



Australian Government

Australian Transport Safety Bureau

Loss of separation involving Boeing 737 aircraft, VH-YFN and VH-VZV and Robinson R44, VH-WYR

near Essendon Airport, Victoria, on 26 January 2016

ATSB Transport Safety Report
Aviation Occurrence Investigation
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Addendum

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Safety summary

What happened

On the morning of 26 January 2016, the air traffic controllers at Melbourne Airport, Victoria conducted a runway change from runway 16 for arrivals and runway 27 for departures to runway 16 for arrivals and departures. The Melbourne Tower Coordinator and the Melbourne Approach East Controller were required to coordinate the runway change with the Essendon Aerodrome Controller. However, both Melbourne controllers forgot to conduct the coordination.

At Essendon Airport, the pilot of a Robinson R44 helicopter, registered VH-WYR (WYR), had been cleared to operate overhead the airport, not above 1,500 ft, as there were overcast conditions above that level.

At 0705 Eastern Daylight-saving Time, a Boeing 737 was cleared for take-off on Melbourne runway 16. About 1 minute later, another Boeing 737 was cleared for take-off on the same runway. The Essendon Aerodrome Controller observed the first Boeing 737 departing runway 16 on their Tower Situation Awareness Display. As the controller was unaware of the change of runway at Melbourne, they believed the Boeing 737 was an uncoordinated missed approach.

Shortly after, the second Boeing 737 departure appeared on the display. The Essendon Aerodrome Controller queried the active runway with the Melbourne Planner Controller, and found out that the active runway had been changed at Melbourne Airport without the required coordination with Essendon. At 0708, the Essendon Aerodrome Controller instructed the pilot of WYR to operate over or to the east of the Essendon runway 26 threshold, ensuring a 3 NM (5.6 km) separation with the runway 16 departures from Melbourne Airport.

A review of the surveillance data confirmed losses of separation between WYR and the two Boeing 737 aircraft. At their closest, the first was 2.4 NM (4.4 km) west of and 800 ft above WYR, the second 2.5 NM (4.6 km) west of and 800 ft above. Either a 3 NM (5.6 km) surveillance separation standard or a 1,000 ft vertical separation standard was required.

What the ATSB found

The ATSB found that, while there were requirements for coordination between Melbourne and Essendon Airports, there were no documented procedures, checklists, tools or memory prompts to assist controllers to coordinate runway and airspace changes. In this case, the Melbourne Tower Coordinator and Melbourne Approach East Controller each forgot to conduct the required coordination with the Essendon Aerodrome Controller. Neither controller could explain this lapse.

What's been done as a result

As a result of this occurrence, Airservices Australia conducted a number of safety actions, including examining the national procedures for coordinating runway and associated airspace changes at locations with units in close proximity. At Melbourne, temporary local instructions introduced a runway change coordination checklist and a runway configuration coordination prompt. At Essendon, any update to the Melbourne automatic terminal information service is automatically displayed in the message queue, increasing controllers' situation awareness and providing early opportunities to detect breakdowns in coordination between Melbourne and Essendon controllers.

