

DEPARTMENT OF COMMERCE
DIRECTOR OF AIR COMMERCE
WASHINGTON

JUNE 12, 1935

Memorandum to the Secretary:

The report of the Accident board which includes information and probable causes of the TWA air line accident near Atlanta, Missouri, on May 6, 1935, is attached. Because of the unusual interest and concern over this tragedy, it is felt that certain comments as well as corrective measures should be added.

4. The following comments are pertinent at this time:

1. No evidence was produced which indicated that the established Department of Commerce navigation aids or its personnel were not functioning properly in this area.

2. It is apparent that even with an approved operating system, such as that of the TWA Company, the judgment and decisions of the ground and air personnel, the so-called personal equation, still remains paramount. In this case, the decisions were in violation of Department regulations for which proper action will be taken. We are also reminded that the problems of unfavorable weather, particularly as it affects the landing of aircraft, as well as those of navigating and communicating by radio, are not yet solved. However, improvements for the increase of safety are continuing rapidly, both by the Department and the air lines.

3. Not only was this accident unfortunate because of the failure of various of its component parts, rather than the general structure of the company's operation methods and procedure, but it was also unfortunate that it occurred during the period of transition to the Department's new and revised regulations which require approved company operating manuals, as well as material and numerous additional safeguards and safety devices. However, company personnel initiated or permitted certain irregularities which were inexcusable, were violations of regulations and automatically will be treated as such.

4. As to reserve fuel, formerly the Department required transport aircraft to carry 35% flight fuel reserve. This was unsatisfactory since a pilot, when flying against a head wind or in circling storms could actually run out of fuel, experience an emergency landing, or even crash, and yet be complying with Department regulations. Last Fall the Bureau increased this requirement by changing the regulations to read that the pilot must have not only adequate reserve for delays enroute, but must have in the tanks sufficient fuel for 45 minutes of flying after landing at his terminal or at a refueling point. The applicable regulation appears as Section 2 of Chapter 8, Aeronautics Bulletin No. 7-b, Governing Operation of Scheduled Interstate Air Line Services.

"(A) An air line craft shall carry sufficient fuel and oil to fly 45 minutes in addition to the time required for the flight to the next scheduled stop or refueling station.

"(b) Such 45 minutes of additional fuel and oil shall be above and beyond that required by abnormal wind and weather conditions. This margin is intended to guard against possible extraordinary consumption, mechanical losses, or other unforeseen contingencies."

"(c) In flights of unusual duration and/or circumstances, such as instrument or over top flying, the minimum amounts required for such flights shall be specified in the approved section of the company's operations manual."

Because it is deemed to be pertinent, Chapter 8, Section 7 (G) is also quoted. This regulation is equally applicable to the subject matter of dispatching.

Chapter 8, Sec. 7 (G) (International instrument flying authorized provided) — "There is an airport or intermediate field, equipped with radio range beacon within the fuel range of the airplane exclusive of the reserve fuel supply, other than the point of intended landing, which has a steady or improving ceiling of not less than 1,500 feet and a visibility of not less than 2 miles."

5. As to possible pilot fatigue, there was no direct evidence to prove that such was a contributory cause of the accident. Again, it should be mentioned that last Fall the Bureau reduced the maximum allowable time for first pilots from 1,320 hours yearly to 1,000 hours yearly, and the hours of co-pilots from no limitation to not more than 100 hours per month. From January 1st of this year, the Department policy has been to accept the recommendations of the specialized air line medical examiners for these maximum flight limitations. The pilot of the crashed plane had averaged 83 hours for the three previous months and had no flight duty for some five days prior to this flight.

