



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Rockwood, ME	<b>Accident Number:</b>	ERA10LA390
<b>Date &amp; Time:</b>	08/01/2010, 1115 EDT	<b>Registration:</b>	N369E
<b>Aircraft:</b>	CESSNA A185F	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Landing gear not configured	<b>Injuries:</b>	1 Fatal, 1 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The amphibious float-equipped airplane departed from a paved runway for the flight, where a water landing on a lake was to be made. The pilot did not raise the landing gear after takeoff. Upon reaching the destination, the landing gear contacted the water during landing and the airplane abruptly nosed over. The airplane came to rest floating inverted, suspended by the floats. The month preceding the accident the pilot had several medical tests performed and was anticipating surgery for the removal of stomach cancer. While the pilot may have been having difficulty sleeping due to back pain or his impending surgery or possible chemotherapy, the investigation was unable to determine that fatigue was a factor in the accident. His toxicology results indicated recent use of diphenhydramine (an over-the-counter antihistamine) at levels that would have likely been impairing at the time of the accident.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to retract the landing gear prior to a water landing. Contributing to the accident was the pilot's impairment due to medication.

## Findings

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<b>Aircraft</b>	Gear extension and retract sys - Not used/operated (Cause)
<b>Personnel issues</b>	Forgotten action/omission - Pilot (Cause)
	Prescription medication - Pilot (Factor)
	Use of checklist - Pilot

## Factual Information

### HISTORY OF FLIGHT

On August 1, 2010, about 1115 eastern daylight time, a float equipped Cessna A185F, N369E, nosed over while landing on Moosehead Lake near Rockwood, Maine. The airplane had departed the Steven A. Bean Municipal Airport (8B0), Rangeley, Maine. Visual meteorological conditions prevailed and no flight plan had been filed. The certificated airline transport pilot was fatally injured and the passenger was uninjured. The airplane received substantial damage. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91.

According to a statement given by the passenger to a Federal Aviation Administration (FAA) inspector and the Maine State Police, just prior to the airplane making contact with the water, the pilot made a verbal expression and immediately after making contact with the water, the airplane went to the left and nosed over. She also informed the FAA inspector that they departed a paved surface at 8B0. The passenger reported to the Maine State Police that on the morning of the accident, the pilot "wasn't feeling well," however, after breakfast "he was feeling much better and felt he was fine to fly." She also reported that "they had a normal flight" and the area of the accident was "the same area he always lands."

### PERSONNEL INFORMATION

The pilot, age 64, held an airline transport pilot certificate with a rating for airplane multiengine land and type ratings for the Douglas DC 3, Grumman 1159, HS-125, and N-265. He also held a commercial pilot certificate, with ratings for airplane single-engine land, airplane single-engine sea, airplane multiengine sea, and rotorcraft-helicopter. His most recent FAA second-class medical certificate was issued on May 13, 2010, and at that time the pilot indicated 23,390 total hours of flight experience.

### AIRPLANE INFORMATION

The airplane was manufactured in 1980 and was issued an FAA airworthiness certificate on February 6, 1980. The airplane's most recent annual/100-hour inspection was accomplished on January 14, 2010, at the time of the inspection the airplane had accrued 5,610.1 total hours and had indicated a tachometer time of 685.3 hours.

The airplane was an all-metal, high-wing design with a Whipaire amphibious landing gear system installed. It was equipped with a Continental IO-520-D engine. According to aircraft logbook entries and FAA records, the amphibious landing gear system was installed on the airplane on May 23, 2000. The airplane would be equipped with either the Whipline 3450 amphibious floats or skis depending on the time of year and the amphibious floats were re-installed on the airplane on June 23, 2010. A main landing gear and a nose landing gear were installed in each float. The gear system was hydraulically actuated and driven by two electric hydraulic pumps. The selection of gear up or gear down was accomplished with a cockpit mounted selector handle. Gear position indicator lights were located on a panel beside the selector handle. There were four blue indicator lights, one for each gear, which illuminated when the landing gear was retracted for a water landing. There were four green indicator lights, one for each gear, which illuminated when the landing gear was extended for a runway landing. Additionally, the airplane was equipped with a Lake and Air Amphibian Landing Gear Position

