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Loading related event involving Airbus A320, VH-VQC

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Addendum

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Loading related event involving Airbus A320, VH-VQC

What happened

On 29 October 2016, an Airbus A320 registered VH-VQC, approached Gold Coast Airport, Queensland, prior to operating Jetstar flight JQ407 from Gold Coast to Sydney, New South Wales.

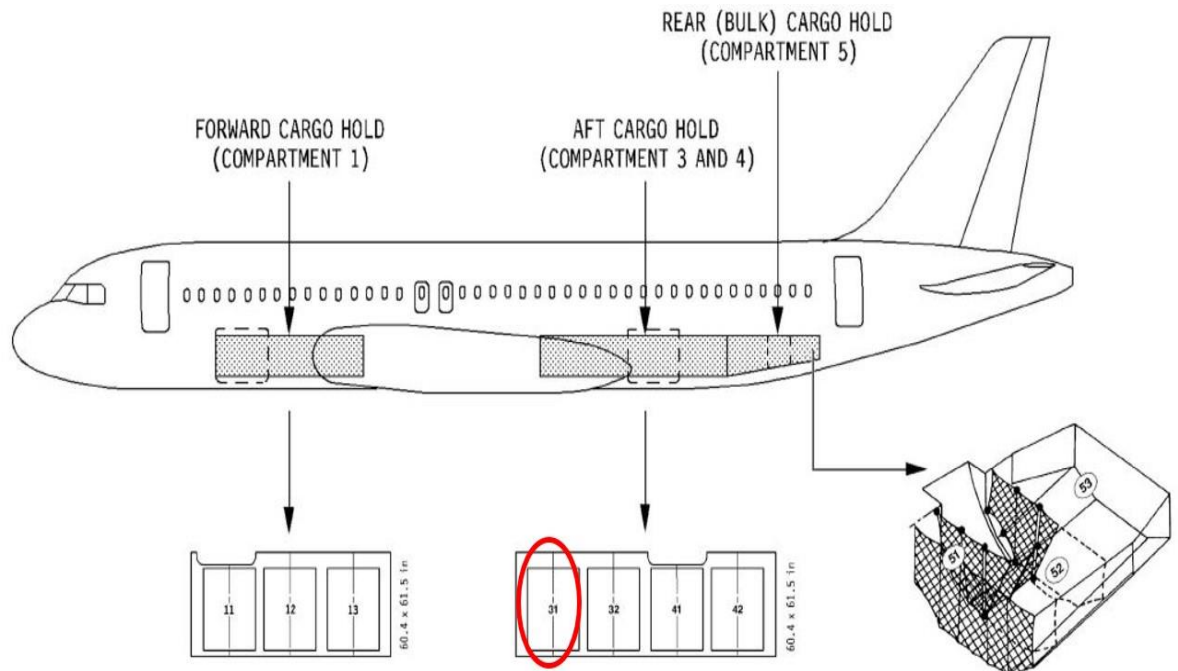
In preparation for the aircraft's arrival, the ground crew leading hand checked whether the pit load sheet¹ from the previous destination had arrived. This would allow the crew to be better prepared to unload the aircraft. As it had not, the leading hand went to assist loader operator 1 in preparing the bay for the aircraft's arrival.

At about 1050 Eastern Standard Time (EST), 20 minutes before the aircraft's arrival, the leading hand received a call detailing the requirements for the aircraft. These requirements included two lifts for passengers who could not board the aircraft using the portable stairs, a non-standard toilet clean and an aircraft water top up. The ground crew were also advised that the aircraft would arrive 3 minutes later than scheduled.

About 7 minutes prior to the aircraft's arrival, the leading hand again checked whether the pit load sheet had arrived, it had not.

Once the aircraft arrived, the leading hand estimated the unloading would require three dollies² and retrieved the dollies to unload the aircraft. Loader operator 1 unloaded containers from positions 41, 42, and 32 (Figure 1). Both loader operator 1 and the leading hand assumed only three containers needed to be unloaded.

Figure 1: Aircraft hold positions (with position 31 highlighted)



Source: Operator (modified by the ATSB)

¹ A document detailing the actual loads in the aircraft's compartments.
² A flatbed trolley used to load and unload containers from the aircraft.

After unloading, the loading procedures require a check of the aircraft hold to confirm if there are any containers remaining in the hold. The loader operator 1 reported checking the hold, however as they were walking towards the hold door, watching their footing, they did not detect a container in position 31. The leading hand witnessed loader operator 1 checking the aircraft hold and assumed all containers had been unloaded.

