

INCIDENT

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| Aircraft Type and Registration: | Boeing 747-436, G-CIVB | |
| No & Type of Engines: | 4 Rolls-Royce RB211-524G2-19 turbofan engines | |
| Category: | 1.1 | |
| Year of Manufacture: | 1993 | |
| Date & Time (UTC): | 18 June 2005 at 1200 hrs | |
| Location: | London Heathrow Airport, London | |
| Type of Flight: | Public Transport (Passenger) | |
| Persons on Board: | Crew - 17 | Passengers - 334 |
| Injuries: | Crew - None | Passengers - None |
| Nature of Damage: | Damage to nose wheel tyres and nose landing gear torque link | |
| Commander's Licence: | Air Transport Pilot's Licence | |
| Commander's Age: | 52 years | |
| Commander's Flying Experience: | 12,560 hours (of which 4,212 were on type) Last 90 days - 215 hours Last 28 days - 64 hours | |
| Information Source: | Aircraft Accident Report Form submitted by the pilot | |

Synopsis

Following an uneventful pushback, ground ATC requested that the aircraft move forward to clear a parking stand. At the time the tug was partially disconnected, and was in the process of being reconnected when the parking brakes were released and the aircraft rolled forward. This resulted in damage to the right nose wheel tyre and nose gear torsion links. The incident was attributed to a breakdown in communication between the headset operator and the aircraft's commander.

History of flight

G-CIVB was parked on Stand 408 at London Heathrow's Terminal 4 where the aircraft was prepared for a passenger

flight to Boston, Figure 1. A towbarless tug was attached to the aircraft's nose gear and the headset operator connected his headset into the aircraft communication system in order to talk to the aircraft's commander.

Once the aircraft was fully loaded and the doors were closed, a request to push back was made to ground ATC, who subsequently gave clearance for G-CIVB to be pushed off the stand and positioned to face north. The commander relayed this clearance to the headset operator, who in turn communicated to the tug driver using hand signals, to indicate that he may commence the pushback and to face north.

