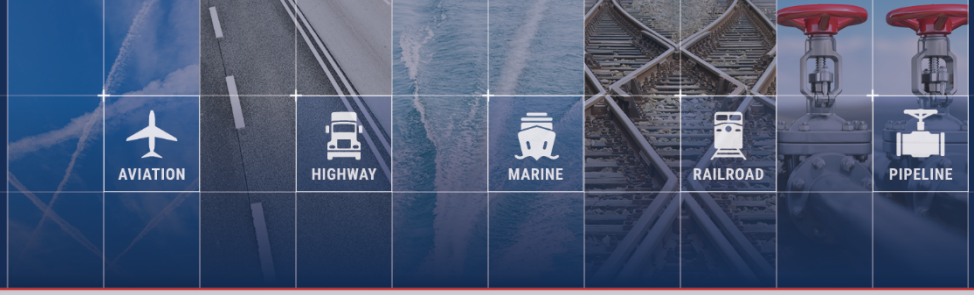

Aviation Investigation Final Report

Location:	Whittier, Alaska	**Accident Number:**	WPR19FA152
Date & Time:	May 21, 2019, 13:00 Local	**Registration:**	N5457X
Aircraft:	Cessna A185	**Aircraft Damage:**	Substantial
Defining Event:	Landing gear not configured	**Injuries:**	1 Fatal, 1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Shortly after landing on water, the amphibious airplane nosed over and came to rest inverted. The passenger in the front right seat drowned following the accident, likely as a result of being incapacitated by head injuries sustained during the impact. The landing gear were found extended and the landing gear selector was found in the "down" position.

The airplane was equipped with a visual landing gear indicator as well as an audio annunciator that was designed to provide a reminder of the gear position to the pilot once the airplane had slowed to its landing approach speed. During the nearly 7 years that the pilot had owned the airplane, the landing gear annunciator system had been out of adjustment and did not give an audible alert until after landing. The pilot was aware of the discrepancy but did not have the system repaired or adjusted.

The circumstances of the accident are consistent with the pilot's failure to configure the landing gear for the water landing. The pilot stated that he was likely distracted by both passengers, who were talking throughout the flight, including during the descent, and landing approach. It is likely that his distraction due to the talking passengers contributed to his failure to configure the gear and to recognize that it was not configured properly before landing.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot’s failure to configure the landing gear for a water landing, which resulted in a nose-over. Contributing to the accident was the pilot's distraction due to his talking passengers.

Findings

Personnel issues	Forgotten action/omission - Pilot
Aircraft	Landing gear selector - Not used/operated
Personnel issues	Monitoring equip/instruments - Pilot
Aircraft	Gear position and warning - Incorrect service/maintenance

Factual Information

History of Flight

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

On May 21, 2019, about 1300 Alaska daylight time, an amphibious float-equipped Cessna A185F, N5457X, was substantially damaged when it was involved in an accident near Whittier, Alaska. The pilot sustained minor injuries, one passenger sustained serious injuries, and another passenger was fatally injured. The airplane was operated as a Title *14 Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he planned to fly the two passengers for a sightseeing trip in the Prince William Sound area, and then land on the water in Cascade Bay to view a waterfall. He was an acquaintance with both passengers and had flown them in the same airplane a few years prior.

The pilot reported that the preflight inspection and takeoff were uneventful. He stated that both passengers were talking throughout all stages of the flight, and as they approached Cascade Bay for landing, he performed the before-landing checks. Confirmation of the landing gear position was included in the checklist, and while he could recall performing the check, he did not have a specific recollection of the landing gear status. The pilot stated that the two passengers continued to talk throughout the descent, and he later surmised that he was likely distracted by their conversation.

The water was rough, so he planned to land the airplane slightly faster than normal; however, as soon as the floats touched the water, he felt a jolt, and the airplane violently nosed over. The cabin immediately filled with water, and he was able to egress by forcing out the door window. After spending a moment at the surface, he swam back down into the airplane and was able to pull the passenger located in the aft seat free. He attempted to free the passenger in the front right seat, but he appeared to be already unconscious.

Review of photos taken a few hours after the accident revealed that the airplane came to rest inverted with the entire fuselage submerged, with only the floats remaining above water. The four wheels of the landing gear appeared in the extended, runway landing position. (see Figure 1.) Subsequent examination of the cockpit revealed that the gear control lever was in the “DOWN” position. (see Figure 2.)

Figure 1. Airplane at the accident site with landing gear extended.

Figure 2. Landing gear control in “DOWN” position (Airplane upside down in water).

Pilot Information

Certificate:	Private	**Age:**	56,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	June 8, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	May 12, 2017
Flight Time:	1102 hours (Total, all aircraft), 820 hours (Total, this make and model), 973 hours (Pilot In Command, all aircraft)		

The pilot's most recent flight took place the day before the accident, when he flew the airplane twice, initially departing from Wasilla, Alaska, then making multiple takeoffs and landings on water.

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N5457X
Model/Series:	A185 F	**Aircraft Category:**	Airplane
Year of Manufacture:	1973	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	18502338
Landing Gear Type:	Retractable - None; Amphibian	**Seats:**	4
Date/Type of Last Inspection:	May 20, 2019 Annual	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	1 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4203.1 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	IO-550-D20B
Registered Owner:	On file	**Rated Power:**	300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The pilot purchased the airplane in April 2012. The most recent annual inspection was completed the day before the accident.

