



MINISTRY OF DEFENCE
MILITARY AIRCRAFT ACCIDENT SUMMARY

**AIRCRAFT ACCIDENT TO ROYAL AIR FORCE HAWK T1A
XX193**

AIRCRAFT:	RAF Hawk T1A XX193
DATE:	22 October 1999
LOCATION:	Shap, Cumbria
PARENT UNIT:	100 Sqn, RAF Leeming
CREW:	Two (Two Pilots)
FATALITIES:	Two

Issued by: Directorate of Air Staff (Secretariat), Ministry of Defence, Whitehall, London SW1A 2HB

January 2001



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SYNOPSIS

1. On 22 October 1999, Hawk T1A XX193 of No 100 Squadron, RAF Leeming, was the 'aggressor' aircraft engaged against a formation of three aircraft from the same squadron operating at low level. At 1310 hours, XX193 engaged the formation for a second time in the vicinity of Sedburgh. After the attack, XX193 disengaged from the formation and flew northwards along the M6 towards Penrith. During the transit, at 1313, XX193 crashed on the outskirts of the village of Shap, killing both crewmembers and injuring a civilian.
2. The RAF Board of Inquiry concluded that the cause of the accident was that XX193 deviated from a safe flight path and hit the ground.

BACKGROUND

3. The aim of an 'aggressor' aircraft is to engage a formation at low-level. In doing so it disrupts a formation's routing, and enables the formation to practise its defensive and re-routing tactics against threatening aircraft.

CIRCUMSTANCES

4. XX193 engaged the formation twice and on both occasions defensive tactics were successfully employed. After the second engagement, XX193 flew north-north-west, behind the formation, and followed the general direction of the M6 corridor. The formation, meanwhile, turned onto a westerly heading, five miles south-east of Shap. During this turn, several formation members saw XX193 three miles to the south of them. After the turn, the formation did not see, and was not threatened by, XX193. XX193 entered a gentle, descending roll to the left, and during this manoeuvre impacted with two trees and the stone out-building of a house on the northern edge of the village of Shap. Neither of the aircrew initiated ejection and both were killed on impact.

DAMAGE TO AIRCRAFT AND CIVILIAN PROPERTY

5. The aircraft was totally destroyed.

6. The impact at the northern edge of the village of Shap resulted in significant damage to civilian property.

INVESTIGATION

7. The Board established that XX193 had been serviceable to undertake the flight, and was able to discount weather and mechanical failure as factors in the accident. The data recovered from the Accident Data Recorder (ADR) was of significant value in confirming the flight profile of XX193, and witness statements on the run-up to the accident and physical evidence at the scene wholly corroborated the ADR data. Furthermore, evidence obtained from the ADR suggested that there were no control column inputs during the last eighteen seconds of flight. However, without the assistance of evidence from a Cockpit Voice Recorder, the Board was left to speculate as to why there were no control column inputs. The Board postulated that external distraction, caused by the close proximity of other aircraft in the formation at a critical moment in flight, together with the potential for distraction within

the cockpit, might have resulted in the aircraft not maintaining a safe flight path. Aircrew fatigue may also have been a contributory factor.

SAFETY RECOMMENDATIONS

8. The Board recommended that consideration be given to the fitting of either a Ground Proximity Warning System (GPWS) or a Radio Altimeter (RADALT) to the Hawk fleet. Both systems would give aircrew timely warnings in the cockpit of unsafe flight paths or unsafe heights.

9. It was also recommended that a voice channel should be incorporated in the Hawk ADR.

OBSERVATIONS

10. The Board observed that the reaction of the Regional Community Relations Officer to the immediate needs of the local community was exemplary.