Jog 1999



National Transportation Safety Board

Washington, D. C. 20594

Safety Recommendation

Date: September 21, 1988

In reply refer to: A-88-113 and -114

Honorable T. Allan McArtor Administrator Federal Aviation Administration Washington, D.C. 20591

At 0950 on July 12, 1987, a float-equipped Cessna 180A, N5027E, collided with water immediately after takeoff from Long Lake, New Brighton, Minnesota, while on a personal flight. Visual meteorological conditions prevailed at the time of the accident; no flight plan had been filed. The airplane was destroyed, and the pilot and four passengers were fatally injured. Only one of the five occupants suffered trauma; the others were not injured. Drowning was the official cause of death of all five airplane occupants. Although the circumstances of the accident indicate that none of the occupants were able to escape from the airplane, the postaccident inspection revealed that no personal flotation devices (PFD) or any other flotation equipment was aboard the airplane. Consequently, had any of the occupants of the airplane been able to escape, their ability to survive in the lake would have been compromised.

As a result of this accident, the National Transportation Safety Board was prompted to examine its accident files to determine if there were other accidents where survivors could have been saved by using personal flotation devices. The Safety Board's records showed that between 1983 and 1986, 15 survivable accidents involved water contact. Thirteen of the 15 airplanes involved sank immediately and the other 2 remained afloat. Of the 30 occupants aboard these 15 airplanes, 10 were killed, 7 were seriously injured, 10 had minor injuries, and 12 had no injuries. Of the 10 that died, 8 were involved in crashes where other occupants survived. Also, of these 10 fatalities, 5 drowned. The Safety Board believes that personal flotation devices may have allowed some of those 10 persons to survive until they were either rescued or were able to make their way to shore.

Several examples from the Safety Board's investigations illustrate the point. In one accident,² witnesses saw the airplane crash and within several minutes saw two occupants climb onto the floating wreckage. The witnesses began building a log raft to rescue the occupants, but before they could complete it, the occupants had drifted

¹For more detailed information, read Field Accident Brief File No. 1700 (attached).

²For more detailed information, read Field Accident Brief File No. 2854 (attached).

out of sight in fog and rain. A search was made, but the occupants were never found and were presumed to have drowned. In a second Safety Board investigation,³ the airplane struck a sand bar while taxiing and turned over and sank after 1 1/2 hours. The pilot stated that he had everyone remove their chest and hip waders and that he tied the openings closed after the waders were filled with air. He and his three passengers attempted to swim to shore. Two individuals were lost and are presumed drowned. The waders were the only flotation devices available to them. The pilot stated there was no emergency flotation gear on board the airplane.

The exact number of amphibians and floatplanes in the United States is difficult to determine because some airplanes can be operated as floatplanes and then as land-based planes simply by removing the floats and adding wheels. Also, the Federal Aviation Administration does not cite a floatplane category when compiling and reporting statistics on aircraft type, operations, etc. However, the Seaplane Pilots Association estimates that between 7,500 and 8,500 floatplanes operate in the United States. The estimate breaks down to about 3,000 floatplanes in the State of Alaska; a total of 2,000 floatplanes in the States of Minnesota, Washington, and Oregon; and the remainder divided among other States.

The Safety Board believes that amphibians and floatplanes inherently are exposed to a greater risk to water mishaps than are land-based aircraft. Consequently, pilots and passengers of these aircraft should be required to carry flotation equipment, and the pilot-in-command of such aircraft should be required to brief all passengers on the location and operation of the flotation equipment before each flight. Federal Aviation Regulations do not require flotation devices on aircraft that operate under 14 CFR Part 91 except on aircraft operated for hire and on large turbine-powered multiengine airplanes on extended overwater operations, that is, more than 50 miles from shore.

Therefore, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Amend 14 CFR Part 91 to require that all aircraft operated on water be equipped with approved flotation gear readily available to each occupant. (Class II, Priority Action) (A-88-113)

Amend 14 CFR Part 91 to require that the pilot-in-command (PIC) brief all passengers on the location of flotation gear if the PIC intends to make a water takeoff or landing. (Class Π , Priority Action) (A-88-114)

KOLSTAD, Acting Chairman, and BURNETT, LAUBER, NALL, and DICKINSON, Members, concurred in these recommendations.

