

May 12, 1937.

Secretary Roper today made public the report of the Accident Board of the Bureau of Air Commerce in connection with the fatal air line accident near Newhall, California, on December 27, 1936. The report is as follows:

REPORT OF THE ACCIDENT BOARD

Statement of probable cause concerning an accident which occurred to an aircraft of United Air Lines Transport Corporation, near Newhall, California on December 27, 1936

To the Secretary of Commerce:

On December 27, 1936, at approximately 7:38 P. M. at a point about two miles southwest of Newhall, California, an airplane of United States registry, while being flown in scheduled interstate operation carrying mail, passengers and express, met with an accident which resulted in death to all persons on board and the complete destruction of the aircraft.

The pilot, Edwin W. Blom, held a Federal transport pilot's license and a scheduled air transport rating. His semi-annual physical examination, taken on August 11, 1936, showed him to be in good physical condition. His license and rating were renewed on August 26, 1936. The co-pilot, Robert J. McLean, held a Federal transport pilot's license. His last physical examination, taken on July 23, 1936, showed him to be in good physical condition. The third member of the crew was Stewardess Yvonne Trego. Passengers aboard were as follows:

E. T. Ford San Marino, California	M. P. Hare Los Angeles, California
Mrs. E. T. Ford San Marino, California	John Korn El Centro, California
A. L. Markwell Los Angeles, California	Mrs. W. A. Newton Los Angeles, California
Alex Novak El Centro, California	H. S. Teague Los Angeles, California

Miss Evelyn Valance
Los Angeles, California

The airplane, a Boeing, Model 247-D, was inspected and approved for renewal of license by the Bureau of Air Commerce on September 10, 1936, and bore Federal license number NC-13355. It was owned by the United Air Lines Transport Corporation of Chicago, Illinois, and at the time of the accident was being operated on the Oakland Division of this Corporation as Trip No. 34, scheduled from Oakland to Los Angeles, California, with one stop, at San Francisco. The airport serving Los Angeles is Union Air Terminal, Burbank, California. This operation was conducted under a valid Federal Letter of Authority.

Flight 34 was dispatched out of Oakland on schedule at 5:10 P. M. A stop was made at San Francisco and the flight departed from this point on schedule, 5:30 P. M., for Los Angeles (Burbank), due to arrive at 7:30 P. M. The weather at each terminal point was satisfactory for flight. Layers of clouds existed in the area between San Francisco and Los Angeles. The flight was properly authorized on the clearance form to fly over the top of the lower layer of clouds.

The flight over the greater part of the route was apparently uneventful. At 7:04 P. M., Pilot Blom reported to Bakersfield via radio that he was over the south edge of Buena Vista Lake at 10,000 feet, descending slowly through broken clouds. At 7:06 P. M. he again talked to the Bakersfield station stating that he was now at 9,500 feet and changing to day frequency. Both messages were acknowledged by Bakersfield. At 7:09 P. M. the pilot communicated with Burbank giving his estimated time of arrival there as 7:37 P. M. Following acknowledgment by Burbank, the pilot requested clearance into the area. This was given him by Burbank at 7:12 P. M. but receipt of this clearance was never acknowledged. Following this, ground stations called the flight at intervals and it was not until 7:29 P. M., 17 minutes later, that Pilot Blom was heard from again, at which time he asked if Burbank could hear him and although acknowledgment of this call was given by Burbank, Fresno, Bakersfield and a pilot flying another schedule, no response came from Blom to indicate that he had received such acknowledgment. At 7:36 P. M. the co-pilot requested that the localizer (company owned low-powered radio range) at the Burbank Airport be turned on. This was done and the airplane's location requested. The co-pilot's reply to this was, "Just a minute." This was the last radio contact with the flight. A search was started when it became apparent that an accident had occurred and the wrecked airplane was first sighted from the air about 10:00 A. M. the following morning at the head of Rice Canyon.