Loader operator 1 then turned the loader around, and unloaded the container in the front of the aircraft (which was staying on the aircraft) and reloaded it at position 11. During that time, they inadvertently put the yellow copy of the underfloor load advice (ULA)³ sheet in their pocket, rather than on the clipboard as is required. As loader operator 1 repositioned the loader at the rear of the aircraft, they received the request for a passenger lift, and they left the loader, to organise the lift. After organising the lift, loader operator 1 went to complete the clean of the two rear toilets, which took between 5–10 minutes. At the same time, loader operator 2 assisted with the aircraft water top up.

After cleaning the aircraft's toilets, loader operator 1 observed loader operator 2 on the loader continuing the loading process. Loader operator 2 presumed that loader operator 1 had started the loading process and had already loaded a container in position 31. They loaded containers in position 42 and 32, using the information on the container destination cards, as they did not have the yellow ULA copy, and ensured all the locks were engaged. Loader operator 1 then completed the yellow ULA copy using the bingo cards,⁴ but they were not aware of the container at position 31.

The leading hand observed loader operator 2 entering the rear hold and assumed that they were checking the locks, which they were doing. As the leading hand had previously worked with the loader operator, they trusted them to have completed the lock check.⁵ Loader operator 1 signed the yellow copy of the ULA and handed it to the leading hand for crosschecking. The leading hand checked the yellow copy against their white copy. As both copies matched, they assumed the aircraft was loaded correctly.

The leading hand then proceeded to the flight deck to hand the paperwork to the captain and confirmed that all locks had been engaged.

While pushing the aircraft back, the leading hand received a call advising that the aircraft had been correctly loaded for the previous flight in Cairns and that 20 bags had been reported missing. The duty manager also contacted the leading hand to confirm if all containers had been unloaded, which the leading hand confirmed.

After the aircraft departed the bay, the leading hand and loader operator 1 considered the possibility that a container may have been left on the aircraft. They recalled that all areas had been checked. The leading hand contacted loader operator 2 assisting on the loader who confirmed that there was a container in position 31, however they assumed it had been loaded prior to them taking over the loading of that hold. The duty manager contacted company personnel in Cairns, who provided a pit load sheet for the previous flight. The pit load sheet confirmed there was a container in position 31 with 40 bags that should have been unloaded at Gold Coast Airport.

At about 1230 EST during the cruise, the flight crew received an aircraft communications addressing and reporting system (ACARS) message advising that there was an extra container in position 31. The container weighed about 360kg and had not been included in the aircraft take-off performance calculations.

³ A triplicate carbonised form to be completed with details of the number of bags and cargo loaded into each underfloor position. It consists of a provisional (pink) copy, loader (yellow) copy, and final (white) copy. The yellow copy is completed by the loader operator during the loading process.

⁴ A card for every item of baggage that has a passenger name, flight number, and destination.

⁵ A check completed by ground staff to ensure containers are secure after loading.

Prior to being advised of the extra container, the flight crew determined the aircraft take-off weight to be 62,844 kg and the take-off trim⁶ position to be 0.4 degrees nose down. After being advised of the extra container, the flight crew recalculated the aircraft weight and trim to be 63,204 kg and 0.5 degrees nose down. The recalculated weight and trim showed that the aircraft was within all weight and balance limitations.

The flight proceeded to Sydney without further incident.

Loading procedures

Jetstar's ground operations procedures include the following steps:

- All compartments must be checked and confirmed as empty, including the bulk hold, on all arrivals after unloading.
- If a position in the cargo hold is labelled as 'Nil fit' (empty), then the loader operator is required to inspect the position. The leading hand is then required to visually inspect the nil fit position and initial the loader copy to show it has been inspected.
- As containers are progressively loaded, the loader operator must notate on the ULA container serial number, destination, contents, and tick loaded and locks up.

Leading hand comments

The leading hand provided the following comments:

- It is unusual for a loader operator to complete a different task.
- The leading hand and two loader operators had worked together previously. This led to a lot of trust within the group.
- At the time, there were also two off-schedule aircraft being handled. This resulted in no extra staff being available to assist with the servicing of the aircraft.
- The other tasks to be completed (lift, water top up, and toilet clean) during the unloading had taken a lot of time and created pressure, which may have led to short cuts being taken.
- They had not come across through-freight before, normally they just take all containers off the aircraft. This particular through-freight needed to have the destination card completed and this created a distraction.
- When they realised that loader operator 2 had not been using the yellow ULA to load the aircraft, they considered unloading the aircraft and restarting the loading process. As they were already running late, they decided against this.
- They were experiencing personal issues on the day, but does not believe they were contributory to the incident.