By: James L. Kolstad Acting Chairman

³For detailed information, read Field Accident Brief File No. 1633 (attached).

Brief of Accident

File No 1700	1,7/12/87	NEW RRIGHTON, M	z	A/C Red, No. N5C	N5027E	7 i L	Tine (Lc1) - 0950	0950 CDT	1 1 1
Type of Operation Flight Conducted Under -14 CFR 91	icate-NONE (GE PERSONAL -PERSONAL -14 CFR	GENERAL AVIA NAL R 91	; ; ; ; ; ; ; ; ; ; ; ;	Aircraft Damage DESTROYED Fire NONE	() (r 0 (r 3 (r	ጠ መ መ ~	Injuries Serious Minor O O O		Nor.e
Aircraft Information Nake/Model - CESSNA Landing Gear - FLOAT Hax Gross Wt - 2650 No. of Seats - 4	1 08		Eng Make/Model Number Engines Engine Type Rated Fower	CONTINENTAL 0-470-K RECIFROCATING-CARRURETOR 235 HF	0-470-K	1	ELT Installed/Activated Stall Warning System	1 1 1	YES/NO YES
Weather Data We Briefins - NO RECORD OF BRIE We Briefins - NO RECORD OF BRIE Completeness - NO Basic Weather - UMC Wis billity - 8.0 SH Usibility - 8.0 SH Lowest Sky/Clouds - 1300 FT Condition of Light - DAYLIGHT	NO RECORD OF BRIEFING N/A N/A N/A V/A 240/009 KTS 240/009 KTS 8.0 SH 8.0 SH 8.0 SH 8.0 SH 1300 FT SCAT 1 HONE NONE HONE HONE HONE	FING SCATTERED BROKEN	Itinerary Last Departure Point SAME AS ACC/INC Bestination LOCAL ATC/Airspace Type of Flight Flan Type of Clearance Type of Clearance	Point NC Flan - NONE ICE - NONE	A A	Airport Proximity UNK/NR Airport Rata Runway Ident Runway Lth/Wid Runway Surface Runway Status	ta Ident Lth/Wid - N/A Surface - N/A Status - N/A	 	
pilot-In-Command Certificate(s)/Ratins(s) PRIVATE SE LAND, SE SEA	(s)	A A B B B B B B B B B B B B B B B B B B	Age - 73 Rennial Flight Review Current - YE: Months Since - 2 Aircraft Type - C-	5 180	cal Certificate - ' Flight Tir Total - 2809 Make/Model- UNK/NR Instrument- UNK/NR	- VALID HEDI Time (Hours) 109 L NR L NR	Medical Certificate - VALID MEDICAL-NO WAIVERS/LIMIT Flight Time (Hours) Total - 2809 Last 24 Hrs - UNK/NR Hake/Hodel- UNK/NR Last 30 Days- 7 Instrument- UNK/NR Last 90 Days- UNK/NR Hulti-Ens - UNK/NR Rotorcraft - UNK/NR	VERS/LIMI UNK/NR 5- UNK/NR 5- UNK/NR	ju.
Instrument Rating(s)	a(s) - NONE		1					1	1

----Narrative---WITNESSES OBSERVED THE FLOATPLANE START A CLIMBING LEFT TURN SHORTLY AFTER RECOMING AIRBORNE FROM A WATER TAKEOFF,
WITNESSES OBSERVED THE SURFACE RIGHT WING DROPPED AND THE AIRCRAFT'S RIGHT WING THE AIRCRAFT'S RIGHT WING THE AIRCRAFT'S RIGHT WING FROM THE FLOATS
FIRST, FLIPPED INVERTED AND SANK, THE AIRCRAFT CAME TO REST SUBMERGED AND SUSPENDED UPSIDE DOWN FROM THE FLOATS
WHICH REMAINED ON THE SURFACE, ALL FIVE OCCUPANTS DIED BY DROWNING IN THE AIRFLANE,

Brief of Accident (Continued)

File No. - 1700 7/12/87 NEW BRIGHTON, MN A/C Rus. No. N5027E Time (Lc1) - 0950 CD1

