

# AIRCRAFT ACCIDENT REPORT

ADOPTED: June 26, 1959

RELEASED: July 6, 1959

CAPITAL AIRLINES, INC., DOUGLAS DC-3, N 49553, MARTINSBURG AIRPORT,  
MARTINSBURG, WEST VIRGINIA, JUNE 4, 1958

## SYNOPSIS

A Capital Airlines DC-3 crashed and burned near Martinsburg Airport, Martinsburg, West Virginia, at 1358 on June 4, 1958, injuring the three occupants - an instructor and two pilot-trainees. One trainee, who was flying the aircraft at the time of the accident, died the following day of severe burns. The aircraft was on a training flight from Washington National Airport and was practicing takeoffs and landings at Martinsburg Airport. During the pilot's attempt to climb out after abandoning a single-engine approach to runway 8, the aircraft stalled and crashed in a wooded area.

The Board's investigation indicates that the aircraft crashed because of a stall which occurred at an altitude too low to effect recovery. The stall was caused by poor technique of the trainee-pilot and the failure of the captain-instructor to monitor properly the simulated single-engine approach and balked landing. As a result of this accident, Capital Airlines has implemented staffing and procedural flight training changes. A senior instructor in DC-3's has been given the responsibility of conducting and supervising all flight training for initial upgrading. The flying procedure for all single-engine approaches has been changed requiring the approach to be either completed to a full stop or abandoned above 200 feet in altitude.

## Investigation

Capital Airlines training flight V-3, a DC-3, N 49553, was released by Capital Flight Dispatch at Washington National Airport to operate VFR in the Martinsburg, West Virginia, area for 4-1/2 hours of training. The crew consisted of Instructor-Pilot Captain James B. Kinne, and Pilot-Trainees Leighton R. Tomkins and Edwin A. Henderson. The aircraft departed Washington National Airport at 1110<sup>1</sup>/<sub>1</sub> with 820 gallons of fuel aboard (full tanks) and 500 pounds of ballast properly strapped to the floor in the rear cargo compartment. The weight of the aircraft at takeoff was 23,905 pounds, which was well within the maximum allowable gross weight of 25,346 pounds; the load was distributed so that the center of gravity was within prescribed limits.

The flight was the second of a 12-hour instruction course that prepared first officers for their DC-3 airline transport rating flight check. Each trainee had flown the first of the instruction periods the previous day when they flew 3 hours and 50 minutes in the same aircraft involved in this accident. There had been a 24-hour rest period since that time.

<sup>1</sup>/<sub>1</sub> All times are eastern standard based on the 24-hour clock.

A lead mechanic for Capital Airlines, who provided line service for training flight V-3, stated he observed Captain Kinne in the copilot's seat and First Officer Tomkins in the left seat when the aircraft departed the ramp. It was later learned that Trainee Henderson occupied the jump seat at the time of departure.

According to Pilot-Trainee Tomkins, a pretakeoff aircraft and engine check was completed before accomplishing a simulated instrument takeoff from Washington National Airport. The departure was routine. Tomkins said that after takeoff he performed climbing turns, timed turns, turns in slow flight, and various other maneuvers.

At 1141 the crew of flight V-3 made one radio contact with the company, giving their ramp departure time, offtime, total fuel aboard, and estimated time of return, and stated they were switching over to Martinsburg Radio.

The flight was observed in the vicinity of Martinsburg Airport at approximately 1200, practicing landings on runway 17. At 1256, the Martinsburg Air Traffic Communications Station contacted the flight, advised that Air National Guard jets would be using runway 8, and requested V-3 also to use runway 8.

Tomkins said he concluded his portion of the flight by completing a radio range approach at Martinsburg, followed by approximately seven touch-and-go landings simulating a 400-foot ceiling and one-mile visibility. Several of these were executed with power retarded alternately on the engines to simulate engine failure. Following a final full-stop landing, the aircraft was parked and First Officers Henderson and Tomkins exchanged positions.

Following takeoff Pilot-Trainee Henderson then performed three or four touch-and-go landings, all of which were flown with a simulated 400-foot ceiling and one-mile visibility condition. Most, if not all, of these landings were simulated single-engine approaches with 2-engine go-around and on the final landing preceding the accident the right engine was stopped by moving the mixture control to idle-cutoff somewhere in the traffic pattern. This engine was then restarted and set at 1,500 r. p. m. and 15 inches manifold pressure (a no-thrust condition) to simulate a feathered propeller. The landing gear and flaps were fully extended in preparation for landing.