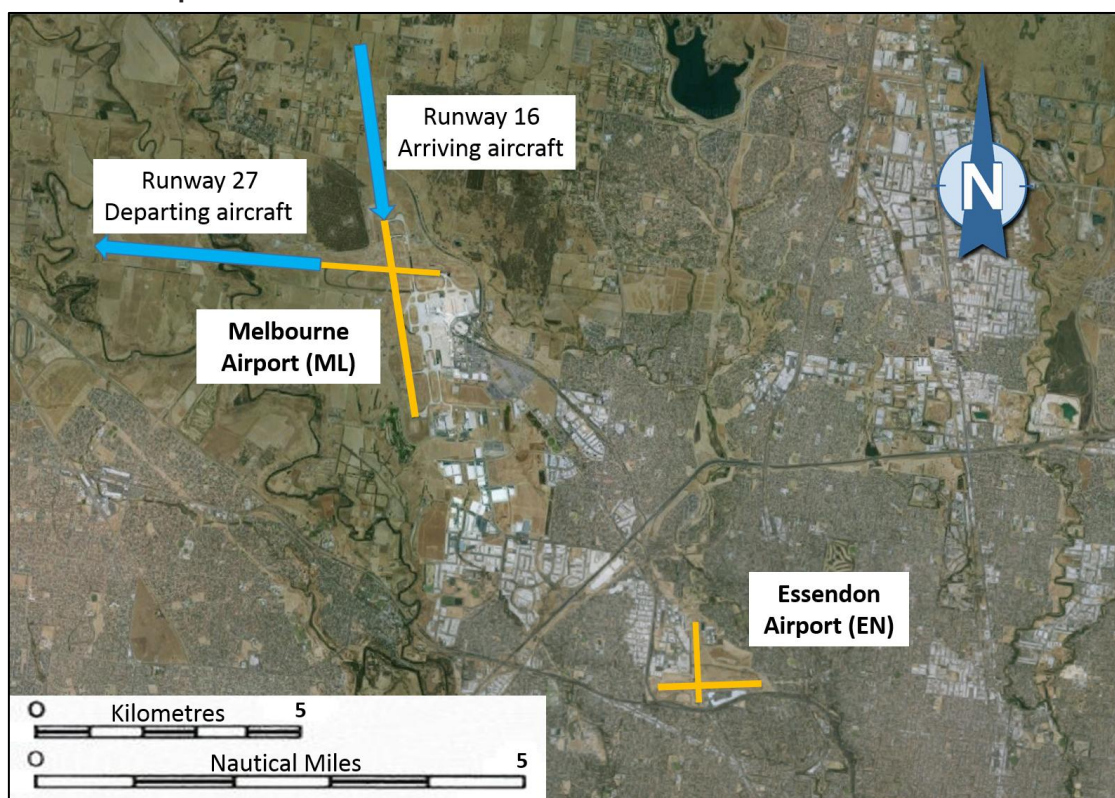
Safety message

This occurrence highlights the benefits of effective memory prompts and checklists as an aid to memory and in ensuring that critical items are not overlooked or forgotten.

The occurrence

Early on the morning of 26 January 2016, the active runways at Melbourne Airport, Victoria were runway 16¹ for arrivals and runway 27 for departures (Figure 1). The Melbourne Tower Coordinator (coordinator)² reviewed the forecast weather and noted that a runway change to runway 16 for arrivals and departures would be required due to increasing downwind on runway 27. At the time, there was broken cloud³ at 1,400 ft above ground level at Melbourne Airport.

Figure 1: The runway configuration in use at Melbourne Airport prior to the runway change, showing runway 16 for arrivals and 27 for departures, and the location of Essendon Airport



Source: Google earth, modified by the ATSB

At 0645 Eastern Daylight-saving Time,⁴ the Melbourne coordinator notified the Melbourne Planner (planner)⁵ that the runway change was required, due to a 10 kt downwind component on runway 27. The coordinator reported then coordinating the change with the Melbourne Surface Movement Controller, the Melbourne Aerodrome Controller (tower controller) and the Melbourne Clearance Delivery Controller. After the coordination, the coordinator proceeded to prepare a new Automatic Terminal Information Service (ATIS),⁶ which reflected the changed conditions.

The coordinator did not inform the Essendon Aerodrome Controller (tower controller) of the runway change (see the section titled *Coordination requirements*). Coordination is required with

¹ Runway number: the number represents the magnetic heading of the runway.

² The Melbourne Tower Coordinator was responsible for coordination with adjacent air traffic service units.

³ Cloud cover: in aviation, cloud cover is reported using words that denote the extent of the cover – broken indicates that cloud is covering between 60 per cent and 90 per cent of the sky.

⁴ Eastern Daylight-saving Time: Coordinated Universal Time (UTC) + 11 hours.

⁵ The Melbourne Planner and Flow Control positions were combined at the time.

⁶ ATIS: The provision of current, routine information to arriving and departing aircraft by means of continuous and repetitive broadcasts during the hours when the unit responsible for the service is in operation.

the Essendon tower controller because of Essendon Airport's proximity (4.3 km) to Melbourne Airport. The runway in use at Melbourne Airport affects the airspace available for use at Essendon Airport.

