MAAS 89.

MILITARY AIRCRAFT ACCIDENT SUMMARY

AIRCRAFT ACCIDENT TO ROYAL AIR FORCE HARRIER GR3 XW 921

Date:	18 August 1988
Parent Airfield:	RAF Gutersloh
Place of Accident:	1.5nm north of RAF Gutersloh
Crew:	1 pilot
Casualties:	Nil

CIRCUMSTANCES

1. On 18 Aug 88, Harrier XW 921 was one of four aircraft recovering to RAF Gutersloh, after an air combat training sortie. As No 3 in the formation, XW921 commenced a climbing turn on to the downwind leg 3 seconds after the No 2 aircraft. As he closed the throttle, the pilot of XW 921 selected undercarriage and flaps down and then opened the throttle to stabilise the speed. However, there was no engine response as the throttle was opened and the engine rpm remained at an indicated 30%. The pilot, believing that the engine had flamed out, moved the throttle to flight idle and selected Manual Fuel Control System; this action should relight the engine. After jettisoning external stores and having lowered the nose to increase the speed above the 200 kts indicated, he advanced the throttle to the mid-position and there was still no engine response and the rpm remained at 30%. At the same time, the No 4 aircraft made a radio call saying that XW 921 was on fire. XW 921's pilot had no cockpit warnings, fumes inthe cockpit or visual indications of a fire but eye witnesses saw a large yellow flame fromthe starboard side and underneath the centre fuselage of the aircraft.

2. The pilot ejected successfully, suffering slight injuries. The aircraft continued towards the ground, still on fire, and was totally destroyed by impact and fire in a wood 1.5 nm north of RAF Gutersloh.

CAUSE

3. Investigation into the cause of the accident was hampered by the problem of distinguishing between the pre and post impact fire damage and the lack of an Accident Data Recorder, which is not fitted to older types of aircraft. Even after a very thorough investigation, the precise cause of the accident could not be determined, however, it was concluded that the most probable cause of the accident was engine stagnation. This was probably due to a fuel leak that developed from either a fuel pipeline coupling or flexible hose. The leaking fuel then egressed from the airframe and spontaneously ignited in the area of the aircraft's hot nozzles.

4. It is believed, that even in the absence of the airborne fire, the engine stagnation would still have led to the loss of the aircraft.

SUBSEQUENT ACTIONS

5. Following the accident, the Harrier Engineering Authority investigated the integrity of the fuel pipe coupling and are revising the lifing policy for the coupling seals. The flexible hose to the engine inlet guide vane controller is being replaced with a new design, less susceptible to vibration and stress.

6. Further tests by Industry have still been unable to determine the precise cause of the engine stagnation or the fuel leak.