File No. 1-0212

CIVIL AERONAUTICS BOARD

ACCIDENT INVESTIGATION REPORT

Adopted: June 14, 1955 **Released:** June 17, 1955

ALASKA COASTAL AIRLINES - NEAR PELICAN CITY, ALASKA,
NOVEMBER 4, 1954

The Accident

An Alaska Coastal Airlines Grumman G-44 amphibian, N 67794, operating as scheduled Flight 60, crashed in a mountain pass a few minutes after takeoff from Pelican City at 1305,1/ November 4, 1954. The pilot was fatally injured; the two passengers, though seriously injured, survived. The aircraft was demolished by impact and fire.

History of the Flight

Flight 60 originated at Sitka, Alaska, with stops scheduled at Pelican City, Hoonah, and Juneau, the destination. Before departure from Sitka, the dispatcher in Juneau issued clearance for the flight to proceed DVFR (Defense Visual Flight Rules) to Hoonah and wait, if necessary, at that station for weather to improve in the Juneau area. The flight plan indicated estimated time from Sitka to Juneau, including stops, would be two hours and fifty minutes. Fuel consumption was estimated at 60 gallons, with 20 gallons reserve upon arrival at Juneau. Gross weight of all disposable load at takeoff was 1,401 pounds, 30 less than the maximum allowable. The flight departed Sitka at 1153 with Captain James C. Rinehart (pilot), four passengers, cargo, mail, and baggage.

The route between Sitka and Pelican City follows the North Pacific shore. The flight landed at Pelican City at 1235. Two passengers deplaned and 88 pounds of baggage, mail, and cargo were taken off; 159 pounds of cargo were added. The aircraft was not refueled. The pilot reported by radio that the flight departed Pelican City at 1305 en route to Hoonah. This was the last radio contact.

When the flight became overdue at Hoonah, search operations were instituted. The Coast Guard was notified at 1655 and began search. At approximately 0800 the following morning, the pilot of a private aircraft located the wreckage in a mountain pass several miles southeast of Pelican City. A Coast Guard and civilian ground rescue party arrived the afternoon of November 5, rendered first aid to the two passengers, and stayed until the survivors and the body of the pilot were evacuated by helicopter on November 6.

1/ All times referred to herein are Pacific standard and based on the 24-hour clock.

Investigation

The survivors advised that after takeoff at Pelican City, the flight proceeded southeast up Lisianski Inlet about 11 miles and turned left up a mountain pass near Soloma Point. The sides of the mountains were visible, but clouds covered the tops and extended about halfway down the slopes. The flight encountered rain, fog, and turbulence as it proceeded up the pass.

The pass runs approximately northeast between Lisianski Inlet and Tenakee Inlet, winding between two mountain ridges. There are several sharp bends in its 10-mile length. The floor of the pass rises rapidly for approximately the first three miles from the Lisianski Inlet, or west, side. The highest point is at approximately the 1,500-foot level, whereupon the pass slopes down and widens for the next seven miles to Tenakee Inlet. Ridges and peaks of the mountains on each side rise to approximately 3,000 feet.

Near the summit of the pass, the pilot successfully negotiated a bend, turning right approximately 90 degrees. Almost immediately after negotiating the first bend, it was necessary to turn left for a second sharp bend. The pass at this point is about one-half mile wide. The survivors said that during the moderate to steeply banked left turn, the aircraft encountered a downdraft, dropped, and struck the ground on the left wing tip, and cartwheeled in final impact.

Both passengers were rendered momentarily unconscious, then made their way out through a break in the fuselage. Their seat belts did not fail. The pilot was extricated from the flaming wreckage and lived for about three hours, but never fully regained consciousness.

Examination at the scene revealed that the accident occurred at the 1,500-foot level in an open area of soft, moss-covered earth with numerous outcroppings of large rocks. The scene of the accident was about three miles from Lisianski Inlet and approximately one-fourth mile due south of the summit. Two prominent gouges indicated that the left wing float and wing tip struck while the aircraft was in a moderate to steeply banked left turn and on a west heading. The left wing float was destroyed and the wing panel sheared from the center section. Fuel spilled into the wreckage when fuel lines broke and fuel tanks ruptured. Fire broke out and burned unabated until all fuel was consumed.