At 0653, the Melbourne tower controller, who was under training, contacted the Melbourne Approach East Controller (approach controller)⁷ to suspend auto release procedures⁸ at Melbourne in preparation for the runway change. During this coordination, the tower controller's training instructor and the approach controller made some brief non-operational comments.

At 0654, the Melbourne tower controller broadcast the new ATIS, which included the changed runway configuration. Three minutes later, at 0657, recorded information indicates an ATIS message was acknowledged on the approach controller's workstation. However, it was not possible to confirm if this message was the new ATIS. At 0658, the approach controller contacted the Melbourne tower controller to ask when the new ATIS was going to be available. The tower controller responded that it was available. During this discussion, there was a non-operational comment from the controller's instructor. The approach controller then confirmed they had the ATIS and resumed auto release.

As all Melbourne Terminal Airspace was combined under the jurisdiction of the Melbourne Approach East position, the approach controller only needed to inform the Melbourne tower controller and the Essendon tower controller of the runway change. However, the approach controller did not inform the Essendon tower controller of that change.

At Essendon Airport, at 0656, the pilot of a Robinson R44 helicopter, registered VH-WYR (WYR), requested taxi and airways clearance for operations at Essendon Airport. The Essendon tower controller⁹ cleared the pilot to operate overhead the airport (Figure 2), not above 1,500 ft above mean sea level (about 1,200 ft above ground level). The pilot had elected to operate overhead the airport due to the overcast cloud¹⁰ at 1,300 ft above ground level. In addition, the Essendon tower controller stated that, believing that runway 16 was only in use for arrivals at Melbourne Airport, they arranged with the pilot of WYR to land on the threshold of Essendon runway 26 (Figure 2). This arrangement was in order to ensure separation if there was a missed approach from Melbourne runway 16.

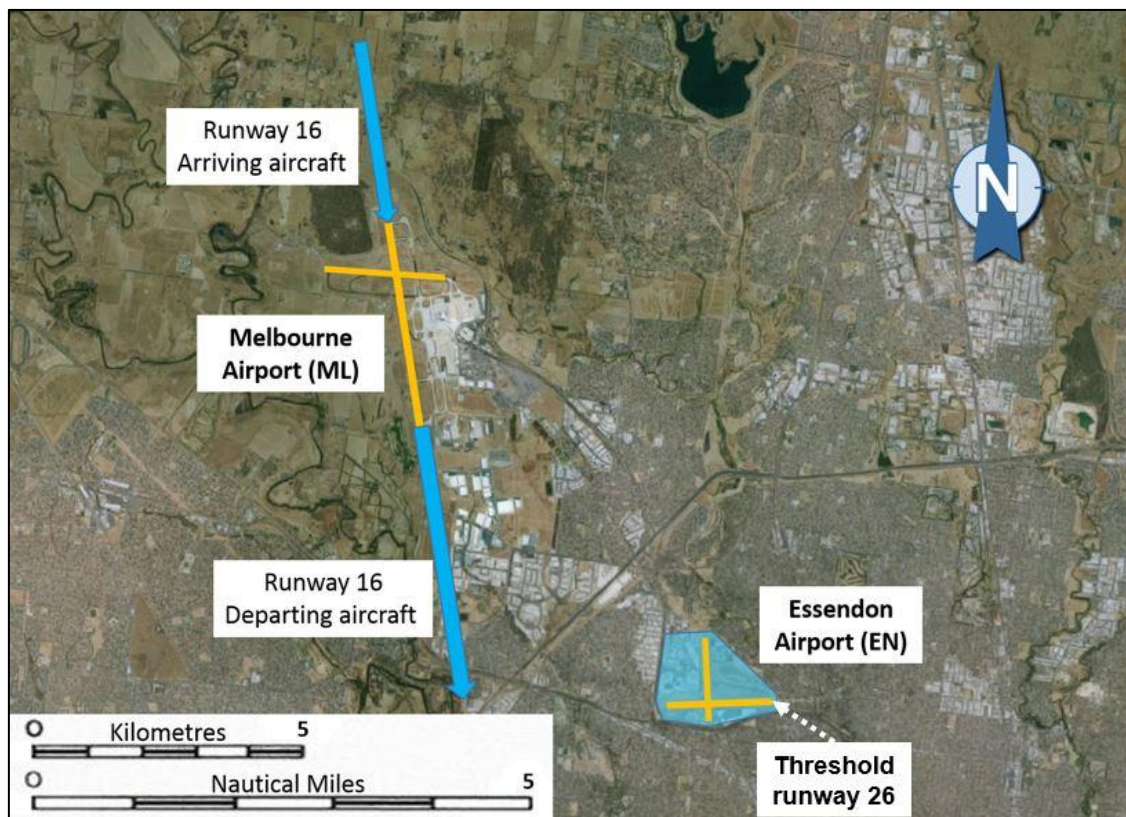
⁷ All Melbourne Terminal Airspace was combined with the Approach East position, due to the low traffic volume.