Advisory System. The system consisted of an air data computer and an annunciator light/pushbutton mounted on the instrument panel. It sensed landing gear position and airspeed and provided advisories to the pilot visually through the amber "GEAR ADVISORY" annunciator light and aurally through the airplane audio system. The system is designed to turn on automatically upon receiving normal electrical power.

#### METEOROLOGICAL INFORMATION

The 1056 recorded weather observation at the Greenville Municipal Airport (3B1), Greenville, Maine, located approximately 15 miles to the southeast of the accident location, included calm wind, temperature 20 degrees C, dew point 11 degrees C; altimeter 30.09 inches of mercury.

#### WRECKAGE AND IMPACT

The accident airplane was examined by an FAA inspector at the accident site. According to pictures provided by the FAA, the outboard section of the left wing beginning about mid-span was bent in the positive direction approximately 15 degrees. The floats remained attached at all fittings; no punctures or damage was observed to the floats. The left float was buckled, and all four of the landing gear wheels were in the down or extended position.

According to an FAA inspector and a representative from Cessna Aircraft, the engine and cylinders were drained, the magnetos were removed and reinstalled, and the damaged left wing was removed, by a local mechanic. The mechanic stated that the engine had been ran using the right fuel tank and it ran well all the way to full power. The mechanic also stated that the electric landing gear motor was not functional, but he was able to pump the gear up and down using the hydraulic hand pump. Power was re-applied to the aircraft after all non-gear warning system circuit breakers and switches were pulled or turned off. Four green lights were observed on the landing gear control panel indicating the gear was down and locked. The yellow illuminated "Gear Advisory" warning annunciator was pushed and held in for at least 5 seconds in unsuccessful attempts to initiate a system self test. According to Wipaire, Inc., the test should provide audio voices, but only static could be heard through the over-head speaker, headphones, and internal audio panel speaker. Eventually, the audio panel circuit breaker tripped, which concluded further testing using aircraft power.

The gear advisory warning box was removed from the pilot's side kick panel and the potentiometer controlling the airspeed at which the audible gear warning is heard was set to the number 8 setting which corresponds to 78 KIAS. The gear warning box cover was removed to facilitate photo documenting the position of the potentiometer and corrosion was noted to two of the power transistors and a diode on the circuit board. The gear advisory system that was installed on the airplane was designed to function without input from the pilot. During takeoff and climb, as the airspeed of the airplane increased through a predetermined threshold value, the system would arm automatically. As the airplane slowed for landing and the airspeed decreased through the same predetermined threshold value, the annunciator light would have began blinking and one of the following messages would have been heard over the audio system "GEAR IS UP FOR WATER LANDING," "GEAR IS DOWN FOR RUNWAY LANDING," or "CHECK GEAR." These advisories are designed to continue until the pilot canceled them by pressing the annunciator light.

#### MEDICAL AND PATHOLOGICAL INFORMATION

A postmortem examination of the pilot was performed by the State of Maine, Office of the Chief Medical Examiner. The cause of death was reported as drowning.

The FAA's Civil Aerospace Medical Institute performed forensic toxicology on specimens from the pilot. The report stated that no carbon monoxide, cyanide, or ethanol was detected. 170.28 ug/ml, ug/g Acetaminophen was detected in the urine and 9.503 ug/ml, ug/g was detected in the blood, 0.05 ug/ml, ug/g Dihydrocodeine was detected in the urine, Diphenhydramine was detected in the urine and 0.091 ug/ml, ug/g was detected in blood, 0.138 ug/ml, ug/g Hydrocodone was detected in urine, 0.074 ug/ml, ug/g hydromorphone was detected in urine, Losartan, Norpropoxyphene, were detected in the blood, Losartan, Quinine, and 0.131 ug/ml, ug/g Norpropoxyphene were detected in the urine.

