

## CIVIL AERONAUTICS BOARD

**ACCIDENT INVESTIGATION REPORT**

Adopted: July 7, 1954

Released: July 9, 1954

UNION PRODUCING COMPANY - NEAR SHREVEPORT, LOUISIANA,  
JANUARY 10, 1954

The Accident

A Grumman amphibian, Model G-73, N 4949N, crashed approximately 10 miles southeast of the Shreveport, Louisiana Airport on January 10, 1954, at about 1750.1/ Both pilots and the 10 passengers were killed instantly; the aircraft, owned by the Union Producing Company of Shreveport, Louisiana, was destroyed by impact and ground fire.

History of the Flight

This flight was for the purpose of transporting 10 men from a private duck hunting camp at Lower Mud Lake, Louisiana, near the mouth of the Mermentau River, to Shreveport, Louisiana, about 190 miles north-northwest. There were 14 in the hunting party; the other four and baggage for all 14 were flown to Shreveport in another company airplane from the Lake Charles, Louisiana Airport some 30 miles from Lower Mud Lake.

At the time of takeoff, weather over the route was overcast with the base of clouds at 800 or 900 feet, and tops sloping from about 2,500 feet at Lower Mud Lake to 7,000 feet at Shreveport. The 1628 weather at Lake Charles Airport, 160 miles from Shreveport, and on course, was: measured ceiling 900 feet, overcast; visibility 10 miles; temperature 47 degrees; dew point 44; wind north-east 17; altimeter 29.92. (Refer to Attachment A).

The gross weight at takeoff was approximately the prescribed maximum of 12,750 pounds; the C. G. was located within prescribed limits. The pilot was W. C. Huddleston, the copilot L. R. Schexnaydre.

Takeoff was made at about 1635 from Lower Mud Lake. The aircraft first reported at 1704 to the CAA Alexandria radio station, giving its position as on top (of clouds) over DeRidder, Louisiana, approximately 76 miles from the point of departure and on course. At this time the pilot requested and received Shreveport weather: measured ceiling 600 feet, variable, overcast; visibility 2 miles: drizzle, fog; temperature 36; dew point 34; wind west-northwest 17; altimeter 30.02; ceiling variable 400 to 800 feet. Alexandria radio also advised that it was very possible the drizzle would turn into freezing drizzle because of low temperature in the Shreveport area. The pilot acknowledged and said that he was going to fly on top to Elmgrove, a fan marker about 16 miles southeast of Shreveport, then file an instrument let-down to

1/ All times herein are Central Standard and based on the 24-hour clock.

Shreveport. He then reported that he was in the clear and cloud tops were at 4,500 to 5,000 feet.

At 1719 the flight reported to Shreveport Approach Control as being 30 miles southwest of Natchitoches, Louisiana, about 70 miles from Shreveport, altitude 5,500 feet, 500 on top, inbound to Shreveport, and asked for an Instrument Flight Rules clearance for approach.

The flight was then issued a 500-feet-on-top clearance to Shreveport's Instrument Landing System outer marker, and the pilot replied that he was estimating the outer marker at 1750. At approximately 1729 Approach Control again checked with Fort Worth Air Route Traffic Control to ascertain if any traffic in the vicinity would prevent descent from 500 feet on top to 2,000 feet, with a new clearance to Forbing, Louisiana, a range intersection about 10 miles southwest of the Shreveport Airport. ARTC advised that if the aircraft was above 5,000 feet to start it down immediately.

Approach Control then asked the pilot his altitude; he replied that he was now at 6,000 feet, more than 500 feet on top. Approach Control then cleared him to descend to 2,000 feet, maintaining 2,000 feet to Forbing, with no delay expected, to report leaving the 6,000-foot altitude and when passing 5,000 feet, and to start descent immediately. The flight was then advised of reported icing at 4,000 feet and above and given the 1704 Shreveport weather: 300 feet scattered, measured 600 variable, overcast, 2 miles visibility, light snow and fog. This was acknowledged.

The flight left 6,000 feet at 1730 and 5,000 feet at 1732 reporting temperatures of 40°F. and 32°F., respectively.

At 1745 the flight advised that it was at 2,000 feet and had picked up a "load" of ice. It was cleared to 1,500 feet, the minimum safe altitude, at which time the pilot said he was on the back course of the localizer. The flight was then requested to report when passing the localizer upon which Approach Control would bring it in. The pilot requested the ground temperature, which was given as 34°F. The next contact advised being at 1,200 feet which was all he "could hold."

