

Australian Government Australian Transport Safety Bureau

# Aircraft preparation event involving Saab 340B, VH-ZLJ

Cairns, Queensland on 16 November 2022

ATSB Transport Safety Report

Aviation Occurrence Investigation (Defined) AO-2022-058 Final – 26 October 2023 Released in accordance with section 25 of the Transport Safety Investigation Act 2003

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#### Addendum

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# **Executive summary**

### What happened

On 16 November 2022, a Regional Express (Rex) Saab 340B, registered VH-ZLJ, was prepared for a scheduled air transport flight from Cairns Airport, Queensland, to Bamaga, Queensland, as flight number ZL5538.

As the crew taxied the aircraft to the runway, an engineer on a nearby parking bay noticed something hanging from the aircraft and contacted the tower. The air traffic controller visually confirmed the engineer's observations and alerted the crew, who returned the aircraft to the bay.

Aircraft parked overnight at Cairns were required to be fitted with an operator-designed bung installed in the horizontal stabiliser trim actuator cove to prevent bird nesting. The inspection revealed the horizontal stabiliser bungs had not been removed and were still installed in the left trim actuator cove.

### What the ATSB found

The investigation found that the horizontal stabiliser bung was not detected during pre-flight preparations, resulting in the aircraft being dispatched with the bung still installed.

The ATSB also found that there was no procedure for the storage and accountability of the bungs after they had been removed, which differed from other bungs and covers used on Rex aircraft. Additionally, the operator did not consider aspects that would ensure the identification of an installed bung, or the safe operation of the aircraft if the bungs were not removed prior to flight.

### What has been done as a result

The operator has commenced a risk assessment to formalise the procedures around the use of the horizontal stabiliser bungs. To support this, an engineering order was obtained to document and approve the manufacture of the bungs.

However, these actions did not address the issues around the storage and accountability of the bungs when they are removed or the aspects around the identification of an installed bung or the safe operation of the aircraft if the bungs were not removed. As such, the ATSB issued two safety recommendations and will continue to monitor the safety issues and provide website updates.

### Safety message

'Remove before flight' conspicuity flags are a visual reminder to remove covers prior to flight. Failure to remove these devices may have the potential to foul or jam aircraft flight controls. In certain circumstances, the flags may not hang freely, which can reduce their visibility. Targeted inspection of locations and components, rather than relying on flags, which may not always be visible, can help to identify when these covers or devices have not been removed.

Further, when a missed item has the potential to affect the safety of flight, a secondary means of assuring the item has been removed should be employed. Similar to procedures employed for other covers on the aircraft, a means to account for what equipment has been removed from the aircraft before being stowed or retained by ground agents will provide the crew with another opportunity to detect when a bung or cover has not been removed.

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# The occurrence

On 16 November 2022, a Regional Express (Rex) Saab 340B, registered VH-ZLJ (ZLJ), was prepared for a scheduled air transport flight<sup>1</sup> from Cairns Airport, Queensland, to Bamaga, Queensland, as flight number ZL5538.

Ground handling services for the operator's aircraft based at Cairns, were contracted to a third-party provider. As part of this contract, 2 ground handlers were assigned to dispatch an aircraft, however, on the day of the occurrence one ground handler was unavailable. This meant that there were times when the available ground handler (ground handler 1) was assisted by a duty manager, prior to another ground handler commencing at 1300.

The aircraft had been parked overnight at Cairns Airport, which required the installation of horizontal stabiliser bungs (bungs) (see the section titled *Use of horizontal stabiliser bungs*) to prevent birds nesting in the elevator trim actuator coves. This was the first flight of the day for ZLJ, and at 1116 local time, ground handler 1 commenced removing the pitot covers, propeller straps, engine bungs and the wheel chocks from the aircraft and loaded the catering for the flight. It is likely they also attached the tail stand before leaving to dispatch another aircraft at 1131.

They returned to ZLJ at 1231 with the duty manager and continued the aircraft's preparations, including connecting the ground power unit and the air-conditioning unit to the rear of the aircraft. Both ground crew then left to meet the ground handler who started work at 1300 (ground handler 2). Ground handler 2 was assigned to load luggage on to the aircraft and was occupied with this task until passengers boarded the aircraft at 1400.

