

CIVIL AERONAUTICS BOARD

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AIR TRAFFIC
SAFETY DIVISION
ACCIDENT INVESTIGATION REPORT

Adopted: October 29, 1956

Released: November 1, 1956

SWIFLITE AIRCRAFT CORPORATION, LOCKHEED, PV-1, N 2000C,
NEAR SMITHTOWN, NEW YORK, JANUARY 26, 1956

The Accident

A Lockheed PV-1, N 2000C, owned and operated by the Swiflite Aircraft Corporation, crashed and burned at 1633^{1/2} on January 26, 1956, three miles west of Smithtown, Long Island, New York. Three pilots, the only occupants, were killed and the aircraft was destroyed by impact and ground fire.

History of the Flight

N 2000C took off at 1625 on January 26, 1956, from MacArthur Field, Ronkonkoma, Long Island, New York, its home base, on a local flight with three pilots. They were Bernard J. Malloy, check pilot, and Pilots Raymond Hamberg and Hugo D. Filangeri. The purpose of the flight was to qualify Pilot Hamberg on the Lockheed PV-1 aircraft, a type he had never piloted.

The takeoff of N 2000C was normal, toward the northwest, and made under VFR (Visual Flight Rules) conditions with Pilot Hamberg occupying the left or captain's seat and Pilot Malloy, as check pilot, seated on the right as copilot; Pilot Filangeri acted as observer. Subsequently the PV-1 was seen over the Smithtown area, flying westerly at an estimated altitude of 2,500-3,000 feet, where a witness reported that the engines sounded normal but that the aircraft appeared to be flying at a slow airspeed.

Witnesses stated that shortly thereafter the engine power sounded as though it was cut momentarily and then came back on. At an altitude of approximately 2,000 feet the aircraft was seen to dip down and pull up, slightly nose-high, and then fall off to the left, making two to three turns of a descending spiral, and disappear behind the tree-topped horizon. Flames erupted from the woods over the point where the aircraft was last seen, followed quickly by a large column of black smoke.

Investigation

N 2000C was found to have crashed and burned on the northerly side of a wooded knoll at about 200 feet m. s. l. (mean sea level) three miles west of Smithtown and three-fourths of a mile north of the Jericho Turnpike. The accident occurred at 1633, eight minutes after takeoff from MacArthur Field.

1/ All times herein are eastern standard and based on the 24-hour clock.

Impact marks revealed that after striking the top of a slender 40-foot tree, at an angle of descent of about 40 degrees, the PV-1 first struck the ground on its left side with the left wing down about 45 degrees, followed by the nose section, and both engines, and on a fuselage centerline heading of 205 degrees. Impact destruction was extensive; both wings were partly crushed and severed from the fuselage and both engines were torn from the nacelles. The steep angle of descent into the ground confined the aircraft wreckage to an area 93 feet long and approximately 50 feet wide.

Ground fire broke out immediately after impact and completely gutted the fuselage and center section. A considerable portion of the entire control system was destroyed and remainder did not reveal any control system irregularities. Because of the almost complete destruction in the cockpit area, the settings of controls, instruments, and trim tabs could not be determined. Other components such as the tail section, landing gear, and scattered pieces of wreckage showed evidence of intense heat but there was no indication whatsoever of inflight fire.

The position of the actuating cylinders indicated that all three landing gears were retracted. Both wing flaps were fully retracted. The flap actuating cylinder, with the piston at the top of the cylinder, provided corroborative evidence that the flaps were fully retracted when the PV-1 struck the ground.

Both engines were severely damaged by impact and extensively destroyed by fire after impact. Although the power sections of both engines were burned dry by ground fire, examination of the interiors did not reveal any evidence of inflight failures. Nine pistons, four from No. 1 engine and five from No. 2 engine, were consumed by fire but all the remaining pistons of both engines failed to reveal any evidence of preignition, detonation, or engine overspeeding.

