![Australian Government — Australian Transport Safety Bureau]

Loading event involving Airbus A320, VH-VFN

Sydney Airport, New South Wales, 8 September 2016

Released in accordance with section 25 of the *Transport Safety Investigation Act 2003*

Publishing information

Published by:	Australian Transport Safety Bureau
Postal address:	PO Box 967, Civic Square ACT 2608
Office:	62 Northbourne Avenue Canberra, Australian Capital Territory 2601
Telephone:	1800 020 616, from overseas +61 2 6257 4150 (24 hours)
	Accident and incident notification: 1800 011 034 (24 hours)
Facsimile:	02 6247 3117, from overseas +61 2 6247 3117
Email:	atsbinfo@atsb.gov.au
Internet:	www.atsb.gov.au

Addendum

Page	Change	Date

Loading event involving Airbus A320, VH-VFN

What happened

On 8 September 2016, at about 1900 Eastern Standard Time (EST), an Airbus A320-232 aircraft, registered VH-VFN, was being loaded at Sydney Airport, New South Wales, to operate Jetstar flight JQ820 from Sydney to Brisbane, Queensland.

The leading hand assigned to loading the aircraft had received the deadload weight statement[1] (DWS) for the cargo from the cargo terminal operator (CTO), and printed out a copy to refer to while loading the aircraft. The DWS listed three containers of freight, which the leading hand reported was usually loaded onto the aircraft before the passenger bags. The CTO had previously delivered the three containers to the loading bay from their facility. The leading hand checked the containers with those listed on the DWS – crosschecking the container numbers and the flight details, and confirming that the sum of the weight of the three containers corresponded to the total gross weight on the DWS. Two of the three listed containers were correct, however, the third was listed on the DWS with number 4183 and a gross weight of 240 kg, while the container on the bay was number 1483 (Figure 1), which was subsequently found to have had a gross weight of 900 kg.
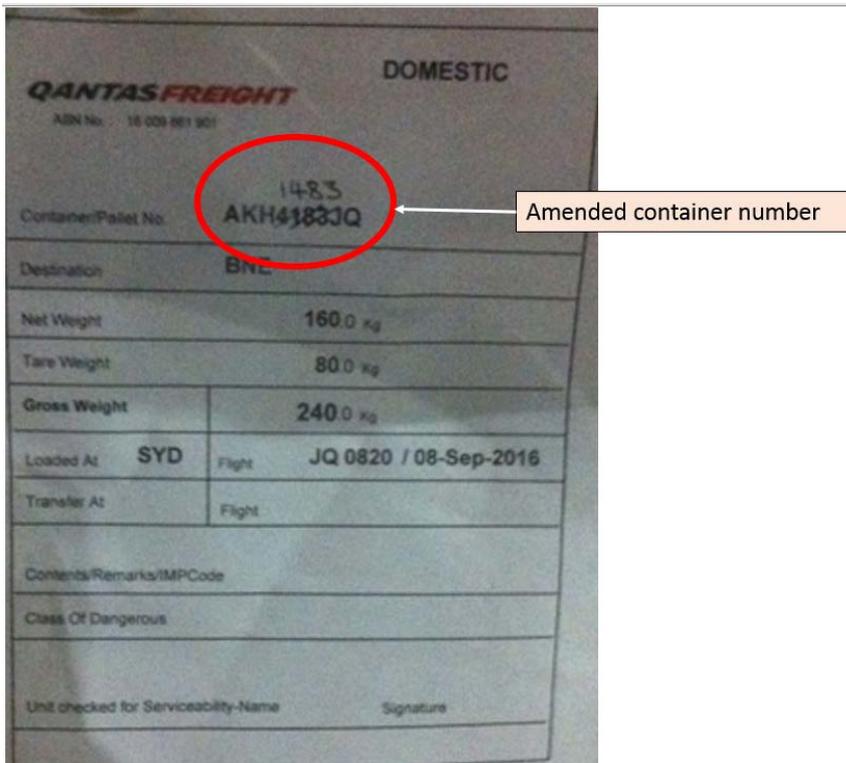
Figure 1: Container AKH 1483 JQ

Source: Jetstar

The container card associated with, and attached to the container also had number 4183 on it (Figure 2). The leading hand assumed that the freight handler had inadvertently transposed the first two digits of the container number from 14 to 41, entered that onto the card and transferred the error onto the DWS. The leading hand therefore amended the card and the DWS with the actual number of the container (1483), and entered that container number onto the underfloor load advice (ULA) as it was loaded onto the aircraft (Figure 3).