The flight was observed to abort the landing and start a go-around. While still at an altitude estimated to be 50 feet and at a point approximately three-fourths of the distance down the 7,000-foot runway, the aircraft entered a right turn making a bank of approximately 35 to 50 degrees. The nose of the aircraft was observed to drop slightly, then rise again during the right turn. The right wing was then seen to contact tall trees, and the aircraft cartwheeled to the ground while traveling in a southerly direction.

The aircraft was extensively damaged at impact, and fire which followed consumed approximately 45 percent of the aircraft structure, particularly that area between the two engines and the forward passenger and crew compartments.

From examination of the terrain, the trees, and the aircraft structure, it was determined that the aircraft entered the wooded area in a steep right

bank of approximately 80 degrees and came to rest on a heading of 320 degrees magnetic in a 30-degree nose-down attitude. The point of impact was 1,165 feet south of the centerline of runway 8-26.

All components of the aircraft remained in their relative positions after impact, although both engines were separated from the aircraft. The wing flaps and main landing gear were found fully retracted. Examination of the aileron, elevator, and rudder system controls revealed their cables to be intact from the control surfaces to the cockpit controls. Most of the control components in the fuselage and wings were extensively damaged by fire after impact, as well as by tree and ground contact. The rudder trim tab was found deflected eight degrees nose left.

Both engines were examined for evidence of malfunction. No. 1 (left) engine was relatively free of any fire damage to the nose and power section assemblies. All accessories were securely mounted on their pads and evidenced light to moderate fire damage. The left throttle valves were found in the fully closed position. The left mixture control was in the full-rich position. No. 2 (right) engine was extensively damaged by fire after impact. It was separated from the nacelle, and all fluid-carrying lines and wiring were extensively burned. All the accessories were damaged in various degrees by impact and subsequent fire. The right throttle valves were in the fully open position. The right mixture control was found in the auto-rich position. Nos. 1 and 2 carburetor heat doors were found in the fully closed and 2/3-closed positions, respectively. There was no evidence of structural failure or malfunction to either engine prior to impact, nor was there any evidence of fuel contamination or exhaustion.

Examination of the propeller assemblies revealed no failures or difficulties of any kind. Blade angles of the left and right propellers at the time of impact were 19 and 16 degrees, respectively, the latter being the low pitch stop position indicating little, if any, power.

Captain Kinne stated that at least once while Tomkins was in the left seat and once while Henderson was flying, difficulty with the landing gear safety latch was encountered during gear retraction. This malfunction, according to Captain Kinne, was caused by the lack of tension on the J-dog<sup>2/</sup> spring located on the landing gear control valve, which prevented the safety latch from remaining in the upright or "latch-raised" position after it was manually pulled in preparation for raising the landing gear. A flight test was accomplished July 16, 1958, to evaluate the significance of the additional motions required to retract the landing gear. Tests were made to determine the time of gear retraction with a simulated malfunctioning landing gear latch. It was determined that with the J-dog spring disconnected, simulating the conditions of a malfunctioning gear, the operator would have to allow from 5 to 10 additional seconds to actuate the landing gear retraction controls.

Tests were also made to determine whether power would be partially lost during an attempted go-around with the carburetor heat doors closed or partially closed. The simulation of several engine power conditions with full

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<sup>2/</sup> The J-dog is a component of the landing gear safety latch assembly which allows movement of the landing gear valve selector handle to the up position.

carburetor heat did not adversely affect the operation of the engine and each time the throttle was advanced the engine responded immediately with no indications of operating difficulty, giving adequate power to continue flight in all instances.

Captain Kinne was appointed an instructor-pilot October 14, 1957. He was relieved from instructor status November 13, 1957, because of the reduced need for instructors. He was again designated as instructor-pilot March 1, 1958. He had instructed a total of eight first officers for their captaincy checkout, only one of whom failed to pass his first flight check successfully. Captain Kinne had a total of 910 hours as captain in DC-3's and had accumulated 275 hours as flight instructor on this type aircraft. He had a total time of 5,625 flying hours.

Both trainee-pilots had over 3,000 flying hours. First Officer Tomkins had 787 hours in DC-3's, and First Officer Henderson had 681 hours in DC-3's.