Examination of the combustion chambers of all cylinders available disclosed that all were capable of normal operation. The crankshafts of both engines, although bent, were intact, as were the counterweight assemblies. Examination of these assemblies revealed no evidence of overspeeding or operational distress.

Both propellers suffered major impact damage. All blades, except No. 2 on the No. 1 propeller, were bent rearward in varying degrees, indicating a power-off condition at the time of the crash. This power-off evidence is also supported by the propeller dome positions and the blade shim plate markings which revealed that the blade angles of both propellers were at 26 degrees, the low pitch position for this propeller installation. This 26-degree low pitch position of the propeller blades can be obtained by a reduction of engine power, or loss of engine power and aircraft speed.

A review of the maintenance records of N 2000C revealed no discrepancies. Flight logs covering the year of operation prior to the accident disclosed no repetitious mechanical malfunctioning, and all pilot report items of mechanical difficulties had been readily and properly corrected. The aircraft was released for flight on the day of the accident, following completion of a 100-hour airframe and engine inspection.

Pilot Filangeri conducted the preflight examination of the aircraft and subsequently it was test flown for approximately 40 minutes, from 1440 to 1520, by Pilot Malloy with Filangeri, who had recently been promoted from copilot-mechanic to pilot. Pilot Hamberg, who had been observed sitting in the PV-1 while it was on the ground, familiarizing himself with the cockpit and equipment, accompanied the crew as an observer on this test flight, his first ride in a PV-1 type airplane. No discrepancies or "squawks" were found on either the Preflight Check Sheet or the Test Flight Check Sheet and so far as is known no complaints were voiced by the crew during the one-hour interval on the ground between the test flight and the last flight of N 2000C.

The flight first called MacArthur Tower and asked permission to make a test run on runway 28, which was granted. Then takeoff instructions for a local VFR flight were requested and the tower cleared N 2000C to runway 32 where a normal takeoff was made. This was the last radio contact the tower had with the flight. All radio communications between the tower and the aircraft were normal. A periodic inspection of radio installations and equipment on board the PV-1 had been completed satisfactorily the previous day.

The gross weight of the PV-1 on takeoff at 1625 was 26,259 pounds which was 4,741 pounds under the maximum allowable gross takeoff weight, and the center of gravity was located within prescribed limits. The fuel on board was computed at 1,004 gallons.

At 1630, three minutes before the aircraft crashed, the U. S. Weather Bureau recorded a ground observation from MacArthur Field as: Ceiling estimated 4,000 broken, 6,000 overcast; visibility 15 miles; temperature 31; dewpoint 18; wind north 10 knots.

Pilot Hamberg, who had been hired by the Swiflite Aircraft Corporation eight days previously, was being given familiarization in the PV-1 so that he could obtain a rating to fly this type airplane. Two days before the accident he had satisfactorily passed a flight check on the company's DC-3.

The company did not have written instructions on basic operating procedures and pilot training. There was no policy regarding pilot seating during initial check flights or familiarization flights. Flight training of company pilots usually consisted of slow flight, single-engine operation, single-engine landings, and other maneuvers aimed at familiarizing the pilot with the operating characteristics of a specific type airplane.

Analysis

The duration of the flight was only eight minutes and while the witnesses' estimates of altitude during the last portion of the flight are below 3,000 feet, the performance capabilities of the aircraft and weather conditions (ceiling 4,000 broken, 6,000 overcast) would have permitted VFR flight at higher altitude. It is entirely possible that the aircraft was at 3,500 feet, or higher, at the time of beginning any maneuvers demonstrating performance of the PV-1, such as slow flight.

It is evident that the aircraft did descend from a higher altitude and then was observed to enter a spiral or start of a spin from a stall. Full recovery from this condition was not accomplished before ground contact.

The investigation covered all control factors to the fullest extent that the intense ground fire damage permitted. The possibility of exterior control locks, incapacitation of the crew, and control interference by foreign objects was investigated but with negative results. Impact and fire damage could have destroyed evidence of control interference.

