



Transport Accident  
Investigation  
Commission

# Annual Report Ripoata Ā-tau

## 2019/2020

Prepared and published in accordance with the  
requirements of the Crown Entities Act 2004



Transport Accident Investigation Commission  
Te Kōmihana Tiro tiro Aituā Waka  
Annual Report 2020

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Transport Accident  
Investigation  
Commission

9 December 2020

Hon Michael Wood  
Minister of Transport  
Executive Wing  
Parliament Buildings  
Wellington

Dear Minister

***Annual Report 2019/2020***

We present the Annual Report of the Transport Accident Investigation Commission for the 12 months ended 30 June 2020.

It has been prepared and is signed in accordance with the provisions of the Crown Entities Act 2004.

Jane Meares  
**Chief Commissioner**

Stephen Davies Howard  
**Deputy Chief Commissioner**



# **Our vision**

## **Tō mātou tirohanga**

No repeat accidents – ever! Whakakore aituā tukurua!

# **Our mission**

## **Tā mātou whāinga**

Safer transport through investigation, learning and influence

# **Our values**

## **Ā mātou uara**

Fairness  
Impartiality  
Independence  
Competence  
Integrity  
Timeliness  
Certainty

# Our purpose

## Tā tātou kaupapa

Ko te aronga a Te Kōmihana Tiro tiro Aituā Waka, ki te whakatau me te āta tiro tiro he aha te pūtake o ngā Aituā Waka. A me pēhea rā te karo, kia kore ai aua takanga e pa mai anō a tōna wā.

The purpose of the Transport Accident Investigation Commission is to determine the circumstances and causes of accidents and incidents with a view to avoiding similar occurrences in the future.

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Jane Meares  
**Chief Commissioner**

## **Chief Commissioner's overview**

### **Te tirohanga a te Kōmihana matua**

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The 2019/20 year presented many and varied challenges for the Commission and staff, testing the work we have done in recent years to build a resilient organisation. I am gratified to report that efforts to strengthen systems, processes and cultural capital meant we successfully overcame these challenges with minimal disruption to our functioning.

In early 2020, we moved all our systems and data to the cloud, strengthening our resilience and establishing the foundation for future systems development. The move was a significant project for us, but was achieved within budget and time.

The decision to move to the cloud proved its merit as we – along with the rest of the world – responded to the COVID-19 pandemic. Under Alert Level 3 and 4 restrictions, were able to move seamlessly to working remotely and continued core operations with relative ease. Commission hearings and board meetings continued, and staff worked from home. We were designated an essential service and opened two inquiries over the 'lockdown' period, collecting evidence remotely where possible. We also continued our international engagement online, although some training was deferred.

Moving data and systems to the cloud was the first major step in the development of a contemporary Knowledge Transfer System – with the end goal of transferring the knowledge gained through our work to make transport safer. We were pleased and encouraged to have been successful in our funding bid for 2020/21. The new funding enables us to develop and implement the information technology systems that will take us into the future. This includes inquiry, investigation and corporate management and reporting assets. But, importantly, it also includes the people and expertise we need to get the best from these assets.

We are now in the process of paving the way for further development in our organisational capability. The Knowledge Transfer System will be a significant step forward for the Commission as we mature and adapt to the increasingly technological and data-driven nature of the transport system. Its implementation requires careful consideration. We were already progressing some planning, but were able to start in earnest once the funding was confirmed. As well as moving to the cloud, we began developing three individual but integrated strategies: a Data Strategy, a Communications Strategy (now complete), and a Research



Strategy. All three strategies fall within an overarching Digital Transformation Strategy, the enabler of the Knowledge Transfer System.

The retirement or resignation during the year of two senior investigation staff presented us with further challenges. However, these had been signalled well in advance, and so were managed without unnecessary risk or disruption to the functioning of the Commission.

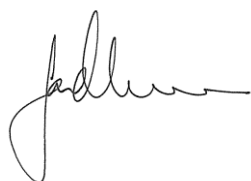
Despite the challenging circumstances of the pandemic and organisational change, we continued our function of investigating accidents and incidents. We dealt with 39 domestic inquiries over the year, and assisted a further nine in overseas jurisdictions. The timeliness of closed inquiries improved by 20–25 percent in the rail and maritime modes, compared with 2018/19. However, the average age of closed inquiries in the aviation mode increased.

As with many other organisations, the Commission is watching to see the medium- to long-term effects of the COVID-19 pandemic. The immediate effect for the transport system has been a reduction in transport activity. This downturn in transport activity could mean a corresponding reduction in the number of accidents, but this is not necessarily the case. Some consequences of the pandemic might increase the risk of accidents: for example, operators facing financial pressures might give safety a lower priority; and operators' skills could degrade because of the reduced activity.

We do not expect the COVID-19 pandemic to change our strategic direction or the purpose of our activities. However, our operating environment is undeniably changing. The Commission is preparing to refresh our statement for intent for the four-year period beginning July 2021. We will be considering the new environment and how we operate within it.

Finally, I would like to acknowledge the international recognition given this year to Lois Hutchinson, the Chief Executive. In October 2019, the Australian Institute of Health and Safety awarded Lois an international honorary fellowship. The Institute's Chair of the College of Fellows travelled from Australia to present the award, citing Lois' safety leadership, including systemic analysis of safety data and her collegiate approach with other members of the international community.

The award is the Institute's first international honorary fellowship. The Commissioners congratulate Lois on her significant achievement. We also thank her, for her leadership of the organisation, and all the staff for their dedication and professionalism through what has been, at times, a challenging year.

A handwritten signature in black ink, appearing to read 'J Meares', with a stylized, flowing script.

Jane Meares  
**Chief Commissioner**



# Our organisation Tō mātou rōpū

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## Our purpose

Our purpose is to determine the circumstances and causes of transport occurrences

Our legislation establishes us as a standing commission of inquiry

The Commission's purpose is to determine the circumstances and causes of transport accidents and incidents with a view to avoiding similar occurrences in the future, rather than to ascribe blame to any person.<sup>1</sup> The Transport Accident Investigation Commission Act 1990 (the Act) enables the Commission to undertake its task.

The Act establishes the Commission as a standing commission of inquiry. It requires the Commission to investigate certain transport occurrences; and then inform transport system participants – domestically and internationally – of what happened, the lessons identified, and what might need to change to help avoid a recurrence. To achieve its purpose, the Commission must:

- decide whether to investigate (the Commission must do so if it believes an accident or incident has significant implications for transport safety or that an inquiry would allow it to make recommendations that would improve transport safety)
- co-ordinate and direct the investigations it initiates and decide which other parties (if any) should be involved in its investigations
- consider evidence gathered by investigators, advice from experts, and the submissions of consulted people and organisations; and hold private or public hearings
- publish its findings and recommendations (the Commission has recommendatory powers only).

To support its functioning, the Commission has broad investigative powers under the Act, including the power of entry and inspection, and the power to seize, remove, and protect evidence. It also has wide powers under the Commissions of Inquiry Act 1908.

On occasions, coroners, the New Zealand Police, transport safety authorities (the regulators<sup>2</sup>) or WorkSafe New Zealand, may also investigate the same transport accidents and incidents as the Commission is investigating.

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<sup>1</sup> Section 4 of the Transport Accident Investigation Commission Act 1990

<sup>2</sup> Maritime NZ, the Civil Aviation Authority, and Waka Kotahi NZ Transport Agency

## Our ethos

Independence and impartiality underpin our ethos

The principles of independence and impartiality underpin the ethos of accident investigation the world over. Ensuring evidence is secured and accessible for critical examination without hindrance or undue influence from vested interests is the cornerstone of state-mandated accident investigation.

People can speak to us freely because we are independent and the evidence we gather is protected

International transport conventions put these principles into practice by obligating signatory States to conduct independent and impartial investigations.<sup>3</sup> New Zealand fulfils this obligation through the Act, which establishes the Commission as a commission of inquiry and expressly requires the Commission to act independently in performing its statutory functions.

Under the Act, all the evidence gathered during an investigation has extensive legal protection from disclosure. Further, no finding, recommendation, or report published by the Commission can be used in legal proceedings.

The Commission's independence and protection of evidence mean people can speak to us freely about what happened in an accident without fear of prosecution.

## Our people

We are a small independent Crown entity, fully funded by the Crown

The Commission is a small independent Crown entity, fully funded by the Crown. Members have two roles: as Commissioners, to determine the circumstances and causes of the accidents and incidents before them; as the Board of the Transport Accident Investigation Commission, to fulfil the requirements of the Crown Entities Act 2004.

The Commission sits two days a month from February through to December each year. Usually at least 75 per cent of the Commission's time is devoted to hearing cases, with the remaining time for board matters.

The Commission had four members at 30 June 2020

The Governor-General appoints the members of the Commission. At 30 June 2020, there were four Commissioners:

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<sup>3</sup> Paragraph 5.4, Annex 13 to the Convention on International Civil Aviation; Chapter 16 International Maritime Organization Casualty Investigation Code

- **Ms Jane Meares** Chief Commissioner (first appointed a Commissioner in February 2015, and Chief Commissioner in November 2016; term expires in October 2021).
- **Mr Stephen Davies Howard** Deputy Chief Commissioner (first appointed a Commissioner in August 2015, and appointed Deputy Chief Commissioner in November 2018; term expires in October 2023).
- **Mr Richard Marchant** Commissioner (appointed in November 2016; term expires in June 2022).
- **Ms Paula Rose QSO** Commissioner (appointed in May 2017; term expires in June 2024).

A Chief Executive and 26 staff support the Commissioners

A small organisation supports the Commissioners, who employ a Chief Executive. At 30 June 2020, the Chief Executive had 25 staff, including four Business Services staff who were part time. One senior role (Manager, Air Investigations) was vacant; it has since been filled.