Phase of Operation Occurrence #1 LOSS OF CONTROL - IN FLIGHT TAKEOFF - INITIAL CLIMB

Finding(s)

1. AIRCRAFT FERFORMANCE.CLIMB CAFABILITY - EXCEEDED
2. AIRSPEED(US) - NOT MAINTAINED - FILOT IN COMMAND
3. OVER CONFIDENCE IN AIRCRAFT'S ABILITY - FILOT IN COMMAND

Occurrence #2 Phase of Operation IN FLIGHT COLLISION WITH TERRAIN/WATER DESCENT - UNCONTROLLED

4. STALL

Finding(s)

5. TERRAIN CONDITION - WATER 6. MISC ERPT/FURNISHINGS, LIFEVEST - NOT INSTALLED

----Probable Cause----

The National Transportation Safety Board determines that the Probable Cause(s) of this accident is/are finding(s) 1:2

Factor(s) relating to this accident is/are finding(s) 3-6

Brief of Accident

File No 2854 9/21/83 VALDEZ,AK	¥	A/C Reg. No. N4559F	96		Time (Lc1) - 1115	1115 AUT	# \$ 1
Type Operation Certificate-ON-DEMAND AIR TOXI Type Operation -NENNETH C, SUMEY, COLUMRI Name of Carrier -NON SCHED, DOMESTIC, FASSENGER Flisht Conducted Under ACFR 135 Accident Occurred During -APPROACH	TOXI STIC, PASSENGER	Aircraft Damosc SUBSTANTIAL Fire NONE	() () () () () () () () () () () () () () () (Serious M 0 0	Hinor 0 0	None 0 0
Hake/Model CESSNA 185 Landing Gear - FLOAT Hax Gross Wt - 3350 No. of Seats - 4	Eng Muke/Model Number Engines Engine Tupe Rated Power	del - CONTINENTAL IO-520-D ncs - 1 - RFCIF-FUEL INJECTED - 300 HP	-520-D ECTED	ELT I	ELT Installed/Activated Stall Warning System	s Custed	YES-UNK/NR YES
Weather Data Weather Data We Briefins - NO RECORD OF BRIEFING We be completeness - N/A Completeness - N/A Basic Weather - UMC Wind Dir/Speed- UNK/NR Visibility - 3.000 SM Lowest Ceiling - 1000 FT BROKEN Obstructions to Vision- FOG Precipitation - RAIN Condition of Lisht - DAYLIGHT	1	re Point AK E,AK ht Plan - COMPANY (VFR) rance - NONE ids - FULL STOP	 1 1	Airport Proximity OFF AIRPORT/SIR Airport Data Runway Ident Runway Ident Runway Surface Runway Status	reort Proximity OFF AIRPORT/STRIP Port Bata Runway Ident Runway Lth/Wid Runway Status	N/A 15000 WATER C	CHOFPY
Personnel Information Pilot-In-Conmand Certificate(s)/Rating(s) COMMERCIAL SE LAND, SE SEA	Ade - 34 Biennial Flight Review Current - UN Months Since - UN Aircraft Type - UN	Medi K/NR K/NR K/NR	col Curtificate - Flight Ti Total - 2500 Make/Model- UNK/NR Instrument- 136	ficate - VALID MEDI Flisht Time (Hours) - 2500 1- UNK/NR t- 136	MEDICAL-WAIVERS/L lurs) Last 24 Hrs - Last 30 Days- Last 30 Days-	A HES - UNK/NR D Days- UNK/NR	IIT IK/NR IK/NR 1000

- AIRPLANE Instrument Ratins(s)

