

MILITARY AIRCRAFT ACCIDENT SUMMARY  
AIRCRAFT ACCIDENT TO ROYAL AIR FORCE  
JAGUAR XZ387

Date:	12 September 1990
Parent Airfield:	RAF Coltishall
Place of Accident:	The Solway Firth
Crew:	One
Casualties:	1 Fatal

CIRCUMSTANCES

1. On the morning of 12 September 1990, the pilots of a 4-ship Jaguar formation planned a sortie in preparation for Operation GRANBY. The sortie was to include low-flying and practise evasion using another Jaguar as an opposing fighter. The pilot of XZ387 took-off as number 2 in the formation and flew wide line abreast of his leader, with the second pair flying some miles behind. Once in the low-flying area, where the weather was good, the fighter engaged the formation which reacted correctly. The sortie progressed as planned until the lead pair of aircraft coasted out into the Solway Firth at Silloth; at that very moment, they were re-engaged by the fighter who was sighted in front and to the left of the leader, about 1000 ft above the sea. The leader, who was on the left of the front pair, called his pair to turn towards the threat. The fighter then passed over the top of the lead aircraft to threaten the number 2, who on seeing the fighter heading towards his rear sector, continued his left turn. The leader then reversed right and the fighter turned away out of the engagement. The front pair passed with a heading difference of about 120°; the leader then turned left to continue in the direction of his planned route and at the same time he saw the number 2 turning hard right to regain his formation position. The leader rolled out on heading and looked ahead before looking left to see the number 2 rolling out of his turn. Almost immediately, the leader saw the number 2 impact the sea; there

no ejection and the pilot was killed. The aircraft was destroyed.

#### CAUSE

2. The cause of the accident was that the pilot failed to maintain a safe separation from the sea. This failure was, however, aggravated by the insidious nature of the unusual weather conditions over the Solway Firth. At the aircraft's operating height there was an indistinct horizon, the sea was flat calm and cloud shadows on the water gave false impressions of the horizon. It was thought that these conditions led the pilot to become spatially disorientated and resulted in him being unaware of his proximity to the sea until too late. His disorientation may have been exacerbated by the banked aspect of the leader's aircraft giving him a false impression that he was above the leader and that he needed to descend to stay at the leader's level. The aircraft's low-height warning system has an angle of bank limitation which was probably exceeded during the manoeuvring and, therefore, a timely audio low height warning may not have been available to the pilot. The evasion manoeuvres occurring immediately after coasting out into the Solway Firth were considered to be a significant factor in the accident because they may have distracted the pilots at a critical time so that they failed to realise that the weather conditions they were entering, low over the sea, had changed from those overland and become unsuitable for the exercise. However, neither the low-level pilots nor the 'fighter' pilot could have determined this before the event.

#### SUBSEQUENT ACTIONS

3. A trial of a Ground Proximity Warning System, to warn fast jet pilots of a potential collision with the ground, is close to completion, and the most suitable aircraft types and the feasibility of modification are being considered should the trial

prove successful. Aircrew and their supervisors have been reminded of the hazards of low-level operations especially with reference to over-sea evasion.