The leading hand supervised the loading of the three containers and the passengers' bags onto the aircraft and completed filling out the ULA. Container 1483 was loaded into position 32 (see *Underfloor load advice*), which was close to the aircraft's centre of gravity.

---

[1] Deadload weight statement: Document produced by the cargo terminal operator that listed the details of freight booked on a specific flight.

Figure 2: Container card

Source: Jetstar

Figure 3: Extract of the underfloor load advice

Source: Jetstar

At about 1915, the leading hand completed loading the aircraft and took the paperwork, including the DWS and ULA, to the flight deck. The captain sighted the amendments and the leading hand explained that they had amended the container number because the digits had been mixed up. The captain said they would accept the paperwork if the leading hand was sure the contents of the container was the same as the container listed on the DWS. The leading hand affirmed, as they believed at the time, that the weight was correct and the container number was now correct on the DWS and ULA.

The flight crew then entered the data into the loading program and crosschecked it. The data was then used to generate the take-off data including reference speeds and trim settings based on the weights provided on the DWS. The crew then entered the performance data into the aircraft's flight management and guidance system.

The aircraft departed on time at about 1925. The flight crew were not aware of the discrepancy during the flight and did not encounter any handling or control issues on take-off or receive any abnormal indications.

Subsequent investigation revealed that the incorrect container was delivered for loading; the CTO had delivered container 1483 (which weighed 900 kg) instead of 4183 (which weighed 240 kg).

Freight management procedures

The aircraft operator's procedures included that if the DWS was incorrect, then the leading hand was to 'offload' the freight – that is, not load it onto the aircraft and remove it from the DWS, irrespective of how the incorrect container arrived at the bay.

Leading hand's comments

Generally, if there is a discrepancy between the freight and the DWS, the leading hand commented that they would cease loading, go to the office and give the CTO a call. They would then ask the team to email a new DWS and bring a new container card to the loading bay. In this event, time did not permit the normal process to be followed, due to the short turnaround time for the aircraft. In addition, as it was the last Brisbane flight of the day, they were trying to ensure the cargo would be loaded if possible. The leading hand also commented that in their experience, it was not uncommon to have discrepancies on the DWS, including errors in the weights. The leading hand assessed that this had just been a simple transcription error, and changed the numbers.

The leading hand had not been to the CTO facility and was not certain as to how the container card and DWS were compiled. However, the leading hand was experienced in operations in the bag room, where the bags were loaded into containers. The loader would then fill out the container card including the container number and the number of bags loaded into the container. The leading hand commented that transcription errors sometimes occurred in that process, resulting in the incorrect number on the container card. The leading hand would then amend the card to reflect the actual (and correct) container number.

The leading hand subsequently found that the CTO did not operate in a similar way to the bag room. On this occasion, container 4183 with 240 kg of freight was scheduled to be loaded onto JQ820, but the incorrect container was delivered to the bay. The leading hand was advised during a post-incident discussion, that the container numbers and corresponding cargo are entered into a database at the CTO and the container numbers on the DWS would therefore be correct.

The leading hand stated that they would only open up the containers to check the contents if there were dangerous goods manifested in the contents, to check for spills or leakages, or if some contents were insecure. Otherwise, once the container is delivered to the bay from the freight shed, there is no confirmation of its contents and no ability to check the weight of the container.

Captain's comments

The captain commented that it is necessary for the leading hand to be able to amend the ULA, which is a Jetstar document. However, the DWS is not a Jetstar-generated document. If there was a Jetstar procedure that did not allow amendments to the DWS (and a new one was required from the CTO whenever a change was deemed to be necessary), that may prompt the CTO to review the DWS details. Such a review may identify any discrepancies such as an incorrect container. This would provide an additional defence against an incident of this nature.

The aircraft operator responded to the comment, advising that the operations manual stated that 'all changes to the DWS must be completed by the cargo terminal operator (CTO)'.

The captain was not required to sign the ULA, unlike the Notification to the Captain (NOTOC) – which contains information about dangerous goods. The captain commented that ULAs were frequently amended, and if the leading hand amends them on the flight deck, they then initial the change.

The leading hand is a trusted member of the team; the captain delegates responsibility for the loading of the aircraft to them. If there are any issues with the loadsheets, the flight crew clarify them with the leading hand. The flight crew can also contact the ground operations controller (GOC) if there are any issues, but the GOC will refer the crew to the leading hand for questions regarding the underfloor load.

