

AIRCRAFT ACCIDENT REPORT NO. 2/91

This report was published on 10 October 1991 and is available from HMSO Bookshops and Accredited agents.

REPORT ON THE ACCIDENT TO SIKORSKY S-61N, G-BEWL AT BRENT SPAR, EAST SHETLAND BASIN ON 25 JULY 1990

SUMMARY

The accident occurred whilst the helicopter was manoeuvring to land on the Brent Spar, a permanently moored semi-submersible offshore storage and tanker loading unit. After the helicopter had approached to a hovering position adjacent to the helideck, several witnesses realised that it was positioned dangerously close to a part of the installation's crane structure. The tail rotor blade tips contacted a handrail surrounding the anemometer mast which was attached to the crane 'A' frame after which the helicopter crashed onto the helideck and almost immediately fell over the side of the deck and into the sea. Seven survivors were rescued from the sea having made their escape from the sinking helicopter. Six occupants including the crew perished.

The report concludes that the accident happened when the handling pilot allowed the helicopter's tail rotor to contact a hand rail surrounding the 'A' frame of the Brent Spar crane which resulted in the helicopter crashing onto the helideck before falling into the sea and sinking.

The following causal factors were identified:

- (i) Negligible wind offered freedom of choice in the direction of approach but required careful handling of the power available and consideration of any rejected landing profile. An indeterminate horizon made attitude control of the helicopter more difficult.
- (ii) Although all the operating restrictions imposed on the Brent Spar helideck by the CAA were observed, a combination of subtle differences relating to this particular landing, as opposed to any other, may have led to the erosion of a safety margin that had already been reduced by the intrusion of the crane structure into the obstacle limited sector.

- (iii) The commander's choice of approach was inexplicable given the number of more favourable options open to him but it may have been influenced by his previous experiences of approaching Brent Spar in strong wind conditions.
- (iv) Orientation of the rotating helideck when a vessel was moored to Brent Spar meant that the major obstacle would often be positioned behind a helicopter which was landing into wind. Pilots were therefore not unused to this situation and the commander may have accepted the constraint it placed upon the direction of approach.

Ten Safety Recommendations were made during the course of the investigation including the following topics:

- (i) Consideration by CAA and HSE of the best arrangements for the inspection of helidecks.
- (ii) A review of helideck markings to include their use in providing greater security from obstacles, greater awareness of their significance and official sponsorship of published landing area information.
- (iii) Amendment of airworthiness requirements for passenger seat static and dynamic testing to at least current US standards with eventual exploitation of available airframe strength and provision of upper torso restraint.
- (iv) Mandatory provision of single action life saving jackets for North Sea helicopter passengers.