



MINISTRY OF DEFENCE

Military Aircraft Accident Summaries

5/90

28 March, 1990

AIRCRAFT ACCIDENT TO ROYAL AIR FORCE

HAWK XX304

Date: 24 June 1988
Parent Airfield: RAF Scampton
Place of Accident: RAF Scampton
Crew: One
Casualties: One Major Injury

CIRCUMSTANCES

1. On 24 Jun 88 the Red Arrows lined up for take-off for a display practice. The line up was standard with Reds 4 and 5 lined up 750 ft behind Reds 1 to 3. Reds 6 to 9 the same distance behind Reds 4 and 5. The wind was from the left at 6 kts and Red 4 was on the downwind side of the runway.
2. Reds 4 and 5 released their brakes 1½ to 2 secs after the front 3 and, as is usual, they delayed lift off until they had reached 130 to 140 kts IAS. Immediately he was airborne, Red 4 selected undercarriage and flaps up and, realizing that he had already developed considerable overtake on the lead section, selected airbrake out. Selection of airbrake so soon after take-off is normal practice for Reds 4 and 5 who accomplish their join up with the lead section by using power against airbrake to achieve rapid throttle response. On this occasion Reds 1, 2 and 3 were still on the runway because of slower acceleration due to their lower power settings. Red 4 flew along the runway at a very low height with his undercarriage fully up, his flaps retracting and his airbrake extended, the aircraft then started to descend. Realizing he was very low and sinking, Red 4 pulled back sharply on the stick but was unable to prevent the airbrake from contacting the runway.
3. Although the aircraft did skip clear of the surface momentarily, the aircraft pitched down and settled onto the airbrake and under-fuselage smoke pod, which ruptured and released a cloud of blue dye. The aircraft continued along the ground for some 1200 ft before it veered gently to the right and off the side of the runway. At this point the pilot ejected. The aircraft slid across the grass for another 1500 ft with an intense, but short lived, fireball developing as diesel fuel from the ruptured smoke pod ignited. It finally slewed left and came to rest pointing towards the runway with the engine still running and a tongue of flame emanating from the jet pipe.

CAUSE

4. It is concluded that technical defect did not contribute to the accident and that birdstrike and lightning strike can be discounted. However, wake turbulence from the lead section was probably a factor. Although Red 4 selected flap up and airbrake out significantly before Red 5, the airspeed was not unduly low. Whilst such early selection might have eroded safety margins to some extent, it is not considered that the early selections in themselves caused the accident. Moreover, since Red 4 was flying level, the effects of a downdraft would have been the same irrespective of flap position. It appears, that Red 4's error lay not in the timing of his service elections, but in his failure to establish a safe rate of climb first. Furthermore, he was flying so low that he had insufficient time to correct for any sink, even though ample control authority was available.

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