

## CIVIL AERONAUTICS BOARD

**ACCIDENT INVESTIGATION REPORT**

Adopted: September 11, 1956

Released: September 14, 1956

NORTHEAST AIRLINES, INC., CONVAIR 240, N 90659  
PORTLAND, MAINE, MARCH 29, 1956

The Accident

At 2204,<sup>1/</sup> March 29, 1956, Northeast Airlines' Flight 124, a Convair 240, N 90659, landed in deep snow to the left of runway 20 at the Portland, Maine, Municipal Airport. The nose gear folded back resulting in major damage to the aircraft and minor injuries to five of the 32 passengers; the crew was uninjured.

History of the Flight

Northeast Airlines' Flight 124 of March 29 was scheduled between La Guardia Field, New York, and Bangor, Maine, with several intermediate stops including Boston, Massachusetts, and Portland, Maine. The flight utilized the aircraft and flight crew of Trip 117 which terminated at La Guardia to originate as Flight 124. Captain Ayres R. Chaves, Captain Robert A. Lebewohl, acting as first officer, and Stewardess Jean L. Anderson comprised the crew. Other than traffic delays which made the flight late, Flight 124 originated in a routine manner. Gross weight of the aircraft at takeoff was 38,318 pounds and the maximum allowable was 38,393 pounds. The load was properly distributed. The first segment to Boston was uneventful and Flight 124, after a short ground time there, departed for Portland at 2120. The flight was conducted in instrument weather conditions and in accordance with an IFR (Instrument Flight Rules) flight plan. at 2147, after a routine flight to the vicinity of Portland, Trip 124 was cleared by ARTC (Air Route Traffic Control) to descend from its assigned cruising altitude of 3,000 feet to 2,000 feet and thereafter make an instrument approach to the Portland Airport.

Shortly thereafter tower personnel observed the aircraft over the airport and below the overcast as it circled left to land on runway 20, which was available and selected by Captain Chaves. The aircraft disappeared momentarily in the limited visibility, reported as 1-1/2 miles in light snow, while it was flying on the downwind leg. It was then seen, landing lights on, apparently aligned with the runway and descending normally on the final approach. Seconds later the aircraft touched down, seemed to roll a few hundred feet, go up on its nose and stop abruptly. Tower personnel promptly dispatched emergency equipment and personnel to the scene.

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<sup>1/</sup> All times herein are eastern standard and based on the 24-hour clock. Altitudes are mean sea level unless otherwise indicated.

## Investigation

Evacuation was through the front door, the most accessible exit because of the tail-high position of the aircraft. It was orderly but slow because several passengers were reluctant to leave without their personal belongings or, despite Captain Chaves' objections, insisted on retrieving them.

Weather conditions reported at the airport at the time of the accident were: Scattered clouds 400 feet; precipitation ceiling 900 feet; sky obscured; visibility 1-1/2 miles; light snow; temperature 32; dewpoint 31; wind south-southwest 8; altimeter setting 29.99.

Investigation at the accident scene showed that the aircraft landed parallel to and off of runway 20 to the left and continued about 450 feet before it stopped. The touchdown position was approximately midway laterally between the left<sup>2/</sup> row of white runway lights which border the left side of the runway and a parallel row of white lights marking the left boundary of the field. The area was covered by packed snow 18 to 24 inches in depth. Lateral distance between the left row of runway lights and the boundary lights is about 168 feet. The runway is 150 feet wide with its two rows of runway lights 160 feet apart.

As the aircraft moved forward parallel to the runway, rearward forces fractured the nose gear drag link and permitted the nose gear to fold back. The main landing gears remained extended and locked, therefore, the aircraft came to a stop resting on the nose section and main landing gear. Before stopping, the sliding action caused extensive abrasive and impact damage to the lower nose section of the fuselage.

Both engines stayed in place; however, the nose section of each engine with its respective propeller was torn off. These components were located apart from the main aircraft showing that they had been separated as the aircraft slid forward.

An extensive examination was made of the aircraft structure, equipment, controls, and its engines and propellers. This examination, as well as confirming statements of the pilots, revealed there was no malfunction or failure of the aircraft prior to impact. It also indicated that performance of the powerplants and aircraft equipment was normal in all respects before the accident.

An examination of the runway lights was conducted shortly after the accident. Ten of the lights along the right edge of runway 20 were inoperative for mechanical reasons, broken, or covered by snow. Eight of the 10 were consecutive, beginning at the approach end and extending down the runway in the landing direction. One was partially obscured by snow and considered dull as compared to normal brilliance. The broken lights were the result of being struck by snowplows during several snow-removal operations and appeared to have been broken for a considerable period. The distance covered along the runway by the broken, inoperative, or obscured lights was about one-half of the runway total length of 4,260 feet.