According to medical records obtained by the Safety Board, on July 19, 2010, the pilot had a biopsy completed on several small ulcers and was diagnosed with stomach cancer. On July 30, 2010 he had a scan performed and no metastatic disease was found and that surgery would be scheduled. Earlier in the month the pilot had been hospitalized for pancreatitis and had an electrocardiography (EKG) completed, with normal results. Other medical records indicated that the pilot had been experiencing back pain.

#### SURVIVAL ASPECTS

The seat belts were examined by an FAA inspector and a representative from Cessna Aircraft, in an attempt to determine if the pilot was utilizing his restraint. Crease marks were observed in the belt webbing at the location of the buckle on the passenger's seat belt. Crease marks were observed in the same location on the pilot's seat belt in addition to lengthwise creasing of the shoulder harness and stretching of the webbing near an area of abrasion on the lap belt. Both seats remained intact and attached to the seat rails and could be moved freely along the rails after fully disengaging the locking pins. The pilot's seat was equipped with an auto-tensioning belt style secondary seat stop and the unit functioned normally as the pilot's seat was moved fore and aft along the seat rail.

Both doors operated normally and could be latched and re-opened. No impact damage was noted to the glareshield or instrument panel with the exception of the landing gear switch.

The tubular steel cross braces that run diagonally across the windshield were intact and no impact damaged was noted; however, the pilot's side cross brace was bent aft approximately mid position, approximately where one might place a hand to help reposition the seat or pull themselves forward or upward.

#### ADDITIONAL INFORMATION

According to the FAA Seaplane, Skiplane, and Float/Ski Equipped Helicopter Operations Handbook, FAA-H-8083-23 (Chapter 6, Seaplane Operations-Landings), "In Seaplanes equipped with retractable landing gear (amphibians), it is extremely important to make certain that the wheels are retracted when landing on water. Wherever possible, make a visual check of the wheels themselves, in addition to checking the landing gear position indicators. A wheels-down landing on water is almost certain to capsize the seaplane, and is far more serious than landing the seaplane on land with the wheels up..."

## History of Flight

Initial climb	Landing gear not configured
Landing-flare/touchdown	Landing gear not configured (Defining event) Nose over/nose down

## Pilot Information

Certificate:	Airline Transport; Commercial	Age:	64, Male
Airplane Rating(s):	Multi-engine Land; Multi-engine Sea; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 2 With Waivers/Limitations	Last Medical Exam:	05/13/2010
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 23390 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	Registration:	N369E
Model/Series:	A185F	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	18504000
Landing Gear Type:	Amphibian	Seats:	6
Date/Type of Last Inspection:	01/14/2010, Annual	Certified Max Gross Wt.:	3320 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	5610 Hours	Engine Manufacturer:	CONT MOTOR
ELT:	Installed, not activated	Engine Model/Series:	IO-520-D
Registered Owner:	POINT GROUP LLC	Rated Power:	285 hp
Operator:	On file	Air Carrier Operating Certificate:	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	GNR, 1401 ft msl	Observation Time:	1056 EDT
Distance from Accident Site:	15 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	151 °	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	20° C / 11° C
Lowest Ceiling:	None	Visibility	
Wind Speed/Gusts, Direction:	Calm	Visibility (RVR):	
Altimeter Setting:	30.09 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Rangeley, ME (8B0)	Type of Flight Plan Filed:	None
Destination:	Rockwood, ME	Type of Clearance:	None
Departure Time:		Type of Airspace:	

## Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal, 1 None		

## Administrative Information

Investigator In Charge (IIC):	Shawn Etcher	Adopted Date:	10/17/2011
Additional Participating Persons:	Dennis P Tremblay; FAA/FSDO; Portland, ME		
Publish Date:	10/17/2011		
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=76811">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=76811</a>		

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