



National Transportation Safety Board Aviation Accident Final Report

Location:	Du Bois, PA	Accident Number:	NYC03LA081
Date & Time:	04/09/2003, 0715 EDT	Registration:	N805SW
Aircraft:	Short Brothers SD3-30	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The airplane was on an instrument landing system (ILS) approach in instrument meteorological conditions. The captain initially stated that the airplane was on the ILS approach with the engine power set at flight idle. About 300 feet above the ground, and 1/4 to 1/2 mile from the threshold, the captain made visual contact with the runway. The captain stated that the left engine then surged, which caused the airplane to yaw right and drift left. At the time, the airplane was in visual conditions, and on glideslope, with the airspeed decreasing through 106 knots. The captain aligned the airplane with the runway and attempted to go-around, but the throttles were difficult to move. The airplane began to stall and the captain lowered the nose. The airplane subsequently struck terrain about 500 feet prior to the runway. After the captain was informed that the engine power should not be at flight idle during the approach, he amended his statement to include the approach power setting at 1,000 lbs. of torque. The co-pilot initially reported that the engine anomaly occurred while at flight idle. However, the co-pilot later amended his statement and reported that the anomaly occurred as power was being reduced toward flight idle, but not at flight idle. Examination of the left engine did not reveal any pre-impact mechanical malfunctions. Examination of the airplane cockpit did not reveal any anomalies with the throttle levers. Review of a flight manual for the make and model accident airplane revealed that during a normal landing, 1,100 lbs of torque should be set prior to turning base leg. The manual further stated to reduce the power levers about 30 feet agl, and initiate a gentle flare. The reported weather at the airport about 5 minutes before the accident included a visibility 3/4 mile in mist, and an overcast ceiling at 100 feet. The reported weather at the airport about 7 minutes after the accident included visibility 1/4 mile in freezing fog and an overcast ceiling at 100 feet. Review of the terminal procedure for the respective ILS approach revealed that the decision height was 200 feet agl, and the required minimum visibility was 1/2 mile.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
The captain's failure to maintain the proper glidepath during the instrument approach, and his failure to perform a go-around. Factors were a low ceiling and reduced visibility due to mist.

Findings

Occurrence #1: UNDERSHOOT

Phase of Operation: APPROACH - FAF/OUTER MARKER TO THRESHOLD (IFR)

Findings

1. (F) WEATHER CONDITION - LOW CEILING
2. (C) PROPER GLIDEPATH - NOT MAINTAINED - PILOT IN COMMAND
3. (F) WEATHER CONDITION - DRIZZLE/MIST
4. (C) GO-AROUND - NOT PERFORMED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: APPROACH - FAF/OUTER MARKER TO THRESHOLD (IFR)

Findings

5. TERRAIN CONDITION - GRASS

Factual Information

On April 9, 2003, about 0715 eastern daylight time, a Short Brothers SD3-30, N805SW, was substantially damaged during approach to Du Bois-Jefferson County Airport (DUJ), Du Bois, Pennsylvania. The certificated airline transport pilot and commercial pilot were not injured. Instrument meteorological conditions prevailed for the flight that departed Pittsburgh International Airport (PIT), Pittsburgh, Pennsylvania, about 0605. An instrument flight rules flight plan had been filed for the cargo flight conducted under 14 CFR Part 135.

During a telephone interview, the captain stated that he initiated the ILS Runway 25 approach about 0705. While on the approach, about 300 feet above the ground, and 1/4 to 1/2 mile from the runway, the left engine surged. Specifically, it went from approximately 1,000 lbs of torque to at least 2,000 lbs of torque, and continued to oscillate. The surge yawed the airplane about 90 degrees to the right, and it drifted left. At the time, the airplane was in visual conditions, and on glideslope, with the airspeed decreasing through 106 knots. The captain aligned the airplane and attempted to go-around, but the throttles were "sticking," and the airplane struck terrain prior to the runway. The captain further stated that the impact occurred about 0715.

According to his written statement, the captain reported that an in-flight check of weather was completed about 0700. The reported weather at DUJ included a visibility 2.5 miles in mist, and a ceiling of 300 feet. The approach was normal, and the flightcrew made visual contact with the runway about 100-200 feet above the minimum approach altitude, approximately 1-2 miles from the runway. The captain initiated a normal decent to land with the power set at approximately 1,000 lbs of torque. He then heard a whining sound from the left engine, and noticed a yaw to the right and left. The captain regained control of the airplane and attempted to go-around, but the throttles were difficult to move. The stall warning horn sounded and the captain pitched down to increase airspeed. The captain thought that the airplane would not reach the runway, and chose to perform a forced landing to a dirt area left of the runway centerline.

A Federal Aviation Administration (FAA) inspector stated that he interviewed the captain prior to his telephone interview with the Safety Board investigator, or his completion of a written statement. During that interview, the captain initially reported that the power was set at flight idle on the approach to DUJ. The inspector then asked the captain if it was true that the power should have never been set to flight idle on the approach, and should have been set at least 500 lbs of torque. Subsequently, the captain stated that the power was set at 1,000 lbs of torque.

The FAA inspector further stated that he observed ground scars approximately 500 feet prior to runway 25, and left of the runway centerline. His examination of the wreckage revealed that the nose gear and right main gear had separated, and the bottom fuselage sustained substantial damage. The inspector found that the throttle levers were in the idle position, and the propeller levers were in a cruise flight position, slightly above the feather position.

