH, PA (PIT)	**Type of Clearance:**	IFR
Departure Time:	2035 EDT	**Type of Airspace:**	Class B

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	JAMES J CAIN	**Adopted Date:**	03/31/1998
Additional Participating Persons:	DENNIS J FERENCZ; PITTSBURGH, PA RAYMOND J MCBRIDE; PITTSBURGH, PA		
Publish Date:			
Investigation Docket:	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 pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		

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