At 1747 the flight was cleared for an approach and was asked for an arrival estimate at the outer marker. At 1749, the last radio contact with the flight, it reported being contact below the clouds with Wallace Lake in sight and "going in." No emergency, as such, was declared.

Several persons near the crash site heard the engines and then saw the aircraft just below the overcast some 400 to 500 feet above the ground. It descended steeply, banking sharply from side to side several times with very loud but normal engine noise. It passed from view beyond trees; almost immediately a crash was heard and a glare seen.

### Investigation

The crash site was in a wooded area a few yards from the north shore of Wallace Lake, a long, narrow, swampy and tree-strewn body of water running generally from east to west.

Persons who saw the descent and heard the crash immediately proceeded to the scene. They found ice forming on the ground, tree branches, automobile windshields, etc., from freezing rain and sleet. Heat of the fire, however, had melted such ice as may have been on the aircraft.

Investigation disclosed no indication of any malfunctioning of the aircraft or its power plants. Computations indicated that enough fuel remained for the aircraft to have proceeded to any one of several airports or water areas, allowing an ice-free approach. Impact was with considerable sinking speed while the aircraft was about level laterally and slightly nose up resulting in pronounced localization of the wreckage.

Both pilots were properly certificated, experienced, and had considerable flying time together on this aircraft. It was not equipped with wing or windshield deicers but did have propeller alcohol slingers and ample alcohol.

On the day of the accident the Grumman had been flown by the same pilots from Houma, Louisiana, its base 145 miles to the east, to Lower Mud Lake. Takeoff was about 1000; landing about 1130. This flight was uneventful. A phone call was made by one of the pilots from Houma to the New Orleans weather office before departure. It is not known if weather information was obtained for the flight to Lower Mud Lake or from there to Shreveport, or both. In any event, weather information that may have been obtained could not have been current for the Lower Mud Lake-Shreveport flight because of the several hours time interval during which a new forecast came into effect.

From Lower Mud Lake the airplane was flown to Lake Charles Airport with all baggage of the hunting party and four of the members. It landed at 1503 and was on the ground about 17 minutes. Another company airplane, a Lockheed Lodestar, was standing by to receive these passengers and baggage. Its pilot talked with the Grumman's pilot, who remained in his cockpit, concerning weather in the Shreveport area. During this time the Grumman's copilot helped in unloading baggage.

The Lockheed pilot had just talked via telephone with another Union Producing Company pilot at Shreveport, who had landed a third company airplane at Shreveport at 1359 and who described conditions encountered there. These were a ceiling of 800-900 feet, top of overcast at 6,200 feet with clear air above and a surface temperature of 38°F. This information was given to the Grumman's pilot who expressed concern over not having wing deicers. He remarked, according to the Lockheed pilot, "I don't want to get in ice, I don't have boots and stuff." The Grumman then left for Lower Mud Lake.

Lake Charles is a joint civil-military airport with a U.S. Weather Bureau office. The Grumman's pilots did not visit or telephone this office.

All available evidence indicated that the Grumman pilots did not avail themselves of a weather briefing from the Weather Bureau before the final flight either in person, by radio or by telephone. As far as could be learned, they did not have either the Weather Bureau's Memphis area forecast which applied to the Shreveport area or the Shreveport terminal forecast. (Neither of these is ordinarily broadcast.) This Memphis forecast, for 12 hours from 1300 to 0100, which proved to be quite accurate in regard to icing, was available on request considerably before the flight's departure. It was,

"overcast with bases 600 to 1,000 feet and top 5,000 feet with another layer, base 6,000 feet to 8,000 feet and top 14,000 feet, intermittent light rain becoming ceiling 1,000 to 1,200 feet, overcast, occasional light freezing rain by 1500, moderate to heavy rime icing in clouds and in precipitation except occasional severe icing<sup>2/</sup> in freezing rain areas in the freezing layers, freezing level at or near the surface." The Shreveport terminal forecast for the same period was, "ceiling 800, overcast, wind north 15, occasional moderate rain showers to 1500, ceiling 1,500, overcast, wind north 15 after 1500 to 2300." This terminal forecast was, as is usual, only for ground conditions.