However, there have been for a period of years, regulations prescribing a maximum total of 8 hours daily under certain conditions. TWA had been granted a waiver by the Bureau of this allowable maximum because the schedule between Kansas City and Los Angeles exceeded the limitation. The policy of that company was to fly the pilots more than the customary period in a single day, without however, exceeding the maximum total for the month. There are both advantages and disadvantages to this system, but it is now felt by the Bureau that delays enroute which add to both the scheduled flight time and time on duty, are of sufficient concern to rescind all waivers of this daily 8-hour total. Also, even though the pilot's condition could not be included as a contributory cause, further study is being made by the Bureau regarding the daily flight limitation and length of a division over which a pilot may operate.

Regulation applicable - Chap. 5, Sec. 3 (C)

"Waivers. - Upon application to and subject to the approval of the Bureau of Air Commerce, strict application of the 8-hour flying time limitation may be waived, but only under exceptional circumstances in which safety is not jeopardized."

6. According to the formal report of the Accident Board, Pilot Bolton was assigned to the Eastern Region on the Kansas City-Columbus-Newark run. The reason for his being assigned to the flight in question, No. 6, the SKY SHLEF, was that about five days previous, April 29-30, he had taken a charter party out to Los Angeles from the East, and when Flight No. 6 was originated, he was available and was assigned to the same. During the five days inter-

veining between the time of his arrival and his departure on No. 6 the afternoon of May 5th, he was not engaged in any flight duty for the company. The flight subsequent to the transfer was a violation of regulations.

Regulation applicable - Chapter 5, Sec. (1)

".....If his (pilot) absence from an airline division has been more than six months' duration, the pilot shall obtain approval from the Bureau of Air Commerce before he is restored to duty."

Pilot Bolton did not take a quarterly S.A.T.f. physical examination and since the company had not provided his name on the prescribed list, it could not be known by the Washington Office that he was actively engaged as a S.A.T. pilot. Therefore, the Bureau would not have informed him or his medical examiner on or about February 10, 1935, that he should take a physical at that time.

Regulation applicable - Chapter 5, Sec. 3 (b) (3)

"Air line pilots shall be examined every three months by designated air line pilot medical examiners to determine fitness."

Co-pilot Kenneth Greeson did not hold a S.A.T. rating.

Regulation applicable - Chapter 5, Sec. 2 (d)

"A co-pilot holding a S.A.T. rating will be required where waivers of flight time limitation are allowed for continuous flight exceeding eight hours without an approved rest period."

Pilot Bolton's name did not appear on the pilot list presented by the company. This absence may be accounted for in the fact that the applications for letter of authority issued previous to January 1, 1935, do not contain a list of the pilots but that the applications submitted after January first do include a list of the pilots. According to Bureau files, there have been two applications for letters of authority granted since January 1, 1935, (a) that of April 10, 1935, covering sector from Winslow to Los Angeles via Grand Canyon, providing for day operation, (b) that of April 10, 1935, covering temporary authority to fly from Winslow to Los Angeles via Grand Canyon and Boulder City, providing for day operation.

In considering this subject of pilots' status, it is to be remembered that the operators as well as the Bureau are still laboring through the transition period from the Old Air Line Regulations to the new Air Line Regulations, which provide for more extensive and comprehensive regulation of air lines operating in interstate commerce. The scheme incorporated in the new Regulations provides for the inclusion by reference into the Bureau's Regulations of the approved rules appearing in the operations manual of the various companies. It was one of the first companies to submit its combined application for authority and operations manual.

7. The regulation violated or reason of the ineffective transmittal referred to at several points in the formal report of the Accident Board is as follows:

Regulation applicable - Chapter 8, Sec. 7 (d)

"Authority to so operate (International instrument flying) may be granted provided that two-way communication is maintained with ground stations."

The order of the ground station to No. 6 to attempt a landing at Kansas City was a violation of regulations since the ceiling at Kansas City at the time the order was issued was under the minimum permitted for landing at that airport, to wit: 700 feet.

regulation applicable - Chapter 3, Sec. 7 (f)

"At the point cleared to, ceiling and visibility are steady or improving and not less than the authorized minimums for landing down through as specified in the approved section of the company's operations manual."

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Director of Air Commerce