MILITARY AIRCRAFT ACCIDENT SUMMARY

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AIRCRAFT ACCIDENT TO ROYAL AIR FORCE

PUMA MK HC1 XW215

Date:	24 June 1991
Parent Airfield:	RAF Gutersloh
Place of Accident:	25 Miles North East of Manston
Crew:	Three
Casualties:	Three slight injuries

CIRCUMSTANCES

1. At 1343 hours on 24 June 1991 Puma XW215 departed RAF Manston for a transit flight to RAF Gutersloh. The crew comprised a pilot and crewman and an experienced Chinook pilot was being carried as a passenger. Some 30 nautical miles from Manston the crew experienced a marked high frequency vibration that grew in severity. The pilot turned the aircraft towards land and transmitted an emergency call to RAF Manston giving his position and the nature of the emergency.

2. He quickly became aware of a slow rate of yaw to the left which he attempted to counter with progressive application of full right rudder and a reduction in main rotor thrust. The pilot initially suspected tail rotor failure but further investigation revealed a minimal amount of tail rotor thrust, which, although uncontrollable, was sufficient to sustain flight while he advised Air Traffic Control of his intention to ditch. At 30 feet, with the aircraft still in an ever tightening spiral he instructed the crewman to retard the throttles and then ditched the aircraft at zero speed and into wind, with all available thrust used to cushion the impact. The crew abandoned the aircraft which then slowly rolled inverted and sank.

3. The crew boarded their survival dinghy without difficulty and were later picked up by a RAF Search and Rescue helicopter. The Puma was subsequently recovered by a Royal Navy salvage vessel and transported to RAF Odiham for examination by an Engineering

Inspector of Accidents from the Air Accident Investigation Branch of the Department of Transport.

CAUSE

4. The tail rotor pitch control mechanism had suffered a fatigue failure caused by stiffness in some of the blade pitch change bearings which imposed abnormally high oscillating loads upon it. The pitch change spider plate had failed at the attachment sleeve and this in turn had abraded on the pitch change control rod which caused it to fail under tension. The pilot thus lost the ability to alter tail rotor pitch and control the aircraft in yaw.

SUBSEQUENT ACTIONS

5. The aircraft has been repaired and returned to service. The tail rotor mechanism of all RAF Pumas have been modified to increase the strength of the pitch change spider plate and the pitch change bearings are now greased daily and examined every 50 flying hours to ensure they turn freely.