No: 12/87 **Ref: 1c**

Aircraft type and registration:	Beechcraft F33A Bonanza D-EDXU	
No & Type of engines:	1 Teledyne Continental Motors IO-520-BA piston engine	
Year of Manufacture:	1974	
Date and time (UTC):	23 July 1987 at 0946 hrs	
Location:	Luton Airport	
Type of flight:	Private	
Persons on board:	Crew — 1	Passengers — 1
Injuries:	Crew — 1 (Fatal)	Passengers — 1 (Fatal)
Nature of damage:	Aircraft destroyed	
Commander's Licence:	Private Pilot's Licence with Instrument Rating issued by the Federal Republic of Germany	
Commander's Age:	39 years	
Commander's Total Flying Experience:	210 hours (of which 25 were on type)	
Information Source:	AAIB Field Investigation	

The aircraft departed Trier in Western Germany at 0700 UTC time for an IFR flight via airways to Luton. The pilot held a German PPL with an Instrument Rating which specified a minimum decision height of 200 feet. The standard of the pilot's compliance with Air Traffic Instructions while in UK airspace gave cause for concern and when handing the aircraft over to Luton Approach Control, the LATCC controller suggested that a close watch be kept on the aircaft's progress. On making contact with Luton, the pilot was passed the current weather which gave visibility of 400 metres with sky obscured, an RVR for runway 08 of 800 metres, and a surface wind of 020° at ten knots. The controller also passed the recommended minima for an ILS approach to runway 08 as a decision height of 250 feet and an RVR of 800 metres. The pilot acknowledged both the weather and the approach minima and was given radar vectors to the ILS. At this time the weather at the pilot's nominated diversion was good. The pilot failed initially to establish on the ILS and was given further assistance by the approach controller. When ½ mile past the descent point for the ILS, the aircraft was still not established and the controller passed the Missed Approach Procedure for use in the event that the pilot failed to establish. The pilot then reported that he was picking-up the ILS but did not confirm that he was established. In response to a query from the controller at 3 miles the pilot confirmed that he was not established and commenced the Missed Approach Procedure.

Having confirmed that the pilot was happy to attempt another approach the controller repositioned XU on the ILS. By this time the RVR had improved to 1000 metres. The second approach to the ILS was satisfactory and having confirmed that the pilot was established, XU was handed to the Local Controller and given clearance to land. Although ILS procedures are

not required to be radar monitored, at about 1 mile XU was seen on radar to be well south of the approach path. The pilot was asked if he could see the lights and when he said that he could not he was advised of his radar position and recommended to pull-up and execute a Missed Approach. Initially there was no reply to this call but some seconds later the pilot reported that he had the airfield in sight. This was the last transmission received from the pilot and at this time he was crossing the runway in a northerly direction having deviated ¾ mile to the south of the runway centre line at a range of 1 mile.

At this time witnesses on the ground saw the aircraft flying North at very low level just below the cloudbase. The radar record of the flight confirms a height of about 100 feet. The aircraft was seen to cross to the North of runway 08 and start a fairly steep left turn. The ground on the approach to runway 08 falls very steeply for 100 feet just short of the threshold and the aircraft was seen to descend to a level very close to the approach lights which are mounted on tall gantries. The aircraft was seen to cross the approach lights on a south westerly heading while maintaining its left turn. The turn was maintained until the aircraft crashed on a heading of 110°M in a position 400 yards south west of the runway threshold at an elevation of 50 feet below the runway.

Initial contact with the ground was made by the left wingtip after which the aircraft collided with a wire mesh fence, the supports of which consisted of 6 feet high concrete posts set 10 feet apart. The right undercarriage was torn off as a result of this impact. Examination of the groundmarks and the damage to the fence indicated that the aircraft was banked approximately 15° to the left, with a nominally level pitch attitude. The undercarriage was down at the time of impact. Once through the fence, the aircraft continued to rotate to the left before coming to rest on a heading of 241°M.

The aircraft was equipped with a bladder tank mounted forward of the main spar in the inboard section of each wing. The right hand tank had been torn open as a result of the impact with the fence, the spilled fuel doubtlessly contributing to the severity of the ensuing fire. The left tank had remained intact, although some seepage was observed from the fuel lines leading to the fuel selector which was located on the left side of the cockpit floor. It was noted that the fuel selector was selected to the left tank, which was found to contain approximately 17 gallons of fuel.

Following an on site examination, the wreckage was taken to Farnborough for a detailed examination. The propeller blades had suffered considerable leading edge damage as a result of contact with the fence, and they were all bent against the direction of rotation. It was therefore concluded that the propeller was rotating at impact. The primary flying controls operating cables were unbroken following the impact. The flap operating screwjacks were found to be at the same extension on each side of the aircraft and corresponded to a flap deflection of 22°, a typical approach selection. The positions of the pitch trim operating screwjacks corresponded to a small amount of nose-up trim applied to the aircraft.

No defects were observed in the engine; there was adequate oil in the sump and the spark plugs were normal in appearance. The accessory gearbox drives to the vacuum pump, fuel pump and magnetos were all intact. The fuel pump and vacuum pump (which drives the artificial horizon and directional gyroscopes) were found to be in a satisfactory condition when stripped. Although the magneto housings were broken as a result of the impact, high tension sparks were produced when the impulse drives were turned by hand.

The cockpit together with many of the instruments had been severely fire affected. However, the artificial horizon was still capable of normal operation, and it was noted that the directional indicator was indicating within 1° of the heading on which the aircraft came to rest.

A small crack was found in the casing of the cabin heater muff which was attached to the right hand exhaust manifold. The cabin heat control was found to be OFF at impact; furthermore the post mortem results did not reveal a high carbon monoxide level in either of the victims. It was therefore concluded that the crack, although clearly an undesirable feature, had no bearing on the cause of the accident.