This Memphis forecast covered an area that included the final 60 miles of flight. However, the New Orleans forecast for the area immediately adjacent to the south and for the same period was, "broken to overcast, cloud base 800, tops 4,000 feet; another overcast layer, base 6,000 and tops 12,000 feet, occasional light rain or drizzle, moderate to heavy icing in clouds and icing in precipitation above freezing level. Freezing level 7,000 to 5,000 feet."

The boundary between the New Orleans area forecast and the Memphis area forecast is 60 miles south of Shreveport where there was 5,000 feet difference in the forecast height of the freezing level. In that boundary zone the weather was developing in agreement with the Memphis forecast, yet the forecaster at New Orleans did not amend his forecast for better accuracy. Actually this discrepancy has no bearing on the accident but it could have been significant from the standpoint of confusing the pilot's interpretation of expected en route weather had these forecasts been obtained.

In connection with these forecasts it is pertinent to examine the weather conditions at Shreveport encountered by three other aircraft. The Lodestar departed Lake Charles at 1617 and landed at Shreveport at 1716, about 34 minutes before the crash. This flight was in clear air above a solid overcast sloping up to 5,000 feet. During descent through the clouds light rime ice formed on the windshield at 4,000 feet and melted at about 3,000 feet. The ice was thin and the pilots considered it to be of no consequence.

Another pilot, flying a twin-engine Beechcraft without wing deicers, landed at Shreveport from Baton Rouge, Louisiana, at 1728 and picked up wing ice during the approach. He testified that ice formed at the 4,000, 3,000, and 2,000-foot levels and that he so reported to the Shreveport tower. He said that at one time during his approach, the aircraft gave signs of stalling because of ice and that after landing he found ice about three inches thick

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<sup>2/</sup> The Weather Bureau's Circular Letter No. 23-53 of 9-15-53 defines three classes of icing, as used in forecasts. They are, light, moderate, and heavy. Severe, as used in the Memphis regional forecast, has no official connotation. However, heavy is defined as, "An accumulation of ice which continues to build up despite deicing procedures. It is sufficiently serious to cause marked alteration in speed, altitude or track, and would seriously affect the safety of the flight." In common usage severe implies a more intense or advanced condition than does heavy and the Weather Bureau so uses it in defining degrees of turbulence as light, moderate, heavy, and severe.

on his wings. He believes that he told the tower of this condition but the tower disclaimed any knowledge of this other than a report of ice at 4,000 feet. This landing was only 22 minutes before the accident.

A Convair operated by Braniff Airways landed at Shreveport at 1808. During the approach it encountered moderate ice which was disposed of readily by its thermal deicing equipment. Its captain testified, "It is our opinion that an aircraft without deicing equipment would be unable to maintain flight in the condition that existed in the Shreveport area at the time of our approach."

The company had a policy in regard to the hiring and training of its pilots aimed at maintaining a high level of pilot proficiency. It required that new pilots have CAA commercial pilot certificates with instrument ratings and a minimum of 1,500 hours on multi-engine aircraft. It also required that pilots pass a strict physical examination by the company's doctor, in addition to CAA requirements. Another company policy was that pilots visit a U. S. Weather Bureau office before starting a flight. They were directed to go to a Weather Bureau office in person, if possible, or if this could not be done to contact the Weather Bureau by radio or telephone.

### Analysis

The record is clear that Pilot Huddleston was concerned with the probability of encountering ice en route. This is borne out by the fact that while at Lake Charles he expressed apprehension because his aircraft was not equipped with wing deicers. While over DeRidder he was advised that the precipitation at Shreveport might turn into freezing drizzle. Upon receiving this information it is believed that the pilot should have requested from Flight Advisory Weather Service the weather he could expect.

Pilot Huddleston had another warning of the probability of ice. During descent from 6,000 feet he experienced and reported a temperature inversion. Therefore he could expect lower temperatures in the clouds during most of the descent.

It is not known at just what levels during the descent the ice accretion was the most rapid; however, when he reported at 2,000 feet, he said that a "load" of ice had been picked up and requested clearance to a lower level. Evidently the ice load or further accretion forced him below the last assigned altitude of 1,500 feet, for at 1,200 feet he reported that this was the highest altitude he could maintain. The pilot obviously had more ice than he estimated, or continued to accumulate more, for a few moments later he reported below the clouds and "going in."

Although it is believed that the pilot suspected icing conditions at Shreveport, he undoubtedly did not know its severity, due to his failure to contact the Weather Bureau for a weather briefing at Lake Charles and his failure to make inquiries while en route.

