MILITARY AIRCRAFT ACCIDENT SUMMARY

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AIRCRAFT ACCIDENT TO ROYAL AIR FORCE

BUCCANEER S2B XN976

Date:	9 July 1992
Parent Airfield:	RAF Lossiemouth
Place of Accident:	38 miles east of Leuchars
Crew:	One pilot, one navigator
Casualties:	Two fatal

CIRCUMSTANCES

1. The crew of Buccaneer aircraft XN976 was detailed to fly in the No3 position of a four-aircraft formation. The sortie plan included a medium-level transit to an area off Montrose, low-level maritime tactics and pre-arranged fighter affiliation with Tornado F3 aircraft. While executing a simulated ship attack some 38 nautical miles east of Leuchars, using a minimum height of 100 feet, the formation was illuminated by a fighter radar and the threatened aircraft turned to break radar lock. During the subsequent manoeuvres, the navigator of the lead aircraft looked left, to where he expected to see XN976, but instead saw an orange fireball. No radio calls were received from the No3 crew and they had not attempted to eject. The No3 had hit the sea, killing the crew and destroying the aircraft.

CAUSE

2. A lengthy salvage operation recovered only about 10% of the aircraft but significantly, all four Powered Flying Control Units (PFCU) hydraulic rams were retrieved. With the assistance of the Air Accidents Investigation Branch of the Department of Transport, the positions of the flying control surfaces at impact were deduced. The detailed investigation that followed allowed the firm conclusion to be drawn that XN976 almost certainly crashed because a rudder PFCU ran away, driving the rudder to port, while the aircraft was flying at 550 knots in a left turn at 100 feet above the sea. The most likely reason for such a runaway was a structural failure of a component part of the PFCU, which had, in turn, probably been triggered by a routine demand for rudder movement.

3. A rudder runaway to port of this nature would have induced both yaw and roll to the left, with the rapid rate of roll possibly masking the yaw and leading the pilot to believe that he only had a roll problem. When the pilot attempted to arrest the rate of roll, the yaw would have produced a rate of descent which could not be effectively countered by use of the tailplane until the angle of bank had been reduced. At this speed and height, impact with the sea would have been inevitable, but the pilot probably became preoccupied with avoiding the crash rather than with taking the little opportunity that existed to initiate ejection. The navigator would have been expecting a roll to the left in response to the tactical situation, however, the rapid sequence of events and the aircraft's attitude would have left him also unable to eject in time.

SUBSEQUENT ACTIONS

4. The aircraft Support Authority ordered a fleet-wide inspection of the suspect component in the rudder PFCU. This inspection was completed, but no other potential failures were found.