The ground handling agent also provided check-in and customer services for the operator. Following a discrepancy with the number of bags checked-in for this flight, ground handler 1 left the aircraft to assist with checking-in the remaining passengers and locating the missing bag. Ground handler 1 was occupied with these tasks until returning to the aircraft at 1357 to load bags and finalise preparations.

At 1330, the flight crew arrived at the aircraft and commenced the pre-flight inspection<sup>2</sup> of the aircraft. The captain initially conducted an external check, walking around the aircraft. The first officer (FO) was completing their final check to line on this flight. They completed an external inspection of the aircraft as part of the aircraft's daily inspection, in accordance with the flight crew operating manual (FCOM). They advised they paid particular attention to the rear of the aircraft, including inspecting the:

- · de-icing boots on the front of both sides of the horizontal stabiliser
- 5 static wicks on the rear of the horizontal stabiliser
- depressurisation port to ensure there were no bird's nests.

Both flight crew reported that during these checks they did not detect the tether rope with the 'remove before flight' conspicuity flag (Figure 2), which attached to each bung and hung under the back fuselage as a visual cue that the bungs were in place (Figure 1). The flight crew completed the internal and external checks prior to passengers arriving. At 1404, the FO completed the final external inspection.

Normally, the air conditioner<sup>3</sup> would have already been removed at this stage, but on this occasion, the FO observed that it was still attached to the aircraft. The ground crew were occupied with the discrepancy on the passenger list and the decision had been made to leave the air conditioner attached until the matter was resolved. The discrepancy was identified to be an

<sup>2</sup> The roles and responsibilities of each crew member when completing the required daily internal and external inspections were defined in the flight crew operating manual.

<sup>&</sup>lt;sup>1</sup> The flight was operated under Civil Aviation Safety Regulations Part 121 (Air transport operations - larger aeroplanes).

<sup>&</sup>lt;sup>3</sup> The portable air conditioner was an item of ground service equipment used to provide cool air to the cabin of the aircraft before engine start.

administration error and the air conditioner was subsequently removed. The FO then walked under the fuselage of the aircraft to remove the tail stand and placed this in the cargo hold. During this inspection, and before closing the cargo door located at the rear of the aircraft, all straps and bungs to be retained on the aircraft were confirmed as having been removed and accounted for. The FO recalled that prior to entering the aircraft, they removed the guide strap that connected from the propeller to the passenger stairs, and the propeller guard. They also conducted a visual inspection to ensure there was nothing hanging underneath the aircraft.

As the aircraft taxied to the runway, an engineer on a nearby parking bay noticed something hanging from ZLJ and contacted the tower controller. The air traffic controller confirmed that something appeared to be hanging form the tail of the aircraft and alerted the crew who returned the aircraft to the bay.

The subsequent inspection revealed the horizontal stabiliser bungs had not been removed. The right bung was found hanging from the tail, still attached to the left bung installed in the trim actuator cove by the tether rope.

# Context

### Horizontal stabiliser bungs

#### Use of horizontal stabiliser bungs

The procedure for the use of horizontal stabiliser bungs (bungs) was implemented by the operator in March 2017 at both Cairns and Townsville Airports. This followed an increase in the number of occurrences where birds had nested in the tail section of aircraft parked overnight during the warmer, humid months. The operator's engineering department devised a solution with the design and fabrication of bungs to be installed in the elevator trim actuator coves on the upper surface of the horizontal stabilisers (Figure 1).

#### Figure 1: Horizontal stabiliser bungs



Source: Regional Express Pty Ltd annotated by the ATSB

The horizontal stabiliser bungs (Figure 2) were listed as site-specific equipment for use at both Townsville and Cairns. They consisted of a foam pad, which fitted into the actuator cove, attached to a board for both the right and left elevator. They were connected by a tether rope which had a conspicuity flag marked 'remove before flight'.