An examination of the immediate terrain gave evidence that the airplane had first struck the ground at an elevation of 2620 feet while turning to the right with the wings banked at an angle of about 28 degrees and in level or slightly descending flight. Marks on the ground indicate that after striking, the airplane traveled in a compass direction of approximately 307 degrees. It passed through several trees shearing off the wings and right hand tail surfaces, and the right landing gear. The rest of the airplane continued as a unit 300 feet further where it struck the wall of a narrow canyon and slid back to the bottom thereof. An examination of surrounding terrain indicates that the airplane had just previously passed over an adjacent ridge which was approximately 200 feet higher than the point where the accident occurred.

A careful examination of the wreckage failed to indicate any structural failure of the aircraft. It was evident that both engines were operating at cruising speed or better at the time of the accident and that there was a considerable amount of fuel in the tanks. The landing gear was found in the down position.

There were no witnesses to the accident and available evidence is insufficient to definitely reconstruct the flight from Buena Vista Lake on. A farmer at Santa Paula, 25 miles west of the accident, stated that while listening over his short wave radio, he heard one of the pilots report that

he had sighted the Saugus beacon and was coming in (meaning coming in for a landing at Burbank). Testimony of this witness appeared sound and it is possible that this report was made by Flight 34 and for some reason was unheard by any company station.

In the 7:06 P. M. radio contact with Bakersfield the pilot stated that he was changing to day frequency for radio contact. It is standard procedure when about to enter an area in which air traffic is controlled by a terminal airport radio station, to reverse radio frequencies, that is, to change to night frequency if entering in the day time or to change to day frequency if entering at night. In this way the airport radio control station can maintain communication with all flights within the control area without interference from other flights and nearby ground stations. Burbank has an airport radio control station, KBLA, which also furnishes the localizer.

The U. S. Weather Bureau weather forecast, a copy of which was a part of the pilot's clearance for the flight, indicated generally that ceilings in the Saugus-Burbank area would vary between one and three thousand feet and that there would be occasional light rain. The last regular hourly sequence weather report available to the pilot via radio contained the weather observations made at 6:41 P. M. and broadcast from Fresno at 6:50 P. M. and from Los Angeles at 6:55 P. M. At this time the estimated ceiling and visibility for Saugus was 3500 feet and 20 miles, for Burbank, 3000 feet and 20 miles, with lower broken clouds at 1800 feet. The 7:41 observation, three minutes after the accident, gave the ceilings and visibilities at these points as: Saugus, 2000 feet and 12 miles and Burbank, 1700 feet and 10 miles, with a few breaks in the overcast. Light rain was reported at both points. This weather was still definitely above the minimum requirements for an instrument approach to Burbank. Other pilots flying in the vicinity at or near the time of the accident reported the presence of heavy static in the clouds at times and also low broken clouds in Newhall Pass. Headwinds between Buena Vista Lake and Burbank were stronger than anticipated, as both the airport officials and other pilots had underestimated arrival times at Burbank by a few minutes.

The two radio contacts (7:04 P. M. and 7:06 P. M.), made while Flight 34 was at and a short distance south of Buena Vista Lake, show definitely that it had started a slow descent. This descent, however, starting from a point approximately 85 miles from Burbank, does not indicate whether the pilot's intention was to lower from the 10,000 feet at which he had been flying to 4,500 feet for an instrument approach over the pass to Burbank or to continue to descend to an altitude which would enable him to fly through the pass by visual methods. Likewise, the landing gear being down gave no indication of the pilot's intention, as it is customary to lower the landing gear when in the vicinity of Saugus, either for visual or instrument approach.

The accident occurred exactly one minute later than the pilot's estimated arrival time at Burbank. Bad static conditions existed in the clouds at the time and it is possible that the pilot, making an instrument approach, was letting down through the clouds at the time of the accident, thinking he was in the immediate vicinity of Burbank. Several things, however, suggest the improbability of this. Principally, an instrument approach to Burbank is premised on a definite position fix at Saugus, approximately 18 miles from Burbank. Failing in a definite fix at this point, the flight should proceed to a designated alternate airport. The accident occurred at a point

approximately four miles south of Saugus and it is hardly reasonable to think that the pilot, starting from a fix at Saugus, descended at this point, thinking he was over Burbank, which is fourteen miles further south. Also, other pilots flying in and out of Burbank at or near the same time, all flying higher than the immediate mountains, had little or no difficulty. The airways beacon light, located on the high point in the pass, was either seen or its glow recognized through the clouds by several of these pilots.