2000

Rotorcraft

- UNK/NR

Instrument-Multi-Ens -

LOG RAFI TO RESCUE THE OCCUPANTS, BUT BEFORE COMPLETING THE RAFT, THE OCCUPANTS HAD DRIFTED OUT OF SIGHT IN FOG & RAIN. THE PLT HAD TRIED TO FLY TO SILVER LAKE, EARLIFR THAT MORNING, BUT HAD TO ABORT THE MISSION DUE TO LOW CEILING & VISIBILITY, WHEN HE HAD RETURNED AT 1110 ADT, THE CEILING HAD IMPROVED, BUT THERE WAS STILL LAYERS OF STRATUS & VISIBILITY, WHEN HE HAIN CLOUD BASE, WITNESSES ORSERVED THE ACFT CIRCLE TWICE & BELIEVED THE PLT INTENDED TO LAND, DURING A DESCENDING LEFT TURN WITH 15 TO 20 DEG OF BANK, THE ACFT STRUCK THE WATER WITH THE LEFT FLOAT, THEN ROUNCED HIGH ABOVE THE WATER, AT THE TOP OF THE BOUNCE, HIGH ENG WAS HEARD, THEN THE ACFT FITCHED DOWN ABRUPTLY & CRASHED IN THE WATER, WHEN THE WATER & SPRAY SURSIDED, WITNESSES SAW 2 FLOATS, THE REAK SECTION OF THE FUSELAGE & DEBRIS ON THE WATER, ABOUT 2 MIN LATER, THEY SAW THE 2 OCCUPANTS CLIMB ONTO THE FLOATING WRECKAGE, THE WITNESSES BEGAN BUILDING A A SEARCH WAS MADE FOR THE OCCUPANTS, BUT THEY COULD NOT BE FOUND & WERE PRESUMED TO HAVE DROWNED.

Brief of Accident (Continued)

File No. - 2854 9/21/83 VALDEZ + AK A/C Red. No. NASS9F Time (Lc1) - 1115 ADT

Phase of Operation Occurrence #1

APPROACH - VFR PATTERN - BASE TO FINAL IN FLIGHT COLLISION WITH TERRAIN

Finding(s)

- 1. WEATHER CONDITION RAIN
 2. WEATHER CONDITION OBSCURATION
 3. WEATHER CONDITION FOG
 4. TERRAIN CONDITION WATER, GLASSY
 5. ALTITUDE MISJUDGED PILOT IN COMMAND
 6. FLARE DELAYED PILOT IN COMMAND
- 7. RECOVERY FROM BOUNCED LANDING NOT FOSSIBLE FILOT IN COMMAND

--Probable Cause----

is/are finding(s) 5+6 The National Transportation Safety Board determines that the Frobable Cause(s) of this accident

