



MINISTRY OF DEFENCE

Military Aircraft Accident Summaries

10/88

October 26, 1988

AIRCRAFT ACCIDENT TO ROYAL AIR FORCE LIGHTNING F3 XP707

Date: 19 March 1987
Parent Airfield: RAF Binbrook
Crew: One
Casualties: Nil

CIRCUMSTANCES

1. On 19 March 1987 a pilot took off in a Lightning from RAF Binbrook to undertake a practice display sortie, over the airfield at a minimum height of 5000 ft agl. The pilot executed the first few display manoeuvres without any difficulty, however, as he positioned for the next exercise, a slow roll, he noticed that the fuel flow from the ventral tank to the wing tanks was less than normal, but that the indication was that the total fuel contents were sufficient to complete the sortie. The pilot commenced the slow roll to port at 5000 ft agl at a speed of 330 kts. As he approached the inverted, he realised that he was descending slightly. He increased the push force on the control column but received a greater pitch response than he anticipated. He, therefore, reduced the push force but this had no effect on the pitch rate and corresponding negative g, which increased to an estimated figure of minus 3g. The aircraft then rolled rapidly to the right with its nose high, still bunting, buffeting severely and speed decelerating rapidly. As the speed reduced through 160 kts the nose sliced to the right and the aircraft entered an inverted spin, at which point,

the pilot ejected safely. The time from the start of the increased negative g to ejection had been only 6 seconds. The Lightning crashed in open farmland 500 metres from the airfield boundary.

CAUSE

2. Although the aircraft was serviceable prior to the accident, a relatively slow feeding ventral tank allowed the centre of gravity to move just beyond the aft limit, thereby reducing the aircraft's longitudinal stability to a dangerous degree. While inverted, the aircraft over-responded to a forward movement of the control column, g-stalled, pitched-up (relative to the horizon) and entered an inverted spin.

SUBSEQUENT ACTION

3. The RAF Handling Squadron issued advice to Lightning aircrew that a slow-feeding ventral tank may result in an aftward movement of the centre of gravity and a progressive reduction in longitudinal stability.

CLAIMS

4. Compensation totalling £4,700 has been paid by the Ministry of Defence in respect of crop damage caused by this accident.

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