Figure 2: Horizontal stabiliser bungs

Source: Regional Express Pty Ltd

#### Training

The operator advised that all staff were trained and assessed in the use of the bungs prior to the bungs' introduction. A training package was developed for contracting agents that included a presentation to familiarise ground staff with the new bungs. The training was delivered by a member of the operator's airport services ground training department and involved the ground handler operating under supervision to obtain on-the-job training. Once assessed as competent, the ground handler would be approved for unsupervised operations. No additional training was provided by the ground handling agent because the procedure was governed by the airline.

The operator advised that the use of bungs was also covered as part of the induction training for pilots new to type.

#### Ground handling procedures

The contractor provided ground handling services for the operator at both ports where the bungs were used. They advised that the operator's procedures for the use of bungs were defined in the operator's airport services manual (ASM). There was no checklist for these tasks, but ground staff followed the operator's ASM procedures.

A presentation used by the operator's ground training department for these pre- and post-flight duties, advised ground agents that:

The horizontal stabilizer bung will be retained by the agent who will be responsible for the fitting of the bung upon termination. Similarly, the ground agent will be responsible for the removal of the bung prior to aircraft operation.

This procedure typically saw the bungs installed after the flight crew had left the aircraft and removed prior to the flight crew arriving at the aircraft the following morning.

#### Storage of bungs

The ground handling pre-flight duties section in the ASM provided the following guidance:

Remove bungs and propeller straps and store in designated positions in the cargo hold.

During interview, the flight crew advised that this procedure did not apply to site-specific equipment such as the horizontal stabiliser bungs. It referred to the general instructions for the storage of items such as the pitot tube covers and engine inlet bungs, where specific storage locations were defined on the aircraft. Ground handling staff confirmed that the operator's ASM procedures did not specify where the bungs were to be stored and that the agent stored these bungs in a container next to the parking bay. These containers were used to store several sets of bungs and were not allocated to a specific parking bay or airframe. Once the bungs were placed in the container, there was no way of knowing which bungs had been removed from what aircraft.

The training presentation, used to familiarise ground handling staff with the bungs, included the use of engine exhaust bungs (exhaust bungs) at Cairns. These exhaust bungs were also retained by the ground handling agent, however, the presentation included guidance for where these bungs should be stored (Figure 3). Similar to the horizontal stabiliser bird bungs, multiple sets were stored together in the designated storage bins.

#### Figure 3: Exhaust bung storage bins

Storage location clearly defined





Storage bin provided for multiple sets of engine bungs

Source: Regional Express Pty Ltd annotated by the ATSB

#### Flight crew awareness

The first officer (FO) completed their induction and commenced line training in March 2022. While familiar with the bungs at the time of the occurrence, the FO did not recall being briefed on their use during their induction. They also advised that their first exposure to the bungs was after seeing them installed on other aircraft at Cairns. Additionally, they reported having never handled the bungs before the day of the occurrence.

The airline's primary means of communicating the use of bungs to flight crew was through the route manual where the following delegation of responsibilities appeared:

The ground agent will be responsible for the removal of the horizontal stabilizer bung prior to aircraft operation. As part of pre-flight duties, the crew MUST ensure the horizontal stabilizer bungs are removed prior to pre-flight inspections.

Additionally, the bungs appeared in the FCOM where they were listed as a check item in the external inspection of the tail area.

Both flight crew were aware of the information relating to the bung in the route manual but also believed that a company notice to air crew (NOTAC) would be provided to crew when the bungs were in use during summer months.<sup>4</sup> In the absence of a NOTAC on this flight, the crew believed that the bungs were not being used, although they had noticed the sporadic presence of the bungs fitted to aircraft at Cairns prior to the occurrence. The operator confirmed that while the route manual referred to the increased risk of bird nesting during the summer months, the manual also stated that the ground agent would install the bungs upon termination of service indicating that they would be used throughout the year. During interview, the ground handler confirmed that the bungs were installed every night.