Trainee-Pilot Tomkins, who was seated in the jump seat at the time of the accident, stated he did not recall whether the wheels touched down or at what point power was applied for the go-around; however, he did remember seeing Captain Kinne actuate the landing gear selector valve to raise the landing gear. Tomkins stated he then recalled the aircraft was in about a 10-degree right bank and on a heading of about 30 degrees to the right of the runway heading, with a speed of about 60 knots. Following gear retraction, Tomkins stated, he saw Captain Kinne's hands at the throttle quadrant and it appeared to Tomkins that the captain was attempting to restore power to the right engine. Tomkins recalled hearing Captain Kinne state he had the controls a moment before hitting the trees.

Thirteen witnesses, several of whom were pilots with the West Virginia Air National Guard and flew Air Guard C-47 type aircraft, observed the approach to the runway, the attempted go-around, and the final crash. One Air National Guard pilot, who was located in the mobile control tower at the threshold of runway 8, stated that the aircraft "did not touch down and proceeded to go around." A second witness, located farther down the runway, confirmed this. An application of power, described by a few observers as normal for takeoff, was heard. A majority of the witnesses agree that the landing gear was retracted as the aircraft continued its climbout. The attitude of the aircraft during the climbout was variously estimated as being from a slight climb to a nose-high mushing attitude approaching a stall. No fire or smoke was observed while the aircraft was in flight and no parts or pieces were seen to fall from it.

Several eyewitnesses stated they saw the right propeller windmilling following the application of power to go around. One witness stated, "the left engine appeared to be developing a considerable amount of power." According to a few witnesses, considerable power was being developed by both engines.

Prior to the accident Pilot-Trainee Henderson completed three or four touch-and-go-landings, several of which were single-engine approaches. According to Captain Kinne these approaches and landings were "not good." Qualified witnesses in proximity to the runway also agree with this. One witness, after watching the next to last touch-and-go, stated that after

takeoff he saw the aircraft start abruptly off the runway in an approximate 15-degree nose-high attitude, climbing to about 200 feet. It was then observed to nose over and descend to about 75 to 100 feet above ground, pick up speed, and continue on around. Another witness, an Air National Guard pilot, described the three landings preceding the accident as very poorly executed.

Captain Kinne stated he pushed both propeller controls forward to the full low-pitch takeoff position prior to calling for the balked landing. Pilot-trainee Henderson was aware that he was to shoot a touch-and-go landing. At the last moment, just as the aircraft was about to flare out at an airspeed of between 60 and 70 knots, the instructor called for a balked landing and told Henderson to, "Take it around, both engines." At this moment, Captain Kinne diverted his attention to raising the flaps and retracting the landing gear at Henderson's order.

Captain Kinne and Pilot-Trainee Tomkins stated Henderson advanced the throttles. Captain Kinne stated both throttles were advanced. Pilot-Trainee Tomkins could not recall whether Henderson advanced one or both throttles to full power.

Capital Airlines' standard procedure for simulated engine out is as follows: After an engine is cut in the landing pattern it is set at 1,500 r.p.m. and 15 inches of manifold pressure to simulate engine failure. Landing gear and flaps are extended when it is certain the field can be reached. On the final approach, rudder trim tab is straightened before getting too close to the airport. Propeller controls are advanced to the low-pitch, takeoff position. Standard procedure calls for all go-arounds to be made with two engines at takeoff power whenever the airspeed drops to less than 74 knots while flying on single engine.

### Analysis

Pilot-Trainee Henderson and Captain Kinne were both familiar with single-engine landings, and two-engine go-arounds. Henderson had observed several single-engine approaches with touch-and-go landings while Tomkins was flying. Henderson then moved into the left pilot's seat and made several single-engine landings followed by two-engine go-arounds prior to the accident. Henderson's touch-and-go landings were poorly executed and, since this was his first balked landing, it behooved Captain Kinne to monitor the instruments and the go-around carefully.

It will be recalled that the final approach to the landing was made under simulated single-engine approach conditions. The right engine had been retarded to 1,500 r.p.m. and was only drawing 15 inches of manifold pressure. The pilot had cranked in eight degrees, or full nose-left rudder trim, the landing gear was down, and flaps were fully extended. It is evident that the aircraft was in its landing flareout, at an airspeed of between 60 and 70 knots, when the order to abort the landing was given with the command from Captain Kinne to, "Take it around - both engines."