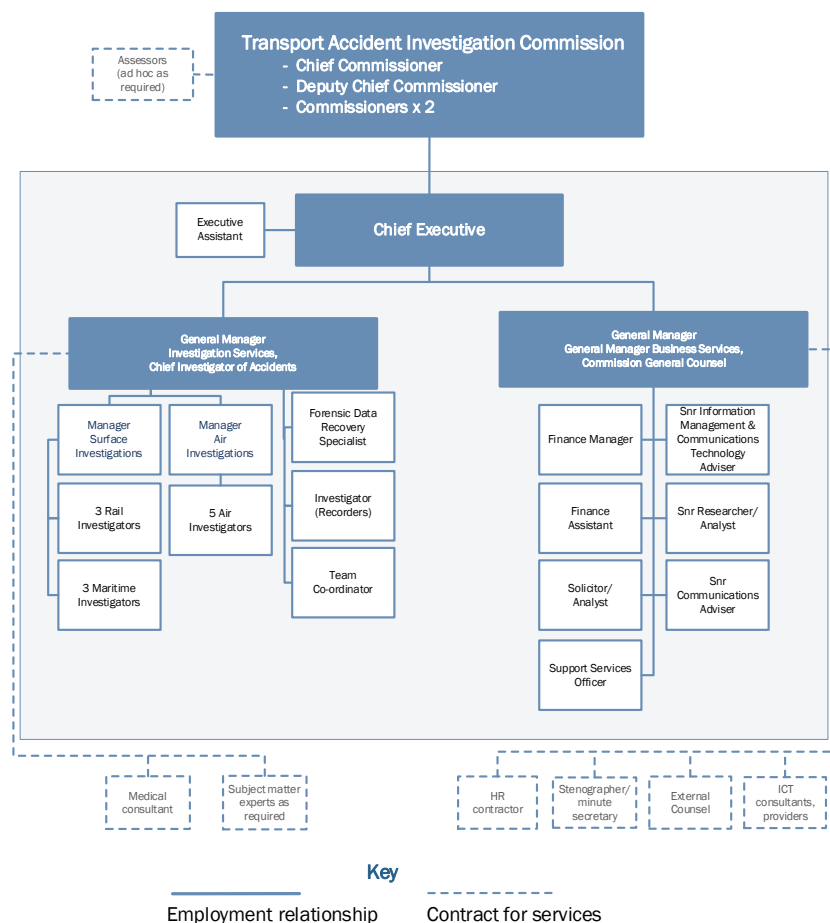


Figure 1: Organisation chart at 30 June 2020

The Chief Executive has been internationally recognised for her safety leadership

In October 2019, the Australian Institute of Health and Safety Commission's awarded the Chief Executive an international honorary fellowship. The Institute's Chair of the College of Fellows, Kym Bills, travelled from Australia to present the award, stating:

Lois Hutchinson is being recognised for outstanding safety leadership, including through professional investigator training, systemic analysis of safety data, and her collegiate approach with other members of the International Transportation Safety Association.

The award is the Institute's first international honorary fellowship.



*Figure 2: Lois Hutchinson (right) receiving her award from Kym Bills, the Chair of the Australian Institute of Health and Safety (left). Transport Minister Phil Twyford (centre) attended the presentation*

## Our work **Ā mātou mahi**

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### ***Established procedures: investigation and inquiry***

A statutorily prescribed notification process initiates our work

A statutorily prescribed notification process initiates the Commission's work.

The Commission opens an inquiry when the notified occurrence meets certain thresholds and we believe the circumstances have – or are likely to have – significant implications for transport safety; or an inquiry could allow the Commission to make findings or recommendations to improve transport safety.

A range of considerations guides the decision to open an inquiry.

Once an inquiry is opened, the Commission's work follows an established procedure of formal fact-finding inquiry

Once the threshold to open an inquiry is met, the Commission follows an established procedure of formal fact-finding inquiry.

Key features of the inquiry process are:

- gathering facts through investigation and analysis
- forming preliminary findings as to circumstances and cause(s)
- consulting with those directly affected by the inquiry's initial findings
- considering submissions from affected persons (in the interests of natural justice)
- determining circumstances and cause(s) with findings, and making recommendations for remedial action where appropriate
- publishing findings and recommendations.

The general areas of our work are activation, investigation, inquiry, and communication. Each of these is covered in more detail below.

The Commission's capacity is an average of 30 open cases at any time, with tolerance for substantial cases of procedural or technical complexity.

## Notifications: activating an inquiry

Notifications come mainly from transport sector regulators

From the over 350 notifications we received, we opened 11 inquiries

The Commission receives notifications of certain incidents and accidents in the aviation, rail, and maritime transport mode from various sources. Most notifications are from the modal regulators. We categorise each notification against one or more event types. The Commission monitors trends, and considers them when deciding whether to open an inquiry into a particular occurrence. The modal reviews (refer page 50) give data on the most frequent notifications, according to event type, for each transport mode.

During 2019/20, we received 368 notifications of accidents and incidents, compared with 457 in 2018/19 – see the section below on the effect of the COVID-19 pandemic.<sup>4 5</sup>

The Commission opened 11 inquiries in 2019/20, three per cent of the notifications received. The graph below shows the number of notifications received and inquiries opened by mode, compared with 2018/19.

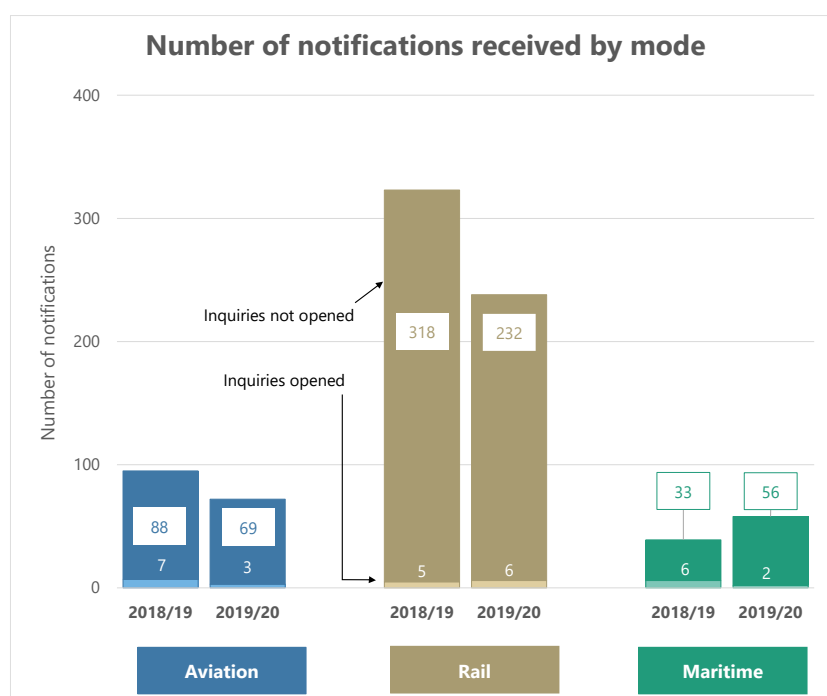


Figure 3: Numbers of notifications received by mode

<sup>4</sup> The terms 'incident' and 'accident' are defined in the legislation covering each of the modes. Here, a generalised definition is used. Accidents are events where injury, death, or serious damage occurred, or could have occurred. An incident is an occurrence other than an accident.

<sup>5</sup> The number of notifications may vary slightly from that reported previously. This is the result of periodic corrections to entries in the notifications database.



Before COVID-19, we received an average of about 30 notifications per month, dropping to about 20 per month

Until March 2020, we were receiving about 30 notifications per month. For the final four months of the year, when transport activity reduced because of the COVID-19 pandemic, this number dropped to an average of about 20 per month. For the four months March to June 2020, we received about half the number of notifications compared with the same period last year.<sup>6</sup>

For the 2019/20 year, we opened fewer inquiries than average (11 compared with a five-year average of 14).

The reduction in opened inquiries is likely to be due in part to the reduced transport activity resulting from COVID-19; however, the number of accidents over any given period is always 'lumpy'. It is impossible to say how many inquiries we would have opened had the pandemic not occurred.

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<sup>6</sup> These calculations exclude maritime notifications for June 2020. Changes in the way we receive notifications from Maritime NZ changed mid-way through the month, making a comparison invalid.

## Investigations: establishing facts and circumstances

Evidence is gathered and analysed; the Commission looks beyond immediate cause to wider systemic issues

The Commission's investigators are authorised to use the Commission's legal powers to protect and gather evidence. Evidence collection is broad to support the many routes that an investigation could follow. Evidence falls into four broad categories: people, machine, environment, and mission.

Analysis involves sorting, corroborating, and linking evidence and facts to prove, disprove and weigh competing theories. The chain of events leading to an incident or accident may appear to be clear, particularly those facts and factors closest to the occurrence. However, incidents and accidents rarely have a single cause; contributing factors are often complex and reach beyond the accident vehicle and its operation to wider systemic issues.

39 domestic inquiries were active over the year; and nine overseas inquiries assisted

As well as opening 11 inquiries, the Commission maintained progress on 13 continuing inquiries and closed a further 15.

In addition to domestic inquiries, the Commission assisted nine investigations conducted by overseas investigation agencies. Refer to page 18 for our obligations to undertake this work.

