
**MINISTRY OF DEFENCE
MILITARY AIRCRAFT ACCIDENT SUMMARY**

**AIRCRAFT ACCIDENT TO
ROYAL AIR FORCE HERCULES ZH876**

AIRCRAFT:	RAF Hercules C130J ZH876
DATE:	12 February 2007
LOCATION:	Maysaan Province, Iraq
PARENT UNIT:	RAF Lyneham
CREW:	6
PASSENGERS:	58
INJURIES	3 minor injuries

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SYNOPSIS

On 12 February 2007, an RAF Hercules C130J ZH876 was undertaking a routine task, conducting a roulement of troops to a Tactical Landing Zone (TLZ) in Maysaan Province, Iraq. At 1710Z¹, as the aircraft was about to touchdown at the TLZ, it was subjected to an Improvised Explosive Device (IED) attack. The aircraft veered from the runway, was brought to a halt and all crew and passengers evacuated. Two passengers and one crewmember suffered slight injuries. Another RAF Hercules subsequently landed and recovered the crew, injured passengers and those roulement troops originally intended for extraction. ZH876 was deemed unrecoverable due to operational constraints and was destroyed by coalition forces.

BACKGROUND

The crew of ZH876 were tasked to fly a routine roulement of troops of the Queen's Royal Lancers (QRL) to a TLZ near Harmalah in Maysaan province, Iraq. The aircraft was carrying 6 crew and 58 passengers. Weather at the TLZ was good, with a visibility of 25km, no significant cloud and a light surface wind. Unserviceability of their original aircraft resulted in the crew switching to ZH876 for the task. This resulted in the troops at the TLZ being informed of a

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

90 minute delay in the sortie timings. However the crew of ZH876 were not informed of this change. The flight to the TLZ was routine and ZH876 made up sufficient time to meet their originally notified landing time, consequently ZH876 had to hold off for 45 minutes. At approx 1700z ZH876 began to make its approach to the TLZ. Comms had already been established between ZH876 and the Tactical Air Traffic Controller (Tac ATC) at the TLZ, and the aircraft was subsequently cleared to land. An uneventful approach followed flown by the co-pilot.

CIRCUMSTANCES

At 1710.15Z, as the aircraft was about to touchdown at the TLZ, the crew experienced a load bang and a bright flash. The flash temporarily blinded the flight-deck crew. Virtually simultaneously, the aircraft touched down. The first flash was followed, a second later, by another flash and louder bang. The aircraft slewed off the left-hand side of the runway. The Captain took over control of the aircraft.

On regaining vision, the Captain tried to steer the aircraft back onto the runway. However, the crew became aware of a fire on the port side, which was confirmed as a wing fire. The Captain brought the aircraft to an immediate halt. The aircraft came to rest 50m from the runway edge, some 700m after touchdown. At this point the Advisory Caution and Warning System activated. The aircraft was shut down.

INJURIES/EVACUATION

The Captain initiated the evacuation by intercom, using non-standard terminology and procedures. Some rearcrew had lost intercom. However, the incident events made it self-evident that an emergency evacuation was required. The two pilots, Ground Engineer and a number of passengers exited via the port crew door. The remainder of the passengers exited using a combination of the forward starboard escape hatch and the starboard para door.

The Loadmaster conducted a sweep of the freight bay and received confirmation that the flight deck was clear before exiting. The crew and passengers mustered together and all were accounted for. One Crewmember and two passengers suffered slight injuries.

FORCE PROTECTION (FP)

Force Protection at the TLZ was provided by QRL troops, a number of whom were to form part of the roulement. Prior to the arrival of ZH876, the area surrounding the TLZ, up to and including the ground adjacent to and either side of the strip was swept. Specific search techniques relating exclusively to TLZs did not exist. The QRL employed a technique that had been employed successfully on recent occasions. The board considered that the sweep technique employed could have been improved upon in detecting the IED.

The board also considered that even if more advanced checks had been carried out, detection of the IED would still have been very difficult.

SUBSEQUENT RECOVERY BY SECOND RAF HERCULES

On hearing that an incident had occurred, a second RAF Hercules that was in the area on another routine task offered to give assistance. The second Hercules was informed that the crew of ZH876 wished to be evacuated. They were also informed that there was a small amount of damage to the TLZ. The Captain of ZH876 established radio contact with this other Hercules and informed them that ground forces were going to move the landing area forward of ZH876's touchdown point to stop any problems. Tac ATC discovered debris from the incident strewn across the runway. He therefore elected to remove some of the larger items.