Following the captain's command, the chronological sequence of actions would have been for the pilot-trainee to advance both engines to full power position, and call for flaps and gear up in that order. According to company practice and good operating procedures the rudder trim should have been

returned to the neutral position during the approach. However, investigation at the wreckage area subsequently disclosed that the left rudder trim settings had not been changed, which would indicate that the trim mechanism had not been actuated. Even though the rudder trim was not returned to neutral and even if there was an actual or simulated loss of power of one engine, the trainee-pilot should have been able to maintain minimum control speed.

An examination of the maintenance records revealed no recent history of a malfunctioning landing gear selector assembly and the failure must have arisen in flight.

Captain Kinne, who was serving as copilot for Trainee Henderson, was responsible for retracting the gear and flaps in the situation described. Because of the gear latch malfunction, Captain Kinne, in order to raise the gear, had to unfasten and pull up on the gear safety latch with one hand and pull up the landing gear valve control lever with the other. This would add additional time to the gear retraction process and result in the captain leaning over to the left with his head down. In this position it would have been almost impossible for him to monitor the instrument panel or the trainee-pilot's actions for several critical seconds during the go-around.

Investigation disclosed that the blade angles of the left and right propellers were positioned at 19 degrees and 16 degrees, respectively. The propeller blades of this aircraft were of the type that permitted constant-speed operation from a low-stop position of 16 degrees to a fully feathered position of 88 degrees. According to Captain Kinne, both propeller control levers were advanced to takeoff r.p.m. prior to attempting the go-around. This could not be confirmed because the propeller governor control pulleys were disconnected at impact. However, there is no reason to believe both propellers were not set at the 2,400 r.p.m. takeoff position.

The left engine, with an r.p.m. of 2,400, would have been developing between 887 and 952 h.p. for an airspeed of between 60 and 70 knots, and a blade setting of 19 degrees. By the same reasoning, the right engine, with an r.p.m. setting of 2,400 would have been developing anywhere from zero to 650 h.p. with the same airspeed, and a blade setting of 16 degrees.

With the airspeed at or near minimum control, as was the case in this accident, the right propeller blades would position to the 16-degree stop if a malfunction of engine occurred, since the propeller governor would try to compensate for loss of r.p.m. Under the same conditions, the propeller blades would remain on the 16-degree stop position if the throttle was not advanced and the propeller was in the forward low-pitch high r.p.m. position. Under these circumstances, with the right propeller in the 16-degree stop position, either the right engine failed to develop its normal power or Pilot-Trainee Henderson failed to advance the right engine throttle.

### Conclusions

After evaluating all evidence, the Board concludes that Pilot-Trainee Henderson attempted a single-engine go-around following a single-engine approach; that he tried to climb the aircraft on one engine at an airspeed below minimum control speed, and that Captain Kinne's attempt to rectify this situation was made too late to prevent the accident. Pilot-Trainee Henderson

apparently misunderstood Captain Kinne's instructions to, "Take it around - both engines," and did not advance the right throttle for the two-engine go-around. Captain Kinne was distracted, momentarily, in his supervision of Henderson because of the malfunctioning landing-gear latch.

Pilot-Trainee Henderson's actions were inconsistent with the degree of competence expected of a first officer. He was about to be upgraded to captain and had over 3,000 flying hours, 681 of which were in DC-3's. Nevertheless, the captain-instructor pilot, Captain Kinne, was instructing Henderson and the final responsibility for the safety of the crew and aircraft was his.

Following this accident, Capital Airlines designated a qualified senior instructor on DC-3 equipment who will be charged with responsibilities for conducting and supervising all flight training for initial upgrading. This senior instructor will select and standardize a sufficient number of line training captains so that a DC-3 training supervisor will be available at each base that operates DC-3 equipment.

In addition to this staffing change, Capital Airlines took further corrective action by instituting a procedural change for DC-3 instructors. This change requires that the decision to either continue or abandon a single-engine approach to a landing be made before reaching an altitude of 200 feet; or, if a single-engine landing is made, the aircraft must be brought to a full stop.

#### Probable Cause

The Board determines that the probable cause of this accident was that, following the trainee-pilot's failure to maintain minimum-control speed during an attempted go-around, the instructor-pilot failed to take control of the aircraft in sufficient time to prevent a critical loss of altitude. A contributing factor was the malfunction of the landing gear latch which delayed retraction of the landing gear and caused the distraction of the instructor-pilot for several seconds during a critical period of the go-around.