The information available to the flight crew did not require them to handle the bungs but stressed that they must ensure the bung was removed before the pre-flight inspection. However, there were no instructions provided on how the crew should ensure the bungs had been removed. The flight crew advised the bungs could not be seen from the ground as the horizontal stabiliser fairings (Figure 1) obscured the bung when they conducted an external inspection, unless they moved further from the tail than would otherwise be required when completing the external inspection. In addition, the bungs could not be removed from the ground and required the crew to notify a ground handler if they were found installed during the external inspection.

# **Pre-flight preparations**

#### Ground crew

The tasks required to dispatch a Rex Saab 340 aircraft were defined in the ground handling section of the company's ASM. Access to operational information was provided to all ground handling agents to ensure the latest information was utilised with control of the documents remaining with the operator's training department.

ZLJ terminated at Cairns the evening prior to the occurrence. The ground handling agent confirmed that while the post-flight duties were completed in accordance with the ASM, the operator's procedures did not require a record of the installation of the bungs, and no additional details were available. As such, it could not be determined if the bung was installed correctly, or by whom, on the evening of 15 November 2022.

Video footage of ZLJ parked on the bay on the day of the occurrence, revealed that ground handling staff passed the rear of the aircraft multiple times while completing the pre-flight duties. During interview, the ground handler in charge advised that neither the bungs nor the tether rope were visible at any time. Further, they advised that they were easily detected when installed correctly and could not be missed with the conspicuity tag normally hanging below the tail and next to the rear cargo door (Figure 1).

#### Flight crew

Flight crew pre-flight procedures are documented in the company FCOM. The horizontal stabiliser bungs were identified in the external inspection, which formed part of the daily inspection. As this

<sup>&</sup>lt;sup>4</sup> Summer months was defined in the Rex airport services manual as the period between November and March.

was the first flight of the day for ZLJ, the daily inspection of the tail area included visual checks of the following:

- static dischargers
- tail lights
- ELT antenna
- confirmation that the horizontal stabiliser bung had been removed.

Both crew members conducted external checks of the aircraft. The captain initially walked around the aircraft and noted that the bungs and associated tether rope were not visible. The FO then conducted the required external inspection in accordance with the FCOM and advised that they did not see the bungs, despite passing the tail area of the aircraft on several occasions.

#### Additional checks that may have identified the bungs

The Saab 340 is fitted with a gust lock system. When the handle in the cockpit is engaged, it mechanically locks the elevator, ailerons, and rudder to prevent damage in windy conditions. The gust lock is released while a stall test is conducted. The stall check is completed by the captain prior to the aircraft's first flight of the day. During this check, the captain would release the gust lock, apply back pressure to the control column and test the stall recognition and recovery protection systems. This is achieved by applying and maintaining aft control column pressure then holding the test button to check that the stickshaker, aural alert and stick pusher activate. Once the test is complete, the gust lock is re-engaged.

The captain was unable to recall if this was the first flight of the day for the aircraft and could not confirm if this check was completed.

An additional flight control check was part of the line-up checklist and would normally have been completed prior to runway entry. It involved a co-ordinated response from the crew to release the gust lock and then check the flight controls. The captain would check the rudder and the FO would manipulate the control column to ensure full and free movement of the aileron and elevator controls. The crew confirmed that the tower controller notified them of the hanging bung before this check had been completed.

During analysis of the airport CCTV footage (Figure 4), the bung was not visible while the aircraft was being prepared, nor was it visible as the aircraft taxied away from the bay. However, the aircraft was not clearly visible in the footage. Later, when the bung was observed hanging from the aircraft, the left bung was still inserted into the trim actuator cove and the tether rope and right bung was hanging from the left horizontal stabiliser.



#### Figure 4: Airport CCTV footage

Source: Cairns Airport Pty Ltd

### **Design and considerations**

The operator's engineering department designed and had the bungs manufactured. They determined that because the design did not require alteration of the airframe, a CASA approved- engineering order was not required.

The ATSB contacted the aircraft manufacturer to ascertain if the elevator trim actuator cove had been identified as a known area for similar nesting occurrences. Saab advised that they had only received one other report of bird nesting, and a handful of reports involving spider or insect nesting, from Australian operators. Additionally, Saab did not manufacture protection for this particular area of the aircraft, and they had not been involved in the design and manufacture of such a device. Significantly, the manufacturer provided a list of considerations that they felt would be appropriate for such a device. These included:

- checklist and visual indicators to aid in identification
- consequences if the cover was forgotten with regards to jamming or fouling of flight controls.