⁸ Auto release is a procedure whereby voice coordination between controllers is minimised to facilitate departures.

⁹ The Essendon Aerodrome Controller was alone in the tower and operating the aerodrome control and surface movement control positions until a second controller arrived. The second controller was rostered to commence their shift at 0700.

¹⁰ Overcast cloud: when almost all of the sky is covered with cloud.

Figure 2: Indicative flight paths for runway 16 operations at Melbourne Airport and the area overhead Essendon airport and the threshold of runway 26, where WYR was operating



Source: Google earth, modified by the ATSB

At 0700, the approach controller handed responsibility for the position to another controller and opened the Melbourne Departures North position. There was some non-operational discussion during the handover. The handover included a briefing on Essendon airspace, as required by the handover checklist, but did not mention coordination with the Essendon tower controller regarding the runway change.

At 0705, the Melbourne tower controller cleared the first aircraft for take-off on runway 16, a Boeing 737 (737), registered VH-YFN. About 1 minute later, the Melbourne tower controller cleared another 737, registered VH-VZV, for take-off on the same runway. At Essendon Airport, at 0706, a King Air aircraft requested taxi and airways clearance. During this request, the Essendon tower controller observed the first 737 departing runway 16 on their Tower Situational Awareness Display.¹¹ The controller looked out the tower window and observed WYR operating overhead the airport, but could not see the 737, as it had already entered cloud. As the Essendon tower controller was unaware of the change of runway at Melbourne, they believed that the 737 was an uncoordinated missed approach.

The Essendon tower controller then contacted the planner to coordinate the King Air departure. During this coordination, the second 737 departure appeared on the Essendon Tower Situation Awareness Display. The Essendon tower controller queried the planner if the active runway had changed to 16 only. The planner confirmed the change in runway configuration, to which the Essendon tower controller stated they had not been informed.

¹¹ The Essendon Tower Situation Awareness Display presents surveillance data received from Melbourne and is validated for the purposes of separation. VH-YFN appeared on the display at about 700 ft above ground level at an altitude of about 1,000 ft.

At 0708, the Essendon tower controller instructed the pilot of WYR to operate over or to the east of the Essendon runway 26 threshold, ensuring a 3 NM (5.6 km) separation with the runway 16 departures from Melbourne Airport.

A review of the surveillance data confirmed two losses of separation between WYR and the 737 aircraft (Figures 3 and 4). The required separation was 3 NM (5.6 km) or 1,000 ft, but separation reduced to 2.4 NM (4.4 km) and 800 ft between WYR and the first 737, and 2.5 NM (4.6 km) and 800 ft with the second.

Figure 3: Air traffic control surveillance image at 0706:56, showing VH-YFN 2.4 NM (4.4 km) from and 800 ft above VH-WYR at Essendon Airport¹²



Source: Airservices Australia, modified by the ATSB

¹² The respective heights are VH-YFN at 2,200 ft, represented by the figure '022' and VH-WYR at 1,400 ft, represented by the figure '014'.

Figure 4: Air traffic control surveillance image at 0708:07, showing VH-VZV 2.5 NM (4.6 km) from and 800 ft above VH-WYR at Essendon Airport¹³



Source: Airservices Australia, modified by the ATSB

Coordination requirements

Due to the proximity of Melbourne and Essendon Airports, requirements are in place to ensure Melbourne air traffic controllers inform the Essendon tower controller prior to a change of runways in use. These requirements state that the approach controller and the coordinator are to inform the Essendon tower controller of any runway change. This is to ensure the required separation standard is maintained between aircraft in the area. The approach controller was also required to coordinate the airspace change with the Melbourne Departures North and Departures South controllers, the Melbourne tower controller, Melbourne Centre and the Avalon Aerodrome Controller.¹⁴

¹³ The respective heights are VH-VZV at 2,100 ft, represented by the figure '021' and VH-WYR 1,300 ft, represented by the figure '013'.