BY THE CIVIL AERONAUTICS BOARD:

/s/ JAMES R. DURFEE

/s/ CHAN GURNEY

/s/ HARMAR D. DENNY

/s/ G. JOSEPH MINETTI

/s/ LOUIS J. HECTOR CONCURRING AND DISSENTING

Member Hector's concurrence and dissent attached.

MEMBER HECTOR, CONCURRING AND DISSENTING:

I cannot concur in the probable cause of this accident as found by a majority of the Board. I agree with the factual report of the investigation and with the factual deductions made by the Board, but I cannot agree with the finding of pilot responsibility in the Board's statement of probable cause. I feel that such a finding is beyond the proper scope of an accident report.

Stripped of qualifying clauses, the Board has here determined that "The probable cause of this accident was that . . . the instructor-pilot failed to take control of the aircraft in sufficient time to prevent a critical loss of altitude." I would find rather that the probable cause of this accident was the failure to maintain minimum control speed during an attempted go-around.

We are dealing in this case not with a student pilot or with a pilot whose lack of experience was such that the instructor-pilot must clearly be held responsible at all times for the performance of the aircraft. Henderson was a first officer of long experience. He had over 3,000 hours of flying time, including 681 hours in a DC-3. He was being checked for a captain's rating. Under these circumstances, whether or not Captain Kinne must bear full responsibility for the safety of the aircraft is by no means clear. I therefore think that the Board should confine itself to an accurate description of the sequence of events and a statement of the mistake in judgment which was responsible for the accident, leaving such matters as responsibility and liability to the pilot certificate procedures of the FAA, and to the courts if the issue of liability is raised therein.

The Board has always attempted to keep matters of liability and responsibility out of its accident investigations. The success of these investigations depends upon the cooperation of all parties, and their being kept non-adversary in character. While the mere recital of the factual chain of events and the factual cause of an accident may carry grave implications of responsibility or liability, the Board has always endeavored so far as possible to keep legal conclusions out of its accident reports.

The matter of pilot responsibility has a long and somewhat inconsistent history. The basic case is Smith, Airman's Certificate,<sup>1/</sup> decided in 1947, involving a mid-air collision caused by the failure of the pilots to keep a proper lookout. It was an airman certificate case and Captain Smith, of course, had a full opportunity in an adversary proceeding to present arguments in his behalf.

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<sup>1/</sup> 13 C.A.B. 117 (1947). The Board stated: "Respondent Smith was the first pilot, and as such the pilot in command of the aircraft . . . In this case Captain Smith failed to maintain a proper lookout himself or to have an effective arrangement with his co-pilot to insure the maintenance of such lookout. Such failure was negligence on the part of Captain Smith." It is noteworthy that the Board in an accident investigation report (Transcontinental and Western Air DC-3- Boeing A75N1 Training Plane near Chicago, Ill. - September 26, 1945) covering the same incident did not attempt to assess specific responsibility. The Board there found the following probable cause: "Upon the basis of the foregoing the Board determines that the probable cause of this accident was lack of vigilance on the part of the pilots of both aircraft. Reduced horizontal visibility may have been a contributing factor."



Subsequent safety cases have not followed the Smith doctrine. In Administrator v. Hazen,<sup>2/</sup> decided in 1958, for instance, the Board overruled the examiner's initial decision which had found the captain negligent under the "command pilot" doctrine. In this case the CAA specifically requested additional argument on the captain-in-command issue, which I would have granted, but the Board dismissed the petition apparently on the grounds that the Smith case did not impose absolute responsibility on the command-pilot. In a recent report on an accident which occurred while a CAA Inspector was conducting a flight-check the Board did not reach a conclusion that any overriding responsibility attached to the inspector-pilot.<sup>3/</sup> Despite these two recent cases, the majority in this accident report now asserts the full pilot-in-command doctrine and builds around it the whole finding of probable cause.

During the period when the Civil Aeronautics Board was responsible both for accident investigation and for the issuance of Civil Air Regulations a certain confusion between our responsibilities in these respective fields may have been inevitable and in any event did not create any jurisdictional problems. Today, however, we no longer have the responsibility for the formulation of Civil Air Regulations and it seems to me, therefore, that the basic determination of the responsibilities of various members of the crew is beyond the proper scope of our authority.