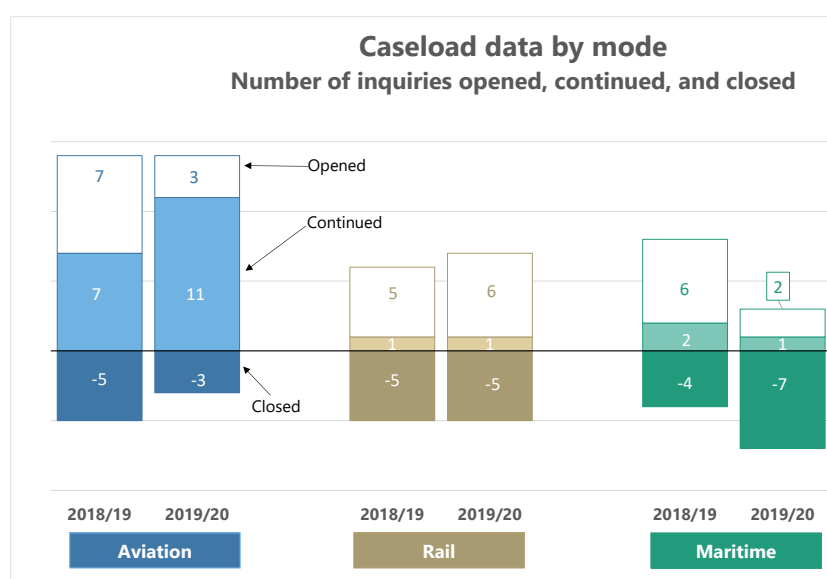


Figure 4: Inquiries opened, continued, and closed by mode

The Commission's functions were deemed an essential service during the COVID-19 lockdown

The Commission's functions were deemed an essential service for the purpose of the COVID-19 response. Two inquiries, one rail and one aviation, were opened over the Alert Level 4 period. Investigators gathered evidence for the rail inquiry remotely (by phone and electronically). Investigators attended the aviation accident site wearing personal protection equipment, and followed physical distancing protocols during travel to and from the site and while gathering evidence.

## ***Inquiries: testing evidence and identifying safety issues***

The inquiry process has three distinct elements: consideration of draft reports, consideration of submissions, and making recommendations

The Commission's inquiry process has three distinct elements. The first is consideration of draft reports prepared by the investigator in charge. The Commissioners rigorously test the hypotheses and supporting evidence, and direct further investigation if necessary.

Sometimes draft reports state or imply that the conduct of a specified person has contributed to the accident or incident. In these cases, the Commission must<sup>7</sup> release the report to interested persons<sup>8</sup> and allow them to comment on, or refute, those findings. The Commission generally allows 21 days for submissions.

The second element is consideration of final draft reports along with written submissions from the interested persons. The Commission may hear oral submissions at this time.

The third element is determining recommendations. Recommendations highlight the most serious safety issues identified in an inquiry and ask for something to be done. The Commission may issue recommendations at any time during an inquiry, although usually they are issued along with the published report.

In 2019/20 the Commission sat 11 times

In 2019/20, the Commission sat for the scheduled number of meetings (11) despite the challenges posed by the country's response to the COVID-19 pandemic.

The Commission delayed by a week the March meeting, which had been scheduled for the week the Government declared a state of emergency. Where necessary, all or some Commissioners attended meetings remotely.

Some non-essential board matters were deferred, but core inquiry work continued. The organisation was able to adapt quickly because of the efforts we have made in building resilience – refer to page 33.

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<sup>7</sup> Transport Accident Investigation Commission Act 1990, Part 2, s14 (5)

<sup>8</sup> 'Interested persons' are persons likely to be affected by the report's findings and include the operator, manufacturer of the vehicle or vessel, engine manufacturer, involved state agencies and representatives of injured persons (Transport Accident Investigation Commission Act 1990, Part 2, s9)



*Figure 5: Deputy Chief Commissioner Stephen Davies Howard and Chief Commissioner Jane Meares*

Over 2019/20, the Commission received 37 inquiry reports (compared with 41 in 2018/19), approved 14 (16) for consultation and 14 (16) for publication. In addition, the Commission issued 11 (22) recommendations and closed 26 (15).

### Complex inquiries can result in an extended inquiry process

If an inquiry is technically complex, the inquiry process can be extended. The Commission may wish to call for further expert advice, receive additional submissions from interested persons, or extend lines of inquiry given the nature of the submissions received. In 2019/20, the Commission closed three inquiries that extended beyond 440 working days (two years) – refer to the section on the aviation year in review beginning on page 56.

### The Commission is mindful of its communications with families and next-of-kin

The Commission aims to keep survivors and families appropriately informed with consistent messaging across all inquiries. We provide regular, planned updates about how the inquiry is progressing through its various stages; however, our legislation constrains us from describing lines of inquiry or findings and recommendations before we have published inquiry reports.

For those wanting to know what happened to their loved ones, the legal restrictions on what we can say is understandably frustrating. From the beginning of an inquiry, we try to communicate clearly the restrictions on what we can say. If requested, and where possible, Commission members or staff meet with next-of-kin and/or other family members to inform them of progress of an inquiry. These meetings are also opportunities for us to learn how we can improve our Families Programme.

## Knowledge transfer: communicating core inquiry information

Identifying safety issues is the core work of the inquiry process

The core work of the inquiry process is to identify safety issues – factors that either have contributed to an accident or are unsafe conditions. Identifying safety issues helps establish common circumstances and causes in repeated types of occurrences.

Findings are the Commission's conclusions

Findings are the Commission's conclusions after examining the facts of an occurrence. The number of findings loosely equates to the complexity of both the occurrence and the inquiry.

Recommendations are issued when action is required to remedy safety issues

The Commission may recommend an operator, regulator, or other transport sector participant acts to remedy an identified safety issue.<sup>9</sup> Ideally, action would have been taken during the investigation, but sometimes safety issues remain unresolved at the end of an inquiry. All safety actions help avoid similar accidents and incidents from recurring.

The Commission releases interim reports when public interest in an event is high, or to communicate important information about the circumstances of an accident. We issue urgent recommendations for safety issues requiring immediate action.

Table 1: Recommendations issued and closed<sup>10</sup>

	2019/20 Recommendations			2018/19 Recommendations		
	Open 30-Jun-20	Issued	Closed	Open 30-Jun-19	Issued	Closed
Aviation	71	3	7	75	5	2
Rail	28	1	4	31	7	3
Maritime	93	7	15	101	10	10
<b>Total</b>	<b>192</b>	<b>11</b>	<b>26</b>	<b>207</b>	<b>22</b>	<b>15</b>

Note: this is the number of recommendations issued during the year regardless of which year the associated inquiry report was published.

<sup>9</sup> See Annex 13, Convention on International Civil Aviation Aircraft Accident and Incident Investigation, (10<sup>th</sup> Ed.), p 1-2

<sup>10</sup> Note that figures in this table may vary slightly from those previously reported. Changes in data can occur because the status of recommendations as at 30 June may be retrospectively changed. For example, a recommendation that is 'draft' as at 30 June may later have its status changed to 'open'; or an 'open' recommendation may be withdrawn).

Reports  
communicate in  
detail the outcome  
of inquiries

The Commission's investigation and inquiry processes culminate in a written report. The report gives a detailed account of the accident or incident, and the analysis to determine the circumstances and causes. It contains core messages about what happened, and about what action has been taken or is still needed to avoid a recurrence.

In 2019/20, we  
published final  
reports for 15  
closed inquiries

In 2019/20, we published final reports for the 15 inquiries closed during the year. Six of these inquiries involved fatalities and/or serious injuries; in total, four people died in the accidents. The number of inquiries closed for 2019/20 is similar to the previous year. Table 2 shows the breakdown by mode.

*Table 2: Number of inquiries closed*

2019/20				2018/19			
Aviation	Rail	Maritime	Total	Aviation	Rail	Maritime	Total
3	5	7	<b>15</b>	5	5	4	<b>14</b>

The Commission issued no interim reports in 2019/20.

## ***The Watchlist: communicating high-priority safety issues***

The Watchlist communicates the highest-priority safety issues

The Watchlist presents the Commission's highest-priority safety issues. We consider the sector should be paying particular attention to these matters. The items on the Watchlist relate to:

- impairment from drugs or alcohol of people in safety-critical roles
- encouraging the use of technologies to track aircraft, ships and boats, and rail vehicles
- the need for recreational boat users to demonstrate they understand and practise safe boating behaviour before getting out on the water
- safety for pedestrians and vehicles crossing rail tracks
- New Zealand's rate of 'mast-bumping' accidents involving Robinson helicopters
- navigation in pilotage waters.

Each year, the Commission reviews and updates the Watchlist. In late 2020, we published to our website updates to five of the six Watchlist items. The sixth item is to be updated and published early 2021.

## International engagement

The Commission is part of a global network of transport accident investigation bodies

The Commission is part of a global network of transport accident investigation bodies prepared to meet their States' obligations to conduct investigations consistent with international requirements (the Convention on International Civil Aviation, or ICAO Convention; and the International Maritime Organization's code on safety investigation).

In accordance with these Conventions, the Commission participates in inquiries by international peer organisations into events in overseas jurisdictions. This occurs when events involve New Zealand registered or manufactured vehicles or components, or a significant number of New Zealanders have died as the result of an accident.

The Commission assisted nine overseas inquiries in 2019/20

During the year, the Commission assisted nine overseas inquiries under New Zealand's obligations as a signatory to the ICAO Convention.

Assistance usually takes the form of co-ordinating information flows, but we can also have more in-depth involvement. For example in 2019/20, we provided feedback on a draft report that the Japan Transport Safety Board provided to us for comment.<sup>11</sup>

We participate in, and contribute to, the international community of investigation agencies in various ways

Under Annex 13 to the ICAO Convention, the Commission is obliged to assist another signatory in investigating an incident or accident if that other signatory does not have the expertise or resources. We may also provide assistance outside ICAO Convention obligations.

In addition, we actively participate in international forums such as the International Transportation Safety Association (ITSA) and the Marine Accident Investigators' International Forum (MAIIF).

Commission investigators gain a grounding in international practice during training at Cranfield University in the United Kingdom.