¹⁴ Avalon Tower was not open at the time of the occurrence and all other airspace was combined into the Melbourne Approach East position.

There was no requirement for the Essendon tower controller to advise the Melbourne tower controller about WYR, as the helicopter was operating within the Essendon Airport boundary and the Essendon tower controller is required to separate Essendon traffic with departures from Melbourne's runway 16.

When aircraft are departing Melbourne Airport from runway 16, the Essendon tower controller may be able to visually separate¹⁵ aircraft operating at Essendon Airport from the aircraft departing Melbourne Airport. However, the cloud cover at the time meant the Essendon tower controller was not able to provide visual separation between WYR and aircraft departing from runway 16 at Melbourne. As a result, either a 3 NM (5.6 km) surveillance separation standard or a 1,000 ft vertical standard was required.

Controller information

All of the controllers involved in the occurrence were appropriately qualified for their roles and met the stipulated currency requirements.¹⁶

The approach controller and coordinator stated that they forgot to advise the Essendon tower controller of the runway change at Melbourne and did not realise their mistake until they themselves were informed. The Essendon tower controller could not recall a similar breakdown of coordination.

The coordinator stated that there was no documented procedure for when they needed to inform the Essendon tower controller of a runway change at Melbourne Airport. However, the coordinator was not in the habit of conducting the coordination at that point. The coordinator stated that in the previous paper-based system, there was a tick box on the paper form to remind controllers to notify the Essendon tower controller. However, this check box was not carried through onto the new electronic system.

The approach controller identified there was no checklist or visual aid to assist controllers to remember the requirement for coordination with the Essendon tower controller. They reported that they would typically notify the Essendon tower controller after receiving the ATIS, however there were no procedures requiring coordination at this point.

The Melbourne controllers noted that, at the time of the occurrence, there were other controllers beginning their shifts and there was a slightly elevated level of non-operational discussion. As the traffic volume was low, they did not consider the discussion to be a distraction.

The approach controller and the coordinator stated that their workload on the morning was light. However, the coordinator noted that the workload for a short-notice runway change, such as preceded the occurrence, was slightly higher.

Consideration of controller rostering and fatigue

The ATSB reviewed the actual hours worked by the coordinator and the approach controller for indications of fatigue on the day of the occurrence. The coordinator was on their fourth shift after a period of 4 weeks recreational leave. The coordinator did not believe they were affected by fatigue at the time of the occurrence, and there was no evidence to suggest they were fatigued.

In the days leading up to the occurrence, the approach controller had completed three overtime night shifts, had 25.5 hours off work, completed one morning shift and then started work at 0600 on the morning of the occurrence. The hours the approach controller actually worked did not meet the Airservices Australia (Airservices) fatigue risk management system tactical rostering

¹⁵ Visual separation: A means of spacing aircraft through the use of visual observation by a tower controller.

¹⁶ The Melbourne Tower Coordinator was on their fourth shift back following a period of leave. This included one shift of familiarisation, including time in the Melbourne Tower Coordinator position.

principles.¹⁷ However, the rostering principles provided guidance for changes to published rosters. These included a risk assessment and the implementation of any required mitigation strategies. The Airservices risk assessment for the occurrence shift assessed the predicted fatigue level as 'low'.

An ATSB assessment of the fatigue risk for the coordinator and the approach controller on the day of the occurrence also rated the controllers' fatigue level as 'low'. In addition, the approach controller self-assessed that they were not experiencing the effects of fatigue at the time.

Non-operational discussion

The Melbourne Tower Shift Manager and Melbourne Terminal Control Unit Shift Manager reported being aware of, and observing, a usual level of general conversation. Conversation levels were reported consistent with the low volume of early morning traffic at the time. However, the levels were increasing with the arrival of additional rostered controllers. Both managers reported that, while the resulting conversation levels were elevated, they:

- were typical following a shift change
- in the period leading up to the handover of the approach/departure sectors, they did not need to intervene.

