tions without further reference to the flight instruments. This action, according to his testimony, consumed quite a few seconds and lasted until his attention was attracted to the outside immediately prior to striking the ground. Had First Officer Dixwell had opportunity to devote his attention to the flight instruments during this critical period in the flight he would undoubtedly have detected the deviation from course.

The cockpit of N 34954 was equipped with both electrical and pitot static flight instruments. With the exception of the C-2A Gyrosyn compass and one cross-pointer indicator, the instrumentation was identical on the pilot's and copilot's panels. Capt. Marsh testified that, with the exception of a turn from 40 toward 45 deg., no turns were made during the flight and that no indication of a turn or bank was displayed on any of the flight instruments. Both pilots testified that there was no warning of any instrument failure. Assuming that there had been a failure of a directional instrument and that the indicator either remained in a fixed position or assumed a rotational motion, the perceptibility of a turn not evident in that instrument would be evident on other instruments as would a turn to follow a rotating directional indication. Similarly, a failure of an attitude instrument and any attempt to follow an erroneous reading would be revealed by other attitude and directional instruments.

There is no evidence that any such irregularities did occur and there appears to be no reason why the radical departure from course would not be displayed on the instrument panel. Based on this and other facts of record the Board can only conclude that Capt. Marsh either did not properly observe his flight instruments or failed to refer to the proper instruments in his control of the flight.

In conclusion, the Board has conducted an intensive study of the evidence accumulated in this investigation in an effort to arrive at a reasonable solution of the facts. It has been shown beyond a reasonable doubt that the aircraft and its accessories were functioning normally throughout the short flight. This being so, we must conclude with reasonable certainty that the events leading up to this accident point to the actions of the captain, who was at the controls and in complete command, in that he did not demonstrate the skill and care required of an airline pilot in the performance of his duties. The captain's contention that he thought everything was normal until the first officer sighted the ground and quickly advised him, further substantiates the Board's opinion that the captain did not have control of the aircraft.

FINDINGS

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

1. The aircraft, crew, and carrier were currently certificated.

2. The gross takeoff weight of the aircraft was under the maximum allowable and properly distributed.

3. The weather at the time of takeoff was above the prescribed company minimums.

4. The aircraft, immediately following takeoff, made a left turn of approximately 119 deg. and a descent.

5. The pilot and flight crew did not observe or interpret any instrument indication of a left turn or descent.

6. The heading indications of both fire seized course indicators corresponded closely to the impact heading of the aircraft.

7. These instruments had been functioning properly until the time of impact.

8. There was no failure or malfunction of the powerplants.

9. There was no airframe failure or control malfunction.

10. There was no electrical power failure or malfunction of instruments prior to ground impact.

11. There was no fire prior to ground impact.

12. As a result of fuselage deformation the main cabin door jammed, hindering evacuation of passengers.

13. The main cabin lighting system became inoperative during deceleration and the emergency inertia lights did not actuate.

PROBABLE CAUSE

The Board determines that the probable cause of the accident was the failure of the captain to (1) properly observe and interpret his flight instruments and (2) maintain control of his aircraft.

By the Civil Aeronautics Board:

James R. Durfee, Chan Gurney, Harmar D. Denny, G. Joseph Minetti, Louis J. Hector.

SUPPLEMENTAL DATA

The Civil Aeronautics Board was notified of this accident at 1825, Feb. 1, 1957. 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 public hearing was ordered by the Board and was held in New York, New York, on April 2, 3, 4, 5, 8, 9, 10, 11, 1957. Depositions were also taken in New York on May 9-10, 1957. . . .

Capt. Alva V. R. Marsh, age 48, was employed as a pilot by Northeast Airlines in 1938, and was rated as a captain on May 1, 1939. He held a valid airman certificate with an airline transport rating and type ratings on DC-3, DC-4, Convair 240, DC-6, and DC-7 aircraft. Capt. Marsh had, according to company records, a total of 16,630 pilot hours, of which 85 hr. were acquired in DC-6 equipment. His last physical examination was successfully passed on Aug. 28, 1956. The dates of his last instrument proficiency and line checks (on DC-6 aircraft) were Jan. 5, 1957, and Jan 10, 1957, respectively.

Capt. Basil S. Dixwell (copilot on Flight 823), age 40, was employed by Northeast Airlines as a pilot in 1942, and was rated as captain on March 18, 1943. He held a valid airman certificate with an airline transport rating and type ratings on DC-3, DC-4, Convair 240, and C-46 aircraft. Capt. Dixwell had, according to company records, a total of 8,943 pilot hours, of which 17 hr. were acquired in DC-6 equipment. His last physical examination was successfully passed on Aug. 29, 1956. His last line check was on Dec. 12, 1956. His DC-6 copilot qualification was on Jan. 18, 1957.

Flight Engineer Angelo V. Andon, age 33, was employed by Northeast Airlines as a mechanic July 19, 1946. He held a valid airman certificate with ratings of flight engineer and airplane and engine mechanic. His date of employment as flight engineer was December 21, 1956, and his last physical examination was on the same date. He received a flight engineer proficiency check on January 18, 1957. His total time on DC-6 equipment was 168 hr. . . .

Douglas DC-6A, serial number 44678, N 34954, was manufactured January 12, 1955. Total time on the airframe was 8,317 hr., with 58 hr. since last maintenance operation. The aircraft was equipped with four Pratt and Whitney R-2800, CB-17 engines, and four Hamilton Standard model 43E60-375 propellers with 6895E-8 blades. Total time on the engines ranged from 5,152 hr. to 6,638 hr., with last overhaul times between 631 hr. and 1,378 hr. Total time on the propellers ranged from 5,055 hr. to 8,550 hr., with last overhaul times between 11 hr. and 3,232 hr. The aircraft was owned by the Main-Elford Corp. and leased to the Flying Tiger Line, Inc., who in turn subleased it to Northeast Airlines.

ALPA Protests Board's Findings

Washington—Air Line Pilots Assn. has charged the Civil Aeronautics Board with "inaccuracies, contradictions and misrepresentation of testimony" in the Board's findings on the Rikers Island accident.

Here are some of the specific points in the report on which pilots take issue:

- **ALPA says the report** fails to note the aircraft weighed 2,000 lb. more than was indicated to the crew.
- **Heading of the aircraft** at the time of impact does not agree with heading shown in the exhibits presented at the hearing, according to ALPA. The group adds, "this means the aircraft turned further than the Board indicates."
- **On the subject of maintenance,** ALPA charged that the report is not consistent with certified exhibits and said "it is apparent that Civil Aeronautics Administration did not properly monitor" maintenance procedures.
- **Pilots charged the Board** with inadequate analysis of all available information in investigating instruments. They said "the Board does not represent fully the electrical system or related components."

ALPA accused the Board of attempting to explain the difference between course line indicators and gyro information by the "simple process of gyro rotation after impact." It added: ". . . It is difficult to appreciate how this gyro rotation continued when intense heat caused instrument seizing within two minutes after impact."

ALPA emphasized that a report placing sole responsibility of an accident on an individual should be supported by fact and said that "flight tests clearly reveal that the crew could not have intentionally flown the flight path required to eventually reach Rikers Island heading as it did."