MINISTRY OF DEFENCE
MILITARY AIRCRAFT ACCIDENT SUMMARY

AIRCRAFT ACCIDENT TO ROYAL AIR FORCE HERCULES XV206

AIRCRAFT:	RAF Hercules XV206
DATE:	24 May 2006
LOCATION:	Afghanistan
PARENT UNIT:	RAF Lyneham
CREW:	7
PASSENGERS:	20
INJURIES	3 minor injuries

Issued by: Business Secretariat, Headquarters Air Command, RAF High Wycombe, Bucks, HP14 4UE

SYNOPSIS

1. On 24 May 2006 at 1020Z[1] a RAF Hercules C130K landed at Lashkar Gar (LKG) Tactical Landing Zone (TLZ) at the end of an uneventful routine logistics sortie. Shortly after a normal landing, a loud bang was heard originating from the port Main Landing Gear (MLG). The aircraft suffered significant damage to the front port MLG and the surrounding area. Debris punctured the port wing fuel tanks causing a major fuel leak. The fuel then ignited in the vicinity of the No1 Engine leading to an uncontrollable wing fire. All passengers and crew escaped successfully via the main crew door and starboard para door before the aircraft was engulfed in flames and destroyed.

BACKGROUND

2. The Hercules was on a routine operational flight providing support to the Provincial Reconstruction Team (PRT) at Lashkar Gar at the time of the accident. The LKG TLZ is 6800ft long by 150ft wide with a surface of compacted sand and gravel located on the south side of LKG town. The TLZ is used by UK forces and other agencies including the UN and Red Cross. The TLZ is not permanently guarded or patrolled; hence the civilian population have unrestricted access to the runway. The crew were all on duty and were

[1] All times are in Zulu(Z) (Greenwich Mean Time)

properly trained, qualified and authorised. The whole crew was assessed as high average or above average. All crew members had been given a thorough pre-deployment brief which covered intelligence, tactics and administration. The crew were well rested and medically fit for the day's tasking. The aircraft was serviceable prior to the incident and had no history of significant defects.

CIRCUMSTANCES

3. The aircraft took off at 0850Z from Kabul International Airport (KBL) to fly a routine logistics sortie to deliver cargo and personnel to LKG TLZ. After an uneventful medium level transit the aircraft landed at LKG at 1020Z. The official weather forecast for LKG at the time of the incident was clear and sunny with a light westerly wind and a temperature of +38°C. Using a standard tactical landing technique the aircraft touched down some 500ft in from the runway threshold, reverse thrust was selected and speed reduced without the need for wheel braking.

4. After 3 seconds, as the speed was nearing 70 kts there was a loud bang from the port side of the aircraft in the vicinity of the port MLG, the force of which was felt throughout the aircraft. At the same time the flight deck crew saw tyre debris flying up in front of the aircraft and then became aware of structural damage to the number 2 engine. The Captain ordered the Emergency Engine Shutdown Drill (EESD) on the number 2 engine. He maintained directional control with nosewheel steering. Immediately after the shutdown of number 2 engine crew members observed a large amount of fuel leaking from the port wing area in the vicinity of the external tank pylon and that there was a fire in the vicinity of No1 engine. The Captain ordered the shut down of the No1 engine using the EESD. Whilst this drill was carried out crew members observed that the fire was spreading across the whole wing. Realising the severity of the situation the Captain brought the aircraft to a halt near the northern end of the landing zone some 6400ft from the touchdown point. He ordered the passengers and crew to immediately carry out the Emergency Evacuation Drill.

INJURIES/EVACUATION

5. During the incident 3 passengers received minor injuries that subsequently required treatment at the LKG medical centre. All 3 have made a full recovery and should not require long term medical treatment.

6. Once the evacuation was ordered, crew members checked that the exits were clear and opened the port crew entrance door and starboard parachute door. Both doors operated as designed and did not hinder the egress of the aircraft. With crew members supervising the egress of the passengers, all passengers and crew rapidly evacuated the aircraft via these two exits. The nature of the injuries to the 3 passengers did not affect their ability to evacuate the aircraft unassisted.

7. The Captain and Air Engineer were the last to exit through the port crew entrance door. The Air Loadmaster was the last to exit the starboard parachute door and he was the final person to leave the aircraft.

8. All the crew and passengers moved rapidly away from the aircraft. They were met by various vehicles which had been awaiting the arrival to the Hercules. A head count was undertaken which confirmed that all personnel had safely evacuated.

AIRCRAFT DAMAGE

9. Once all personnel had evacuated the aircraft, fire rapidly destroyed the aircraft and cargo. There was no fire cover provided on this remote TLZ, therefore the aircraft burnt itself out, with only the tail section remaining intact. The aircraft was classified as Category 5 (destroyed). Wreckage was distributed over 3 separate sites. The first site, approx 2000 feet in from the threshold contained a significant amount of debris from the tyre and wheel coincident with a crater in the TLZ. The second site 1650ft further along the TLZ contained some aircraft panels from the port undercarriage area. The third site situated 4400ft from the first contained the main aircraft wreckage where it had come to rest.

