MINISTRY OF DEFENCE

Military Aircraft Accident Summaries

MAAS 17/82

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AIRCRAFT ACCIDENT INVOLVING ROYAL AIR FORCE HARRIER GR 3 XW923

Date:	26 May 1981
Parent Airfield:	Belize International Airport
Place of Accident:	Belize International Airport
Crew:	One pilot
Casualties:	One major injury (pilot)

CIRCUMSTANCES

1. Harrier XW923 formed part of the RAF Harrier force in Belize; on 26 May 1981 it was to be flown as No 2 of a pair of Harriers on a routine training sortie. Each aircraft was to carry out an individual short take-off. XW923's take-off run was normal until the point that it should have become airborne and climbed away but, although the aircraft left the ground, it did not climb or accelerate further. Although the pilot selected emergency power on the engine by tripping the limiters, the aircraft's flight path was not affected. Assessing that XW923 would hit some small trees just beyond the end of the runway, the pilot ejected. He sustained a compression fracture of the spine; the aircraft struck the tops of the trees, crashed into the Belize River and bounced onto the far bank where it burst into flames and was destroyed.

CAUSE

2. The Harrier, unlike conventional jet aircraft, uses a combination of wing lift and deflected jet thrust during a short take-off. Normally, the jet nozzles are deflected down through an angle of 50° at the point of lift off; to facilitate accurate movement of the nozzles, the aircraft is fitted with an adjustable stop in the nozzle lever slide.

3. There was no evidence to show that a technical failure caused the accident. However, examination of the wreckage revealed that the nozzle stop had not been selected to 50° (as it should have been, during the pre take-off checks) but was located clear of the nozzle lever slide in the 'out of use' position. The nozzle lever was found in the 'hover stop' position (corresponding to a nozzle deflection of approximately 90°.

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4. When the pilot selected nozzles on the take-off run, instead of obtaining 0° deflection, he achieved approximately 90° deflection. The engine thrust alone was insufficient to support XW923 at its take-off weight without increased wing lift but, with no horizontal component of thrust, the aircraft would not accelerate further. It would have been possible to recover from the situation had the pilot appreciated the nozzles were at the wrong angle, selected them further aft and accelerated to increase wing lift; although the aircraft might have sunk back onto the runway momentarily, its speed would have increased rapidly enough to fly clear before the end of the runway. The cause of the accident was the pilot's failure to select the correct nozzle angle and subsequently to recognise and correct his mistake.

SUBSEQUENT ACTIONS

5. A revised sequence of pre-take off checks has been issued for the Harrier in order to further minimise the possibility of vital pre-take-off checks being omitted. Consideration is being given to the provision of additional advice on take-offs at high temperature and all up weight and stagnation in ground effect.

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