Civil Air Regulations, Section 60.11, reads, "PREFLIGHT ACTION. Before beginning a flight, the pilot in command of the aircraft shall familiarize himself with all available information appropriate to the intended operation.

Preflight action for flights away from the vicinity of an airport, and for all IFR flights, shall include a careful study of available current weather reports and forecasts, taking into consideration fuel requirements, an alternate course of action if the flight cannot be completed as planned, and also any known traffic delays of which he has been advised by air traffic control."

The evidence of record is clear that Pilot Huddleston did not acquaint himself with all available information to evaluate the situation properly. The significant portion of the forecast read, ". . . severe icing in freezing rain . . ." Thus he had not familiarized himself with the regulation's ". . . all available information . . ." Had he done so, his fuller knowledge would most probably have been a deterrent against continuing into severe icing with an aircraft not equipped to combat the icing conditions encountered.

There is another side to this accident which should also be considered. Certain duties are prescribed in "Standard Procedures for Flight Assistance Service," a joint publication of the Weather Bureau and the CAA. Its Section 2 states: "2.2 Flight Assistance Service Personnel: CAA and Weather Bureau personnel rendering flight assistance service will put forth every effort to anticipate flight assistance needs and to initiate service so far as possible. However, they will not be held responsible for the initiation of flight assistance service in each instance." The same section also states: "2.1 Pilots: The sole purpose of flight assistance service is to aid the pilot. Flight assistance service will in no way relieve the pilot of complete responsibility for the safe conduct of flight, and final decision regarding any proposed alteration of flight plan must be made by him."

Pilots are expected to report hazardous conditions encountered en route. However, it cannot be taken for granted that this will always be done. In view of the Memphis forecast containing "occasional severe icing," it would seem to have been appropriate for the Weather Bureau meteorologist at Shreveport to have drawn the icing forecast to the tower personnel's attention and at the same time to have requested that pilots be asked to give as much information as possible on icing conditions being encountered. Had this been done, it is entirely possible that the resulting information furnished to Captain Huddleston would have alerted him to the condition he actually encountered.

### Findings

On the basis of all available evidence the Board finds that:

1. The aircraft and the crew were properly certificated.
2. At the time of takeoff the gross weight of the airplane was less than the approved maximum and its center of gravity was within approved limits.
3. The aircraft did not have wing or windshield deicing equipment.
4. The U. S. Weather Bureau area forecast for the time and place of the accident included occasional severe icing.
5. The pilot did not obtain sufficient weather information to conduct this flight safely.

6. The aircraft quickly acquired so much ice that it could no longer maintain altitude.

Probable Cause

The Board determines that the probable cause of this accident was the rapid accumulation of wing ice to such a degree that the aircraft could not maintain altitude. A contributing factor was the pilot's failure to acquaint himself with the pertinent weather forecasts.

BY THE CIVIL AERONAUTICS BOARD:

/s/ CHAN GURNEY

/s/ OSWALD RYAN

/s/ JOSEPH P. ADAMS

Harmar D. Denny, Vice Chairman, and 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

### Investigation and Hearing

The Board's Investigator-in-Charge at Fort Worth, Texas, the nearest regional office, was notified of the accident during the evening of January 10, 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. The Board ordered a public hearing which was held at the Washington-Youree Hotel, Shreveport, Louisiana, on February 10 and 11, 1954.

### Company

Union Producing Company is a Delaware corporation with its principal place of business at 1525 Fairfield Avenue, Shreveport, Louisiana. The company is a wholly owned subsidiary of United Gas Corporation, also a Delaware corporation of the same address.

### Crew

Pilot W. C. Huddleston, age 33, held a currently effective airline transport pilot certificate with appropriate rating for the subject aircraft. He had been employed by the Union Producing Company since May 1, 1949. His total flying time was 6,852 hours, total instrument time 812 hours, and total time in the subject aircraft 1,114 hours.

Pilot Louis R. Schexnaydre, age 32, held a valid commercial pilot certificate and was appropriately rated for the subject aircraft. His total flying time was 3,114 hours, of which 1,020 hours had been in the subject aircraft.

### The Aircraft

N 4949N was a Grumman Mallard amphibious airplane, Model G-73, powered with Pratt and Whitney R 1340-S3H1 engines. The total flying time on the aircraft and its engines was 1,730 hours. Both engines had been overhauled 359 hours prior to the accident.