The captain accepted the amendment to the DWS based on the leading hand's confirmation that the correct container weighing 240 kg had been loaded onto the aircraft. The captain then entered that weight into the loading program, an iPad application 'Jetload', which was used to generate the aircraft's performance data.

The captain commented that the Jetload program is very robust and is designed around ease of use. It prevents crew making a basic input error because there is a crosscheck. If there is a mismatch, it will not proceed to the next screen. The data then goes into the Airbus fly smart program along with the environmental and aircraft data, and generates the V speeds[2] and flex temperature for take-off. While the system is robust, it depends on the correct data being provided on the DWS and ULA. Offloading freight or bags is easy to do with the program and only takes 5–8 minutes for the leading hand to action and the crew to amend the data.

Deadload weight statement

The deadload weight statement (Figure 4) was generated by the freight shed at 1824 and the loading details specified three unit load device (ULD, or container) items: AKH4183JQ gross weight 240 kg, AKH4297JQ 300 kg and AKH1583JQ 115 kg, all destined for Brisbane with a total ULD weight of 655 kg.

Figure 4: Extract of the deadload weight statement

Source: Jetstar

---

[2]   V speeds: take-off reference speeds or V speeds are provided by the manufacturer to assist pilots in determining when a rejected take off should be initiated, and when the aircraft can rotate, lift off and climb.

Effect on the aircraft

The actual container loaded onto the aircraft weighed 660 kg more than the 240 kg entered into the loading program, and was loaded close to the aircraft's centre of gravity. The trim setting used for the take-off was the same as would have been used if the actual container weight and position had been entered and the derived V speeds were within 1 kt and the flex temperature within 1 °C of those generated based on the actual aircraft take-off weight. There was no effect on the aircraft performance or handling and no issues or abnormal indications were identified by the flight crew.

Based on the weights listed on the DWS, the leading hand commented that they could have loaded any of the three containers into the forward compartment of the aircraft, but elected to load container 4297 with a gross weight of 300 kg for position 11 (Figure 3) and fortuitously elected to load 1483 close to the centre of gravity.

Safety analysis

The aircraft operator advised that a member of the freight company misread the digits on the container (confusing 1483 for 4183) and transported it to the incorrect bay while delivering the correct DWS and container card.

The leading hand (incorrectly) assumed the freight container (1483) was the correct container to be loaded, but that the container number on the container card and DWS (4183) had been entered incorrectly (due to a transcription error). Although the leading hand could have requested a new printed DWS and container card, due to the combination of the limited turnaround time available and the concern to ensure the freight made it to the destination that night, the leading hand instead 'corrected' the numbers with a pen so they matched the number on the container. This resulted in a lost opportunity for the leading hand's incorrect assumption to be identified. Similarly, although the captain could see there was a discrepancy, they accepted the hand-written amendment to the DWS based on the leading hand's assurance that the correct container been loaded onto the aircraft.

Findings

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

- An incorrect container was delivered to the ramp by the cargo terminal operator, probably because the cargo terminal operator crew misread the similar container numbers.
- The short turnaround time combined with this being the last flight to Brisbane that night, along with the assumption there was a transcription error, resulted in the leading hand not requesting a new deadload weight statement and container card, and loading the incorrect container on the aircraft.
- Due to the leading hand's assurance, the captain accepted the hand-written amendment to the deadload weight statement.
- Although the actual take-off weight was about 660 kg more than the calculated take-off weight, as the container was loaded close to the aircraft's centre of gravity, there was no effect on the aircraft performance or handling.

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.

Aircraft operator

As a result of this occurrence, the aircraft operator has advised the ATSB that they are taking the following safety actions:

Reminder to ground staff

Ground crew have been reminded to offload any freight where there is a discrepancy in the paperwork.

Safety message

The procedure published by the aircraft operator was to offload freight if a discrepancy existed. The leading hand thought it was a simple typographical error and amended the associated paperwork. Their intention was to facilitate loading the freight if at all possible, rather than offload it and leave it overnight for the next shift to deal with. This incident highlights how being service oriented to increase efficiency can inadvertently bypass safety-related risk controls.

General details

Occurrence details

Date and time:	8 September 2016 – 1900 EST
Occurrence category:	Incident
Primary occurrence type:	Loading related
Location:	Sydney Airport, New South Wales
	Latitude: 33° 56.77' S — Longitude: 151° 10.63' E

Aircraft details

Manufacturer and model:	Airbus A320	
Registration:	VH-VFN	
Operator:	Jetstar Airways	
Serial number:	5566	
Type of operation:	Air transport high capacity – Passenger	
Persons on board:	Crew – 6	Passengers – 173
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.