Factor(s) relating to this accident is/are finding(s) 1,2,3,4

Brief of Accident

1

File No 1633 8/28/84 ILIAHNA BA	Y+AK A/C	Rcs. No. N2641Y	Time (Lc1) - 0600 ADT
Basic Information Type Operatins Certificate-NONE (GENERAL	AVIATION)	Aircraft Damase	Injuries (a) Serious Minor None
00	arir arir arir arir arir arir arir arir	1	} } }
ation - CESSNA 180 - FLOAT - 2550	Ens Mcke/Model - Cl Number Engines - 1 Ensine Tyre Rated Fower - RF	CONTIMENTAL 0-470-L 1 RFCIPROCATING-CARBURETOR 230 HF	ELT Installed/Activated - YES/NO Stall Warning System - YES
Weather Data Wx Briefing - NO RECORD OF BRIEFING	Itinerary Last Reparture Point	Aı	Airport Fromimits OFF AIRFORT/SIRIF
ı i	SAME AS ACC/INC Destination Penen BAY.AK	Airec	Airport Data
CLEAR CLEAR - 2000 FT BROK an- NONE - NONE	ATC/Airse Type of Type of	- NONE	Runway Ident N/A Runway Lth/Wid N/A Runway Surface N/A Runway Status N/A
	Ase 43 Riennial Flight Review Current - YES Months Since - 13 Aircraft Tyre - C-180	Medical Cortificate Flight Total - 30 Make/Model- 3 Instrument- UNK/ Hulti-Eng - UNK/	- VALID MEDICAL-WAIVERS/LIMIT Time (Hours) 50 Last 24 Hrs - 4 100 Last 30 Days- UNK/NR NR Last 90 Days- 120 NR Rotorcræft - UNK/NR
THE ACFT STRUCK A GRAVEL BAR WHILE TAXIING, THE ACFT WAS NOT FREED FROM THE GRAVEL BAR UNTIL THE NEXT MORNING IN A RECEDING TIDE ON THE FREVIOUS NIGHT, APPROX 3 HOURS LATER AS THE FILOT TAXIED AROUND AWAITING DAYLIGHT FOR TAKEDEF, THE ACFT ROLLED OVER IN THE WATER AND EVENTUALLY SANK, FRIOR TO THE DISAFFEARANCE OF THE ACFT, THE PILOT ALSO STATED THE PILOT ACCOMPLISHED FILOT AND VERDED TO BE DEVELOR WITH BUBRIES COMING OUT OF THEM. THE PILOT ACCOMPLISHED FLOATS NOT ACCOMPLISHED FLOATS NOT ACCOMPLISHED FROM THE BARBONAL FLOATS NOT ACCOMPLISHED BARBONAL FLOATS	E ACFT WAS NOT FREED FROM THE GRAVEL BAR UNTI OX 3 HOURS LATER AS THE FILOT TAXIED AROUND A EVENTUALLY SANK, FRIOK TO THE DISAFFEARANCE PLOAT WITH BUBBLES COMING OUT OF THEM. THE DOUT DAILY, HOWEVER HE INDICATED THAT THIS W DOUT WILLY, HOWEVER HE INDICATED THAT THIS W	FT WAS NOT FREED FROM THE GRAVEL BAR UNTIL THE NEXT MORNING DUE HOURS LATER AS THE FILOT TAXIED AROUND AWAITING DAYLIGHT FOR NTUALLY SANK, FRIOR TO THE DISAFFEARANCE OF THE ACFT, THE OAT WITH BURBLES COMING OUT OF THEM. THE PILOT ALSO STATED THAT TO IN IT HOWEVER HE INDICATED THAT THIS WAS NOT ACCOMPLISHED THE TIME IT SANK, THERE WERE NO AFPROVED PERSONAL FLOATATION	IL THE NEXT MORNING DUE NWAITING DAYLIGHT FOR OF THE ACFT, THE PILOT ALSO STATED THAT THE NAS NOT ACCOMFLISHED

1

BETWEEN THE TIME THE ACFT STRUCK THE GRAVEL RAR AND THE TIME IT SANK, THERE WERE NO APPROVED PERSONAL FLOATATION DEVICES ABDARD THE ACFT, THE FOUR INDIVIDUALS ARDARD THE FLANE USED INFLATED HIP WADERS DURING AN ATTEMPT TO SWIM FOR SHORE, TWO INDIVIDUALS WERE LOST AND PRESUMED DROWNED IN THIS ATTEMPT, WATER TEMPERATURE WAS APPROX 45 DEGREES

i.

Brief of Accident (Continued)

File No. - 1633 8/28/84 ILIAHNA BAY,AK A/C Res. No. N2641Y Time (Lc1) - 0500 AUT

Phase of Operation Occurrence #1 TAXI - TO TAKEOFF DRAGGED WING, ROTOR, FOD, OR FLOAT

Finding(s)

- 1. LANDING GEAR, FLOAT ASSEMBLY CRACKED
 2. JUDGEMENT POOR PILOT IN COMMAND
 3. IMPROPER USE OF PROCEDURE, PRESSURE -
- FILOT IN COMMAND
- 4. LANDING GEAR, FLOAT ASSEMBLY LEAK

Occurrence #2 Phase of Operation MISCELLANEOUS/OTHER TAXI - TO TAKEOFF

Finding(s)

- 5. LANDING GEAR, FLOAT ASSEMBLY LEAK
 6. MAINTENANCE, SERVICE OF AIRCRAFT IMPROPER PILOT IN COMMAND
 7. AFRCRAFT PREFLIGHT POOR PILOT IN COMMAND
 8. PASSENGER BRIEFING NOT PERFORMED FILOT IN COMMAND
- 8. PASSENGER BRIEFING NOT TENTONIAND 9. EQUIPMENT, OTHER INADEQUATE PILOT IN COMMAND

----Probable Cause----

is/are finding(s) 2+4 The National Transportation Safety Board determines that the Probable Cause(s) of this accident

Factor(s) relating to this accident is/are finding(s) 3