The operator confirmed that while a risk assessment had not been completed specifically for the bird bungs themselves, the decision to implement the bird bung procedure was to address the bird nesting safety concern and reduce the potential risk to passengers, crew, and the aircraft itself. There were no reports, prior to this occurrence, of aircraft dispatched with bungs installed in the trim actuator coves. However, it was reported that bungs had previously fallen out of the trim actuator cove in wind and were later found in nearby parking bays.

# **Safety analysis**

## Installation of the horizontal stabiliser bung

On the morning of the occurrence, there were significant distractions for the ground handling agent. Despite this, there were no significant time pressures during the early part of the day when the aircraft preparations began, and the ground handler removed the pitot and other aircraft covers. During this time, and later in the aircraft preparation, they were working around the rear of the aircraft on a number of occasions and the horizontal stabiliser bungs (bungs) were not detected.

In addition, while the flight crew were not expecting that the bungs would be installed, they both conducted external inspections of the aircraft, with the first officer (FO) stating they paid particular attention to the rear of the aircraft. The FO also removed the tail stand from under the tail of the aircraft where the bung conspicuity flag would have been hanging prior to entering the aircraft after the external inspection was completed. Neither pilot detected the bungs.

The ATSB analysis of the CCTV footage also did not detect the bungs while the aircraft was parked at the bay, nor as the aircraft taxied to the runway. Together, this would indicate that the bung was not installed correctly or possibly the tether rope with the 'remove before flight' conspicuity flag was not hanging from the horizontal stabiliser, as designed.

### Procedures to ensure the removal of the bungs

The training package provided to the ground handling agent indicated that the horizontal stabiliser bird bungs were to be retained by the agent, but did not specify how or where the bungs were to be stored. As the containers utilised by the agent stored multiple sets of bungs together, it could not be determined what equipment had been removed from what aircraft. This prevented any positive assurance check by ground handlers or flight crew that the bungs had been removed. This was also the case for the engine exhaust bungs.

Existing airline checklist procedures ensured that flight crew account for other covers and bungs that had been removed from the aircraft during pre-flight inspections. However, there was no pre-flight procedure on how to check the aircraft for the installation of the horizontal stabiliser bird bungs. In the absence of a prescribed method of assurance, the flight crew walkaround inspection procedures relied on visual confirmation that the bungs had been removed by ensuring that the conspicuity flag was not visible. In this instance, when the conspicuity flag was not detected by both ground crew and flight crew, both parties would most likely have continued preparations with the belief that the bungs were not installed.

This occurrence revealed the potential for the horizontal stabiliser bungs to go undetected if incorrectly installed or not displaying as designed and identified a gap in the assurance procedures for the operator.

### **Risk assessment**

While a risk assessment of the bird nesting hazard led to the implementation of the procedure to install the horizontal stabiliser bungs, the operator did not conduct a separate risk analysis of the potential hazard a control surface bung could induce. Although the design incorporated features to aid in the recognition of the bungs when they were installed correctly, the evidence indicated that the design allowed for an incorrectly installed bung or one not displaying as designed to go undetected.

Existing procedural checks designed to detect fouled or jammed controls did not identify the incorrectly installed bung and there was no documented consideration given to assuring that a bung would be ejected prior to take-off, after which time it could have had the potential to adversely affect the safety of a flight.

# **Findings**

ATSB investigation report findings focus on safety factors (that is, events and conditions that increase risk). Safety factors include 'contributing factors' and 'other factors that increased risk' (that is, factors that did not meet the definition of a contributing factor for this occurrence but were still considered important to include in the report for the purpose of increasing awareness and enhancing safety). In addition 'other findings' may be included to provide important information about topics other than safety factors.

