No:10/89 **Ref: EW/C1116** **Category: 1c**

Aircraft Type and Registration:	Cessna P206D, EI-BGK	
No & Type of Engines:	1 Continental IO-520-A-14B piston engine	
Year of Manufacture:	1962	
Date and Time (UTC):	16 June 1989 at 0809 hrs	
Location:	Near Kilmory, Ardnamurchan, Scotland	
Type of Flight:	Private (business)	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - 1 (fatal)	Passengers - N/A
Nature of Damage:	Aircraft destroyed	
Commander's Licence:	Eire Private Pilot's Licence with Instrument Rating	
Commander's Age:	47 years	
Commander's Total Flying Experience:	About 2,152 hours (of which about 240 hours were on type)	
Information Source:	AAIB Field Investigation	

The aircraft was in regular use transporting shell fish from Benbecula to destinations mainly in southern Europe. On 16 June 1989 it was planned to fly a cargo of live lobsters and crayfish from Benbecula to Nice, with re-fuelling stops at Glasgow and Jersey. The aircraft took off from Benbecula without filing a flight plan and without Air Traffic clearance at 0730 hrs. After reporting to Scottish Information at 0754 hrs its position at 4000 feet over the island of Rhum, the aircraft crashed into a mountain near Kilmory on the Ardnamurchan peninsular at a height of 1200 feet above mean sea level at 0809 hrs.

History of the flight

EI-BGK arrived at Benbecula from Belfast/Aldergrove at 1333 hrs on 15 June 1989. Highland and Islands Airports Limited operates an Indemnity Scheme which permits 'out of hours' operation of certain fixed wing aircraft on flights which are not for the purpose of public transport. The pilot of EI-BGK possessed such an indemnity. One of the requirements of 'out of hours' operation is that pilots make blind radio transmissions of their intentions. These transmissions are recorded.

On his arrival at Benbecula the RTF recording reveals that the airport Flight Information Service

(FIS) controller asked the pilot if he was aware that 'out of hours' operation from Benbecula was temporarily suspended and that the Notice to Airmen (NOTAM) promulgating this suspension was available in the control tower. The pilot asked if it was permissible to load the aircraft early in the morning so that it was ready to take off immediately the airfield opened at 0830 hrs. The controller replied that it was preferable that the pilot visited the control tower and read the NOTAM for himself. The pilot replied that he would do this. However in the event he did not, but merely parked the aircraft and left the airport.

At about 0645 hrs on 16 June 1989 the pilot returned to the airport where he met two members of the seafood company exporting the consignment to Nice. The cargo, which consisted of 28 boxes of lobsters and 11 boxes of crayfish, was loaded onto the aircraft. The pilot arranged the distribution of the load within the cabin. The boxes were placed evenly distributed in layers over the cabin floor. There was no cargo restraint. The net weight of the cargo was reported to be 400 kg, and a further estimated packaging weight of 10% was added to make a manifested cargo load of 440 kg. No fuel was uplifted at Benbecula and the total weight at take off is estimated to have been 1400 kg. The maximum permitted take off weight is 1633 kg. It has not been possible to calculate the aircraft's centre of gravity either at take off or in the final stages of flight.

The RTF recording of the Benbecula tower frequency shows that, at 0711 hrs, there was a blind transmission that EI-BGK was taxying to Runway 25 and at about 0730 hrs two eye witnesses observed the aircraft to take off and, as they described it, climb away into the mist. At 0754 hrs Scottish Information received a message from EI-BGK reporting that the aircraft was over the island of Rhum, maintaining 4000 feet and estimating Glasgow at 0855 hrs. The pilot was asked to select a transponder code of 5044 and, at 0756 hrs, the aircraft was positively identified on radar at a position over the north west coast of Rhum and approximately 2 nautical miles east of the centre line of the advisory route DW6. Unfortunately the height read out was not displayed.