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<sup>11</sup> AO-2019-004: Serious incident involving Jetstar Airways Boeing B787, registered VH-VKJ, near Kansai, Japan, 29 March 2019



International engagement is vital for building resilience

International engagement enables inter-agency collaboration, and helps build resilience against the significant pressures we would face should a major accident happen in New Zealand. In such a situation, the Commission would have to draw on the assistance of international colleagues. Inter-operability with other nations would be critical to a rapid and effective response.

A staff member has contributed knowledge and expertise on voyage data recorders to international agencies

In July 2019, a Commission staff member participated in the annual Accident Investigators Recorders meeting in Japan. The staff member presented on the challenges for small investigation agencies in establishing a capability to recover data from certified aviation flight data recorders and cockpit voice recorders.

The same staff member also provided training support to the Transport Safety Investigation Bureau, Singapore's independent investigation authority. The training included topics such as voyage data recorders and other digital evidence.

COVID-19 has curtailed some international engagement

The consequences of COVID-19 disrupted some of our international engagement over the second half of 2019/20. This includes the deferral of the ITSA forum and the postponement of a training course for an investigator. The Commission and staff have maintained engagement with the international community and met our commitments to others through alternative means such as online forums.

## Our impact *Ā mātou pānga*

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### ***Recommendations: communicating safety issues***

Recommendations are part of the Knowledge Transfer System, informing transport regulators, the industry, and users about safety issues

Recommendations are a vital part of the Commission's Knowledge Transfer System (explained in the section beginning on page 33). They are signals about safety issues in the transport system that could contribute to future accidents or incidents. These signals can be useful to others in the transport system too, not just the recipients of recommendations. Anyone can use the information to create conditions within the system that help avoid similar accidents in the future.

Recommendations do not prescribe solutions or implementation timeframes. Recipients assess how to respond by considering their competing priorities and resource constraints, and the balance they must strike between risk and cost. Regulators must also consider options for implementation within the context of their intervention logic, which can change over time.

The Commission directs most recommendations to regulators rather than operators. Regulators are better able to influence and act on the transport system, which is highly complex. Assessing and implementing a recommendation can take a long time, especially if it requires legislative change.

Although the Commission's recommendations are not mandatory, international treaty sets expectations about responding to them

Our recommendations are not mandatory. Nevertheless, there are international standards for responding to them.

The Transport Accident Investigation Act 1990 (the Act) is partly derived from international treaties, which anticipate prompt response. Paragraph 6.10 of Annex 13 to the Convention on International Civil Aviation<sup>12</sup> requires the State receiving a recommendation to respond to the issuing State within 90 days. It must inform the issuing State what preventative action it is taking or considering, or give reasons if it declines to act.

In addition, Annex 13 recommends that States issuing recommendations should record responses; and the States receiving a recommendation should monitor the progress of action taken in response to it.

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<sup>12</sup> See Annex 13 to the Convention on International Civil Aviation Aircraft Accident and Incident Investigation, (11<sup>th</sup> Ed.), chapter 6

Our legislation is silent on oversight of recommendations, but transport sector regulators report on progress in implementing them

The Act incorporates into New Zealand's domestic law most of the standards and recommended practices for both aviation and maritime accident investigation. It is, however, silent on the procedures for overseeing recommendations. As a matter of good practice, the Commission records the responses to the recommendations we issue,<sup>13</sup> but we have no powers to require recipients to report progress in implementation.

In practice, government agencies actively submit evidence to the Commission if they (the recipients) consider they have implemented a recommendation. The transport sector regulators (Civil Aviation Authority, Maritime NZ, and Waka Kotahi NZ Transport Agency) report every six months to the Associate Minister of Transport on progress in implementing the Commission's recommendations. The reports are published on our website.

Commission staff are working through documentation for closure of a large number of 'aged' recommendations to the CAA

Staff at the Civil Aviation Authority and Maritime NZ, with assistance from Commission staff, are working to close 'aged' recommendations. Circumstances or recommendations that are more recent have superseded many of these older ones.

Most of the recommendations were issued to the Civil Aviation Authority. The Civil Aviation Authority has completed documentation on 43 of them and requested closure.

Commission staff are processing the documentation. In some cases, this can be complex and time-consuming. Staff need to validate the evidence, check legal implications, and resolve other matters as necessary before presenting the recommendation to the Commission. Finally, the Commission considers the evidence and supporting information, and determines whether or not the recipient has taken sufficient action to mitigate the related safety issue.

Workload in the aviation mode (refer to the aviation year in review beginning on page 56) and the priority given to progressing inquiries means processing and considering all 43 recommendations is likely to take some time.

At 30 June 2020, the average age of all open recommendations was 1,643 working days (220 working days is one year). This an increase of 7.5 per cent from 1,529<sup>14</sup> working days at 30 June 2019.

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<sup>13</sup> Paragraph 6.11, Annex 13

<sup>14</sup> Incorrectly reported last year as 1,595

## Case studies: demonstrating effectiveness

The Commission can influence the transport system, but we cannot improve transport safety on our own

The Commission's vision is *No repeat accidents – ever!* Our principal goal is to protect people from transport-related injuries and death. Thus, our most significant support for the Government's expectations is through our contribution to a safe transport system. We also contribute to economic prosperity by strengthening trust in the safety of transport operations.

Direct measurement of the Commission's influence on sector outcomes is difficult. Our recommendations are not mandatory – we contribute to improved safety by making information available to others in the transport system so they can act.

In addition, in many instances there is good reason for sector responses to be lengthy. The Commission investigates occurrences that involve large systems tightly coupled with other systems. This means that achieving change in behaviour or modifying processes often requires substantive change programmes, which takes time. Depending on the transport systems involved and what the Commission is recommending – for example, regulatory change – implementation could take years.

We gauge our effectiveness mainly through case studies

Given the complexities of the transport system, and the non-mandatory nature of our recommendations, we demonstrate our influence on safety outcomes mainly through case studies.

The case studies on the following pages show how the Commission's work in identifying safety issues, together with a responsive sector, can achieve a safer transport system.

Note: The case studies contain short summaries of inquiries; the full reports are the official record of the findings and recommendations.

## **Maritime case study: Improvements to infrastructure at ports**

### **The occurrence: passenger vessel breakaway from wharf and collision**

In early 2017, an incident occurred while a passenger vessel was berthed at a wharf in port.<sup>15</sup> The vessel was secured to mooring bollards using its own mooring lines.



*Figure 6: One of the bollards on the wharf*

An unpredicted change in the wind pushed the ship away from the wharf, and mooring bollards on the wharf progressively failed by tearing from the wharf.

The resulting load on the remaining mooring lines caused them to break. The stern of the ship swung out and collided with a bulk cement carrier berthing at the next wharf.

Nobody was injured, but the wharf, the hull of the bulk cement carrier, and the passenger vessel all sustained damage.

### **The Commission's work: what we said**

After the incident, the port operator began work to improve the conditions and reliability of its wharves, associated mooring systems, and mooring procedures.

The Commission recommended that while the port was strengthening the shore bollards, it should take measures to ensure that vessels could be safely moored. These included systematic ship-to-berth risk assessments.

To ensure other port operators could learn from the incident, we recommended that Maritime NZ promulgate the inquiry's findings through the Secretariat of the Port and Harbour Marine Safety Code Steering Group. (The Port and Harbour Marine Safety Code provides national best practice guidance for managing safety in ports and harbours.)

The safety issue has global implications also, especially where port infrastructure is aging and the size of vessels increases.

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<sup>15</sup> MO-2017-204: Passenger vessel *Seabourn Encore*, breakaway from wharf and collision with bulk cement carrier at Timaru, 12 February 2017

### **The sector response: what happened**

The Commission closed both recommendations in late 2019. As the infrastructure upgrades at the port continued, the port operator was undertaking the recommended ship-to-berth risk assessments as part of the standard Pilot to Master interchange.

The May 2019 newsletter of the Port and Harbour Marine Safety Code Steering Group referenced the Commission's report on the incident. In addition, Maritime NZ wrote to all port companies and those who work on the ports through their associations and representatives highlighting the findings of the report. The matter was an integral part of Maritime NZ's presentation to Marine Operations Managers at their national meeting in May 2019.

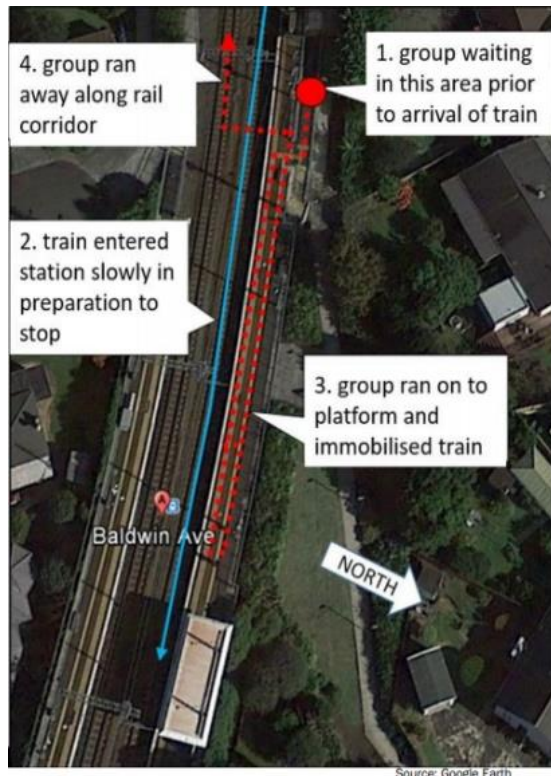
### **Impact: what difference have we made**

The Commission's recommendations helped reduce the risk of damage or injury at the port where the incident occurred while authorities completed infrastructure work.

The inquiry had a broader impact across the sector. Maritime NZ and the Port and Harbour Marine Safety Code Steering Group worked to communicate the circumstances and cause of this incident. In particular, the sector has better knowledge of the risks of securing vessels able to generate loads above those the port infrastructure can withstand. Increased knowledge reduces the risk of similar occurrences in the future.

