



MINISTRY OF DEFENCE

Military Aircraft Accident Summaries

1/88

18/ JAN / 88

AIRCRAFT ACCIDENT TO ROYAL AIR FORCE TORNADO GR1 ZA493 AND JAGUAR GR1A XZ116

Date: 17 June 1987

Parent Airfield: Jaguar - RAF Coltishall
Tornado - RAF Laarbruch

Place of Accident: The Lake District

Crew: Jaguar - One
Tornado - Two

Casualties: Jaguar - One Fatality
Tornado - One Major Injury
One Slight Injury

CIRCUMSTANCES

1. On 17 June 1987 the pilot of Jaguar GR1A XZ116 took off to carry out a low level reconnaissance training sortie. A second Jaguar was tasked to follow close behind to act as a chase aircraft. Both aircraft were cleared to fly down to 250ft. About 8 nm of Keswick, the lead aircraft turned onto an easterly track and headed towards some high ground between Keswick and Derwent Water. The pilot of the chase aircraft, which was approximately three-quarters of a mile astern of and slightly above XZ116, became aware of 2 Tornado aircraft climbing towards the lead aircraft from behind the high ground to the south. Shortly afterwards, the left hand (northerly) Tornado appeared to explode.

2. The Tornados were undertaking low flying training in the UK on detachment from RAF Germany, and were authorised to fly down to 250ft. The pair were turning left at the north end of Thirlmere around Dod Crag, with the intention of passing to the south of Keswick and then right up Bassenthwaite Lake. While in the left turn, the No 2 pilot, who was watching his leader through his starboard quarterlight, became aware of a Jaguar approaching his leader's left hand side. The No 2 pilot had insufficient time to transmit a warning before the lead Tornado, ZA493, and the Jaguar collided. The No 2 immediately pulled up hard to avoid the ensuing fireball and banked left in time to watch ZA493 impact on the ground.

3. The collision occurred approximately 425 ft above ground level. The starboard wing of the Tornado struck the cockpit area and wing root of the Jaguar. After colliding, the Jaguar disintegrated and the Tornado rolled rapidly, inverted, and pitched down. Both members of the Tornado crew successfully ejected from the aircraft, although the navigator suffered compression fractures of the spine. The Jaguar pilot did not eject. It is likely that he was killed in the collision.

CAUSE

4. The crew of Tornado ZA493 turned left at the northern end of Thirlmere Valley to avoid Keswick, its hospital, and also a hang glider site to the south. During the course of the manoeuvre they were looking ahead and inside the aircraft's turn to ensure that the area was clear. Neither crew member saw the Jaguar before the collision. It was considered that the Tornado's altitude in the last seconds before the collision placed the Jaguar outside the crew's field of view.

5. The pilot of the Jaguar had climbed to pass over a crag at 400 ft above ground level. At this height the Tornados were screened by the high terrain until seconds before the collision. Moreover, the Tornados would have been under the nose of the Jaguar until the pilot started to push over the crag, seconds before the collision. It was calculated that a minimum time of 5 seconds would have been required to effect an avoiding manoeuvre and that there had been insufficient time for the Jaguar pilot to take avoiding action in respect of the other aircraft.

6. In summary, it was concluded that the accident was the result of a unique coincidence, involving aircraft of unrelated formations seeking to fly through the same airspace at the same time, caused by:

a. The terrain and local features acting as a choke point and channelling aircraft through the same piece of airspace.

b. Similarly, the terrain limiting the pilots' view and the angles of bank and climb of the two aircraft reducing still further the chances of timely mutual acquisition.

SUBSEQUENT ACTIONS

7. Since the accident, specific consideration has been given to ways of reducing the possibility of head-on collision in areas where traffic may be funnelled down certain valleys within which the pilot's view is restricted by particularly steep valley sides.

CLAIMS

8. Eleven claims have been received for compensation covering loss of crops, stock and revenue, and damage to property -in particular walls- caused by the accident and the ensuing recovery operation. Some claims are still outstanding, but the total paid is expected to be in the region of £10,000.

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