10. Following the fire all classified equipment onboard the aircraft was confirmed as destroyed. Due to the remoteness and hostile environment the wreckage could not be safely removed. The Board of Inquiry examined and plotted the wreckage in situ and took photographic and video evidence, however the recovery of large items from the remains of the ac for further analysis was not feasible. They recovered some small items of wreckage for the investigation. The remains of the aircraft were then destroyed in situ by coalition forces.

FORCE PROTECTION (FP)

11. A Permanent Joint Headquarters (PJHQ) recce of the Force Protection (FP) requirements for LKG was carried out on 8 February 2006. Prior to the aircraft scheduled arrival time, the FP unit arrived at the TLZ. A visual sweep was conducted prior to the aircraft landing. At the same time other vehicles arrived, ready to transport the aircraft's passengers.

12. After the evacuation of the aircraft, a member of the FP party carried out a head count of the passengers and crew. At this stage enemy action could not be ruled out and there were concerns that follow on action by insurgents was possible, therefore all crew and passengers were evacuated to safety.

13. No evidence of hostile activity was observed prior to or during the landing. The FP team were able to guard the main aircraft wreckage. Unfortunately due to a lack of manpower, the TLZ was left largely unguarded and local civilians and Afghani police were able to walk onto the TLZ including wreckage site 1 and the crater which is approximately one mile from the

aircraft wreckage site. Therefore, the Board concluded that some wreckage sites had been compromised by local Afghans.

CRATER IN THE TLZ

14. The Board examined a crater in the LKG TLZ (approximately 70cms wide by 40cms deep), which was coincident with the start of wreckage site 1 and bridging a rut made by previous aircraft movements. The FP elements did not notice a crater prior to the aircraft landing and likewise the crew did not notice a crater on the landing roll. The crater showed an area around the crater that was indicative of a sub-surface explosion.

CONCLUSIONS

15. Physical evidence gathered from the wreckage and TLZ, combined with photographic evidence and witness statements taken from the crew passengers and observers on the ground, together with subsequent analysis ruled out the following as possible causative factors in the loss of XV206: human factors (Air), human factors (Ground), aircraft fatigue, cargo explosion, tyre burst, aircraft sabotage, engine fire/failure, surface-to-air and surface-to-surface fire and technical failure.

16. The Board concluded that XV206 was destroyed after detonating an explosive device that was buried in the surface of the LKG TLZ. After extensive investigation the Board concluded that the device was an anti-tank landmine. This resulted in aircraft debris puncturing the port wing fuel tanks, causing a major leak of fuel that ignited, leading to an uncontrollable fire originating in the port wing in the vicinity of the No1 engine.

17. The Board concluded that the following contributed to the loss of XV206:

a. The lack of permanent force protection at LKG TLZ allowed uncontrolled access to persons wishing to carry out a hostile act.

b. The TLZ clearance procedures proved to be inadequate for detecting sub-surface mines.

RECOMMENDATIONS AS SHOWN IN THE REDACTED BOI

18. The Board recommends that:

a. FP procedures at TLZs within operational theatres should be reviewed by PJHQ ***[word redacted].*** This review should include procedures to counter the threat from landmines and Improvised Explosive Devices (IEDs) used to target aircraft.

b. The Board recommends that a Standard Operating Procedure (SOP) be developed between the Special Investigations Branch and

Defence Aviation Safety Centre (DASC) in order to facilitate efficient working practices.

c. The Board recommends that an agreement is sought between DASC and the Air Accident Investigation Branch (AAIB) to allow AAIB investigators to attend in-theatre fixed wing incidents.

d. (Annotated as ‘c’ on the BOI) A system is sought by STC/***[word redacted***] to allow operations staff and crews to raise passenger manifests on all tasks.

e. (Annotated as ‘d’of the BOI) Consideration is given to the formation of a UK centre of excellence, acting as the focal point for all information on Aircraft combat survivability and vulnerability, and combining national elements of expertise from the various Defence Facilities.

f. (Annotated as ‘e’ in the BOI) Prior to the formation of a UK centre of excellence, a Memorandum of Understanding (MOU) is sought between the MOD and the US Department of Defense (DOD) to allow relevant information on aircraft combat survivability and vulnerability to be exchanged with the Survivability/Vulnerability Information Analysis Centre (SURVIAC).

g. (Annotated as ‘f’ in the BOI) That Strike Command expedites the implementation of fire resistant Combat Soldier 95 clothing for C-130 crews.

h. (Annotated as ‘g’ in the BOI) HQ 2 Gp undertake a review of the provision and functionality of survival equipment, Combat Body Armour and personal weapon carriage for multi-engine crews.

i. (Annotated as ‘h’ in the BOI) HQ 2 Gp consider issuing a ***[redacted word]*** leg holster to all multi-engine crews scheduled to land in a operational theatre.

(Annotated as ‘j’ in the BOI) The Board recommends that ***[word redacted]*** rifle stowage facilities are fitted to the C-130 fleet.