**Safety issues are highlighted in bold to emphasise their importance.** A safety issue is a safety factor that (a) can reasonably be regarded as having the potential to adversely affect the safety of future operations, and (b) is a characteristic of an organisation or a system, rather than a characteristic of a specific individual, or characteristic of an operating environment at a specific point in time.

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

From the evidence available, the following findings are made with respect to the aircraft preparation event involving Saab 340B, registration VH-ZLJ, at Cairns Airport, Queensland on 16 November 2022.

# **Contributing factors**

- The horizontal stabiliser bungs were most likely incorrectly installed or possibly the tether rope with the 'remove before flight' conspicuity flag was not hanging from the horizontal stabiliser as designed. This resulted in them not being detected during pre-flight preparations and the aircraft being dispatched with the bung installed.
- There were no formal procedures for the storage and accountability of horizontal stabiliser bungs after they were removed from the aircraft. (Safety issue)
- The design of the horizontal stabiliser bungs did not consider aspects that would ensure the identification of an installed bung, or the safe operation of the aircraft if the bungs were not removed prior to flight. (Safety issue)

# Safety issues and actions

Central to the ATSB's investigation of transport safety matters is the early identification of safety issues. The ATSB expects relevant organisations will address all safety issues an investigation identifies.

Depending on the level of risk of a safety issue, the extent of corrective action taken by the relevant organisation(s), or the desirability of directing a broad safety message to the aviation industry, the ATSB may issue a formal safety recommendation or safety advisory notice as part of the final report.

All of the directly involved parties were provided with a draft report and invited to provide submissions. As part of that process, each organisation was asked to communicate what safety actions, if any, they had carried out or were planning to carry out in relation to each safety issue relevant to their organisation.

The initial public version of these safety issues and actions are provided separately on the ATSB website, to facilitate monitoring by interested parties. Where relevant, the safety issues and actions will be updated on the ATSB website as further information about safety action comes to hand.

# No procedure for storage and accountability

### Safety issue description

There were no formal procedures for the storage and accountability of horizontal stabiliser bungs after they were removed from the aircraft.

Issue number:	AO-2022-058-SI-01
Issue owner:	Regional Express Pty Ltd
Transport function:	Aviation: Air transport
Current issue status:	Open – Safety action pending.
Issue status justification:	To be advised.

#### ATSB comment

No evidence of a procedure to appropriately store and account for horizontal stabiliser bungs was provided to the ATSB. The ATSB remains concerned that the operator's current procedures present an ongoing risk of a similar occurrence. As such, the ATSB makes the following safety recommendation.

# Safety recommendation to Regional Express Pty Ltd

The ATSB makes a formal safety recommendation, either during or at the end of an investigation, based on the level of risk associated with a safety issue and the extent of corrective action already undertaken. Rather than being prescriptive about the form of corrective action to be taken, the recommendation focuses on the safety issue of concern. It is a matter for the responsible organisation to assess the costs and benefits of any particular method of addressing a safety issue.

Recommendation number:	AO-2022-058-SR-23
Responsible organisation:	Regional Express Pty Ltd
Recommendation status:	Released

The Australian Transport Safety Bureau recommends that Regional Express Pty Ltd continues reviewing the use of horizontal stabiliser bungs and takes action to address the limitations associated with the current procedures around the storage and accountability of equipment removed from an aircraft.

# Horizontal stabiliser bung design considerations

#### Safety issue description

The design of the horizontal stabiliser bungs did not consider aspects that would ensure the identification of an installed bung, or the safe operation of the aircraft if the bungs were not removed prior to flight.

Issue number:	AO-2022-058-SI-02
Issue owner:	Regional Express Pty Ltd
Transport function:	Aviation: Air transport
Current issue status:	Open – Safety action pending.
Issue status justification:	To be advised.

#### ATSB comment

Following an initial risk assessment, Regional Express Pty Ltd obtained an engineering order to formalise the design and fabrication of the horizontal stabiliser bungs fitted to Saab 340B company aircraft. A copy of the risk assessment was not provided to the ATSB.

While the engineering order formalises the design, fabrication, and installation of the horizontal stabiliser bungs, it does not address the safety issue relating to the identification of installed horizontal stabiliser bungs, or continued safe operation of the aircraft if the horizontal stabiliser bungs were not removed before flight. As such, the ATSB makes the following safety recommendation.