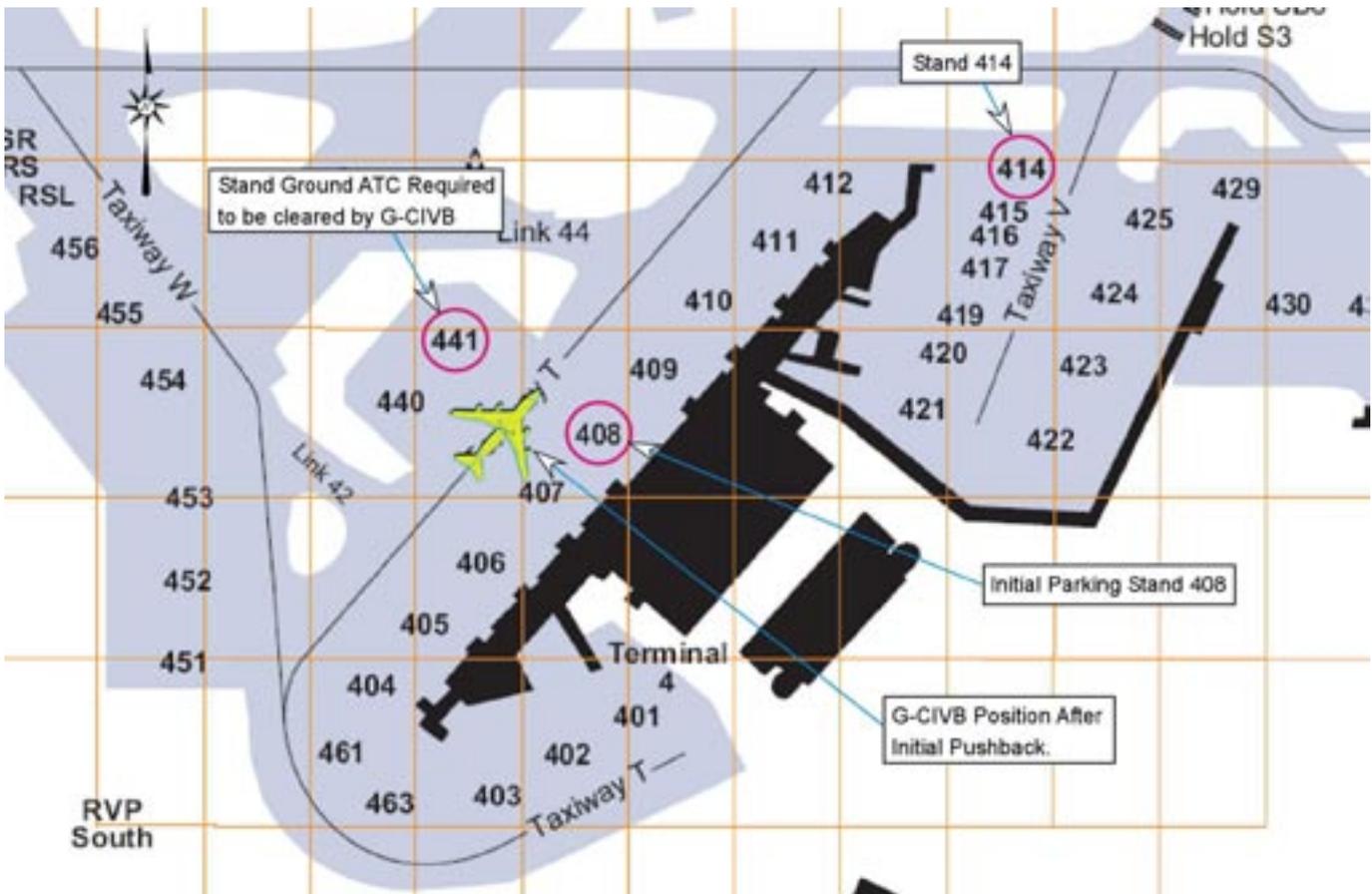


Figure 1

The initial pushback was commenced without incident; the commander started the engines during this process. Once the aircraft was positioned on the taxiway, pointing north, the parking brake was applied and the commander said to the headset operator, “brakes set to park”. The headset operator, again using hand signals, relayed this to the tug driver who, using standard procedure, began to disconnect the tug. G-CIVB was now abeam, and to the right of, Stand 441, Figure 1. The commander was about to say “engines running, awaiting visual clearance”, as detailed in the standard procedure, when ground ATC requested that they clear Stand 441. The commander contacted the headset operator and asked if the tug was still attached, to which the headset operator replied “standby”. The commander mistakenly thought the reply was “affirmative” and then said “do not

disconnect and to standby”. The headset operator then spoke with the tug driver, who was still in the process of disconnecting the tug. The tug at this time was away from the nose leg but not far enough to allow a chock to be placed under the nose wheels. The headset operator and tug driver continued their discussion, which was mainly about whether they needed to move the aircraft to clear Stand 414 or 441.

In the meantime, the commander requested whether ground ATC required them to move forward or push back. Ground ATC replied with “pull forward”. This was passed to the headset operator but he appeared confused with the instruction. After three of four repeats of the information he then understood the request, the confusion being mainly about which stand needed to be

cleared. The commander then asked “are we connected?”, to which the reply from the headset operator was “we are connecting”. After this, the commander asked “release parking brakes?”, to which the headset operator replied “hold on”. However, the commander thought he heard a positive response and released the parking brake. The aircraft then moved forward and struck the tug.

The headset operator spoke to the commander and informed him that the aircraft had struck the tug and requested that the park brakes be set. The aircraft was inspected and later towed back to the engineering base for repair.

There were no injuries and the damage was limited to the nose gear upper and lower torsion links and the right nose gear tyre.

The replay of the Cockpit Voice Recorder (CVR) revealed that this incident had been overwritten by the time the circuit breaker (CB) had been pulled.

Discussion

The accident occurred clearly due to a lack of communication between the flight and ground crew. However, this was compounded with having the

additional requirement to manoeuvre the aircraft after the initial pushback in accordance with ground ATC instructions. The ground crew procedure allows them to disconnect the tug as soon as the parking brake is set without consulting the flight crew. At this point the flight crew may have thought that the tug was still attached and when the ground crew were asked, the reply of “we are still connecting” seems to have been misconstrued as the expected answer of ‘we are still connected’. This may also have been true when the commander asked for the release of the parking brake, expecting a positive response, but actually getting the response “hold on”.

This move away from the standard push back procedure meant that non standard phrases had to be employed between the flight crew and the ground crew, leading to mis-interpretation and confusion.

The operator has undertaken a review of the ground operations during the push back of aircraft and will be introducing updated standard phraseology to be employed during these manoeuvres. The operator is also considering introducing an item to their checklist to pull the CVR CB following a ground incident.