Airservices review

Airservices investigated the occurrence and found that while there were requirements for coordinating a runway or airspace change, there were no documented procedures detailing how it was to be achieved or when coordination was to take place. In addition, there were no system tools (for example memory prompts or checklists) to support a controller carrying out a runway change.

Other breakdown of coordination occurrences

On 18 November 2013, the ATSB received a confidential report (REPCON) (reference number [AR201300090](#)) relating to a breakdown in communication between the Melbourne and Essendon controllers. The reporter stated that the breakdown in communication might have resulted in a loss of separation assurance or potentially a loss of separation between aircraft operating at Melbourne and Essendon Airports. The breakdown in communication occurred within Melbourne Tower, and resulted in the the Melbourne Approach East Controller being unaware of the need to identify aircraft approaching Essendon Airport to the Melbourne Aerodrome Controller. Airservices confirmed that there was no loss of separation assurance or separation due to this breakdown in communication.

As a result of this confidential report, Airservices tasked the Check and Standardisation Supervisors of the involved air traffic control group with reviewing the coordination requirements. The aim of the review was to identify potential opportunities to minimise the likelihood of a similar breakdown of communication reoccurring. In the interim, Airservices also created a temporary console display at Melbourne to highlight the separation responsibility for Essendon traffic arriving from Melbourne Terminal Control Unit airspace.

The circumstances of this REPCON, and the related safety action, did not have any direct bearing on the breakdown of coordination on 26 January 2016.

A review of the ATSB occurrence database for the 5 years prior to the occurrence on 26 January 2016 found no similar occurrences.

¹⁷ The fatigue risk management system tactical rostering principles stated that a controller should have an extended rest period (59 hours or more) after a block of two or three night shifts.

Safety analysis

The losses of separation between two Boeing 737 aircraft departing Melbourne Airport and a Robinson R44 operating overhead Essendon Airport, Victoria occurred due to a breakdown in coordination between the Melbourne and Essendon air traffic controllers. The Melbourne Tower Coordinator (coordinator) and the Melbourne Approach East Controller (approach controller) were required to coordinate the change with the Essendon Aerodrome Controller (tower controller). However, both Melbourne controllers forgot to conduct the coordination, resulting in the Essendon tower controller:

- being unaware of the increased risk of a loss of separation between aircraft departing Melbourne Airport and aircraft operating overhead Essendon Airport
- clearing the Robinson R44 helicopter to operate overhead Essendon Airport, which lead to a loss of separation with the two Boeing 737s departing from runway 16 at Melbourne Airport.

This analysis will examine the factors that increased the risk of these memory lapses occurring, the breakdown in coordination and the subsequent losses of separation.

Runway coordination procedures

The coordinator and the approach controller were required to coordinate the runway change at Melbourne with a number of other controllers. However, there was no documented procedure detailing how to coordinate the runway change and no specific point in the process at which to notify the Essendon tower controller.

In addition to the lack of documented procedures on how to coordinate the runway change, the coordinator and the approach controller did not have any checklist, system tools or memory prompts to remind them to coordinate the change. In the old, paper-based tower environment, there was a memory prompt on the controller's paper form to remind the coordinator to coordinate the runway change. However, this was not carried through to the new electronic system.

Memory prompts and checklists provide an aid to memory and ensure critical items are not overlooked or forgotten. It is likely that a documented procedure detailing how to coordinate the runway change, along with system tools or memory prompts, would have reminded the Melbourne controllers to coordinate the runway change with the Essendon tower controller.

Other human factors

The ATSB considered a number of other human factors that could have contributed to the coordinator and the approach controller forgetting to coordinate the runway change with the Essendon tower controller. These factors are considered in the following discussion, however there was insufficient evidence to indicate these contributed to the occurrence.

Workload

The coordinator and the approach controller, along with the Melbourne Tower and the Terminal Control Unit Shift Managers, indicated that there was only light traffic on the morning of the occurrence. However, the coordinator had to coordinate the runway change with a number of other controllers. The workload associated with completing this task was elevated due to it being a short-notice runway change. In addition, at the time of the runway and airspace change, the approach controller was preparing to handover the position to another controller. Despite the potentially increased workload, both the coordinator and the approach controller assessed their workload as light.

