Piper PA-46, N92562

AAIB Bulletin No: 10/99 Ref: EW/C98/7/4 Category: 1.3

Aircraft Type and Registration:	Piper PA-46, N92562
No & Type of Engines:	1 Lycoming TIO-540-AE2A piston engine
Year of Manufacture:	1995
Date & Time (UTC):	22 July 1998 at 1650 hrs
Location:	Cregneash, Isle of Man
Type of Flight:	Private
Persons on Board:	Crew - 1 - Passengers - 1
Injuries:	Crew - None - Passengers - None
Nature of Damage:	Aircraft extensively damaged
Commander's Licence:	Private Pilot's Licence (UK and USA) with Instrument Rating (USA)
Commander's Age:	60 years
Commander's Flying Experience:	1,600 hours (of which 167 were on type) Last 90 days - 42 hours Last 28 days - 19 hours
Information Source:	AAIB Field Investigation

The aircraft was inbound to the Isle of Man on a VFR flight from Huddersfield. The Special Meteorological Observation taken at 1646 hrs recorded a surface wind from 080° at 17 kt, visibility 4,000 metres in rain, scattered cloud base 400 feet, broken cloud base 600 feet, overcast at 1,800 feet, temperature +13°C, dew point +13°C, QNH 1005 mb.

The pilot obtained an IFR clearance into the Isle of Man Control Zone, and was given radar vectoring to position the aircraft onto final approach for a VOR/DME approach to Runway 08. The pilot had reference to the Jeppesen approach chart for this procedure.

On a right hand downwind leg, the aircraft was given descent clearance to descend to 1,900 feet on the QFE of 1004 mb. The pilot reported that he had the autopilot engaged and descended to 1,900 feet in Vertical Speed mode with 300 feet per minute rate of descent selected. The aircraft levelled off successfully at 1,900 feet. Once the aircraft was established on the inbound approach radial (085°) at 1647 hrs, the Approach controller confirmed its range to touchdown was 9 nm and cleared the aircraft to descend with the procedure.

The pilot recalled setting the automatic flight control system with a pre-selected level-off altitude (target value 1,400 feet) in the Altitude Preselect controller. Descent was commenced in Autopilot

Vertical Speed mode. The approach speed was about 115 kt with the landing gear down and 10° approach flap selected. The pilot considered that he had selected a Vertical Speed of 300 feet per minute. The procedure required a descent to 1,400 feet initially, with further descent **after** passing over the Isle of Man VOR/DME transmitter.

During the descent, at 1649 hrs, the pilot was requested to change radio frequency to Ronaldsway Tower control on 118.9 MHz. At 1650 hrs, the pilot attempted to call the Tower controller on the Approach frequency (120.85 MHz) and was again requested to change frequency to 118.9 MHz. Contact was never established with the Tower controller and the aircraft hit rising ground in the vicinity of the Isle of Man VOR/DME transmitter station (elevation 580 feet amsl) which is situated atop the headland known as Spanish Head at the south western tip of the Isle of Man.

The landing gear collapsed after impact with the ground. The aircraft slid to a halt after travelling up the rough sloping ground for a distance of about 150 metres, narrowly avoiding some dry stone walling. The cabin area of the aircraft remained intact and there were no injuries to the pilot, his wife or their dog. After evacuation, the pilot's wife remained with the aircraft while the pilot went to seek assistance from nearby residents. He contacted ATC at the airport by telephone to inform them of the accident location. Search action had already been initiated by ATC after the aircraft had disappeared from radar contact.

During subsequent repair of the damaged airframe, the relevant avionics controllers and instrumentation was removed for investigation. Detailed examination and testing of the components by the avionics manufacturer revealed no fault conditions to be present in the equipment. The altimeter was found to be set correctly to the QFE 1004 mb. The Altitude Pre-Select controller's non-volatile memory was interrogated and the last pre-selected altitude was found to be 400 feet.

The minimum crossing height at the Isle of Man VOR/DME transmitter for this procedure was 1,400 feet. Given the wind conditions and the estimated approach speed of the aircraft, it is likely that the average rate of descent was about 500 feet per minute over a period of some 3 minutes after the aircraft descended from 1,900 feet.

The design of the VOR/DME procedure for Runway 08 at the Isle of Man was reviewed in the light of this accident, and of the circumstances surrounding two similar serious incidents which occurred on 6 June 1998 while aircraft were conducting this approach procedure. Although the procedure, as published, conformed to the required specifications, it was considered that there was an alternative descent procedure which could be less prone to error or misinterpretation. As a result, the CAA revised the procedure such that a continuous descent was specified, to maintain a 3° angle of descent, with the initial descent point (from 1,900 feet) being specified at 1.3 nm to run to the VOR/DME transmitter. The revised procedure was implemented in September 1998.

The pilot of this aircraft noted that the Altitude Preselect controller was located at the bottom of the avionics stack, just above the engine power setting levers. He commented that, in this location, the unit was sometimes difficult to read. He indicated that this unit may be relocated higher up in the avionics stack during the rebuild of the aircraft.