

No: 7/86

Ref: 1b

Aircraft type and registration: Piper Cheyenne II — PA31T D-IHVI

No & Type of engines: Two Pratt & Whitney PT6-28 Turboprops

Year of Manufacture: 1979

Date and time (GMT): 13 March 1986 at 0832 hrs

Location: Rochford, near Southend, Essex

Type of flight: Private (business)

Persons on board: Crew — 1 Passengers — 1

Injuries: Crew — 1 (Fatal) Passengers — 1 (minor)

Nature of damage: Aircraft destroyed

Commander's Licence: Private Pilot's Licence with Instrument Rating

Commander's Age: 60 years

Commander's Total Flying Experience: 3081 hours (of which 311 were on type)

Information Source: AIB Field Investigation.

History of the Flight

A flight plan for the flight from Cologne to Southend was filed on the evening of 12 March 1986. The pilot obtained by telephone details of the actual weather condition at Southend at 0650 hrs on 13 March 1986. He took off from Cologne at 0714 hrs with a company colleague as his sole passenger. The aircraft flew without incident using the airways at Flight Level 220 until cleared by air traffic control to descend towards Southend. At 0820 hrs the pilot established radio communications with the approach controller. He was passed details of the existing weather conditions and said that he would try the approach. He requested and was given radar guidance to land on runway 24 at Southend. The published operating minimum for an approach using the 3 cm surveillance radar is an Obstacle Clearance Limit (OCL) of 280 feet. Radar guidance for the approach terminates at half a nautical mile from touchdown. The recommended Decision Height (DH) and Runway Visual Range (RVR) published in the UK Air Pilot (RAC 4-6-13) is 380 feet and 800 metres respectively.

The approach was flown accurately in azimuth, and advisory heights to maintain a 3° glide path were passed to the pilot. The aircraft's flight path was observed on the London Air Traffic Control Centre radars. Analysis of the recordings made from the radars reveals no abnormality in the descent profile. The radar talkdown was terminated at half a mile and the aircraft was cleared to land. When the aircraft was not sighted from the control tower at the expected time of landing the alarm was raised.

Members of the airfield fire service were already positioned on the airfield at "weather standby". They initiated a search for the aircraft. It was learned that it had crashed close to an industrial estate which lies about half a mile from the threshold of runway 24. The aircraft had been seen on

the normal approach path but at a height judged to be lower than normal. Two eye witnesses saw the aircraft bank sharply to the left before it crashed into a small field. There was a minor post-impact fire in the area of the left engine, which was quickly extinguished by those first on the scene using a hand held extinguisher. The passenger was assisted in opening the main cabin door and he was escorted from the wreckage. The pilot was killed on impact. The passenger, who had been seated in a rearwards facing seat behind the co-pilot's station, stated that he had glimpsed the ground shortly before the accident but could give no information indicating the cause of the accident.

Weather

Actual conditions at Southend:

	0650 hours	0830 hours
Surface wind:	140° at 7 knots	130° at 5 knots
Visibility:	1100 metres in mist	900 metres
Cloud:	5 oktas stratus at 300 feet	Sky obscured
		Vertical visibility 100 feet
Temperature/Dew Point	+ 1°C/0°C	+ 1°C/0°C

Examination of the wreckage

The aircraft's first impact point was with trees within the northern side of a hedgerow bordering a small lane. The approximate attitude of the aircraft at this initial impact was 33° left wing low and 10° nose up, it was turning to the left and descending at a low forward airspeed. At the initial impact, the outer third of the left wing was removed and the aircraft pivoted to the left. The aircraft then struck the hedgerow, and a telegraph line and pole on the southern side of the lane. This was followed by an impact with a galvanised steel water trough. The aircraft then skidded on its belly for 130 feet before coming to rest.

Examination of the wreckage at the accident site established that when the aircraft struck the trees it was structurally intact, and that all the flying controls were attached. Evidence from damage to the propellers and engine exhaust casing indicated that, at impact, power was being produced by the engines and that the propellers were being driven by them. The landing gear and flaps were extended, which was consistent with the aircraft making an approach to land. The instruments, radios, navigation equipment and electrical switches were found in configurations and selections consistent with the phase of flight.

After removal of the wreckage to AIB Farnborough, an examination showed that all the flying control circuits were intact at impact and that there was no evidence of a control jam or restriction having occurred. The Stability Augmentation System (SAS) was visually examined and there was no evidence of a system failure. The pilot's upper torso restraint strap was examined and it showed no evidence of having been worn during a rapid deceleration. The inertia reel mechanism that anchored this strap to the fuselage was found to function satisfactorily.

Medical and pathological evidence

During investigation of the accident it was discovered that the pilot had been receiving treatment for slightly raised blood pressure. Post-mortem evidence revealed moderately severe coronary arteriosclerosis. Fatal injuries were received as a result of the pilot's upper body having struck the cockpit instrument panel.