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<sup>2/</sup> Left and right are used as viewed from the cockpit while approaching runway 20.

At the time of the accident the three rows of lights (the row of boundary lights and the two parallel rows of runway lights) were white in color with the boundary lights somewhat brighter than the ones for the runway. The latter were set for maximum intensity. The runway fixtures were flush mounted, and the fixtures for the boundary units extended 24 inches above the ground, or a few inches above the snow cover.

The approach end of runway 20 is marked normally by three green threshold lights. Inspection of these, after the accident, disclosed they varied in brilliance and that the green glass cover of one was broken. The left light, as viewed from the approach area, was bright, the middle one was dull, and the cover for the right light was broken.

At the time, the policy of the City of Portland in connection with inspection of the airport lighting was to contact the control tower personnel daily for any lighting irregularities reported to them during the previous night. If required, action was taken by the City to make corrections before the next night. Also, the policy required a complete inspection of the lighting system once each month by an electrician employed by the City to detect any unreported faults. It was the policy during the snow season not to replace each broken light as it was reported or discovered unless complaints by pilots showed too many lights were broken. In this season repairs were deferred until spring.

Tower personnel, on the day of the accident, reported no irregularities had been brought to their attention and so indicated in the daily report to the City. These personnel stated that they were unaware of the broken lights and that existing snowbanks precluded them from seeing the area where the broken lights were located.

Investigation disclosed that the electrician's report of February 13 indicated all lights were repaired. Thereafter, his report of March 12 did not indicate any broken lights. Records also showed that there were eight snow-removal operations during the month of March and the last one preceding the accident was on March 25. Further, investigation showed that there were no current "Notams" (Notices to Airmen) issued relative to the Portland Municipal Airport except that runway 10-28 was closed during the winter months.

Northeast Airlines company procedures require that the company ground personnel at Portland submit a periodic field condition report to the Boston operations office. This report is required three times daily. Among other pertinent items, the condition of the airport lighting is included as follows: "Remarks as to lighting conditions. Will specify if boundary contact or runway lights are operating, and if any are out when expected to be replaced and if smoke pots will be used to replace any inoperative lights, etc." A message in compliance with the above instruction was sent March 29, the day of the accident, at 0518. With respect to lighting the message stated, "Lites Normal." A second message sent as the noon field report repeated, "Lites Normal." The station manager responsible for the message indicated that his understanding was to reflect the lighting condition as outlined in the policy of the City of Portland for the snow season. The snow season policy was the basis on which "Lites Normal" was reported.

Captains Chaves and Lebewohl stated that the flight to the vicinity of Portland was uneventful but in instrument weather conditions. In accordance with their clearance, they proceeded to the Portland low frequency range station at 2,000 feet and stated that when over this facility were briefly able to see the airport. The instrument approach procedure was then executed precisely and completely. According to the pilots, during the final approach to runway 15, the instrument runway, visual reference was established at approximately 1,000 feet above the ground. This permitted a circling approach for landing on runway 20.

Clearance was then obtained by the flight for the circling approach to land on runway 20. Captain Chaves chose this runway because of its length, grade, and the existing winds. The aircraft was therefore flown across the airport and a left circling turn made to align on the final approach with the runway.

The captain stated that while turning onto the final approach he was able to pick out the runway lights and instructed Captain Lebewohl to complete the landing checklist. During the final approach Captain Chaves stated that he noted landmarks below which were familiar to the final approach path; landing flaps were extended and landing lights turned on. Captain Chaves recalled that what he assumed to be the runway, during the approach, was white and without wheel tracks; because of light to moderate falling snow this seemed normal. Approach speed and altitude were good. Alignment seemed good.

The pilots said that at touchdown the aircraft decelerated very rapidly, nosing down as the nose gear collapsed and stopping after a short slide. Both pilots were completely amazed when they learned that the landing had been to the left of runway 20.

### Analysis

Based on all the available evidence, it appears that Flight 124 was conducted as a routine instrument flight and was normal in all respects until it was positioned on the final approach for landing on runway 20 at the Portland Municipal Airport.

As previously described, numerous runway lights were obscured or inoperative along the right side of the runway. As the final approach was made the pilots saw a row of field boundary lights and the left row of runway lights. This undoubtedly appeared to the pilots as the left and right rows of runway lights and created an illusory runway to the left of and parallel to runway 20. Considering the nearly equal distance between the boundary lights and the left row of runway lights as compared to the distance between the left and right rows of runway lights, their same color and comparable spacing, the appearance of an actual runway is even more apparent. These factors considered together with the existing weather conditions makes Captain Chaves' off-runway landing understandable.

