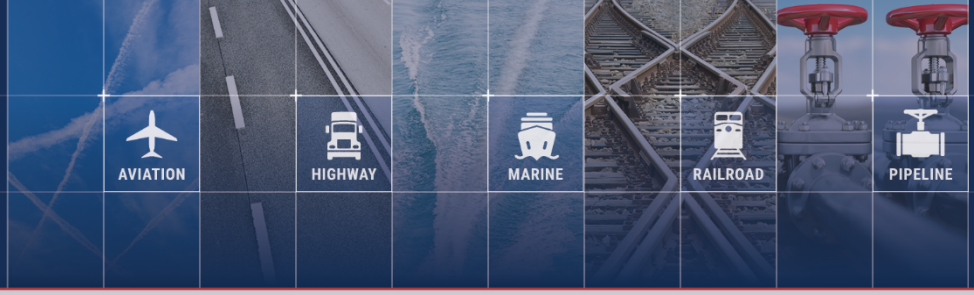

Aviation Investigation Final Report

Location:	BLAIR LAKE, Alaska	**Accident Number:**	ANC93LA136
Date & Time:	August 6, 1993, 19:30 Local	**Registration:**	N6669L
Aircraft:	LAKE LA04	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

PILOT OF LAKE AMPHIBIAN AIRPLANE ENCOUNTERED PORPOISING LOSS OF CONTROL WHILE STEP TAXIING IN CHOPPY LAKE CONDITIONS. PORPOISING PROGRESSED TO WINGFLOAT PITCHING AND COLLISION WITH WATER. THE AIRPLANE SANK.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S INADVERTANT ENTRY INTO A PORPOISE AND SUBSEQUENT LOSS OF CONTROL WHILE STEP-TAXIING PRIOR TO TAKEOFF. A FACTOR IN THE ACCIDENT WAS THE ROUGH WATER CONDITIONS.

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: TAXI - TO TAKEOFF

Findings
1. (F) TERRAIN CONDITION - WATER,ROUGH
2. (C) PORPOISE/PILOT-INDUCED OSCILLATION - INADVERTENT - PILOT IN COMMAND

Occurrence #2: DRAGGED WING,ROTOR,POD,FLOAT OR TAIL/SKID
Phase of Operation: TAXI - TO TAKEOFF

Factual Information

HISTORY OF FLIGHT

On August 6, 1993, at approximately 1930 Alaska daylight time, a Lake Amphibian LA04 airplane, N6669L, porpoised, dragged a wing and waterlooped while conducting a high speed on-the-step taxi. The airplane sank on Blair Lake, 30 miles SE of Fairbanks. The flight had originated at Wrights Field, North Pole, Alaska at 1730 on a personal flight in visual meteorological conditions, under 14 CFR Part 91. No flight plan was filed. The commercial pilot and two passengers escaped without injury and the aircraft was substantially damaged.

In a statement to the NTSB the pilot said that the airplane developed a porpoise while taxiing on the step at 60 MPH which progressed to wing oscillations and loss of control.

DAMAGE TO AIRCRAFT

The aircraft sustained hull damage and loss of wing floats, consistent with sideloads experienced in a waterloop.

AIRCRAFT INFORMATION

In boat hull seaplanes, a porpoise is a pitch into and out of the sea by the bow of the aircraft about the lateral axis. The magnitude of the oscillations relate to the energy needed to displace the water under the bow and the resultant upward force by the water on the hull. The frequency of the oscillation relates to aircraft speed and period of the sea (distance between swell crests). The oscillations can be pilot-induced or sea-condition-induced. Typically, this porpoise is followed by rolls about the longitudinal axis which, as the wingtip floats alternately enters the water, and exacerbates the rolling moment by porpoising themselves. A final turn (waterloop) is typically a result of the hydrodynamic center of drag becoming forward of the aerodynamic center of gravity, leading to a destabilized loss of control and sudden sideload on the forward hull. Damage to cantilever mounted wing floats by these sideloads is typical.

Pilot Information

Certificate:	Commercial; Military	**Age:**	48,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	September 2, 1993
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	4547 hours (Total, all aircraft), 863 hours (Total, this make and model), 3892 hours (Pilot In Command, all aircraft), 73 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	LAKE	**Registration:**	N6669L
Model/Series:	LA04 LA04	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	431
Landing Gear Type:	Amphibian; Hull	**Seats:**	4
Date/Type of Last Inspection:	September 1, 1992 Annual	**Certified Max Gross Wt.:**	2400 lbs
Time Since Last Inspection:	57 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1300 Hrs	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	IO-360-A1B
Registered Owner:	GREGORY H. CLAYTON	**Rated Power:**	200 Horsepower
Operator:	CLAYTON, GREGORY H.	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dusk
Observation Facility, Elevation:	FAI ,1760 ft msl	**Distance from Accident Site:**	30 Nautical Miles
Observation Time:	19:00 Local	**Direction from Accident Site:**	350°
Lowest Cloud Condition:	Unknown / 1900 ft AGL	**Visibility**	15 miles
Lowest Ceiling:	Broken / 1900 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	20 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	16°C / 13°C
Precipitation and Obscuration:	N/A - Blowing - Spray		
Departure Point:	NORTH POLE , AK	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	17:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	Water
Airport Elevation:		**Runway Surface Condition:**	Rough;Water-choppy
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	None

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:**	64.769905,-147.32991(est)

Administrative Information

Investigator In Charge (IIC):	Herlihy, Douglas
Additional Participating Persons:	DAVID A SMITH; FAIRBANKS , AK
Original Publish Date:	October 20, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=2395