The landing gear and flaps were retracted at the time of the accident. The pointer of the airspeed indicator was jammed at 160 m. p. h. Both propellers were found in maximum low pitch and evidence indicated that considerable power was being developed. No evidence was found to indicate malfunction or failure of airframe, engine, or propeller components prior to impact.

Weather conditions at the scene of the accident were not observed by any witness on the ground. Weather conditions on the eastern mountain slopes near Tenakee Inlet were learned from an employee of Alaska Coastal Airlines who was hunting in the area. He said the sky was overcast and there was light rain throughout the day and dense fog filled the pass at about the 1,500-foot level.

The U. S. Weather Bureau advised that the most probable weather conditions prevailing in the accident area were: "Scattered to occasionally broken clouds near 500 feet with an overcast between 2,000 and 4,000 feet with good visibility along the west side of Chichagof Island, but with sharply reduced ceilings and visibility along the higher ridges in rain and fog. Conditions along the eastern and southern slopes were probably worse than along the western side, with the lower deck of clouds broken to overcast and with much lower visibility. The winds prevailing at the scene of the accident are highly problematical since conditions in this area were extremely variable due to the rough terrain. Turbulence was undoubtedly present along and in the lee of mountain ridges and through the passes with strong gusty easterly winds through the passes." The freezing level over Chichagof Island at the time of the accident was estimated to have been between 4,000 and 5,000 feet.

The Alaska Coastal Airlines station manager at Sitka stated that prior to departure of Flight 60 at 1153 he and Captain Rinehart studied the 0730 - 1030 weather sequences. Weather from the Chichagof Island area, received at 1020, and the Pelican City weather, received at 1043, were made available to the pilot. This weather information was essentially the same as that reported above.

The routes over which Alaska Coastal Airlines operates serve various coastal and island points in southeastern Alaska. The coastlines are characterized by high mountains, numerous bays and fjords, and islands with high mountains. Since most of these operations are over water, amphibian aircraft are used by the company to a great extent. Several overland routes are frequently utilized, many of which involve flight through mountain passes. The pass in which this accident occurred is the regular route between Pelican City and Hoonah, via Port Frederick Sound, particularly when weather conditions on the overwater route around the north end of Chichagof Island, which is the alternate route to Hoonah, preclude VFR operation. Weather conditions along this alternate route, while poor, appeared to have been satisfactory for VFR flight. All aircraft operated by the company which are 12,500 pounds or less gross weight are restricted to DVFR flight. That part of the company operations manual pertaining to the overland route between Pelican City and Hoonah, via this particular pass, reads: "This route provides a ten-mile crossing of land between Tenakee Inlet and Lisianski Inlet. This crossing will be made at 3,000 feet."

Investigation disclosed that Captain Rinehart had approximately 20 years' experience as a professional pilot in Alaska, most of this having been acquired in southeastern Alaska. He had approximately 14,000 pilot hours, of which about 600 were in Grumman G-44 aircraft.

The company, the aircraft, and the pilot were currently certificated.

Analysis

When the flight departed Pelican City, the pilot apparently did not have sufficient information on weather conditions within the pass and on its

Tenakee Inlet side. He should, however, have known of the generally poor conditions in the pass and beyond it through weather briefing before departure from Sitka. The pass is relatively narrow, and once entered, a turn to reverse course is difficult. There is no question but that he flew lower than the altitude prescribed by the company operations manual (3,000 feet) for this crossing. The base of the clouds was lower than this prescribed altitude, thus forming a tunnel through which he attempted to fly. Weather conditions near the summit of the pass, where the accident occurred, were only slightly above zero ceiling and visibility. The tunnel at this point was therefore almost blocked for contact flight. The location of the wreckage near the second bend, and the heading of the aircraft at impact indicate that the pilot started to negotiate the second sharp bend in the pass when weather conditions made it necessary to turn back.

Study of the short gouges in the earth at the point of initial impact, the nature of the left wing panel damage, and the limited area of wreckage distribution demonstrated that the wing tip struck the ground while the aircraft was in a steep left bank and in a high rate of sink, thus indicating a left slip before impact. This was probably due to encountering severe turbulence while in the steep left turn and resulted in an abrupt and uncontrolled loss of altitude combined with an uncontrolled continuation of the left turn. This assumption is strengthened by testimony of the passengers in their descriptions of what occurred just prior to impact.

