No: 5/83 Ref: EW/C817

Aircraft:	Pilatus Britten-Norman Islander B-N2A G-AXXG (light twin engine fixed wing aircraft)	
Year of manufacture:	1970	
Date and time (GMT)	24 March 1983 at 1837 hrs	
Location:	3 miles north-west of Aviemore	
Type of flight:	Positioning flight	
Persons on board:	Crew - 1	Passengers - Nil
Injuries:	Crew - Nil	Passengers - Nil
Nature of damage:	Substantial damage to nose undercarriage, port undercarriage and port wing	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's age:	60 years	
Commander's total flying experience:	7761 hours, (343 hours were on type)	

During routine maintenance of the aircraft at Inverness Airport, corrosion was discovered under the port tailplane leading edge de-icer boot. It was arranged that the aircraft should be flown to Perth for the re-skinning of the tailplane leading edge and then flown back to Inverness for the de-icing system to be refitted. The Technical Log shows that the aircraft departed from Inverness with 150 kgs (55 US gallons) of fuel in the tanks. No record was made of the fuel contents on arrival at Perth. In addition to the tail-plane repair the compass was also swung and adjusted while the aircraft was at Perth. This involved some 75 minutes of ground running of the engines.

No pilots of the operating company were available to fly the aircraft back to Inverness upon completion of the work and so it was arranged that a freelance pilot should be engaged. This pilot had previous experience of Islander aircraft but, at the time of flight, his professional qualifications had lapsed. He has stated that he undertook the flight using the private privileges of his licence. It was also arranged that the aircraft should be refuelled at Perth to a fuel state of 70 Imperial gallons (84 US gallons), so as to have sufficient fuel remaining on arrival at Inverness for the next flight.

The pilot had planned to arrive at Perth in the afternoon but, because of a rail delay, did not arrive until 1730 hours when the aerodrome had closed and the staff had left.

The Islander, G-AXXG, was standing outside the hangar and appeared to be ready for flight. The pilot could not, at that time, find the Technical Log and so he made a telephone call to establish whether the work had been completed and he understood from the call that the fuel state was as requested but that the fuel gauges were unreliable. It was drawn to his attention that there was a dip stick on the aircraft and that he could check the fuel for himself. However, since it was a high wing aircraft and there were no ladders or steps readily available, it was not easy for him to check the fuel levels and he did not do so. The aircraft's fuel gauges indicated a total of 25 US gallons of fuel. The pilot was anxious to complete the flight in daylight since the airframe de-icing system was unserviceable and he wished to be able to avoid flying in cloud. He departed from Perth at 1748 hours and filed an airborne flight plan with Scottish Information giving his ETA for Inverness as 1845 hours and a fuel endurance of 3 hours. At 1801 hours, at the request of Lossiemouth Radar, he climbed to Flight Level 85 and was identified on radar. At 1816 hours he informed Lossiemouth that he was having icing problems and that the port engine had stopped. He was able to maintain height and requested a descent clearance as the icing had become quite severe. He was cleared to descend initially to FL 75 and later to 5000 ft. At 1825 hours when he had been further cleared to descend to 4800 ft, he transmitted a 'Mayday' call and announced that the starboard engine was now failing. After the application of carburettor heat, the starboard engine appeared to run normally again and so the pilot cancelled the'Mayday' as he was able to maintain a height of 4000 ft in visual meteorological conditions. At 1830 hours,the starboard engine again lost power and the pilot reinstated the 'Mayday' announcing that he would have to make a forced landing. The starboard engine continued to run intermittently until at 1837 hours the pilot made a flapless forced landing on what he took to be a flat, snow covered plateau.

The aircraft in fact landed on a 1 in 5 upward slope on the side of Gael-charn Beag in the Monadhliath Mountains north-west of Aviemore at 2000 ft AMSL. The nose undercarriage collapsed, the port undercarriage struck a ridge on touchdown and was forced rearwards causing damage to the port wing and after a short ground run the aircraft came to rest on the starboard wheel, the fuselage and the port wing tip. There was no fire, the pilot was uninjured and was able to leave the aircraft by the front entry door. He was fortunate that the battery and radio equipment was undamaged and he was able to make radio contact with the Search and Rescue helicopters from Lossiemouth, and they were able to 'home in' to his transmissions. He was rescued by helicopter at 1901 hours and flown to Inverness.

The aircraft was examined on site over the following two days. No defects were found other than those attributable to the forced landing. The fuel tanks and fuel system were drained of fuel and a total of 14 pints (2.1 US gallons) was recovered; the Flight Manual states that 7 US gallons of fuel are unusable. No evidence of a fuel leak could be found.

The aircraft was later airlifted to Inverness Airport where both engines were successfully ground run. The fuel gauging system was investigated and found to be within the manufacturer's design tolerance of 5% accuracy. It has been established that the aircraft was not refuelled at Perth and that the fuel used on the accident flight plus the previous flight and the ground running time at Perth is consistent with the known amount of fuel on board the aircraft after it was last refuelled at Inverness. Although atmospheric conditions were conducive to carburettor icing at the time of the accident flight and it is probable that the pilot experienced carburettor icing to some degree, it is evident that there was insufficient fuel on board the aircraft to complete the flight to Inverness.