MINISTRY OF DEFENCE

Military Aircraft Accident Summaries

MAAS 13/83

6 May 1983

AIRCRAFT ACCIDENT INVOLVING ROYAL AIR FORCE HUNTER FGA 9 XE 649

Date:	13 May 1982
Parent Airfield:	RAF Brawdy
Place of Accident:	15 miles SE Aberystwyth
Crew:	One pilot
Casualties:	One (pilot) major injuries

CIRCUMSTANCES

1. The pilot of XE 649, an instructor at the Tactical Weapons Unit (TWU), was flying as the leader of a section of 4 single-seat Hunters on a low level simulated attack mission. A unit based Hawk aircraft was used to pose an air threat, with the aim of forcing the section to take evasive action. All pilots were drawn from the TWU staff and the sortie was flown in accordance with the Staff Continuation Training syllabus. The flight went according to plan until the Hunters were re-grouping after carrying out individual simulated attacks on their first target; at this stage the Hawk closed in behind the No 4 Hunter. When the aircraft was seen by the formation, an evading turn was ordered during which the Hawk climbed clear. In the course of the turn, the lead Hunter pilot ordered the formation to roll out on a specified heading. As he rolled his aircraft's wing level, he was aware of 2 loud bangs and a loss of engine power. He attempted to initiate a climb, but the movement of the control column felt 'gritty' and the aircraft did not respond. He realised that he could do nothing to prevent the aircraft from hitting the ground within seconds and he therefore ejected. Simultaneously, the No 3 pilot saw a plume of flame emerge from the jet pipe of the lead aircraft and called his leader to pull up. The aircraft crashed into an area of boggy moorland and disintegrated on impact. The pilot landed in close proximity to the wreckage and had to roll clear of a residual ground fire. He sustained spinal injuries.

CAUSE

2. Examination of the wreckage proved conclusively that an in-flight turbine failure had occurred. A segment of the fractured turbine disc had broken through the engine casing and had then penetrated the fuselage structure. The reason for the loss of elevator control could not be positively established but it was concluded that the catastrophic engine failure had probably caused some distortion of the fuselage and produced a nose down change of trim. Metal fatigue was believed to have been the cause of the turbine failure, and this had probably been induced by variations in gas pressure around the circumference of the turbine entry nozzle area.

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SUBSEQUENT ACTIONS

3. The Service engineering authority, in collaboration with the manufacturer, has isolated those Hunter engines which were considred to be at risk from similar failures. These engines have been categorised either for rejection or for monitoring to detect incipient failures. In addition, the manufacturer has introduced revised engine overhaul acceptance standards, which require adjustment of the gas flow pressure distribution in order to eliminate alternating stresses in the turbine disc.

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