No: 1/89 **Ref: EW/C1090** **Category: 2a**

Aircraft Type and Registration:	Sikorsky S61N, G-BDES
No & Type of Engines:	2 General Electric CT58-140 turbine engines
Year of Manufacture:	1975
Date and Time (UTC):	10 November 1988 at 0850 hrs
Location:	The North Sea 2 nms south of the Claymore platform
Type of Flight:	Non-scheduled public transport
Persons on Board:	Crew - 2 Passengers - 11
Injuries:	Crew - None Passengers - 1 (minor)
Nature of Damage:	Aircraft destroyed
Commander's Licence:	Airline Transport Pilot's Licence (Helicopters)
Commander's Age:	41 years
Commander's Total Flying Experience:	5295 hours (of which 3351 were on type)
Information Source:	AAIB Field Investigation

History of the Flight

On the morning of 10 November 1988, G-BDES was tasked on a non-scheduled public transport flight to several North Sea installations in the area of the Claymore A platform. The weather in the area was poor with a surface wind of 190° gusting to 40 kts and cloud down to 1200 ft in rain. The sea temperature was + 10°C and the wave height was 15 feet. The crew consisted of two captains with the aircraft commander occupying the right hand seat.

The crew reported at 0600 hrs for an 0700 hrs departure. Pre-flight procedures revealed no faults with the aircraft and the flight was initially uneventful. G-BDES departed the Sedco 703 platform with eleven passengers and a small amount of freight at 0825 hrs and climbed to 1500 feet en-route to Aberdeen. After a short time both pilots and a passenger became aware of a noise but did not consider it serious enough to warrant any action. Shortly after becoming aware of the noise however, the passenger heard a "thump" and then noticed a low amplitude vibration. He went forward to inform the pilots and when the aircraft commander removed his headset to hear what the passenger was saying he could clearly hear the noise that was coming from the cabin area. Despite the fact that there were no flight-deck indications of any problem he decided to divert to the nearest helipad which was on the Claymore A at a range of 18 nms and directly down-wind. A descent was started and changing the rotor rpm indicated that the noise was probably emanating from the main rotor transmission.

At 0847 hrs, the main rotor gearbox oil pressure began to fall. Selection of the auxilliary lubrication system restored pressure. The aircraft commander used the Public Address system to order the passengers to prepare for ditching. None of the passengers heard the message clearly but one passenger heard the word "life jacket" and began to prepare himself for ditching. On seeing this the other passengers followed suit. At 0849 hrs when 4 nmls from the intended landing site, "break-up" noises were heard from the transmission and there were fluctuations in the torque and engine rpm indications. The aircraft commander decided to ditch straight ahead, downwind, as there was by now insufficient height to turn into wind. Two abbreviated MAYDAY calls were made and the aircraft ditched at 0850 hrs.

On contacting the very rough sea, the aircraft immediately rolled to the right and inverted. The Automatically Deployable Emergency Location Transmitter (ADELT) failed to deploy. All the crew and passengers, who were uninjured, managed to escape from the inverted aircraft with varying degrees of difficulty. The life-raft located in the rear door was deployed from outside the aircraft and six survivors boarded it. The other seven survivors could not reach the life-raft but managed to join up in a group.

After 42 minutes the survivors in the sea were rescued by boat and after a further 9 minutes the survivors in the life-raft were winched onboard a helicopter. Subsequent medical examination revealed that one passenger was suffering from hypothermia. Most immersion suits leaked to some degree.

After completion of the rescue G-BDES floated for some hours before sinking 13 nms east-north-east of the ditching position. The wreck was raised five days after the crash and the engineering investigation commenced.

Engineering Investigation

Strip examination of the main rotor gearbox revealed that the helical combiner gear, Pt No S6135-20620-003, had disrupted and a fatigue fracture has been identified. The cause of this fracture is being investigated.

The Chief Inspector of Accidents has ordered an Inspector's Investigation into this accident.