# Safety recommendation to Regional Express Pty Ltd

The ATSB makes a formal safety recommendation, either during or at the end of an investigation, based on the level of risk associated with a safety issue and the extent of corrective action already undertaken. Rather than being prescriptive about the form of corrective action to be taken, the recommendation focuses on the safety issue of concern. It is a matter for the responsible organisation to assess the costs and benefits of any particular method of addressing a safety issue.

Recommendation number:	AO-2022-058-SR-24
Responsible organisation:	Regional Express Pty Ltd
Recommendation status:	Released

The Australian Transport Safety Bureau recommends that Regional Express Pty Ltd further reviews the horizontal stabiliser bungs design and pre-flight procedures to ensure that installed bungs are readily identifiable and will not adversely affect the continued safe operation of the aircraft if not removed prior to flight.

# **General details**

# Occurrence details

Date and time:	16 November 2022 – 1355 Eastern Standard Time	
Occurrence class:	Incident	
Occurrence categories:	Aircraft preparation, Foreign Object Damage / Debris	
Location:	Cairns Airport, Queensland	
	Latitude: 16º 52.404' S	Longitude: 145º 45.068' E

# **Aircraft details**

	1	
Manufacturer and model:	S.A.A.B. AIRCRAFT CO 340B	
Registration:	VH-ZLJ	
Operator:	REGIONAL EXPRESS PTY LTD (REX)	
Serial number:	340B380	
Type of operation:	Part 121 Australian air transport operations - Larger aeroplanes-Standard Part 121	
Activity:	Commercial air transport-Scheduled-Domestic	
Departure:	Cairns, Queensland	
Destination:	Bamaga/Injinoo, Queensland	
Persons on board:	Crew – 3	Passengers – 20
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	None	

# Glossary

ASM	Airport Services Manual
CASA	Civil Aviation Safety Authority
CCTV	Closed-circuit television
FCOM	Flight crew operations manual
FO	First officer
NOTAC	Notice to air crew

# **Sources and submissions**

### **Sources of information**

The sources of information during the investigation included:

- the flight crew of VH-ZLJ
- Regional Express Pty Ltd
- Aus Flight Handling
- Cairns Airport Pty Ltd
- Saab Aircraft Co.

# **Submissions**

Under section 26 of the *Transport Safety Investigation Act 2003*, the ATSB may provide a draft report, on a confidential basis, to any person whom the ATSB considers appropriate. That section allows a person receiving a draft report to make submissions to the ATSB about the draft report.

A draft of this report was provided to the following directly involved parties:

- the flight crew of VH-ZLJ
- Regional Express Pty Ltd
- Aus Flight Handling
- Saab Aircraft Co
- Swedish Accident Investigation Authority
- Civil Aviation Safety Authority.

A submission was received from:

• Regional Express Pty Ltd

The submission was reviewed and, where considered appropriate, the text of the report was amended accordingly.

# Australian Transport Safety Bureau

### About the ATSB

The ATSB is an independent Commonwealth Government statutory agency. It is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers.

The ATSB's purpose is to improve the safety of, and public confidence in, aviation, rail and marine transport through:

- independent investigation of transport accidents and other safety occurrences
- safety data recording, analysis and research
- 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, as well as participating in overseas investigations involving Australian-registered aircraft and ships. It prioritises investigations that have the potential to deliver the greatest public benefit through improvements to transport safety.

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

#### Purpose of safety investigations

The objective of a safety investigation is to enhance transport safety. This is done through:

- identifying safety issues and facilitating safety action to address those issues
- providing information about occurrences and their associated safety factors to facilitate learning within the transport industry.

It is not a function of the ATSB to apportion blame or provide a means for determining 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. The ATSB does not investigate for the purpose of taking administrative, regulatory or criminal action.

#### Terminology

An explanation of terminology used in ATSB investigation reports is available on the ATSB website. This includes terms such as occurrence, contributing factor, other factor that increased risk, and safety issue.