



# MINISTRY OF DEFENCE

## Military Aircraft Accident Summary

### MILITARY AIRCRAFT ACCIDENT SUMMARY OF RAF BOARD OF INQUIRY

**Aircraft Type:** Tornado F3  
**Date of Accident:** 10 March 1995  
**Place of Accident:** North Sea, 15 miles E of Spurn Head  
**Casualties/Fatalities:** 1 Fatal, 1 Minor

#### Synopsis

1. Tornado F3 ZE789 had completed a training exercise over the North Sea on the morning of 10 March 1995 and was returning to RAF Coningsby, its home base, as a singleton when it crashed into the sea. The Inquiry concluded that the accident was caused by an uncontained left hand engine failure. This caused severe damage to the flying controls and the subsequent loss of control of the aircraft. Both crew ejected but unfortunately the navigator was killed during the ejection sequence.

#### Circumstances

2. The weather conditions in the area were good with scattered cloud, good visibility and a moderate wind. Following the successful completion of an electronic warfare training sortie, the aircraft was recovering to RAF Coningsby at approximately 1000hrs, when the crew heard a loud thump that appeared to come from behind the cockpit. The aircraft began to yaw, roll and pitch violently. Faced with a number of warnings, including indication of an engine fire, the crew quickly recognized a left engine failure and closed down the affected engine. Shortly

afterwards the aircraft became uncontrollable and the pilot, having first warned the navigator, initiated a command ejection.

#### Rescue/Salvage Operation

3. The crew from a RAF Search and Rescue (SAR) Sea King helicopter responded to the MAYDAY call and picked up the pilot who was found to be suffering from only minor ejection injuries. The navigator was recovered by a second RAF SAR Sea King but, regrettably, he had already suffered fatal injuries.

#### Aircraft Damage

4. Although the aircraft was destroyed on impact with the sea, a large proportion of the wreckage was recovered for inspection by the Department of Transport Air Accidents Investigation Branch.

#### Investigation

5. In addition to the salvaged engines, the Board had access to data from the Accident Data Recorder/Cockpit Voice Recorder and the pilot's report. It became apparent that the left hand engine had suffered an uncontained failure initiated by thermal fatigue in the High Pressure Nozzle Guide Vanes. The Inquiry concluded that a number of blades from the Guide Vanes penetrated the engine casing and severed a hydraulic system and the electrical wiring for the flight control system. Hydraulic fluid then ignited and the resultant fire burnt through the flying control rods rendering the aircraft uncontrollable. Although it could not be determined with absolute certainty, the navigator had probably been struck by the canopy as it was jettisoned.

#### Safety Recommendations

6. An analysis of heat resistant flying control rods is being conducted by the Defence Research Agency at Farnborough to

ascertain whether their incorporation would allow pilots to maintain control of an aircraft with a rear fuselage fire. Simultaneously, a Tornado F3 is being trialled with a rear fuselage fire detection system that will give aircrew a more positive indication of a fire in that area. As a result of this accident, High Pressure Nozzle Guide Vanes found to be damaged will be replaced in future rather than repaired. Further advice has been given to Tornado aircrew to prevent the risk of serious injury when the canopy jettisons.

26 March 1996