



Aviation Investigation Final Report

Location:	Miami, Florida	Accident Number:	ERA10LA042
Date & Time:	October 30, 2009, 10:30 Local	Registration:	N13KL
Aircraft:	BERIEV AIRCRAFT COMPANY BE-103	Aircraft Damage:	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	Injuries:	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The owner/pilot was demonstrating the airplane to the two passengers, who were potential buyers. After takeoff, when the pilot retracted the landing gear, two of the three gear position indication lights signaled that the gear was retracted, but the right gear position indicated that the landing gear was still in transit. The pilot re-cycled the landing gear, and all three lights indicated that the landing gear was retracted. After an otherwise normal flight, the pilot decided to demonstrate a water landing. During touchdown, the right side of the airplane "dragged," and the left wing struck the water abnormally. The airplane remained afloat. Witnesses reported that they observed the airplane land with one landing gear extended. Postaccident examination revealed that one of the springs on the landing gear up-latch assembly was stretched, for undetermined reasons. No additional details were provided for the investigation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A malfunction of the landing gear retraction/extension and indication system for undetermined reasons, which resulted in one or more components being improperly positioned for the water landing.

Findings

Aircraft	(general) - Malfunction
Aircraft	(general) - Malfunction
Aircraft	Configuration - Malfunction

Factual Information

History of Flight

Landing	Sys/Comp malf/fail (non-power) (Defining event)
Landing-flare/touchdown	Landing gear not configured
Landing-flare/touchdown	Dragged wing/rotor/float/other

HISTORY OF FLIGHT

On October 30, 2009, about 1030 eastern daylight time, an amphibious Beriev Aircraft Company Be-103, N13KL, was substantially damaged during a water landing in the Biscayne Bay near Miami, Florida. The airline transport pilot-rated owner and the two passengers were not injured. The local personal flight departed Opa-Locka Executive Airport (OPF), Miami, Florida at 1000, and was operated under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed, and no flight plan was filed for the flight.

According to the pilot, the purpose of the flight was to demonstrate the airplane to the two passengers. After takeoff, when he retracted the landing gear, two of the three gear position indication lights signaled that the gear was retracted, but the right gear position light indicated that the landing gear was still in transit. The pilot then re-cycled the landing gear, and all three lights indicated that the landing gear was retracted. After an otherwise normal flight, the pilot decided to demonstrate a water landing in Biscayne Bay. On touchdown, the right side of the airplane "dragged," and then the left wing of the airplane struck the water abnormally. This resulted in an "abrupt heading change of about 60 degrees," and a sudden stop, but the airplane remained afloat. Persons on a commercial tow boat operating in the area witnessed the accident and motored to the airplane. The pilot and passengers deplaned onto the boat.

Witnesses reported that while the airplane was coming in to land, they observed that one of the landing gear wheels was down. They could not provide any additional detail.

PERSONNEL INFORMATION

FAA records indicated that the pilot held an airline transport certificate with airplane single and multi-engine land and sea ratings, as well as multiple type ratings. He also held a flight instructor certificate with airplane single- and multi-engine ratings, and a mechanic certificate with airframe, powerplant and inspection authorization ratings. His most recent FAA first-class medical certificate was issued in November 2008, at which time he reported 26,000 total hours of civilian flight experience.

AIRCRAFT INFORMATION

The airplane was designed and manufactured in Russia. According to the manufacturer's web site, the airplane was a "multipurpose amphibious...monoplane with low-set water-displacement wing with a root strake, all-moving horizontal tail located in the propeller blow zone, and tricycle landing gear." The site also noted that a "unique feature of the amphibious aircraft includes implementation of a water-displacement wing concept, which improves seaworthiness and stability when moving on water." The airplane was equipped with two Teledyne Continental IO-360 piston engines that were mounted on horizontal pylons above the rear part of the center wing section, and variable-pitch three-blade reversible propellers.

METEOROLOGICAL INFORMATION

The 1053 recorded weather observation at OPF, located about 8 miles northwest of the accident site, reported winds from 100 degrees at 7 knots, 10 miles visibility, clear skies, temperature 29 degrees C, dew point 22 degrees C, and an altimeter setting of 30.03 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

According to information provided by the Federal Aviation Administration (FAA) inspector who responded to the accident scene, the left wing of the airplane sustained substantial damage. The outboard section of the wing, beginning at the juncture between the flap and the aileron, was bent down approximately 20 degrees, and twisted approximately 10 degrees leading-edge down. The skin was buckled, cracked, and torn in the region of the bend. The fuselage skin outboard of the right forward nose gear door was torn by the door hinge brackets, due to over-travel of the door. The airplane was otherwise undamaged.

TEST AND RESEARCH

After the accident, the airplane sat unwashed for approximately three weeks before it was examined in detail by a certificated mechanic and an inspector from the FAA. NTSB personnel did not examine the airplane. The visual inspection revealed a considerable amount of salt crust on portions of the landing gear mechanism. It was also noted that one landing gear up-latch springs (of four total, two per side) was stretched. As part of the examination, the landing gear system was cycled several times. Initially, the motion appeared to be resisted by the contamination of the joints, but after several cycles, the landing gear operated normally, and correct indications of landing gear position by the cockpit gear-position lights were observed. Despite repeated requests of the personnel involved in the examination, no additional details were provided for the investigation.

Pilot Information

Certificate:	Airline transport; Commercial; Flight instructor	Age:	63, Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land; Multi-engine sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	November 19, 2008
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	June 19, 2008
Flight Time:	26000 hours (Total, all aircraft), 50 hours (Total, this make and model), 12000 hours (Pilot In Command, all aircraft), 75 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BERIEV AIRCRAFT COMPANY	Registration:	N13KL
Model/Series:	BE-103	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	3301
Landing Gear Type:	Tricycle; Amphibian	Seats:	6
Date/Type of Last Inspection:	September 25, 2009 Annual	Certified Max Gross Wt.:	5000 lbs
Time Since Last Inspection:	5 Hrs	Engines:	2 Reciprocating
Airframe Total Time:	440 Hrs at time of accident	Engine Manufacturer:	CONT MOTOR
ELT:	Installed, not activated	Engine Model/Series:	IO-360 SER
Registered Owner:	On file	Rated Power:	210 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	OPF,8 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	10:53 Local	Direction from Accident Site:	325°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	100°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.03 inches Hg	Temperature/Dew Point:	29°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Opa Locka, FL (OPF)	Type of Flight Plan Filed:	None
Destination:	Opa Locka, FL (OPF)	Type of Clearance:	None
Departure Time:	10:10 Local	Type of Airspace:	

Airport Information

Airport:	Miami Seaplane Base X44	Runway Surface Type:	Water
Airport Elevation:	0 ft msl	Runway Surface Condition:	Unknown
Runway Used:		IFR Approach:	None
Runway Length/Width:	14000 ft / 200 ft	VFR Approach/Landing:	Unknown

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	2 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	25.781665,-80.176666(est)

Administrative Information

Investigator In Charge (IIC): Huhn, Michael

Additional Participating Persons: Edmundo Rolon; FAA/FSDO; Miami, FL

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Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=74982>

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](#).