Aviation Investigation Final Report

Location:	Klawock, Alaska	**Accident Number:**	ANC05LA055
Date & Time:	April 6, 2005, 14:35 Local	**Registration:**	N29884
Aircraft:	Britten-Norman BN-2A Islander	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Scheduled		

Analysis

The airline transport certificated pilot was landing a twin-engine airplane on a paved runway. The flight was conducted under Title 14, CFR Part 135, as a scheduled domestic passenger flight. The pilot reported that during the landing roll he noted a significant airframe vibration, and a pronounced rumbling noise as the airplane slowed. As he applied the brakes, the airplane veered to the left, and he was unable to keep the airplane on the runway. The airplane continued off the left side of the runway, and the nose of the airplane struck a drainage ditch. The airplane sustained substantial damage to the fuselage. During a postaccident inspection, maintenance personnel discovered a broken aluminum alloy landing gear oleo attachment bracket on the left main landing gear strut assembly. Operators that use the aluminum alloy landing gear oleo attachment brackets are required to conduct recurring inspections every 500 hours, or every 1,200 landings, which ever occurs first. According to the FAA airworthiness inspector that inspected the accident airplane's maintenance records, the aluminum alloy oleo attachment bracket was last inspected about 101.0 hours, and 218 landings before the accident. The FAA inspector commented that there was a substantial accumulation of dirt, grease, and oil on and around the broken oleo attachment bracket.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The fracture of the aluminum alloy landing gear bracket assembly, which resulted in a loss of control during the landing roll.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: LANDING - ROLL

Findings
1. (C) LANDING GEAR,MAIN GEAR - FRACTURED

Occurrence #2: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING - ROLL

Findings
2. DIRECTIONAL CONTROL - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: LANDING - ROLL

Findings
3. TERRAIN CONDITION - DITCH

Factual Information

On April 6, 2005, about 1435 Alaska daylight time, a twin-engine Britten-Norman BN-2A Islander airplane, N29884, sustained substantial damage following a main landing gear component failure and subsequent loss of control while landing at the Klawock Airport, Klawock, Alaska. The flight was conducted under Title 14, CFR Part 135, as a scheduled domestic passenger flight operated by LAB Flying Service, Haines, Alaska, as Flight 609. The airline transport certificated pilot and the two passengers were not injured. Visual meteorological conditions prevailed, and VFR company flight following procedures were in effect. The accident flight originated at the Ketchikan Airport, Ketchikan, Alaska, about 1400.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), on April 7, the pilot reported that during the landing roll on runway 02, he noted a significant airframe vibration, and a pronounced rumbling noise as the airplane slowed. He said that as he applied the brakes, the airplane veered to the left, and he was unable to keep the airplane on the runway surface. The airplane continued off the left side of the runway, and the nose of the airplane struck a drainage ditch. The airplane sustained substantial damage to the fuselage.

During a postaccident inspection, maintenance personnel discovered a broken landing gear oleo attachment bracket on the left main landing gear strut assembly.

The accident airplane's broken landing gear oleo attachment bracket, part number NB-40-0075, is the subject of a repetitive inspection procedure outlined in the Federal Aviation Administrations (FAA) airworthiness directive (AD) 2002-02-11, which allows two methods of compliance; the part may be replaced or the bracket must be inspected more frequently. The manufacturer has changed the design of the oleo attachment bracket which is made of aluminum alloy. The newly designed oleo attachment bracket, part number NB-40-0479 is made of steel. Installation of the newly designed, steel oleo attachment bracket significantly reduces the number of repetitive inspections required. Operators that elect to utilize the old style aluminum alloy oleo attachment brackets are required to conduct recurring inspections every 500 hours, or every 1,200 landings, which ever occurs first.

According to an FAA airworthiness inspector from the Juneau Flight Standards District Office (FSDO), who inspected the accident airplane's maintenance records, the aluminum alloy oleo attachment brackets were last inspected about 101.0 hours, and 218 landings before the accident. The FAA inspector noted that there was a substantial accumulation of dirt, grease, and oil on and around the broken oleo attachment bracket. The FAA inspector said that during the last main landing gear overhaul, the operator elected to install the old style aluminum alloy oleo attachment brackets, primarily due to the cost of the new style steel oleo attachment brackets.

Pilot Information

Certificate:	Airline transport	**Age:**	54,Male
Airplane Rating(s):	Single-engine sea; Multi-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 1 With waivers/limitations	**Last FAA Medical Exam:**	November 1, 2004
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	13000 hours (Total, all aircraft), 3000 hours (Total, this make and model), 12600 hours (Pilot In Command, all aircraft), 150 hours (Last 90 days, all aircraft), 50 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Britten-Norman	**Registration:**	N29884
Model/Series:	BN-2A Islander	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	847
Landing Gear Type:	Tricycle	**Seats:**	5
Date/Type of Last Inspection:	March 1, 2005 AAIP	**Certified Max Gross Wt.:**	6200 lbs
Time Since Last Inspection:	25.7 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	9145.9 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-540-E4CS
Registered Owner:	L & A Bennett, Family Trust	**Rated Power:**	260 Horsepower
Operator:	L A B FLYING SERVICE INC	**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:		**Operator Designator Code:**	LABA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PAKW,80 ft msl	**Distance from Accident Site:**	
Observation Time:	14:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Broken / 5000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.75 inches Hg	**Temperature/Dew Point:**	11°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Ketchikan , AK (PAKT)	**Type of Flight Plan Filed:**	Company VFR
Destination:	Klawock, AK (PAKW)	**Type of Clearance:**	None
Departure Time:	14:00 Local	**Type of Airspace:**	

Airport Information

Airport:	Klawock AKW	**Runway Surface Type:**	Asphalt
Airport Elevation:	80 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	02	**IFR Approach:**	None
Runway Length/Width:	5000 ft / 100 ft	**VFR Approach/Landing:**	Full stop

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:**	55.566665,-133.066665

Administrative Information

Investigator In Charge (IIC):	Johnson, Clinton
Additional Participating Persons:	Larry D West ; Federal Aviation Administration; Juneau, AK
Original Publish Date:	January 31, 2006
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=61279