It is not known why the pilot elected to take the regular route through the pass, as opposed to choosing the alternate route over the water around the north end of Chichagof Island. The regular route through the pass saves about ten minutes' flying time, which might have been a consideration. As the aircraft climbed after takeoff from Pelican City, it must have been apparent to the pilot that the pass could not be negotiated VFR at the prescribed 3,000-foot altitude, since the base of the clouds was lower than this altitude.

Although Captain Rinehart had a wealth of experience in flying the rugged terrain of this area, this accident is indicative of questionable judgment and failure to abide by company procedures promulgated for safety reasons. The Board must therefore conclude that he pressed into prohibitive weather conditions.

Findings

The Board finds that:

1. The carrier, the aircraft, and the pilot were currently certificated.

2. The pilot was briefed on weather conditions over the route Sitka-Juneau, via intermediate stops, before departure from Sitka.

3. Flight 60 departed Sitka at 1153 and proceeded uneventfully to Pelican City, landing at 1235.

4. The flight departed Pelican City at 1305 with two passengers, mail, and cargo, proceeded up Lisianski Inlet to Soloma Point, and turned left up a mountain pass regularly used for the route to Hoonah.

5. Weather conditions within the pass were: Rain, fog, severe turbulence, and low ceiling, with the base of the clouds extending about halfway down the 3,000-foot mountain slopes.

6. Flight 60 crashed one-fourth mile due south of the summit of the pass about 1,500 feet above mean sea level, the pilot having negotiated about three miles of its 10-mile length.

7. The aircraft struck the ground on a west heading at a sharp bend in the narrow pass, having encountered strong turbulence in a steep left bank at low altitude.

8. The pilot had reversed course when the accident occurred.

9. The two passengers survived but the pilot was fatally injured.

10. Alaska Coastal Airlines flights in this type aircraft are restricted to Defense Visual Flight Rules operations.

11. The Alaska Coastal Airlines operations manual specified that the pass must be flown at 3,000 feet altitude.

12. The pilot was attempting to negotiate the pass at less than the altitude specified in the operations manual and in weather conditions which were lower than DVFR requirements.

Probable Cause

The Board determines that the probable cause of this accident was loss of control of the aircraft during a steep turn in severe turbulence while the pilot was attempting to conduct visual flight at less than the required altitude and weather minimums.

BY THE CIVIL AERONAUTICS BOARD:

/s/ ROSS RIZLEY

/s/ JOSEPH P. ADAMS

/s/ CHAN GURNEY

/s/ HARMAR D. DENNY

Josh Lee, Member, did not participate in the adoption of this report.

S U P P L E M E N T A L D A T A

Special Investigation

The Civil Aeronautics Board was notified of the accident at approximately 1800, November 4, 1954. An investigation was immediately initiated in accordance with the provisions of Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended. A Special Investigation was ordered and depositions were taken at Juneau, Alaska, December 6, 7, and 10, 1954; Sitka, Alaska, December 9, 1954; and Anchorage, Alaska, December 16, 1954.