Loader operator 1 comments

Loader operator 1 provided the following comments:

- Normally when they operate as loader operator, they have always fully loaded or fully unloaded the aircraft.
- During unloading, if you are standing at the controls of the loader you cannot see position 31, only part of 32, and positions 41, and 42. It is only when you walk into the compartment door, or stand on the very edge of the loader at the door are you able to see position 31.
- They were feeling fatigued on the day due to a lack of, and poor quality sleep the previous night. They were also feeling a little dehydrated at the time.

Captain's comments

The captain provided the following comments:

⁶ Part of an aircraft control surface for stabilisation

- The pilot flying commented that during the take-off, they did not notice any unusual aircraft behaviour and did not detect the incorrect trim setting.
- They had used a higher take-off weight than required, to allow for last minute adjustments in the passenger loads. This meant that the extra weight did not have much effect on the flight.

Ground handling operator internal report

The ground handling operator internal report found the following:

- Initially, loader operator 1 was not aware that loader operator 2 had commenced the loading as they were still cleaning. Therefore, they did not offer the yellow copy of the ULA.
- There was a revision to the Standard Underfloor Load Advice Procedures for both leading hand and loader operators to commence from 13 October 2016. One of the changes was that loader operators are to complete the yellow ULA copy progressively as containers are loaded. This was not adhered to during the loading process.

Previous occurrences

A search of the ATSB database of previous loading related occurrences involving incorrect load or weight on the aircraft were detected, particularly when crew were under time pressures and procedures were not followed to resolve discrepancies:

- 8 May 2014: During unloading, unmanifested baggage in the front hold of the aircraft was detected from the previous flight. The dispatcher did not check the front hold due to time pressures from the short turnaround times.
- Loading related event, Bali, Indonesia, 26 May 2014 ([ATSB investigation AO-2014-110](https://www.atsb.gov.au/publications/investigation_reports/2014/aair/ao-2014-110/))⁷. A Boeing 737 aircraft was being loaded at Bali Airport for a flight to Melbourne, Victoria. Due to the time restrictions, the ground staff were unable to load all of the bags for the flight before aircraft had to be prepared for departure. The load controller assessed that a total of 93 bags had been loaded and the flight documents produced were using that figure. About 30 minutes after the aircraft departed Bali, the ground handler advised network operations and load control that the final baggage numbers were incorrect. The total number of bags loaded onto the aircraft was 189 instead of 93, which an estimated additional weight of about 1,600 kg. Prior to loading, the ground crew were under time pressure due to the flight already being delayed, breakdown of baggage belt, and scheduled closure of the runway and impending airport curfew.
- Loading event, Sydney Airport, NSW, 8 September 2016 ([ATSB investigation AO-2016-119](https://www.atsb.gov.au/publications/investigation_reports/2016/aair/ao-2016-119/))⁸. An Airbus A320 was being loaded at Sydney for a flight to Brisbane, Queensland. The leading hand received the deadload weight statement (DWS) and checked the containers. The third container number (1483) did not match the number listed on the DWS (4183), nor the container card (4183). The leading hand assumed that the freight handler had inadvertently transposed the numbers incorrectly and amended the card and DWS with 1483 and continued loading. When the aircraft was unloaded in Brisbane, it was found that the incorrect container (1483) was delivered and was nearly 650kg heavier than container 4183. The loading procedure if the DWS is incorrect, is that the container must not be loaded onto the aircraft. The leading hand noted that the short turnaround time and the flight was the last one of the day led to procedures being bypassed.
- Loading event, Brisbane Airport, Qld, 19 October 2015 ([ATSB investigation AO-2015-139](https://www.atsb.gov.au/publications/investigation_reports/2015/aair/ao-2015-139/))⁹. During boarding, the flight crew were notified of a discrepancy between passenger numbers, but later advised the issued had been resolved. After the passenger count during the flight, it was found that the aircraft departed with 16 more passengers than advised. The investigation is continuing.

⁷ https://www.atsb.gov.au/publications/investigation_reports/2014/aair/ao-2014-110/

⁸ https://www.atsb.gov.au/publications/investigation_reports/2016/aair/ao-2016-119/

⁹ https://www.atsb.gov.au/publications/investigation_reports/2015/aair/ao-2015-139/

Safety analysis

The first step in the ground handling operator's aircraft loading procedures involve obtaining a pit load sheet, if available. If the load sheet is not available, then the ground crew can contact the ground operations controller. The ground crew attempted to contact the ground operations controllers, but they were unavailable at the time of this occurrence. These are the only two sources that can provide accurate load information. The investigation was unable to determine why the pit load sheet was not provided.