Damage by ground contact and fire precluded an accurate determination of engine operation. The examination of the engines indicated that they had been capable of developing normal power prior to the accident. Had power interruption occurred, without loss of control, the open areas below were suitable for emergency landings.

Normal safe procedures had been followed before the subject flight as shown by the 40-minute test flight in which Pilot Hamberg acted as observer, the time spent by him on the ground in cockpit familiarization, and the practice takeoff roll made on runway 28 just before the actual takeoff.

According to experienced PV-1 pilots, stalls in this type aircraft are "extremely severe" and considerable altitude is lost before recovery. It appears that in this instance the pilot, while practicing familiarization maneuvers, permitted the aircraft to stall at a low altitude.

Findings

Upon consideration of all available evidence, the Board finds that:

1. The crew and aircraft were currently certificated.
2. The takeoff weight of the aircraft was more than 4,000 pounds under the maximum gross weight and the load was properly distributed.
3. Weather was not a major factor.
4. The altitude probably did not exceed 3,500 feet above the ground during the eight minutes the aircraft was in the air.
5. There was no fire prior to impact.
6. There was no evidence of failure of the airframe or malfunction of controls as far as could be determined.
7. There was no evidence of power failure of either engine.
8. The purpose of the flight was pilot familiarization and included slow flight.
9. The aircraft was observed to stall at low airspeed approximately 2,000-2,500 feet above the ground.

Probable Cause

The Board determines that the probable cause of this accident was loss of control resulting in a stall at an altitude too low to effect recovery.

BY THE CIVIL AERONAUTICS BOARD:

/s/ JOSEPH P. ADAMS

/s/ HARMAR D. DENNY

/s/ G. JOSEPH MINETTI

Durfee, Chairman, and Gurney, Member, did not take part 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 at approximately 1700, January 26, 1956. An investigation was immediately started in accordance with the provisions of Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended.

Aircraft Owner

The Swiflite Aircraft Corporation, a subsidiary of Cities Service Oil Company, has headquarters at 60 Wall Street, New York, New York, and an office at MacArthur Field, Ronkonkoma, Long Island, New York. The company owns several transport type aircraft that are used to transport company personnel throughout the United States.

Flight Personnel

Captain Bernard J. Malloy, age 39, held a currently effective airman certificate with ratings of commercial pilot, instrument, airplane single- and multi-engine land, and type ratings on Douglas DC-3 and A-26, Lockheed L8, and PV-1. He was employed by the parent company January 28, 1947. Captain Malloy had approximately 6,600 flying hours, of which 237 hours were in PV-1 aircraft. His last Class-2 physical examination was passed on November 16, 1955.

Pilot Hugo D. Filangeri, age 33, held a currently effective airman certificate with ratings of commercial pilot, airplane single- and multi-engine land, and instrument. He was employed by the company August 13, 1951. Pilot Filangeri had approximately 800 pilot hours, of which 600 hours were in PV-1 aircraft. His last CAA physical examination was on October 10, 1955.

Pilot Raymond Hamberg, age 33, held a currently effective airman certificate with a rating of airline transport, and type ratings on Douglas DC-3 and DC-4. He was employed as a pilot by the company on January 19, 1956. Pilot Hamberg's flight time was approximately 5,800 hours, of which only the subject familiarization flight was on Lockheed PV-1 aircraft.

The Aircraft

Lockheed PV-1, N 2000C, serial 5243, was manufactured in 1943 for the U. S. Navy. It was purchased from the Quaker Rubber Company on September 10, 1953. Total airframe time was 2,216:25 hours, with 1,458 hours since major overhaul, and 40 minutes since the last 100-hour inspection. The aircraft was equipped with two Pratt and Whitney model R-2800-31 engines and two Hamilton Standard model 23E50-505 propellers with model 6477A-12 blades. Time on the engines since overhaul was 149 hours and 67 hours. Time on the propellers since overhaul was 447 hours.