At 1742Z the captain of the other Hercules informed the captain of ZH876 that he was inbound and estimated arrival in 5 minutes. The other Hercules then lost comms with the captain of ZH876 and could not establish contact with Tac ATC. The captain of the other Hercules took the decision to land the aircraft in order to expedite the evacuation of the crew. Ground personnel were still clearing the debris on the TLZ when the other Hercules landed at 1748Z. Tac ATC, but not the crew, heard the sound of metal striking metal.

The second Hercules spent approximately 35 minutes on the ground. The crew were not aware of having landed through debris; neither did Tac ATC inform them when he spoke to them. In manoeuvring on the runway, propwash caused some minor damage to FP vehicles and knocked over a number of FP personnel. At 1824Z the second Hercules took off and departed to Basra with the crew of ZH876, those passengers originally intended for extraction and two passengers from ZH876 that had been injured. The second Hercules, then returned to its previous tasking and completed three further sectors before returning to its operating base.

AIRCRAFT DAMAGE

The damage to ZH876 was not officially categorised. Even if the aircraft had been fitted with Explosion Suppressant Foam (ESF), it is the Board's opinion that it would not have reduced the damage sustained to the aircraft. An assessment of the damage was made by the Ground Engineer and members of 83 Expeditionary Air Group, they advised the UK Air Component Commander (UKACC) that it would require a major repair effort. The assessment was that there was insufficient time to repair the aircraft, due to operational constraints such as Force Protection and Logistics support.

In order to deny the enemy any potential intelligence and/or media exploitation opportunities the UK ACC took the decision that the aircraft should be destroyed. At 0829Z on 13 February, ZH876 was destroyed by coalition forces. The aircraft was not left unguarded and its successful destruction ensured that no classified material was left for potential exploitation.

An inspection of the second C130 the following day revealed that the aircraft had sustained damage to the port side tyres, with a small hole in the tertiary underbelly of the fuselage. The pressure hull of the fuselage was not punctured. In the board's opinion, it is highly likely that the damage was sustained as a result of the landing at the TLZ.

CONCLUSIONS

The evidence recovered from the incident site revealed that two IED arrays had exploded in the near vicinity of ZH876's touchdown point at the TLZ. The Board quickly ruled out aircraft systems failure and other possible causes. The Board concluded that this deliberate enemy action was the sole cause of the damage sustained to ZH876 in this incident.

The Board further concluded that there was a lack of understanding, by the Force Protection personnel, of TLZ sweep procedures and they had not received the appropriate training. This meant that the sweep procedures applied at the TLZ were inadequate to discover the IED arrays.

RECOMMENDATIONS AS SHOWN IN THE REDACTED BOI REPORT

The Board recommends that:

- a. Prior to the resumption of TLZ usage **[redacted]**.
Note: the Board has already initiated this issue with HQ 2 Gp due to operational necessity.
- b. The Search Procedures section of the RAF Regiment Tactics, Techniques and Procedures (TTP) 2211 should be further developed in conjunction with the National Search Centre (NSC), and the complete document be developed in conjunction with relevant units. In the case of Search Procedures, NSC should be considered as the lead Authority.
- c. In order to minimise Pattern Setting, consideration must be given to both the operational constraints and tactical employment, ie **[redacted]**.
- d. Review C130J survivability/vulnerability issues and assess them against protection of crew and passengers. This study should also include the survivability of the DFDR and CVR.
Note: A number of strands of independent work are ongoing which need coordinating into one deliverable strategy.
- e. A review of C130J **[redacted]** should be carried out to consider the qualification of Co-pilots as PF in **[redacted]** as part of their work up.
Note: The decision to start Co-pilot training and qualification in **[redacted]** was agreed at a meeting on 5 April 2007 at RAF Lyneham.

- f. The provision of **[redacted]**.
- g. TAC ATC Order **[redacted]** should be expanded to include more operationally focussed guidance ie.procedures for the **[redacted]**.
- h. The ballistic and fragmentation protection afforded by aircrew helmets should be further investigated to determine the level of risk of ballistic strikes and whether improved ballistic protection of the helmet is possible.
- j. Review the combination of existing aircrew Body Armour (BA) and Combat Survival Waistcoat/Operational Waistcoat (CSW/OW). The provision of a single integrated BA/CSW for multi-engine aircrew should be expedited.
- k. A further review of **[redacted]** weapon stowage on C130J should be conducted.
Note: The current work being undertaken by HFHQ and Hercules IPT must take into account the lessons identified in the ZH876 incident.
- l. Review the fitment and attachment methods of flight deck armour.
- m. A review for a suitable combination of helmets with intercom and **[redacted]** Air Dispatch (AD) personnel, cleared for use on C130, should be carried out.