As I stated above, if it were absolutely clear under the Civil Air Regulations or under the customs of the air, that the captain in this precise type of situation has absolute responsibility, the Board might possibly find his failure to act the probable cause. Since absolute responsibility of the type imputed in the present case is by no means clear, however, I think that question should be left to proceedings where the issue of responsibility and liability can more appropriately be determined.

When powers which have for many years been placed in a single agency are divided between two agencies, each must exert the greatest care and discretion to disentangle those powers and responsibilities in accordance with the new statutory scheme and to avoid encroaching upon the jurisdiction of the other agency. If absolute responsibility is to be placed on an instructor-pilot in this kind of situation, then that responsibility must be placed by the FAA under appropriate rule-making procedures or by an airman certificate proceeding rather than by the CAB as a part of an accident investigation.

One other aspect of the Board's finding disturbs me. If the FAA should institute an airman certificate proceeding against Captain Kinne, those proceedings may well come before this Board on appeal. In such a case the Board may seem to prejudge the matter by making a clear finding of responsibility

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<sup>2/</sup> Administrator v. Hazen, S-853, February 12, 1958.

<sup>3/</sup> Aircraft Accident Report, Beechcraft Travel Air, N 819B, Near Little Rock, Arkansas, July 22, 1958. The Board's finding of probable cause reads simply: "The Board determines that the probable cause of this accident was the unintentional entry into a spin at too low an altitude to recover." In this case we further concluded that one of the accident factors may have been the inspector's unfamiliarity with the aircraft in question which would appear to heighten the degree of his responsibility.

in its accident investigation report. In extraordinary cases such a finding may be inescapable, but there is clearly no need to make such a finding in the present case. This type of situation -- the overlap between a certificate case and an accident investigation -- has recently given the Board difficulty in the case of Administrator v. Welling,<sup>4/</sup> although in that case the finding in the accident investigation was largely factual in character. The confusion between the two types of proceedings is compounded if the Board, as it does here, makes not only factual findings but also a finding of responsibility in an accident report prior to a possible hearing on an airman certificate appeal.

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<sup>4/</sup> Administrator v. Welling, 8-991, June 2, 1959.

# S U P P L E M E N T A L   D A T A

## Investigation and Taking of Depositions

The Civil Aeronautics Board was notified of this accident immediately after occurrence. An investigation was initiated in accordance with the provisions of Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended. Depositions were taken at Washington, D. C., on July 10 and August 15; at Martinsburg, West Virginia, on July 11; and in Kansas City, Missouri, on August 13, 1958.

## Air Carrier

Capital Airlines, Inc., is a Delaware corporation and maintains its principal offices in Washington, D. C. The corporation holds a current certificate of public convenience and necessity issued by the Civil Aeronautics Board to engage in the transportation of persons, property, and mail. It also possesses a valid air carrier operating certificate issued by the Civil Aeronautics Administration (now Federal Aviation Agency).

## Flight Personnel

Captain James B. Kinne, instructor, age 34, was employed by Capital Airlines on July 2, 1951. He held a valid airman certificate with an airline transport rating for multiengine land aircraft, Douglas DC-3, and Lockheed Constellation. Captain Kinne had a total of 5,625 flying hours, of which 1,600 were in DC-3 equipment. He had received his last semiannual proficiency check January 30, 1958, and had passed his CAA physical on February 25, 1958. He was assigned as a flight instructor October 14, 1957.

Trainee First Officer Leighton R. Tomkins, age 31, was employed by Capital Airlines June 6, 1955. He held a valid airman certificate with an airline transport rating for multiengine land aircraft, and had a total of 3,333 flying hours, of which 787 were in DC-3. His latest CAA physical examination was passed March 21, 1958; his last semiannual proficiency check was January 29, 1958.

Trainee Edwin A. Henderson, age 30, was employed by Capital Airlines April 25, 1955. He held a valid airman certificate with commercial pilot rating for single-engine land and sea aircraft, and instrument rating. He had a total of 3,921 flying hours, of which 681 were in the DC-3. His latest CAA physical examination was passed April 7, 1958; his last semiannual proficiency check was passed on November 24, 1957.

## The Aircraft

N 49553, a Douglas DC-3, manufacturer's serial number 4820, had a total of 32,296 hours and 48 minutes of flying time. It was equipped with Wright model G-202 A engines, Hamilton Standard model 23E50 propellers with model 6353A-18 blades, and was currently certificated by the Civil Aeronautics Administration.