

No: 6/92

Ref: EW/G92/03/09

Category: 2c

Aircraft Type and Registration: Bell Jet Ranger III, G-MHCC

No & Type of Engines: 1 Allison 250-C20 turboshaft engine

Year of Manufacture: 1974

Date & Time (UTC): 20 March 1992 at 1626 hrs

Location: Morecambe Bay in the Irish Sea

Type of Flight: Private

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Aircraft sank and was not recovered

Commander's Licence: Private Pilot's Licence

Commander's Age: 44 years

Commander's Flying Experience: 2,000 hours (of which 160 were on type)
Last 90 days - 20 hours
Last 28 days - 5 hours

Information Source: Aircraft Accident Report Form submitted by the pilot plus AAIB enquiries

History of the Flight

The pilot had intended to fly to the Isle of Man with a colleague on the day before the accident but the weather was unsuitable and the flight was cancelled. On the day of the accident he departed Barton aerodrome with full fuel and landed at Blackpool after an uneventful flight. There he filed a flight plan, obtained security clearance for a flight to the Isle of Man, and hired an immersion suit and lifejacket. The aircraft was not fitted with emergency flotation bags; the pilot considered obtaining a dinghy but he was unable to hire or borrow one in time for the flight.

At 1604 hrs the aircraft departed Blackpool with 55 US gallons of fuel for a direct flight to Douglas. The weather was basically fine with 20 km visibility, scattered cumulus at 2000 to 2500 feet and broken strato-cumulus base 3000 feet. The surface wind was 220°/13 kt and the temperature +10°C. A meteorological aftercast prepared by the Bracknell Met office concluded that at 3000 feet amsl the air temperature was +5°C and the relative humidity was 92%. During the climb to 3000 feet the pilot selected anti-ice on at 2000 feet where the indicated OAT was +8°C. Soon after reaching 3000 feet he

encountered an area of rain and decided to cruise at 70% torque. At about 1615 hrs Warton radar, who were providing radar information service, notified the pilot of opposing traffic, a Cessna 172 aircraft en-route from Ronaldsway to Blackpool at 2000 feet. A short while later the engine-out audio and lamp warnings came on and the pilot immediately put the aircraft into autorotation. He transmitted a Mayday call to Warton which the controller acknowledged with details of the nearest landing area, a gas rig, about 5 nm south east. In the descent, the pilot noticed a split between the NR (rotor) and N2 (power turbine) needles; he believes that the N2 indication was below 40% and still falling but he was unable to recall the N1 (gas producer) or TOT (turbine outlet temperature) readings. He attempted to relight the engine by closing the throttle, holding the starter button depressed and re-opening the throttle after five seconds but this was unsuccessful. During the later stages of the descent he removed his headset, pulled up his immersion suit hood, zipped up the suit and opened both doors. Water impact was smooth and the aircraft landed upright with some 60-70% NR remaining. It floated upright for about 20 seconds before slowly rolling through 120° to the left with the tail and rear section submerged.

Survival and Rescue

The pilot left the aircraft through the pilot's door which appeared to have opened fully during touchdown. His legs were briefly entangled but he was able quickly to kick himself clear of the aircraft. Once clear of it he inflated his lifejacket and then he felt water running down the back of his neck and into the immersion suit. He tried to raise the suit zipper to tighten the neck seal but he was unable to reach it because of the inflated lifejacket. After about a minute he saw an aircraft circling his position and so he attempted to wave to it but found the required movement very tiring. The swell was about 6 to 8 feet high and was creating a lot of spray which penetrated his eyes, nose and throat causing him discomfort and breathing difficulties. After a few minutes his immersion suit had partially filled with water and he felt extremely cold. Some time later he noticed a small dinghy floating towards him and, with great effort, he reached the dinghy but found it inverted and somewhat soft. Eventually he righted the dinghy and clambered aboard but it was full of water. In the dinghy he felt exhausted, weak and very cold. He tried to bale out the water but the wave action filled it faster than he could bale and so he kept still to conserve his energy. Some time later the pilot heard a helicopter to his left. He looked around and saw the winchman almost beside him. The winchman secured him to the hoist in a prone position and he was winched aboard the RAF Sea King. At this stage he was shaking with cold and almost unable to speak. The sea temperature was +8°C and he had been in the water for a total of only 23 minutes. The helicopter crew wrapped the pilot in blankets and shortly afterwards he was able to tell them that he had been alone and that his suit was full of water. They then cut off his lifejacket and immersion suit before wrapping him in dry blankets. He was taken to

Blackpool where he was transferred by ambulance to hospital and treated for hypothermia. He recovered quickly, had no injuries and was discharged the next day.