With moderate falling snow to restrict flight visibility and the normal tendency to concentrate on the landing area of the runway (the first one-third) during the final approach, it is not difficult to understand why the pilots did not see the operating lights of the right row located along the far one-half of the runway. Further, these lights, when normally viewed during the final approach, would probably have been near the limit of forward flight visibility.

According to company procedures, a field condition report was required which included a section on the field lighting. In accordance with the reporting requirements, the field lighting was stated as "Lites Normal" on the day of the accident. This being a report to the operations branch of the airline and principally for pilot information, the Board does not understand the report or the reason for indicating that the lights were normal. It is believed that the detailed field condition report procedure was definite and clear but complied with inadequately.

It is further believed that the policy of the City of Portland was not adequate for the maintenance of its airport lighting. Although it is recognized that the maintaining of field lighting in northern areas is difficult because of the many snows and resulting snow-plowing operations, it is believed that the maintenance of lighting should be geared to this situation. The responsibility for adequate lighting and the detection of irregularities rests properly with the airport management.

It is believed that sufficient inspections should be made by airport and company employees to ensure an accurate knowledge of the condition of the lighting facilities and that the condition be reported so that users of the airport be on notice of the conditions.

### Findings

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

1. The carrier, aircraft, and crew were properly certificated.
2. The aircraft was loaded to a gross weight less than the maximum allowable.
3. The flight was cleared according to Instrument Flight Rules to Portland, a scheduled stop.
4. The flight was routine in instrument weather conditions and normal in all respects until it was positioned for landing on the final approach to runway 20.
5. Eight consecutive runway lights were inoperative or obscured along the right side of this runway.
6. Under the existing weather condition, airport boundary lights paralleling the left row of runway lights created the illusion of runway 20 being to the left of its actual position.

7. Captain Chaves understandably landed to the left of and off runway 20 in the area which appeared to be the runway.

8. The lighting condition was reported incorrectly to the airline operations office by company employees as "Lites Normal."

9. The procedure for detecting and reporting lighting irregularities by the airport management was inadequate.

Probable Cause

The Board determines that the probable cause of this accident was inadequate maintenance of runway lights and incorrect reporting of their condition resulting in an illusionary position of the runway under conditions of low visibility.-

BY THE CIVIL AERONAUTICS BOARD:

/s/ JAMES R. DURFEE  
/s/ HARMAR D. DENNY  
/s/ G. JOSEPH MINETTI

Adams, Vice Chairman, and Gurney, 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

The Civil Aeronautics Board was notified of this accident shortly after its occurrence on March 29, 1956. An investigation was immediately initiated in accordance with the provisions of Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended. There was no public hearing held in connection with the accident.

### Air Carrier

Northeast Airlines, Inc., is a Massachusetts corporation with its principal offices located in Boston, Massachusetts. The company is engaged in the transportation by air of persons, property, and mail under a currently effective certificate of public convenience and necessity issued by the Civil Aeronautics Board and an air carrier operating certificate issued by the Civil Aeronautics Administration. The company conducts scheduled operations over the route involved.

### Flight Personnel

Captain Ayres R. Chaves, age 43, on March 29, 1956, held CAA Airman Certificate No. 21316 with an airline transport rating and rating for the Convair 240. He became a first officer with the company June 1, 1939, and captain April 22, 1941. He had accumulated 5,568 flying hours in the Convair 240. The last instrument proficiency check of Captain Chaves was satisfactorily passed November 21, 1955. His medical certificate was current.

Captain Robert A. Lebewohl, age 39, was acting first officer on the subject flight. He held CAA Airman Certificate No. 94014 with an airline transport rating and rating for the Convair 240. Captain Lebewohl became a first officer with the company July 1, 1946, and was promoted to captain on August 11, 1953. He had accumulated 2,437 flying hours in the Convair 240. The last instrument proficiency check of Captain Lebewohl was successfully accomplished November 17, 1955. His first-class medical certificate was currently effective.

The stewardess on Flight 124 of March 29, 1956, was Miss Jean L. Anderson of North Quincy, Massachusetts.

### The Aircraft

N 90659, a Convair 240, serial number 34, was manufactured during May 1948, and acquired from the original owner by Northeast Airlines, Inc., on March 8, 1954. Total time on the aircraft when the accident occurred was 12,478 flying hours, 43 of which were accumulated since major overhaul. The aircraft was powered by Pratt and Whitney R-2800-CB3 engines which were equipped with Hamilton Standard 43E60/6895E-R propellers.