



MINISTRY OF DEFENCE

MILITARY AIRCRAFT ACCIDENT SUMMARY

AIRCRAFT ACCIDENT TO ROYAL AIR FORCE HARRIER GR7 ZD326

DATE:	4 February 1999
PARENT UNIT:	No IV(AC) Squadron, RAF Laarbruch
LOCATION OF ACCIDENT:	9 nm east of RAF Laarbruch, Germany
CREW:	One
CASUALTIES:	One Minor

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Synopsis

1. The pilot of Harrier GR7 ZD326 was carrying out a routine air test on the aircraft. He had reached item 59 of the Harrier Flight Test Schedule (FTS) which involves checking for any side-slip during the transition between wing-borne flight to partial jet-borne flight, when control of the aircraft was lost. With insufficient height to recover, he ejected sustaining minor injuries. The aircraft crashed into open farmland.
2. The Board of Inquiry concluded that the accident was caused by control of the aircraft being lost at an insufficient height in which to recover.

Background

3. ZD326's pilot was an experienced Harrier operator. He had been an air tester since 1995 and was familiar with the first edition of the Harrier FTS.

4. As he signed for his aircraft on 4 February, he was given a copy of the second edition of the FTS, which he briefly studied. This was the first time he had seen a copy of this edition, although during a chance meeting the previous evening, he had discussed it with the Harrier Force's Unit Test Pilot. His impression was that the second edition had removed some tests and arranged the remaining tests in a more logical sequence. He was unaware that the new test had been introduced at item 59.

Circumstances

5. Until the pilot reached item 59 of the FTS, the air test had been uneventful. At this point the aircraft was being flown at 3,000 ft at a speed of 150kts. The pilot began the test and steadily adjusted the engine nozzles from the horizontal position (fully aft) to 75°, reducing the aircraft speed.
6. Throughout this routine, the aircraft's nose is supposed to remain pointing upwards at about 8°. As ZD326 began the test however, the pitch steadily increased to 14° nose up, it decelerated rapidly and yawed suddenly to the left. Considerable left aileron was then applied to hold the wings level. However, as the aircraft continued to decelerate through 88kts the nose suddenly dropped and control of the aircraft was lost. Although the pilot attempted to correct the situation, he realised he did not have enough height to recover successfully and ejected, sustaining minor injuries and coming to land amongst trees. The aircraft crashed into open farmland.

Aircraft Damage

7. The aircraft was destroyed by the impact.

Investigation

8. ZD326's Accident Data Recorder (ADR) enabled the Board to establish that up until the moment of impact, the aircraft had been serviceable and had been behaving normally. Their investigation therefore considered the development and content of the second edition of the FTS, and the pilot's unfamiliarity with item 59.

9. Although the revised second edition had generally been developed thoroughly, the Board noted that the wording of item 59 was misleading and incomplete. For example, it did not indicate a preferred height at which to carry out the test. In addition to this, they noted that current air test pilots had not been given any training or guidance on its content.
10. The Board concluded that the reason for the accident was that ZD326 had been flown outside of its limits, with the resulting loss of control occurring at an altitude from which it could not be recovered. They observed that effective communication during evolution of the FTS was hindered by the considerable number of detachments undertaken by squadrons.

Safety Recommendations

11. The Board made a number of recommendations including a review of whether item 59 needed to be included in the FTS; and that the second edition of the test schedule be re-examined to determine whether it is a comprehensive check of the aircraft. Linked to this, they also recommended that Harrier air-testers be given formal advance notification of changes in the FTS.