The available evidence strongly indicates that the pilot originally expected to be able to fly through the pass under the clouds by visual contact. The presence of heavy static in the clouds at times would make this desirable if practical. The latest regular weather report for the Burbank-Saugus area, from Fresno at 6:50 P. M. and from Los Angeles at 6:55 P. M. did indicate that a visual approach was possible. However, the general weather forecast for the entire area, given the pilot as a part of his clearance, indicated the possibility of the changes which did occur. The pilot displayed no particular concern about the weather. By his own calculation, he expected to arrive at Burbank a few minutes before the 7:41 P. M. hourly weather observation sequence would be broadcast and although several radio contacts were effected, there is no evidence that he ever asked for weather information which was available to him upon request.

The evidence further suggests that after getting into the pass at an altitude lower than is permitted for an instrument approach, the pilot decided that conditions were not favorable for flying through the pass by visual contact. It was raining at the time and broken clouds probably partially obscured the airways beacon light on the high point in the pass at times. It is also probable that static was encountered in these clouds.

The attitude and direction in which the airplane struck the ridge indicate definitely that it was executing a turn, and make it appear that after getting into the pass and deciding against proceeding by visual contact, the pilot elected to get back out of the pass to start an instrument approach from a more favorable point, rather than to ascend directly into the clouds for an instrument approach from within the pass.

The co-pilot's reply of "Just a minute" was made while the airplane was in this turn and less than two minutes before the accident occurred (7:38 P. M.). There was nothing in the manner in which this message was given to indicate the slightest alarm and it suggests a desire on the part of the co-pilot to delay giving the requested position report until the turn had been completed. The existence of stronger headwinds than anticipated would account for the presence of the flight in the pass at the approximate time which the pilot, 27 minutes earlier, had estimated that he would arrive in Burbank.

The evidence in the case tends to show that the pilot had no concern over his safety up to the very moment he decided to turn in the pass. He was intimately acquainted with the route and with the type of aircraft he was flying. His weather forecast predicted variable weather at Burbank. The last hourly weather report, if he received it, indicated that the weather was varying favorably. No effort seems to have been made by the dispatching or weather observing personnel to closely observe and acquaint the pilot with the unfavorable weather trend which developed between the 6:41 observation and the time of the accident. Radio communications with other aircraft, parts of

which the pilot or his co-pilot must have heard, indicated that numerous other aircraft were moving in and out of Burbank without appreciable difficulty or delay. While, like the other pilots, he probably encountered heavy static in the clouds over the southerly 75 to 100 miles, he undoubtedly regarded this as a minor annoyance since the weather seemed satisfactory for visual approach, which would not require radio navigation, otherwise he would probably have circled about in one of the areas between the clouds where radio reception was clear, which would enable him to get exact weather information. On the other hand, variable weather conditions were forecast, particularly low clouds on the mountain ridges, and it seems to be common knowledge that weather conditions when variable can vary rapidly in the Burbank valley and over the exceedingly rough terrain north and northwest of it. It is also clearly established that at least four other flights in and out of Burbank within the hour, but which were undertaken at altitudes well above the mountains by radio or dead reckoning navigation, were completed successfully and without incident. There is no evidence whatever of emergency due to fuel shortage, mechanical difficulties or icing. It, then, seems inescapable that the underlying cause of the accident was the choice by the pilot of the visual approach.

It is the opinion of the Accident Board that the probable cause of this accident was an error on the part of the pilot for attempting to fly through the Newhall pass at an altitude lower than the surrounding mountains without first determining by radio the existing weather.