Distraction

During the period when the runway and airspace change was being carried out, there were multiple instances of non-operational discussions. However, at the time, the traffic level was low

and apart from the runway change, the workload was relatively light. The Tower and Terminal Control Unit Shift Managers believed that, while there was some conversation and non-operational discussion, it was not sufficient to require intervention.

At the time of the airspace change, all Melbourne terminal airspace was combined into the Melbourne Approach East position and Avalon Tower had not opened. This meant that the approach controller only needed to coordinate the airspace change with the Melbourne tower controller and the Essendon tower controller. During discussions with the Melbourne tower controller, a number of non-operational comments were made by the controller's training instructor. These comments had the potential to distract the approach controller from their usual processes and contribute to their forgetting to coordinate with the Essendon tower controller. However, it was not possible to determine if this was the case.

Fatigue

It is unlikely that fatigue was a factor for the coordinator, as they had just returned from a period of leave. In comparison, the approach controller had a heavier workload in the preceding days, with a mix of day and night shifts. However, given the coordinator made the same omission as the approach controller, it is not possible to determine whether fatigue was a contributory factor in the approach controller's memory lapse.

Findings

From the evidence available, the following findings are made with respect to the losses of separation involving Boeing 737 aircraft, registered VH-YFN and VH-VZV, and Robinson R44 helicopter, registered VH-WYR, near Essendon Airport, Victoria, on 26 January 2016. These findings should not be read as apportioning blame or liability to any particular organisation or individual.

Contributing factors

- **Airservices Australia did not provide procedures with associated local instructions to Melbourne air traffic controllers regarding how to coordinate runway changes at Melbourne Airport. Furthermore, an absence of system tools increased the risk of the controllers forgetting to coordinate those changes with the Essendon Aerodrome Controller. [Safety issue]**
- The Melbourne Tower Coordinator and the Melbourne Approach East Controller did not inform the Essendon Aerodrome Controller of the runway change to runway 16 for arrivals and departures at Melbourne Airport. This meant that the Essendon Aerodrome Controller was unaware of the increased risk of a loss of separation between aircraft departing Melbourne Airport and aircraft operating overhead Essendon Airport.
- The Essendon Aerodrome Controller, being unaware of the runway change at Melbourne Airport, cleared the pilot of a Robinson R44 helicopter to operate overhead Essendon Airport, leading to a loss of separation between the helicopter and two Boeing 737 aircraft departing from runway 16 at Melbourne Airport.

Safety issues and actions

The safety issues identified during this investigation are listed in the Findings and Safety issues and actions sections of this report. The ATSB expects that all safety issues identified by the investigation should be addressed by the relevant organisation(s). In addressing those issues, the ATSB prefers to encourage relevant organisation(s) to proactively initiate safety action, rather than to issue formal safety recommendations or safety advisory notices.

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 repeated 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 information comes to hand.

Absence of air traffic control procedures and tools for runway changes at Melbourne Airport

Number:	AO-2016-005-SI-01
Issue owner:	Airservices Australia
Operation affected:	Aviation: Airspace management
Who it affects:	Air traffic controllers at Melbourne and Essendon Airports

Safety issue description:

Airservices Australia did not provide procedures with associated local instructions to Melbourne air traffic controllers regarding how to coordinate runway changes at Melbourne Airport. Furthermore, an absence of system tools increased the risk of the controllers forgetting to coordinate those changes with the Essendon Aerodrome Controller.

