

Follow-up Action on Occurrence Report

ACCIDENT TO EC135 T1, G-SPAU, NEAR MUIRKIRK, EAST AYRSHIRE ON 17 FEBRUARY 2002
(HELICOPTER STRUCK GROUND AND CRASHED DURING LOW VISIBILITY OPERATIONS)

CAA FACTOR NUMBER : F30/2003
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OPERATOR : Bond Air Services
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SYNOPSIS

(From AAIB Report)

The pilot and two police observers (legally designated as passengers but referred to as crew in this report), were tasked to conduct an operation, close to the village of Muirkirk, in support of the police. The helicopter lifted off from its Glasgow base at 2137 hrs and climbed to an altitude of 1,500 feet. The pilot later received clearance from air traffic control to climb to 2,000 feet. As the helicopter settled onto an initial direct track of 165° M towards Muirkirk the pilot could see clearly the lights of East Kilbride about 8 miles ahead and assessed the visibility to be greater than 10 km with a cloud base between 3,000 and 3,500 feet. As the helicopter approached the high ground to the south of Eaglesham it unexpectedly entered snow showers and encountered reduced visibility. The pilot immediately turned onto a reciprocal heading and soon regained visual flight. He then discussed with his crew the option of flying to the east, towards Hamilton, following the M74 motorway to Douglas and from there flying west towards Muirkirk. This route was intended to avoid the high ground and any associated poor weather. The flight continued at an altitude of approximately 2,000 feet, and from overhead the village of Douglas the pilot could see the lights of Muirkirk. Shortly afterwards the helicopter unexpectedly entered cloud. The pilot immediately turned to the left, away from the high ground to the north, rapidly regained visual flight and re-located the lights of Muirkirk. The helicopter continued towards the village and the crew commenced their task maintaining an altitude of about 1,800 feet (approximately 1,000 feet agl). The task was completed after approximately 15 minutes during which time the weather remained good.

Whilst orbiting the village the crew utilised a very powerful, steerable, searchlight mounted on the left side of the helicopter. When the task was complete this light was extinguished. The helicopter was also equipped with a fixed, forward facing, high intensity light fitted to the nose of the aircraft; the pilot left this light illuminated for the return journey.

The pilot initially intended to return to Glasgow via Douglas and the M74, however, as soon as the helicopter turned towards Douglas he could see an extensive area of cloud ahead. He therefore decided to fly west along the valley, towards lower ground, and then return to Glasgow via Kilmarnock. As the crew set off on a westerly track at an altitude of approximately 2,000 feet (1,200 feet agl) they could see beyond the town of Cumnock, 9 miles ahead.

The helicopter then unexpectedly entered thick cloud once more and the police observer, occupying the front left seat, recalled that the airspeed indicator showed approximately 80 kt. The pilot, who was aware of the high ground on either side and reluctant to turn, decided that the safest option was to maintain his present track and descend using the radio altimeter as his height reference. When passing 1,000 feet agl, and still in cloud, the pilot selected

the 'ALTITUDE' (ALT) and 'HEADING' (HDG) modes of the autopilot with the intention of maintaining his current altitude and heading. He then noticed that the helicopter had entered a turn to the right with approximately 15° angle of bank (AOB). He manually overrode the autopilot and regained a westerly heading, but the helicopter recommenced the turn to the right causing him to intervene once more. Following this second manual intervention the pilot recalled seeing discrete 'AP' and 'A.TRIM' red warnings and red 'P' and 'Y/R' annunciations. These warnings indicate that the autopilot has disconnected. The helicopter then entered a steep nose down attitude whilst turning to the right at about 45° AOB. The descent was rapid and despite his corrective control inputs the pilot was unable to prevent the helicopter striking the ground.

After impact the pilot, in the front right seat, and the police observer, in the front left seat, were able to release their harnesses and vacate the helicopter via the disrupted area on the right side of the fuselage. The pilot then returned to the cockpit to shut down the engines that were still running. The police observer, seated in the rear of the helicopter, was seriously injured and required assistance from his two colleagues to vacate the wreckage. Once the injured observer had been dragged clear of the helicopter the pilot remained with him whilst the other observer sought assistance from a nearby farm. The emergency services arrived at 2235 hours, approximately 10 minutes after the accident.

Prior to take off an 'ACTUATION' message had appeared on the Caution and Advisory Display (CAD) with an associated 'R' (roll axis) warning on the pilot's Primary Flight Display (PFD); the warning had remained illuminated throughout the flight. This warning indicates a reduction in roll control authority due to a failure of one of the two roll control actuators. The pilot considered this warning to be a false warning since it had appeared on a number of recent occasions and the higher modes of the autopilot had still been available. (These modes would not have been available if the warning had represented a flight critical failure).

FOLLOW UP ACTION

The two Safety Recommendations, made by the AAIB following their investigation, are reproduced below, together with the CAA's responses.

Recommendation 2003-49

The CAA should require that Police Air Operators Certificate (AOC) holders review the safety benefits provided by the use of helmet mounted night vision goggles (NVGs) with a view to the introduction of NVGs for helicopter operations conducted at night in support of the police in areas of limited cultural lighting, particularly in hilly or mountainous regions.

CAA Response

The CAA accepts this Recommendation.

The CAA will require Police Air Operator Certificate (PAOC) holders to review the safety benefits provided by the use of helmet mounted Night Vision Goggles (NVGs) with a view to the introduction of NVGs for helicopter operations conducted at night in support of the police in areas of limited cultural lighting, particularly in hilly or mountainous regions.

Considerable work has already taken place within the European forum to establish certification requirements for NVG equipment and the associated aircraft cockpit instrumentation. In parallel with this work, operational rules are being developed within the JAA for NVG equipment. The UK CAA will require PAOC holders to consider the safety benefits offered by NVGs once criteria are in place.

CAA Status - Open

Recommendation 2003-50

The CAA should review the Police Air Operators Manual (PAOM) to ensure that training in the use of autopilot systems is required to be covered by the operator during initial and recurrent line training and the PAOM Part II contains instructions for the use of autopilot systems by pilots during normal operations.

CAA Response

The CAA accepts this Recommendation.

The CAA has reviewed the Police Air Operators Manual (PAOM) to ensure that training in the use of autopilot systems is required to be covered by the operator during initial and recurrent line training and that the PAOM Part II contains instructions for the use of autopilot systems by pilots during normal operations.

A consultative letter was issued on 16 May 2003 proposing amendments to the PAOM to require PAOC holders to place in their PAOM Part II, autopilot training requirements and appropriate standard operating procedures.

CAA Status - Closed