Rescue Coordination

The Warton radar controller noted the aircraft's position and immediately alerted his supervisor. The supervisor coordinated the ATC response whilst other staff notified the Distress & Diversion Cell at West Drayton, the Coastguard and the local Police Headquarters. The flightplan stated that there were two persons on board and this information, together with the approximate ditching position were passed to the relevant rescue agencies. Meanwhile, the radar controller contacted the "opposing traffic" C172 and asked the pilot to look for the ditched helicopter. The controller then telephoned Blackpool ATC and asked them if they could "scramble" a helicopter to look for the ditched pilot.

The Cessna pilot and his passengers had seen the descending helicopter and kept it in view. They saw its autorotative descent into the sea and throughout the descent there were no signs of smoke or vapour emanating from the exhausts. The touchdown appeared to be gentle and a few seconds later they saw the pilot escape from the helicopter but they could not see any dinghy. Being a frequent traveller between the island and the mainland, the Cessna pilot was well aware of the dangers of cold water immersion and he offered to drop his own dinghy to the pilot.

The Warton controller suggested that he should drop the dinghy and so the Cessna descended to low altitude where the pilot assessed the wind and current from the wave patterns on the sea surface. He set up a left hand oval pattern using rate one turns and accurate headings to ensure that he returned to the scene of the accident during each pass. After four or five passes during which he practised approaching, flaps up, at 100 feet asl and 70 kt directly into wind, he assessed that he should drop the dinghy about 500 to 600 feet upwind and slightly to the survivor's right to allow for the swell which was from 240°. He briefed the front seat passenger to hold the door open whilst the rear seat passenger launched the dinghy and inflated it by hanging onto the lifeline until he felt a sharp tug. After two more right hand orbits to allow his passengers time to practice their roles, the three men succeeded in launching the dinghy out of the door at the desired drop location. For the moment of launch, the Cessna pilot closed the throttle and shouted to the rear seat passenger. Although the dinghy left the aircraft cabin forward of the main gear leg the lifeline did not snag. The Cessna then remained in the area for about five minutes to watch the progress of the dinghy which was slowly blown towards the survivor who by this time was no longer moving. Another fixed wing aircraft under Warton's control arrived on scene at about 1640 hrs and the Cessna then departed to complete its journey to Blackpool.

Meanwhile, SAR (search and rescue) helicopters from RAF Valley and RN Prestwick were scrambled and a civilian helicopter from Blackpool made its way to the area. The RN helicopter had to return to base with an unserviceability but Barrow and Fleetwood lifeboats were launched and rig standby vessels proceeded to the area. The RAF Sea King and the civilian helicopter from Blackpool arrived at the scene at about the same time. After the Sea King had rescued the pilot, the civilian helicopter searched for the second person believed to be on board. The search continued for a short time until it was established by the SAR helicopter crew that there had been only one person on board, the pilot having failed to amend part of the flight plan he had prepared the previous day.

Aircraft History

The helicopter was manufactured in 1974 and had acquired 8504 hours. It was operated on a Public Transport C of A and three days before the accident it had undergone a 50 hour check. During this check the Pc air pipe between the engine compressor and the Bendix fuel control unit had been disconnected for a compressor wash and reconnected afterwards. There have been several recorded incidents where a loose Pc air pipe union has come adrift in flight leading to leaks from or disconnection of the pipe union. Loss of Pc air pressure results in reduction of fuel flow to an amount less than that required to sustain ground idle.

Some months prior to the accident the helicopter, with the accident pilot at the controls, had made a precautionary landing in a field after indications of engine failure. The indications were spurious and attributed to failure of the N1 tachometer generator. The apparent loss of N1 triggered the engine out warning horn and light although the engine was performing normally. The engine was not fitted with an auto-relight system.

A few low-density parts of a Jet Ranger have been recovered from the sea surface in the accident area but the remains of the engine and gearbox have not been located.