Proactive safety action taken by Airservices Australia

Action number: AO-2016-005-NSA-004

In response to this safety issue, Airservices Australia advised the following proactive safety action:

- A temporary local instruction was issued to Melbourne air traffic controllers that introduced a runway change coordination checklist. The checklist is intended to provide a recordable process for implementing and coordinating runway changes. This checklist has since been incorporated into the Melbourne and Canberra Terminal Control Unit local instructions.
- A temporary local instruction was issued to Melbourne air traffic controllers introducing a runway configuration coordination prompt. This prompt requires the Melbourne Tower Coordinator to remove the text 'COORDINATE WITH MPL [Melbourne Planner] AND EN [Essendon]' when preparing the digital automatic terminal information service, thereby prompting the Melbourne Tower Coordinator to conduct the required coordination. In addition a pop-up memory prompt is being developed that will amend this temporary procedure.
- Any update to the Melbourne Airport automatic terminal information service is automatically displayed in the message queue in the Essendon Tower cabin. This system change is intended to increase Essendon air traffic controllers' situation awareness and to provide them with early opportunities to detect breakdowns in communication between them and Melbourne Airport air traffic controllers.

Current status of the safety issue

Issue status: Adequately addressed

Justification: The action by Airservices Australia minimises the risk associated with the safety issue.

General details

Occurrence details

Date and time:	26 January 2016 – 0706 EDT	
Occurrence category:	Incident	
Primary occurrence type:	Loss of separation	
Location:	Near Essendon Airport, Victoria	
	Latitude: 37° 43.673' S	Longitude: 144° 53.62' E

Melbourne Tower Coordinator details

Initial rating:	January 2005
Ratings:	Aerodrome Control
Endorsements:	Aerodrome Control, Coordinator, Surface Movement Control, Airways Clearance Delivery
Medical certificate:	Valid
Last competency assessment:	December 2015

Melbourne Approach East Controller details

Initial rating:	September 1998
Ratings:	Approach Radar Control
Endorsements:	Melbourne Approach East, Melbourne Approach West, Melbourne Departure North, Melbourne Departure South, Melbourne Flow Control, Melbourne Planner
Medical certificate:	Valid
Last competency assessment:	September 2015

Aircraft details

Manufacturer and model:	Robinson R44
Year of manufacture:	2003
Registration:	VH-WYR
Serial number:	10085
Type of operation:	Aerial work
Damage:	None

Manufacturer and model:	Boeing 737-8FE
Year of manufacture:	2013
Registration:	VH-YFN
Serial number:	41009
Type of operation:	Air Transport High Capacity
Damage:	None

Manufacturer and model:	Boeing 737-838
Year of manufacture:	2011
Registration:	VH-VZV
Serial number:	34189
Type of operation:	Air Transport High Capacity
Damage:	None

Sources and submissions

Sources of information

The sources of information during the investigation included the:

- air traffic controllers involved in the occurrence
- Airservices Australia.

Submissions

Under Part 4, Division 2 (Investigation Reports), Section 26 of the *Transport Safety Investigation Act 2003* (the Act), the ATSB may provide a draft report, on a confidential basis, to any person whom the ATSB considers appropriate. Section 26 (1) (a) of the Act 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 involved air traffic controllers, Airservices Australia and the Civil Aviation Safety Authority.

Submissions were received from Airservices Australia and the Civil Aviation Safety Authority. The submissions were reviewed and where considered appropriate, the text of the draft report was amended accordingly.

Australian Transport Safety Bureau

The 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; 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.

Purpose of safety investigations

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

Developing safety action

Central to the ATSB's investigation of transport safety matters is the early identification of safety issues in the transport environment. The ATSB prefers to encourage the relevant organisation(s) to initiate proactive safety action that addresses safety issues. Nevertheless, the ATSB may use its power to make a formal safety recommendation either during or at the end of an investigation, depending on the level of risk associated with a safety issue and the extent of corrective action undertaken by the relevant organisation.

When safety recommendations are issued, they focus on clearly describing the safety issue of concern, rather than providing instructions or opinions on a preferred method of corrective action. As with equivalent overseas organisations, the ATSB has no power to enforce the implementation of its recommendations. It is a matter for the body to which an ATSB recommendation is directed to assess the costs and benefits of any particular means of addressing a safety issue.

When the ATSB issues a safety recommendation to a person, organisation or agency, they must provide a written response within 90 days. That response must indicate whether they accept the recommendation, any reasons for not accepting part or all of the recommendation, and details of any proposed safety action to give effect to the recommendation.

The ATSB can also issue safety advisory notices suggesting that an organisation or an industry sector consider a safety issue and take action where it believes it appropriate. There is no requirement for a formal response to an advisory notice, although the ATSB will publish any response it receives.