The radar recording shows that the aircraft continued on a south-easterly heading, maintaining a constant groundspeed of 120 knots until 0803 hrs. At this time it had deviated 5 nautical miles to the east of the centre line of DW6, and turned right onto a southerly heading. It continued on this heading with the groundspeed increasing to 135 knots until, at 0806:30 hrs, when about half a nautical mile from the north coast of Ardamurchan, it entered a 360° turn to the left. Throughout this turn the groundspeed is calculated to have remained constant at about 135 knots. After completing the orbit the radar recording shows that the aircraft crossed the coast on a south-south-westerly track heading almost directly towards the 1315 feet height known as Beinn an Leatheid. As the aircraft approached the high ground, the radar recording shows that the groundspeed reduced to about 97 knots before it disappeared from radar cover less than one quarter of a nautical mile from the summit of Beinn an Leatheid.

At about the same time two witnesses who were at Achateny, which is a small group of cottages close to the north coast of Ardnamurchan and also close to the final track of the aircraft as shown on the radar recording, report hearing the sound of a low flying aircraft which they could not see due to the prevailing low cloud and mist. They reported that the aircraft appeared to have made a turn over

the sea before heading back south towards the land. After it passed close to them they heard a sudden increase in the engine noise followed by the sound of an impact. They alerted the police and subsequently, in a temporary break in the low cloud, were able to see aircraft wreckage close to the summit of Beinn an Leatheid, and direct the rescue services to its location.

Site examination

Examination of the wreckage and the site indicated that the aircraft struck the mountain face obliquely, on a track of 204°(M), which was 30° left of the local line of maximum slope, while in a climbing turn to the left. In the initial impact region the maximum slope was 45°, and along track the upward slope was approximately 30°. The terrain was rock with a deep covering of soil and short vegetation. At impact the aircraft was estimated to have a pitch angle of around 20° nose up, with a climb angle of 15°, a bank angle of 16° left and a yaw angle of 11° left. Flaps were up. Ground speed at contact was estimated at 60-80 knots.

After impact the aircraft bounced back into the air, turned over and landed inverted on its forward fuselage 30 metres further on. It came to rest with severe disruption to the landing gear and the forward fuselage, mostly the result of initial impact. The pilot's seat was provided with a lap strap only, and no upper-torso restraint. Both the attachments for the lap strap had torn free from the aircraft structure.

Evidence was found indicating that the propeller was turning at initial impact, but at low power, however charring of vegetation in contact with the engine showed that it had been delivering high power shortly before. The left and right wing fuel tank contents were 14 ltr and 52 ltr respectively, and no evidence was found that significant quantities had been released at the site. The evidence indicated that at impact the altimeter subscale was set at 1023 mb and both VORs were tuned to 117.70 MHz (Tiree). Omni-bearing selectors 1 and 2 were found set at 254° and 249° respectively.

No evidence of defect or failure likely to have contributed to the accident were found, although conditions precluded detailed examination of the aircraft in some areas. There was no fire

The aircraft had valid Certificates of Registration and Airworthiness, in the Private category, issued by the Eire authorities. At the last Annual Inspection in February 1989 total aircraft flight time since manufacture was recorded as 2901 hours and the engine was a newly overhauled unit. No information on subsequent operations or maintenance was available from Aircraft, Engine or Propeller Log Books.

Meteorological information

A twenty-four hour weather forecasting and briefing service is available at Benbecula airfield, and the facility is situated within the air traffic control tower. On the morning of 16 June 1989 the pilot

of EI-BGK did not enter the control tower building or request a weather forecast. Details of the weather forecast that was available to pilots together with an aftercast of the actual conditions were provided by the Meteorological Office, Bracknell. The forecast was for a cold front lying from Dounreay through Fort William to Ballycastle which was moving northeast at 20 knots. There were warnings of low cloud, mist and drizzle over the western isles and coasts with cloud bases as low as 400 feet above mean sea level. The aftercast confirmed that the forecast was substantially correct and that, at the time of the accident, all ground in the Ardnamurchan area above about 800 feet would have been covered by Stratus cloud, especially that ground exposed to the moist southwesterly flow. The sea level barometric pressure was 1025 mb.

Flight planning and documentation

Examination of the aircraft wreckage, of which the cockpit area and its immediate surroundings were readily identifiable, revealed no evidence that the pilot had completed and carried a flight plan. There were no topographical maps for any part of the intended route. There was a comprehensive selection of International Aeradio navigation charts, however the majority of these were considerably out of date and found stowed in their carrying case.