During a telephone interview with a Safety Board investigator, the co-pilot stated that about 300 feet above the ground, he made visual contact with the runway and reported, "contact." The captain then reduced the power to flight idle, and the propeller levers were full forward. About 100-150 feet above the ground, while at idle power, the left engine surged to partial power. The nose yawed right, and the airplane drifted left. The captain corrected the yaw, and attempted to increase power, but the airplane struck terrain prior to the runway.

The co-pilot subsequently telephoned the Safety Board investigator and stated that he may have made an error during his first interview. The co-pilot added that the surge might have occurred as the captain reduced power toward flight idle, but not at flight idle.

Review of the co-pilot's written statement revealed that it corroborated with the captain's written statement.

Examination of the left engine by an FAA inspector, and representatives from the engine manufacturer, did not reveal any pre-impact mechanical malfunctions. The inspector noted that the propeller levers were found at an approximate 1,200 rpm setting. The inspector did not observe any anomalies with the throttle levers.

According to an FAA specialist at Air Traffic Control Quality Assurance, the flightcrew reported that they had received the weather at DUJ about 0645. The flight was cleared for the approach approximately 12 miles from the airport, about 0709. The last radar return was received at 0713:44, and displayed an altitude of 1,900 feet.

A completed Pilot/Operator Aircraft Accident Report form was signed by the president of the operator, and submitted to the Safety Board. Review of page four of the report, "Recommendation (How Could This Accident Have Been Prevented)," revealed:

"The accident could have been prevented had the pilot used the visual cues available to him. Namely the electronic indications provided by the glide slope and the localizer and the PAPI light system installed at the airport. Furthermore, crew coordination appeared to be lacking in the final moments of the flight."

The reported weather at DUJ, at 0656, was: wind from 070 degrees at 7 knots; visibility 2 1/2 miles in mist; ceiling 300 feet overcast; temperature 32 degrees F, dew point 31 degrees F; altimeter 30.09 inches Hg.

The reported weather at DUJ, at 0710, was: wind from 070 degrees at 6 knots; visibility 3/4 mile in mist; ceiling overcast at 100 feet; temperature 32 degrees F, dew point 31 degrees F; altimeter 30.10 inches Hg.

The reported weather at DUJ, at 0722, was: wind from 070 degrees at 7 knots; visibility 1/4 mile in freezing fog; ceiling overcast at 100 feet; temperature 31 degrees F, dew point 31 degrees F; altimeter 30.10 inches Hg.

Review of an FAA Terminal Procedure for the ILS Runway 25 approach at DUJ, revealed that the decision height was 200 feet agl (2,017 feet msl), and the required minimum visibility was 1/2 mile.

The ILS antenna was located 1,157 feet beyond the approach end of the runway. The glideslope height above the ground at 500 feet prior to the runway was approximately 83 feet.

Review of a Short Brothers SD3-30 flight manual revealed that during a normal landing, 1,100 lbs of torque should be set prior to turning base leg. The manual further stated, "...at about 30 feet AGL...select power levers to flight idle and initiate a gentle flare."

Pilot Information

Certificate:	Airline Transport	Age:	46, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	02/01/2003
Occupational Pilot:		Last Flight Review or Equivalent:	11/25/2002
Flight Time:	3470 hours (Total, all aircraft), 2100 hours (Total, this make and model), 2665 hours (Pilot In Command, all aircraft), 76 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Co-Pilot Information

Certificate:	Commercial	Age:	37, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	09/30/2002
Occupational Pilot:		Last Flight Review or Equivalent:	01/31/2003
Flight Time:	1347 hours (Total, all aircraft), 431 hours (Total, this make and model), 786 hours (Pilot In Command, all aircraft), 82 hours (Last 90 days, all aircraft), 36 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Short Brothers	Registration:	N805SW
Model/Series:	SD3-30	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	3055
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	03/24/2003, AAIP	Certified Max Gross Wt.:	22600 lbs
Time Since Last Inspection:	26 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	24401 Hours at time of accident	Engine Manufacturer:	Pratt & Whitney
ELT:	Installed, not activated	Engine Model/Series:	PT6A-45R
Registered Owner:	Sky Way Enterprises Inc.	Rated Power:	1198 lbs
Operator:	Sky Way Enterprises Inc.	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	DKEA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Dawn
Observation Facility, Elevation:	DUJ, 1817 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0710 EST	Direction from Accident Site:	0°
Lowest Cloud Condition:		Visibility	0.75 Miles
Lowest Ceiling:	Overcast / 100 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	70°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.1 inches Hg	Temperature/Dew Point:	0°C / -1°C
Precipitation and Obscuration:			
Departure Point:	Pittsburgh, PA (PIT)	Type of Flight Plan Filed:	IFR
Destination:	Du Bois, PA (DUJ)	Type of Clearance:	IFR
Departure Time:	0605 EDT	Type of Airspace:	Class G

Airport Information

Airport:	Du Bois-Jefferson County (DUJ)	Runway Surface Type:	Asphalt
Airport Elevation:	1817 ft	Runway Surface Condition:	Unknown
Runway Used:	25	IFR Approach:	ILS
Runway Length/Width:	5504 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	41.178333, -78.898611

Administrative Information

Investigator In Charge (IIC):	Robert J Gretz	Report Date:	03/02/2004
Additional Participating Persons:	Warren Hall; FAA FSDO-03; Allegheny, 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.nts.gov/pubdms/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).