## **Rail case study:** **Improved training for responding to unusual situations**

### **The occurrence: unauthorised immobilisation of a passenger train**



*Figure 7: Aerial view of Baldwin Avenue Station*

In late 2017, an Auckland metropolitan passenger train was travelling to Britomart Transport Centre with a train driver, a train manager, and about 40 passengers on board.<sup>16</sup>

As the train approached Baldwin Avenue Station, a group of people on the station platform disabled the train by pulling the emergency door release levers on the outside of the train. The group then spray-painted one side of the train before escaping along the rail corridor.

The train doors remained closed throughout the event and passengers kept on board. Nobody was injured and damage was confined to the spray-painting on one side of the train.

### **The Commission's work: what we said**

The Commission found that the emergency door release levers on the train met the recommended industry standards. The design achieved an appropriate balance between deterring unauthorised use and allowing the doors to be opened from outside the passenger cars.

The Commission also found that the emergency response to the incident was appropriate for the circumstances based on the information the train crew reported to train control; but the response to the incident would probably

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<sup>16</sup> RO-2017-104: Unauthorised immobilisation of passenger train, at Baldwin Avenue Station, Avondale, 17 September 2017

have been more efficient if the train crew had spoken directly with the Police communications centre.

We identified one safety issue: the operator had no policies or procedures to guide its train crew in responding to unusual situations. We recommended that it improve the quality of training for train crews. This included training on liaising with emergency services, so crews are better prepared to respond to unusual situations.

In making the recommendation, the Commission was mindful of the increasing numbers of people using rail transport, especially in the Auckland metropolitan area.

### **The sector response: what happened**

The operator changed its response to an unauthorised immobilisation of a train because of the incident. Previously considered an irritation, these events are now regarded as serious.

In line with the inquiry's findings and our recommendation, the operator has amended its training materials. The materials now instruct drivers to report to train control if a train is disabled, and then to contact the Police directly.

### **Impact: what difference have we made**

The operator's implementation of the Commission's recommendation means that in an emergency, first responders are able to plan and execute a fast and efficient response. Improved response time means a safer outcome for passengers and crew.

The Commission welcomes any changes to operating procedures that improve safety. This is especially so where growing passenger numbers could magnify any adverse outcomes of a future event.



## **Maritime case study:** **Managing the risks associated with fire on board vessels**

### **The occurrences: fires on three different vessels**

Between 2016 and 2018, the Commission inquired into three occurrences involving fire on board ships: a passenger vessel (the *PeeJay V*), a container vessel (the *Kokopo Chief*) and a fishing trawler (the *Dong Won 701*).<sup>17</sup>



On the *Dong Won 701*, the fire took place in the accommodation space. Three crew members and one Fire and Emergency New Zealand firefighter were treated at hospital for smoke inhalation. The vessel was destroyed.

*Figure 8: Dong Won 701, Credit: Stuff*

### **The Commission's work: what we said**

The Commission made various findings in the three inquiries that were specific to the vessels' operators. These covered aspects of equipment, training, and response procedures.

Other findings were more broadly applicable to the industry. For example, because of the fire on the *PeeJay V*, we recommended that the Director of Maritime NZ promote the need for those designing, installing or using fixed fire-fighting systems to fully document and understand the principles and operation of those systems.

In the case of the *Dong Won 701*, the Commission found that although the vessel complied with the relevant rules, its structural fire integrity did not meet current standards. We identified a systemic safety issue related to inconsistent application of the Maritime Rules Part 40D: *Design, Construction and Equipment – Fishing Ships*.

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<sup>17</sup> MO-2016-201: Restricted-limits passenger vessel the *PeeJay V*, Fire and sinking, 18 January 2016  
MO-2017-205: Multipurpose container vessel *Kokopo Chief*, cargo hold fire, 23 September 2017  
MO-2018-202: Accommodation fire on board, fishing trawler *Dong Won 701*, Timaru, 9 April 2018

The inconsistent application of the rules has meant some fishing vessels might not be fully compliant with safety standards; and others, for historical reasons, are allowed, under the current Maritime Rules, to operate indefinitely without meeting current safety standards.

The Commission recommended the Director of Maritime NZ:

- take any measures available to ensure all fishing vessels comply with as many of the design, construction and equipment standards prescribed in the current Rule 40D as are reasonable and practicable
- work with the Ministry of Transport to amend Rule 40D to ensure aging fishing vessels are not permitted to remain in the system indefinitely without being required to meet current safety standards.

### **The sector response: what happened**

In response to the *Peejay V* recommendation, Maritime NZ produced a Safety Update to raise awareness of potential problems that can occur with fixed fire systems on vessels. Safety Updates are aimed at ship owners, operators, masters and crew, and Maritime NZ-recognised surveyors and design approvers. Maritime NZ circulated the Safety Update and put it on its website.<sup>18</sup> The recommendation is now closed.

The recommendation from the *Dong Won 701* inquiry requires substantial work. Maritime NZ has advised that it is working on a comprehensive reform for the Maritime Rules Part 40 series. The work, which will incorporate the safety issues identified by the Commission, is to ensure that the rules for the design, construction and equipment for domestic ships are fit for purpose.

If new rules were accepted, the earliest effective date would be 2023.

### **Impact: what difference have we made**

Maritime NZ's Safety Update disseminated the safety issues identified by the Commission. Improved knowledge will help to avoid the type of situation that occurred on the *PeeJay V*, where crew were unfamiliar with the principles of the carbon dioxide fire-fighting system on the vessel. Greater awareness of, and knowledge about, the potential problems with fixed fire systems on vessels leads to more effective fire fighting.

We are pleased that Maritime NZ has incorporated our recommendation into its reform of the Maritime Rules Part 40 series. We await the outcome of this work.

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<sup>18</sup> <https://maritimenz.govt.nz/commercial/safety/safety-updates/hazards/fixed-fire-systems.asp>

## **Case study:**

### **Knowledge transfer through inquiry reports**

#### **Written reports contain core inquiry information**

Written inquiry reports are the main way in which the Commission transfers to the transport sector the knowledge and insights gained from inquiries. Reports contain core information such as findings and recommendations.

Reports have a plain English summary of the inquiry for general readers. The main body of a report has detailed information about the occurrence and why it happened. The detailed information, and the findings and recommendations – which are addressed to specific recipients – are aimed at those who can make a difference to safety within the transport system. Reports also highlight key lessons for a broader audience.

At the end of 2019, we refreshed the format of the reports to make them easier to read, and the key information easier to find.

#### **Reports have value beyond their immediate audience**

Our reports have practical benefit beyond the immediate audience for findings or recommendations, and beyond the transport sector. Below are three examples that demonstrate our influence beyond the obvious. In these examples, diverse organisations and professional groups, national and international, have found value in the Commission's knowledge and insights.

- KiwiRail has indicated that some of its technical committees are required to review our inquiry reports. The technical committees are a support function for managers responsible for rolling stock. They help managers make safe decisions, so KiwiRail can better manage its risks. The committees review inquiry reports (along with other material) with a view to recommending any required changes to codes, procedures or practice, including training.
- The Director of Auckland University of Technology's Centre for Ergonomics, Occupational Safety and Health, School of Public Health advised that students studying occupational health and safety and risk management are required to read selected Commission reports. There are two purposes: students become acquainted with the world of work-related injuries and fatalities, and they see how to set out an accident investigation report.
- In April 2020, *Materials Performance* magazine published an in-depth article on one of the Commission's reports.<sup>19</sup> *Materials Performance* is an international magazine dedicated exclusively to corrosion prevention and control. The report was from an inquiry into a fatal accident on a passenger vessel resulting from a

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<sup>19</sup> <http://www.materialsperformance.com/articles/coating-linings/2019/10/final-report-issued-on-fatal-new-zealand-cruise-ship-blast>

burst nitrogen cylinder.<sup>20</sup> The Commission found that the cylinder burst at below normal working pressure because its casing had corroded to about 30 per cent of original thickness. The article noted the identified safety issue of a lack of global minimum standards for the inspection, testing and rejection of pressure cylinders that make up part of stored energy systems on lifeboat launching installations. The result has been a wide variation in, and in some cases inadequate, standards applied by flag state administrations, classification societies and authorised service providers.

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<sup>20</sup> MO-2017-203: Burst nitrogen cylinder causing fatality, passenger cruise ship *Emerald Princess*, 9 February 2017

## Non-financial reporting Ripoata pūtea kore

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### **Context: our operating environment**

To remain credible, we must be able to respond to the challenges of a rapidly changing digital environment

The Commission's strategic focus for the period covered by the *Statement of Intent 2018-2022* is our capacity and capability to meet the challenge of an operating environment that is undergoing rapid technological change.

We must have all the relevant evidence to make credible determinations. More and more, the data and information we use in an investigation is digital, held in large data sets, and might not be part of the physical evidence found at the site of an occurrence. An example is cloud-based software and data used in navigation systems, or the technology used in unmanned transport systems.

Building resilience is key to achieving our strategic objectives

The objectives set out in the *Statement of Intent 2018-2022* are designed to strengthen resilience. Resilience means the Commission maintains effectiveness in the face of technological change, or in responding to shocks such as a major accident or a natural disaster.

## Our strategic objectives

We aim to improve transport safety through credible investigations, and transferring to others the knowledge we gain from inquiries

The Commission's overarching aspirational goal – our vision – is for **No repeat accidents – ever!** We aim to improve transport safety through credible investigations and transferring our acquired knowledge to others.

We have two strategic objectives:

<i>Occurrences are independently investigated and the facts uncovered</i>	This objective relates to our primary statutory function: investigation of accidents and incidents. It is about making sure our output – accident investigation and reporting – is of high quality: thorough, rigorous and credible.
<i>Participants in the transport sector know about safety issues</i>	This objective is about transferring to others the knowledge we gain from our inquiries, so they have the information they need to understand and manage system risks.