Air Carrier

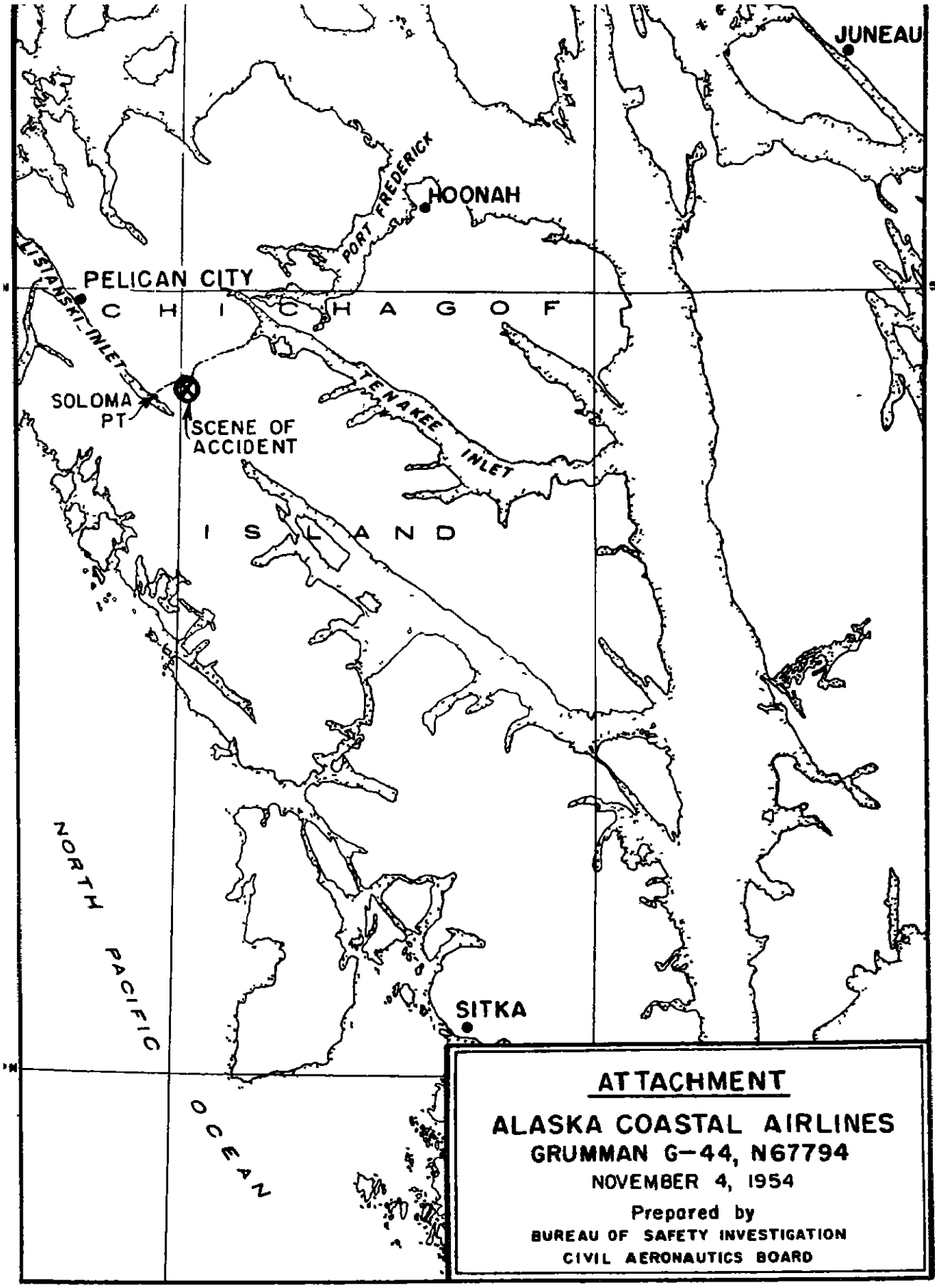
Marine Airways, a corporation, and Alaska Air Transport, Inc., do business as Alaska Coastal Airlines. The principal offices of Alaska Coastal Airlines are located at 2 Marine Way, Juneau, Alaska. The carrier possesses a certificate of public convenience and necessity issued by the Civil Aeronautics Board and an air carrier operating certificate issued by the Civil Aeronautics Administration.

Flight Personnel

Captain James C. Rinehart, age 46, had been employed by Alaska Coastal Airlines since March 1948. He held a valid airman certificate with commercial pilot privileges and the following ratings: airplane, single- and multi-engine land and sea; flight instructor; instrument. Captain Rinehart had approximately 14,000 pilot hours, of which about 600 were acquired in Grumman G-44 aircraft. His last first-class CAA physical examination was taken on February 9, 1954, with no physical waivers. He had a rest period of about 24 hours prior to this flight. Captain Rinehart's last "Route and Proficiency" check was successfully accomplished under the supervision of the chief pilot on April 2, 1954; his last "Instrument and Equipment" check, also given by the chief pilot, was passed on April 12, 1954.

The Aircraft

N 67794, a Grumman G-44 amphibian, serial number 1321, was manufactured in July 1943, and had a total time of 2,763 hours. It was owned by Alaska Coastal Airlines. A No. 1 inspection was made on November 4, 1954, after which the aircraft acquired approximately 45 minutes' flying time. It was currently certificated by the Civil Aeronautics Administration. The aircraft was powered by two Ranger 6-440-C5 engines and Hartzell HC12X20-3A propellers, and was equipped with a full complement of instruments for flight under IFR conditions. It had one Lear RCBB receiver and a Lear T30AB transmitter.



ATTACHMENT

ALASKA COASTAL AIRLINES
GRUMMAN G-44, N67794
NOVEMBER 4, 1954

Prepared by
BUREAU OF SAFETY INVESTIGATION
CIVIL AERONAUTICS BOARD

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