

ACCIDENT

Aircraft Type and Registration:	Bombardier Global Express BD-700-1A10, N683GA	
No & Type of Engines:	2 Rolls-Royce BR 700 series engines	
Year of Manufacture:	2003 (Serial no: 9134)	
Date & Time (UTC):	25 March 2016 at 0345 hrs	
Location:	Owen Roberts International Airport, Cayman Islands	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Another aircraft, a Saab 340B, registration VP-CKI, suffered damage to its outboard left underwing surface and left engine spinner and propeller	
Commander's Licence:	Not known	
Commander's Age:	Not known	
Commander's Flying Experience:	17,500 hours (of which 600 were on type) Last 90 days - Not known Last 28 days - Not known	
Information Source:	Aircraft Accident Report Form submitted by the pilot and a report from the internal investigation conducted by the airport operator	

Synopsis

The Global Express manoeuvred out of a parking stand between two other aircraft and its jet exhaust caused an adjacent, parked Saab 340B to move and collide with ground equipment, which had been left on the stand.

The Airport Authority has identified four areas in which it can take safety action.

Background

On 22 March 2016, the Cayman Islands Airport Authority (CIAA) granted permission, by e-mail, for N683GA to operate a private late-hours flight into Grand Cayman, to arrive at 0305 hrs UTC on 25 March 2016 (2205 hrs local time on 24 March 2016).

On 24 March, 8 hours before the flight was due, a follow up e-mail was sent from the operator of N683GA to correct a possible misunderstanding about the date of the flight. The title of the earlier e-mail request showed arrival on 25 March, because the translation to local time had not been made (UTC minus 5 hours). The amended e-mail was copied to a number of interested parties, but this did not include the ramp manager of the handling company at the airport.

History of the flight

The aircraft arrived at Grand Cayman at 0322 hrs UTC on 25 March (2222 hrs local time on 24 March) and the commander was advised by ATC to proceed to the Commercial Apron. It was dark but the weather was clear. ATC advised that they did not have parking instructions for the aircraft but to expect to park on Stand 8 (see Figure 1).

As the aircraft approached the apron it was marshalled towards Stand 2. A parked Saab 340 was occupying Stand 1, on the left, and a parked Boeing 737 occupied Stand 3, on the right. Both aircraft had been parked for more than 3 hours, and were staying overnight. All the other stands on the apron were clear.

A member of staff of the contracted handling company, a ramp dispatch agent, marshalled N683GA on to the stand, without the presence of wingmen. He stopped the aircraft short, to avoid conflict with any possible obstacles and to ensure clearance from the wings of the two parked aircraft on either side. Additionally, this allowed space for the aircraft to self-manoeuvre off the stand, once the passengers had disembarked.