Our strategy for achieving our objectives has three strands: organisational performance (what we do), impact (how we make a difference), and organisational capability (how we sustain ourselves into the future).

<i>Organisational performance</i>	We generate information and insight about transport safety through rigorous, evidence-based, and properly focused investigations.
<i>Making a difference</i>	We use information and insight to add to bodies of knowledge about transport safety and influence others in the transport system to improve safety, nationally and internationally.
<i>Organisational health and capability</i>	We build and maintain resilience to environmental disruptions and external shocks.

Our strategy and objectives contribute to the Transport Outcomes Framework, specifically healthy and safe people, and resilience and security. The Commission works for systemic improvements in transport safety where users *are* safe, and *feel* safe, supporting community wellbeing now and into the future.

The tables beginning on page 37 describe progress in achieving strategic objectives.

## **Knowledge transfer: strengthening human and information capital**

Our strategic direction is centred on strengthening knowledge transfer

Resilience underpins our strategy. Resilience includes having strong systems and processes to support knowledge transfer within and beyond the organisation. Knowledge transfer is about capturing and organising data and information, and creating and distributing information and knowledge.<sup>21</sup>

For the Commission, knowledge transfer must function throughout the life of an inquiry. This means from the gathering and analysis of data and evidence, to the publication of the inquiry report, and to organisational management and reporting.

Knowledge can be transferred from one person to another; or it can be converted into a retrievable form (such as a document, image, or video) for others to use. Physical assets, people, and processes work together to enable knowledge transfer.

The Knowledge Transfer System is about IT assets

In January 2020, critical IT assets, including the investigation management system, reached their end-of-life. This situation placed us at an important stage in our development as an organisation. We had to consider how to secure our data and systems while also laying the foundations for a contemporary Knowledge Transfer System that would support us into the future.

The need to replace IT systems, and the increasingly technological nature of our operating environment, means the Commission's focus is on the digital aspects of our Knowledge Transfer System.

But it is also about the people who enable us to get the best from those assets

But the Knowledge Transfer System is more than IT assets – it includes the people who provide supporting capability and those who can leverage the opportunities for improved organisational performance (for example, trend analysis or video presentation of findings). The Knowledge Transfer System therefore links to workforce planning.

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<sup>21</sup> Here the term 'data' refers to anything gathered during the course of a fact-finding exercise (such as an investigation) in its raw form; 'information' is the assessment and analysis of data; and 'knowledge' is about gaining insight from integrating different sources of information. The terms can depend on context: 'knowledge' from one perspective (for example, the Commission's insights into the circumstances and causes of an occurrence) might be 'information' from another perspective (for example, an operator's decision about how to improve a safety management system based on findings from the Commission).

The broad direction set out for the Knowledge Transfer System was set out in 2018/19

In 2018/19, in anticipation of the end-of-life of our IT assets, the Commission undertook a strategic analysis of IT systems. The review identified our best approach is to use cloud-based services and interface tools that are added to our existing 'as a service' IT, with support provided by in-house IT staff. In parallel with the IT analysis, the workforce plan was reviewed to determine the people needed to get the full benefit of the IT assets.

The review of the workforce plan and the strategic analysis of our IT systems culminated in a funding bid for 2019/20, submitted in late 2018. The funding bid was unsuccessful, which slowed progress in developing the Knowledge Transfer System. The bid was successfully re-submitted for 2020/21.



## Achievements in 2019/20

Over 2019/20 we successfully moved all systems and data to the cloud

Despite the lack of success of the funding bid for 2019/20, we needed to secure our data and systems. To achieve this, we moved them all to the cloud, which was in line with recommendations from the strategic review. This project was a major organisational focus for 2019/20.

The move to the cloud provided a basis for the development of the Knowledge Transfer System while strengthening organisational resilience. This is a good example of how the Commission builds the concept of resilience into all our decision-making, rather than treating it as a programme of work in itself. The cloud offers flexibility by removing the constraints of in-house infrastructure and bespoke applications. We can more easily scale and reconfigure as our needs develop.

We completed the project in February 2020, close to the target date and within budget.

The Commission's work to build resilience meant that we could continue core business through the COVID-19 'lockdown' with only minimal disruption

With data and systems in the cloud, we were well placed to continue core operations during the COVID-19 Alert Level 3 and 4 restrictions. Commission meetings continued remotely with minor modification (refer to page 13). Staff were able to work from home with minimal disruption to investigation and support services.

The relative ease with which the Commission was able to continue operating under Alert Levels 3 and 4 reflected the efforts we have made over recent years to build and enhance organisational resilience.

Planning for the Knowledge Transfer System continued in 2019/20

In parallel with the move to the cloud, other preparations for a contemporary Knowledge Transfer System were also underway in 2019/20. We began developing three individual but integrated strategies: a Data Strategy/Information Management and Communications Technology Plan, a Communications Strategy, and a Research Strategy.

All three strategies fall within an overarching Digital Transformation Strategy, the enabler of the Knowledge Transfer System. We completed the communications strategy by the end of the 2019/20 financial year, but resource constraints limited the development of the other two strategies.

The change to the format of inquiry reports, referred to in the case study on page 29, is another support for the Knowledge Transfer System.

## Looking forward

With increased funding from 2020/21 we are ready to take a significant step forward

The budget bid was resubmitted in late 2019 and was accepted. As a result, the Commission's funding will increase from \$5.520 million in 2019/20 to \$7.300 million in 2020/21. The main purpose of the extra funding is to implement the Digital Transformation Strategy. In the upcoming year, 2020/21, the focus will be on more detailed planning.

The Knowledge Transfer System will be a significant step forward for the Commission in our organisational capacity, and requires careful deliberation and planning. We established a project management structure to ensure the funds are managed well and applied appropriately. We will be reporting against milestones over the course of the project.

The Commission is watching to see what the longer-term effects arising from the COVID-19 pandemic might be on the transport system and on us as organisation

As with many other organisations, the Commission is watching to see the medium- to long-term effects of the COVID-19 pandemic.

The immediate effect for the transport system has been a reduction in transport activity. This downturn could mean a corresponding reduction in the number of accidents, but this is not necessarily the case. Some consequences of the pandemic might increase the risk of accidents: for example, operators facing financial pressures might give safety a lower priority; or operators' skills could degrade because of the reduced activity.

We do not expect the COVID-19 pandemic to change our strategic direction or the purpose of our activities. However, our operating environment is undeniably changing. The Commission is preparing to refresh the statement for intent for the four-year period beginning July 2021. We will be considering the new environment and how we operate within it.

## Progress towards strategic objectives

### Occurrences are independently investigated and the facts uncovered

Indicator	The Commission complies with international standards of safety investigation
Description	<p>The Commission internally audits aspects of 7 investigations each year and remedies any deficiencies found.</p> <p>This measure represents the Commission's internal continuous improvement process. It involves managers assessing various aspects of sampled investigations against the Commission's quality assurance framework (which reflects ICAO Convention standards).</p>
Progress	<p>Investigation Services Managers undertook three process reviews during the year. This is fewer than expected, partly because of COVID-19 and partly because the quality assurance focus for 2019/20 has been on a review of investigation procedures. The review has included updates to evidence-gathering guidelines, which cover a large part of investigation work, and improved processes for managing notifications.</p> <p>Although we did not meet the indicator, ongoing management and supervision means that all investigations are informally audited. Where opportunities for improvement are identified, processes are amended or training provided as appropriate. Over 2019/20, a refresher training in interview techniques was arranged, although deferred because of COVID-19. Investigation Services staff also took a report writing course.</p> <p>Early in 2019/20, Commission staff were preparing for an audit by the International Maritime Organization (IMO) scheduled for late 2020. The audit is a comprehensive and objective assessment of how effectively New Zealand administers and implements mandatory IMO instruments, including accident investigation. COVID-19 has caused the audit to be deferred.</p>

Indicator	All Commission inquiries follow proper process
Description	<p>There are no:</p> <ul style="list-style-type: none"> <li>judicial reviews of Commission inquiries that identify process issues*, or</li> <li>successful challenges to an Ombudsman, the Privacy Commissioner or the Human Rights Commission of an administrative decision or action.</li> </ul>
Progress	<p>There have been no judicial reviews of Commission inquiries that identify process issues. There have been no successful challenges to an Ombudsman, the Privacy Commissioner or the Human Rights Commission of an administrative decision or action.</p>
*Performance measure for the appropriation for this output class.	