The airplane was equipped with Aerocet 3400 series amphibious seaplane floats, which were installed in 2004.

Amphibious Landing Gear System

The floats were equipped with retractable wheels, composed of two swiveling nose wheels and two main wheels. Gear operation was initiated by moving the landing gear switch on the K-65 landing gear advisory unit to either the up or down position.

The landing gear advisory unit included eight gear position indicator lights (four blue lights labeled for gear-up water landing, and four amber lights for gear-down runway landing). The unit also included an audio advisory system, which was connected to the airplane's audio panel, and provided verbal information to the pilot regarding gear position.

The design was such that when the airplane slowed to the trigger speed, around 90 knots, an audio alert would announce the position of the gear and the type of landing it was configured for. With the gear up, the message would say, "Gear up for water landing." With the gear down, the message would say, "Gear down for runway landing." The message would repeat until acknowledged by the pilot by pressing a button on the advisory unit.

The Airplane and Systems Description section of the FAA-approved supplemental flight manual provided with the floats noted that the audio advisory system does not alleviate the pilot's responsibility to visually check the location of the landing gear before landing; especially to assure that the gear is up when making a water landing. The manual notes that the audio system may be turned down or fail, and that the pilot should always visually check the nose gear before attempting a water landing regardless of audio indication.

The Amplified Procedures section of the supplemental flight manual issued the following warning:

DO NOT land in the water with the wheels either partially or fully extended. If the landing MUST be accomplished on water and the gear is partially or fully extended, it is suggested that a power-on full stall landing with full flaps (40°) would be the best procedure. Unlatch both cabin doors prior to touchdown. During deceleration after touchdown, with the gear extended, the float bows will submerge and there is a high probability of flipping the amphibian onto its back causing either fatal or serious injury.

The final item in the "takeoff from land checklist" calls for, "Landing Gear UP".

The before landing on water checklist is as follows:

1. Landing Gear -- UP.
2. Landing Gear Blue Indicator Lights -- CHECK ILLUMINATED.
3. Visually check that nose gear are UP
4. Water Rudders -- UP.
5. Wing Flaps -- 40°

The pilot stated that, during the entire time he had owned the airplane, the audio advisory system would only issue alerts regarding the landing gear position once the airplane had slowed to about 50 knots, which was just after landing. He stated that he had discussed the system with a mechanic when he initially purchased the airplane and had been told that the trigger speed was not adjustable.

The Aerocet 3400 service and maintenance manual did not provide specific instructions for adjusting the trigger point of the audio landing gear advisory system annunciator beyond stating that turning the adjustment potentiometer clockwise would increase the trigger speed. The manual stated that the unit was sealed and should be returned to Aerocet for servicing.

According to a technical representative from Aerocet, the potentiometer adjustment range is limited and requires only about 1/2 turn to sweep through a 45 to 90 knot speed range. Adjustment on the aircraft is not advised, because it requires a flight test each time an

adjustment is made; therefore, Aerocet advised customers to return the K-65 unit if an adjustment is needed. Company records indicated that the unit installed on the accident airplane had not been returned since its manufacture in 2004.

The K-65 unit sustained damage from saltwater immersion following the accident, and an assessment of its operating condition at the time of the accident could not be determined.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PAVD,37 ft msl	**Distance from Accident Site:**	43 Nautical Miles
Observation Time:	21:56 Local	**Direction from Accident Site:**	72°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	Broken / 30000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.02 inches Hg	**Temperature/Dew Point:**	13°C / 4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Wasilla, AK (PAWS)	**Type of Flight Plan Filed:**	None
Destination:	Whittier, AK	**Type of Clearance:**	None
Departure Time:	12:10 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal, 1 Serious	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 Serious, 1 Minor	**Latitude, Longitude:**	60.910556,-147.77082

Survival Aspects

The airplane was equipped with four-point harnesses for both front seats, and lap belts for the rear seats. The pilot stated that the passenger in the right seat, who sustained fatal injuries, was wearing the four-point harness.

According to the autopsy performed by the State of Alaska, State Medical Examiner's Office, the cause of death for the front seat passenger was drowning. The medical examiner stated that the passenger sustained blunt force head injuries during the accident, which likely resulted in a loss of consciousness prior to becoming submerged in water.

Additional Information

Multiple FAA publications discuss risks associated with distractions in the cockpit and recommend refraining from nonessential tasks and conversation during critical phases of flight such as takeoff and landing. For example, the Pilot's Handbook of Aeronautical Knowledge states that pilots can manage risks when flying with passengers by including their expectations on talking and conversation during the flight when conducting a preflight briefing. For example, calling for periods of no pilot communication with the passengers or by the passengers, otherwise known as a sterile flight deck, to minimize the potential for distraction.

Administrative Information

Investigator In Charge (IIC):	Simpson, Eliott
Additional Participating Persons:	William S Tu; Federal Aviation Administration FSDO; Anchorage, AK Peter Basile; Textron Aviation; Wichita , KS
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Investigation Class:	Class 3
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=99461