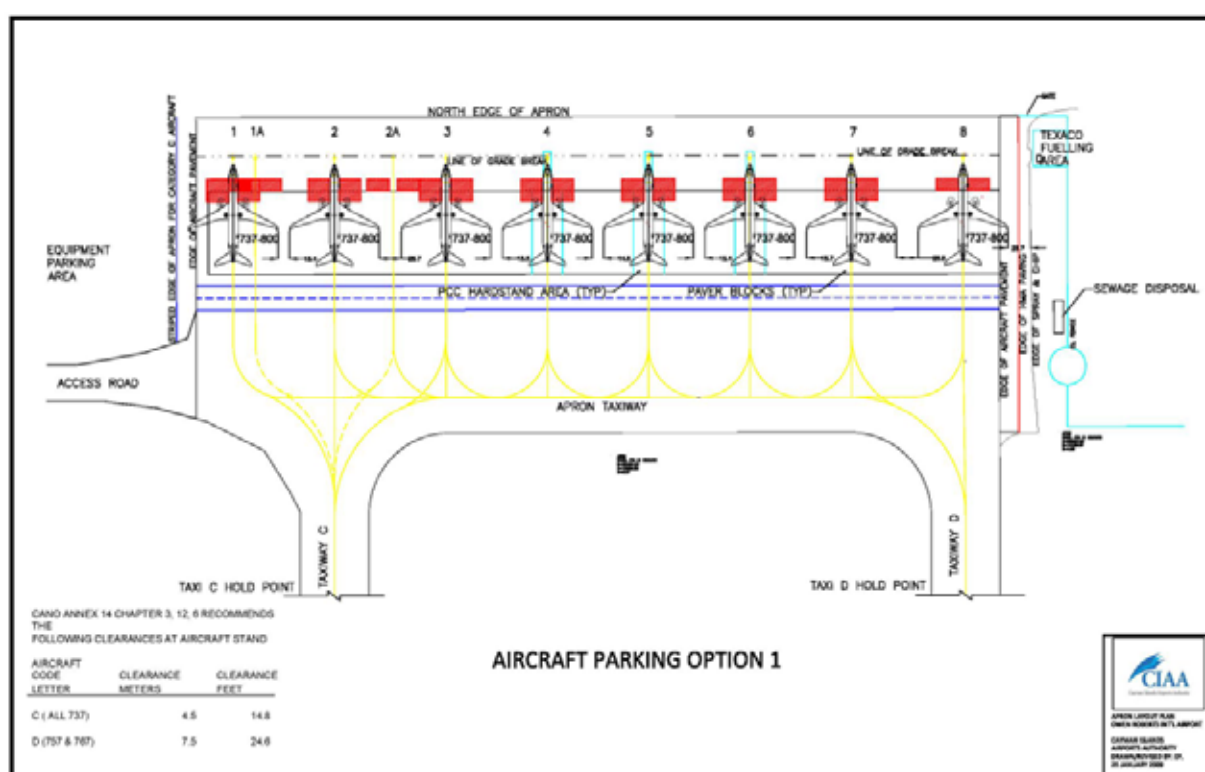


Figure 1

Aircraft parking geometry, commercial ramp, Owen Roberts International Airport

When the aircraft arrived, the Airport Duty Officer (ADO) was finishing off paperwork at the end of a nine-hour duty period, which was due to finish at 0400 hrs UTC. She noticed that the aircraft had been incorrectly parked, with its tail infringing the taxiway, and went to the apron to instruct the aircraft to be repositioned.

As the passengers were disembarking, the ADO advised the commander that the aircraft had to be moved immediately. After some discussion, it was decided that the ramp dispatch agent would assist the passengers to the Terminal, with their bags, and the flight crew would move the aircraft, before completing their own immigration procedures. The commander requested the ADO to remove the chocks and warning cones and monitor the wing clearance. He then started the right engine, expecting to make a turn to the left. The ADO picked up a set of marshalling wands, only one of which was lit, and proceeded to assist the commander. He taxied ahead prior to making the turn to the left and received a signal to stop. He then understood that he was being given a signal to turn right. The signal to turn right persisted, so he increased power on the right engine, which was now on the inside of the turn, to make the sharp turn required in that direction. The jet blast from the engine caused the SAAB 340 on Stand 1 to rotate to the right and its left wing struck a set of passenger steps which had been left on the stand. The commander of N683GA was not aware of the incident and proceeded to reposition to Stand 8.

Organisational information

The commercial apron at Owen Roberts International Airport has eight designated stands. Stand assignment plans are published in advance and any updates are made, as required, by the ramp manager. The original plan for 24 March did not include N683GA and it was not updated, thus a stand had not been pre-assigned when the aircraft landed.

Stand allocation and marshalling procedures are provided in the Cayman Islands Airports Authority Apron Management and Procedure Manual (CIAA AMPM), which includes the following instruction:

'It is the policy of the CIAA that all aircraft utilizing the commercial aprons will be marshalled in to aircraft stand. For aircraft being diverted from the General Aviation Ramp it is the responsibility of the organization making that decision to ensure notification is given to Cayman Airways Ramp Control in order to ensure proper equipment and personnel are assigned to meet the aircraft. Marshalling crew will consist of 1 marshal and two wing men (one on each wing) at all times.'

Ground equipment is required to be removed from stands once aircraft servicing has been completed, as stated in the CIAA AMPM:

'Once the aircraft has been serviced and either secured for the evening or pushed back to the taxi line for departure- ALL GHE [ground handling equipment] SHALL BE RETURNED TO THE APPROPRIATE PARKING SPOT IN THE GHE STAGING AREA!'

The ADO had received training in ramp handling procedures, which included aircraft marshalling, in 2013.

Analysis

The revision to the date of arrival of the aircraft was not communicated to the ramp manager, so a parking stand had not been assigned when the aircraft arrived unexpectedly. In the absence of any other information, the ramp dispatch agent decided to park the aircraft on Stand 2. However, Airport Authority stand allocation and parking procedures, provided in the CIAA AMPM, were not followed, possibly because of a lack of appropriate personnel available at short notice at night.

N683GA was parked so that its tail infringed the taxiway, a situation which the ADO considered to be a safety risk that should be addressed immediately. She attempted to resolve the situation by asking the commander to move the aircraft. The required personnel were not present for the task to be completed safely, so, on being asked by the commander, she decided to assist him herself. Communication between the ADO and the aircraft was not effective and the commander believed he was receiving signals to turn to the right, which required high engine power. It is common procedure when taxiing a short distance to use one engine but doing so may create a high power requirement in confined areas, with an associated risk to personnel and equipment. On this occasion, the jet blast caused the adjacent SAAB 340 to move substantially on its stand and collide with ground equipment which should have been removed.

The arrival of the aircraft was not clearly notified and the personnel on duty were not expecting it. This, and the lack of a pre-assigned stand, led the on-duty staff to use a sequence of *ad hoc* procedures to accommodate the aircraft.

The ramp dispatch agent and the ADO both gave manoeuvring instructions to the aircraft without a marshalling crew in attendance, which is in contravention of the requirements of the Apron Management and Procedure Manual. Handling equipment was also left on Stand 1, when it should have been removed.

Safety actions/Recommendations

The Airport Authority conducted an investigation into the circumstances of the accident and made four safety recommendations:

- 1. A systematic review of the process and criteria for approving flights after the normal working hours of the airport, with special emphasis placed on General Aviation operations, should be conducted and used to create a clear policy for this activity.*
- 2. Apron Management Training and annual recurrence is a requirement for all ATC, Ground Handling, Ramp control personnel and Airport Duty Officers and should be strictly enforced.*
- 3. Airport Duty Officers and other ramp personnel must be focused on ensuring the proper placement and subsequent timely removal of Ground Handling Equipment used on aircraft stands.*

4. *Establishment of a Training course and CAA approved Operators Certificate for aircraft Marshal and Wing Walkers.'*