After unloading, all compartments are to be checked and confirmed as empty. Loader operator 1 did check the hold, but did not see the container in position 31. The leading hand witnessed loader operator 1 checking the hold, but did not check the hold themselves.

Loader operator 1 had commenced the loading and was called away with the yellow ULA copy in their pocket, as opposed to on the clipboard in the loader per normal. Because loader operator 2 continued the loading process, they assumed that any containers on the aircraft had been pre-loaded. This assumption was reinforced as the yellow copy was with loader operator 1. Therefore, loader operator 2 completed the loading without the yellow copy and did not complete the sheet as containers were loaded. There was also no communication between the two loader operators on how much of the task had been completed.

When a position is identified as empty on the ULA, the loader operator and leading hand are to check the position is empty and initial it on the yellow copy. The loader operator 1 had commenced the loading process but did not complete the process, nor did they check all the containers once they had been loaded. The leading hand also did not check position 31 though it was marked as empty.

On that day, the ground crew were required to complete additional tasks, including putting in a lift, toilet clean, and water top up. Ordinarily, the leading hand would have asked another team to complete the toilet clean in order to keep the loader operator on that task. It is unusual to have a leading hand complete a different task. The leading hand did call for assistance, but as there were two off-scheduled aircraft also being turned around at the time, no assistance was available. Furthermore, the leading hand reported feeling rushed because of the extra tasks to be completed during the 30 minute turnaround, and this contributed to the checks not being completed.

Findings

These findings should not be read as apportioning blame or liability to any particular organisation or individual.

- The lack of loading documentation received at the Gold Coast resulted in the ground crew not knowing the number of containers to be off-loaded from the aircraft. Loader operator 1 did not detect the container in position 31 as they checked to ensure the hold was empty.
- The loader operator and leading hand did not adequately check the containers during the loading process, leading to the container in position 31 not being noticed.
- The individual conducting the loader operator role changed during the loading of the aircraft, which likely led to a misunderstanding of how much of the loading had been completed.
- The ground crew had additional tasks to complete during the unloading and a smaller ground team than normal, which led to the hold not being checked adequately.

Safety action

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following proactive safety action in response to this occurrence.

Ground handling operator

As a result of this occurrence, the ground handling operator has advised the ATSB that they have taken the following safety actions:

Ground handling operator's safety communications

The loader operator procedures have changed to include the following requirements:

- Physically touch each bulkhead wall after unloading is completed, to ensure no containers are left inside the aircraft.
- If there is no leading hand present, then no movement by the loader machine including unloading/loading will be undertaken.
- If there is no yellow ULA, then no loading is to be completed.
- Yellow ULA must be completed as each container is loaded
- Yellow ULA must be handed to the leading hand for cross checking before the white ULA is taken to the crew.
- Standardised communication between loader operators and leading hand to confirm that all containers have been unloaded.
- The leading hand is to conduct a mandatory visual check to ensure unloading has been completed before any loading commences for the new outbound flight.

Safety message

This incident highlights the effect time pressures and workload can have during loading operations. The ATSB report: [Aircraft loading occurrences - July 2003 to June 2010](#) found that one reason unlisted cargo was loaded into an aircraft was time pressure where late arriving inbound traffic left little time for loading. This pressure is increased when airlines are under internal and external pressures to meet timeframes.

Overall, this investigation emphasises the importance of adhering to procedures during the completion of tasks and communication between fellow colleagues, particularly if there is a role changeover.

General details

Occurrence details

Date and time:	29 October 2016 – 1535 EST	
Occurrence category:	Incident	
Primary occurrence type:	Loading related	
Location:	Gold Coast Aerodrome	
	Latitude: 28° 09.87' S	Longitude: 153° 30.28' E

Aircraft details

Manufacturer and model:	Airbus A320-232	
Registration:	VH-VQC	
Operator:	Jetstar Airways	
Serial number:	3668	
Type of operation:	Air Transport – High Capacity	
Persons on board:	Crew – 6	Passengers – 155
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	Nil	

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The ATSB is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. The ATSB's function is to improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; and fostering safety awareness, knowledge and action.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to operations involving the travelling public.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

The object of a safety investigation is to identify and reduce safety-related risk. ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not a function of the ATSB to apportion blame or determine liability. At the same time, an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

About this report

Decisions regarding whether to conduct an investigation, and the scope of an investigation, are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, a limited-scope, fact-gathering investigation was conducted in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.