## Participants in the transport system know about safety issues

Indicator	The Commission disseminates information about its most pressing concerns
Description	<p>The Watchlist is reviewed and published/updated as required by 30 June 2020.</p> <p>The Watchlist presents the Commission's highest-priority safety issues, which merit the most active monitoring. The purpose of the Watchlist is to build and maintain a profile for these safety issues. It publicises and promotes the Commission's calls for transport sector participants to improve safety in respect of the each of the safety issues on the Watchlist.</p>
Progress	<p>The Commission reviewed the Watchlist, consulted on updates to five of the items. We published five of the six revised items on our website in late 2020, and the final one will be updated and published late 2020/early 2021.</p> <p>See page 17.</p>

Indicator	Our information is sought after																																						
Description	The number of website visitors increases.																																						
Progress	<p>The number of visitors to the Commission's website is measured in unique page views. The number of visitors is related to activity, tending to increase when reports are published. Averaged over time, however, the numbers are steady. Figure 9 shows the twelve-month rolling average of unique page views over the 18 months to 30 June 2020 – consistently about 15,000 visitors per month. This pattern suggests that we have a regular, but specialist, audience for our inquiry reports.</p> <div data-bbox="472 1299 1300 1668"> <table border="1"> <caption>Estimated data for Figure 9: Unique page views 12-month rolling average</caption> <thead> <tr> <th>Month</th> <th>Number of unique page views (thousands)</th> </tr> </thead> <tbody> <tr><td>Jan-19</td><td>13.5</td></tr> <tr><td>Feb-19</td><td>13.2</td></tr> <tr><td>Mar-19</td><td>13.8</td></tr> <tr><td>Apr-19</td><td>14.2</td></tr> <tr><td>May-19</td><td>14.8</td></tr> <tr><td>Jun-19</td><td>14.5</td></tr> <tr><td>Jul-19</td><td>14.2</td></tr> <tr><td>Aug-19</td><td>14.5</td></tr> <tr><td>Sep-19</td><td>14.8</td></tr> <tr><td>Oct-19</td><td>14.5</td></tr> <tr><td>Nov-19</td><td>14.2</td></tr> <tr><td>Dec-19</td><td>14.5</td></tr> <tr><td>Jan-20</td><td>14.8</td></tr> <tr><td>Feb-20</td><td>14.5</td></tr> <tr><td>Mar-20</td><td>14.2</td></tr> <tr><td>Apr-20</td><td>14.5</td></tr> <tr><td>May-20</td><td>13.8</td></tr> <tr><td>Jun-20</td><td>14.2</td></tr> </tbody> </table> </div> <p><i>Figure 9: Trend in number of website visitors 18 months to 30 June 2020</i></p>	Month	Number of unique page views (thousands)	Jan-19	13.5	Feb-19	13.2	Mar-19	13.8	Apr-19	14.2	May-19	14.8	Jun-19	14.5	Jul-19	14.2	Aug-19	14.5	Sep-19	14.8	Oct-19	14.5	Nov-19	14.2	Dec-19	14.5	Jan-20	14.8	Feb-20	14.5	Mar-20	14.2	Apr-20	14.5	May-20	13.8	Jun-20	14.2
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Indicator	Users find the information they are looking for from our website and reports
Description	<p>Survey of subscribers shows an increase in the percentage who find the information they are looking for from our website and reports.</p> <p>Subscribers are people whom the Commission notifies when it has published a major update to its website – usually the release of an inquiry report. They are the stakeholders who regularly access certain material, for example, the content of inquiry reports. The Commission currently has nearly 750 national and international subscribers, compared with 700 at the end of 2018/19.</p>
Progress	The survey of subscribers remains on hold. As part of the Commission's broader Digital Transformation Strategy, we intend to refresh our Research Strategy. This will include a review of the methods we use to understand how participants in the transport system learn about safety issues, and access the information and knowledge we produce. We had expected that we would complete a review of the Research Strategy 2019/20, but completion in 2020/21 is now more likely.

Indicator	The Commission's recommendations contribute to improvements in transport safety
Description	In our annual report, we will include case studies of changes to the transport system made in response to our recommendations to show they have contributed to improved safety.
Progress	See pages 23 to 29.

## Organisational health and capability

Indicator	Workforce Plan implemented
Description	The workforce plan will be implemented over the three remaining years of the current <i>Statement of Intent 2018-2022</i> .
Progress	<p>The workforce plan is now part of ongoing business. Findings from an independent review in 2017/18 form the basis of the plan. The review included an assessment of the skills needed to meet the demands of a data-driven and technologically changing environment. The review considered how we could most effectively procure resources to fill gaps in capability (whether by employment, or contact services, for example).</p> <p>The recommendations from the review could be actioned only when the resources became available. With the success of the funding bid for 2020/21, planning has started for the procurement of capability to fill identified gaps. The project to implement the Knowledge Transfer System incorporates the procurement process. Reporting against milestones in this project begins in 2020/21.</p>

Indicator	Complete development of integrated strategies and plans for data, communications, and research
Description	<p>Three individual but integrated strategies, with associated plans, are developed.</p> <p>The three strategies are the data strategy/IMCT (information management and communications technology) plan, the communications strategy, and the research strategy.</p>
Progress	<p>The data strategy/IMCT plan was delayed while resource was dedicated to moving data and systems to the cloud. With the success of the budget bid for increased funding for 2020/21, we contracted a Business Analyst from 1 July 2020 to write the data strategy. The strategy is expected to be finalised by the end of 2020. The document is purposefully more detailed than is usual for a strategy. The intention is to provide a practical basis from which the organisation can quickly develop solutions.</p> <p>We finalised the communications strategy in May 2020.</p> <p>We are likely to complete the research strategy in 2020/21.</p>

## Corporate organisation

### Workforce profile

Table 3 shows the demographic profile of Commission staff. The Commission is a committed Equal Employment Opportunities employer.

Table 3: Employee workforce composition

		As at 30 June				As at 30 June	
		2020	2019			2020	2019
Total staff		26	27	Total staff		26	27
Gender	Male	16	17	Disability	Yes	0	0
	Female	10	10		No	26	27
Ethnicity	European	23	23	Age	<41	5	7
	Maori	0	0		41-50	8	7
	Asian	2	2		51-55	1	2
	Pacific	0	0		56-60	6	5
	Other	1	2		>60	6	6

### Organisational culture

The Commission's employees come from specialised disciplines, giving rise to a strong professional culture. The Commission actively encourages investigative and other staff to work together in multi-disciplinary teams on accident cases or projects.

### Staff turnover

Over the year four employees resigned, giving a staff turnover of 16 per cent. In 2018/19, staff turnover was 15 per cent.

## Health and safety during COVID-19

The wellbeing of staff during the COVID-19 pandemic was of paramount importance

The wellbeing of staff during the COVID-19 pandemic was of paramount importance. At the time this report was prepared, no staff member was a confirmed or probable COVID-19 case, or had a case among immediate family.

Before the COVID-19 lockdown, PPE equipment was reviewed in consultation with investigators. PPE stores were purchased, and a structured approach established to ensure they remain in date and at satisfactory levels.

Staff worked from home during the lockdown period. Managers actively monitored the health, safety and wellbeing of staff during this period with virtual team and one-on-one meetings. However, as noted earlier, the Commission's functions were deemed an essential service. Investigators deployed to one (aviation) accident over this period.

COVID-19 was, and remains, an active consideration in deployment to accident sites. This includes ensuring personal protection equipment is adequate for the situation. Individual circumstances are also taken into account, such as the risk status of staff and their family members.

## Developing and maintaining staff

Our Workforce Plan reduces disruption from staff changes

The organisation's Workforce Plan anticipates a cohort of senior staff retiring over the next few years. A combination of succession planning and identification of future skill requirements means that resignations are managed without unnecessary risk or disruption to the functioning of the Commission.

The beginning of 2020/21 sees new incumbents in all three senior Investigation Services roles. Two staff had resigned towards the end of 2019/20, with replacements appointed by September 2020, one of them an internal appointment. A third senior management position was vacant over the whole of the reporting period. Two internal staff in succession filled the position for six months each to provide training and development opportunities. The position had been filled by August 2020.

## Recruitment

The Commission widely advertises available positions, and conducts a comprehensive recruitment process. That process includes a diverse recruitment panel, practical and psychometric assessments, and thorough curriculum vitae and reference checks so we can make the best appointments possible.

All new employees and other workers, for example contract staff, are subject to an individualised induction process to help them assimilate into the organisation. Our expectations include those set



out in the Public Service Code of Conduct as well the Commission's ethical foundations based on its values.

## Training and development

The base skill pivotal to the Commission's successful performance is factual investigation. Credible factual investigation depends, in part and as a starting point, on transport sector experience and expertise. Strong investigative and analytical experience and expertise support this base skill. It takes at least two years for a new investigator with a strong transport background to become trained and experienced enough to be regarded as fully effective.

The Commission's training programme ensures staff members develop and maintain the knowledge and skills essential to their specialist work. The Commission funds investigators to complete (multi-modal) fundamental and (mode-specific) advanced training courses at Cranfield University in the United Kingdom.

Investigators may also undertake modal specific training and professional education opportunities beyond the maintenance of professional credentials that might be required for a role. The Commission also supports professional corporate staff to maintain currency in their professional disciplines.

The Commission has an organisation-wide approach to development opportunities. The purpose is to enable a consolidated performance and career development opportunity for all employees.

## Good employer initiatives

### Work design

As a smaller organisation, the Commission requires a flexible workforce to quickly respond to operational needs. Investigators in particular are required to work outside normal office hours at times. To balance these demands, the Commission allows flexible working hours and time in lieu (that is, additional to alternative holidays) to employees who are required to work in the weekends.

With an ageing workforce, the Commission is open to considering options for managed retirement. This practice supports operational capability and succession planning, and maximises the institutional knowledge of experienced employees.

## Remuneration and recognition

The Commission offers a pay-for-performance remuneration system designed to attract and retain high-performing employees. The remuneration system incorporates options for providing rewards and recognition, as well as leave entitlements.

## A safe and healthy working environment

The Commission remains committed to promoting a safe and healthy working environment for employees. Our health and safety focus is risk-based. For the Commission this means the focus is on ensuring the health and safety management system is in place and followed at accident sites, our wreckage facility, and other in-the-field investigation management activities.

Each month the Commission receives a health and safety report from the Chief Investigator on any issues or incidents related to deployment. In addition, the Chief Executive also reports on general matters of health and safety.

As part of our health and safety system, the Commission provides training, protective and corporate clothing appropriate to roles, and medical examinations for investigators. Health-related benefits, such as contributions to gym memberships, are available.

The Commission is mindful of the health and safety of others with whom we have contact in the course of an investigation. For example, when we finish our work at an accident site, or release wreckage back to its owner, we ensure chemicals or other hazards have been minimised and, where possible, removed.

## Harassment and bullying

The Commission has a zero tolerance approach to harassment and bullying. This is set out in our Code of Conduct, which is based on the Public Service Commission's guidelines. Our position on harassment, including sexual harassment and bullying, are made known to new employees and other onsite workers during inductions. This ensures a strong and clear message about unacceptable behaviour is delivered early in an employee's working life with the Commission. A suite of policies, guidelines and procedures related to professional conduct and behaviour, including the Code of Conduct, were updated over the year.

The monthly health and safety report has been expanded to include any incidents of bullying, unfair discrimination, harassment, or privacy breaches.

## Statement of responsibility

We are responsible for the preparation of the Transport Accident Investigation Commission's financial statements and statement of performance, and for the judgements made in them.

We are responsible for any end-of-year performance information provided by the Transport Accident Investigation Commission under section 19A of the Public Finance Act 1989.

We have the responsibility for establishing and maintaining a system of internal control designed to provide reasonable assurance as to the integrity and reliability of financial reporting.

In our opinion, these financial statements and statement of performance fairly reflect the financial position and operations of the Transport Accident Investigation Commission for the year ended 30 June 2020.



Jane Meares  
**Chief Commissioner**



Stephen Davies Howard  
**Deputy Chief Commissioner**

18 November 2020

# Statement of performance

## Ngā pūrongo whakatutukinga

The Commission has one output class: accident or incident investigation and reporting

The Commission has one output class: accident or incident investigation and reporting.

The appropriation for this output class intends to achieve the conduct and completion of independent inquiries into selected aviation, rail, and maritime accidents and incidents with a view to avoiding recurrences.

This section provides an overview of the Commission's performance results for this financial year. Refer to the Statement of Comprehensive Revenue and Expense on page 84 for the revenue and expenditure of this output class.

Table 5 on page 49 reports outcomes against the targets and expectations set out on page 2 of the *Statement of Performance Expectations 2019-2020*.

The number of inquiries active over the year is similar to last year

The graph below shows the number of active inquiries over each of the last five years. The graph includes international assist inquiries.

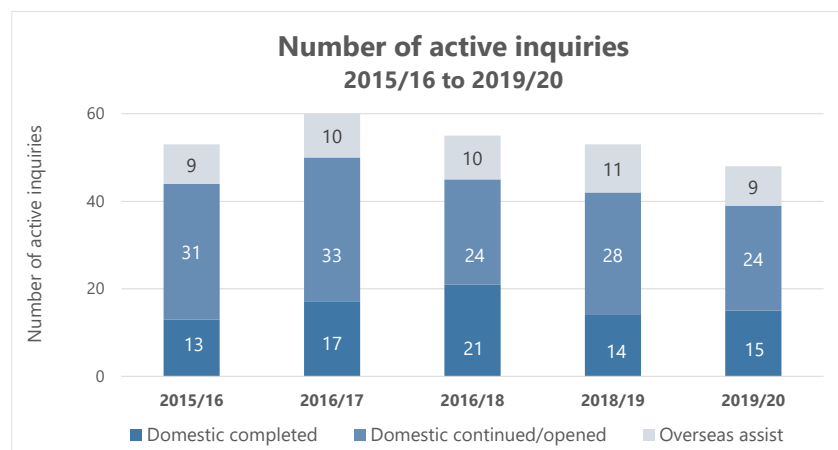


Figure 10: Number of active inquiries 2015/16 to 2019/20

Our casebook has achieved a steady state, and we maintained improvements in timeliness

Timeliness as measured by the 12-month rolling average in the age of open inquiries has been steady for the past two years. The average age has been between 209 and 239 working days over that period (220 working days is one year). This indicates that the timeliness of Commission inquiries has achieved a ‘steady state’ since we received additional funding in 2015/16. The extra resourcing allowed for an increase in investigator numbers, leading to a gradual reduction in the backlog of cases that had built up.

As shown in Figure 11, the 12-month rolling average of the age of open inquiries at 30 June 2020 was 234 working days. This is a five per cent increase from the same time last year (223), but a decrease of 26 per cent from 317 working days at 30 June 2015.

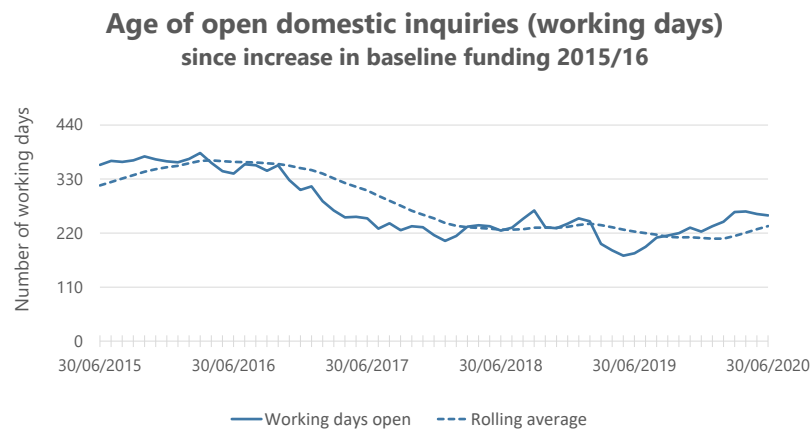


Figure 11: Age of open inquiries

Aviation inquiries are longer and more costly

Timeliness of closed inquiries has also improved considerably between 2015/16 and 2019/20, decreasing 48 per cent from 664 working days to 348. Compared with 2018/19, when the average age of closed inquiries was 414, the decrease is 16 per cent.

However, there are differences between modes, as shown in Figure 12 below. The inquiries that go beyond 440 working days (two years) tend to be in the aviation mode. This can be for one or more reasons:

- accident sites are more likely to be challenging for evidence gathering (for example, remote mountain sites)
- wreckage is more likely to be badly damaged or even totally destroyed, making the technical analysis difficult and the determination of cause challenging (and sometimes impossible)

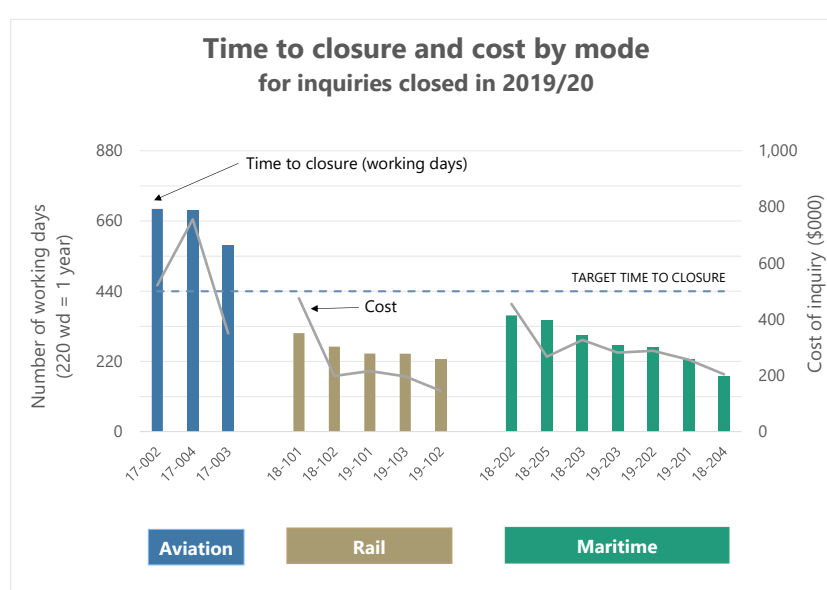
- aviation accidents are more likely to have multiple fatalities or injuries, and, especially if a tourism operator is involved, more likely to have witnesses and next-of-kin from multiple nationalities, requiring contact with several international agencies
- aircraft components often come from a range of international manufacturers, also requiring contact with several international agencies.

The table below shows the average age of closed inquiries over 2019/20 by mode.

*Table 4: Average age of closed inquiries by mode*

	Aviation	Rail	Maritime
Number closed	3	5	7
Closed within 440 working days	0	5	7
Average age of closed inquiries (working days)	658	258	279

Aviation inquiries are more costly in general. This is partly because of the longer time to complete on average, and partly because salvage and evidence-gathering costs tend to be greater for the reasons outlined above.



*Figure 12: Time to closure and cost*

Table 5: Output measures against Statement of Performance Expectations 2019/20 targets and expectations

Financial	Instrument	Actual 2019/20	Target 2019/20	Actual 2018/19
Average cost of domestic inquiries closed*	Timesheet and financial data analysis	\$329K	\$300–350K	\$350K
<p>The average cost of inquiries is calculated by allocating all costs (including general overheads) to inquiries. A proportion of overheads is allocated to all open inquiries, plus a further proportion is allocated according to time spent on each inquiry. The cost of an inquiry is taken over the whole of its life.</p> <p>The target is expressed as a range because it accommodates variation in the modal mix of inquiries published through the year. Generally, aviation inquiries are more expensive than rail or maritime inquiries.</p>				
Volume	Instrument	Actual 2019/20	Expected 2019/20	Actual 2018/19
Number of reports published for domestic inquiries:				
Final reports*	Casebook analysis,	15	15–25	14
Interim reports	manual count	0		2
Number of inquiries by overseas jurisdictions assisted*	Casebook data analysis	9	4–8	11
Number of domestic inquiries in progress at each month's end (12 month rolling average, as at 30 June)	Casebook data analysis	29	30	25
Volume of outputs is demand driven. Inquiries open at 30 June 2020 was 24 compared with 28 at 30 June 2019.				
Timeliness	Instrument	Actual 2019/20	Target 2019/20	Actual 2018/19
Proportion of closed domestic inquiries completed within 440 working days*	Casebook data analysis	80%	70%	64%
<p>A year is 220 working days. The Commission aims to close in inquiries within 440 working days; however, more complex inquiries may take longer. Complexity can arise because of, for example, technical aspects of the occurrence being investigated, or the number and/or substance of submissions received on draft reports.</p> <p>Of the 15 inquiries closed during 2019/20:</p> <ul style="list-style-type: none"> <li>• 10 were closed in 18 months (330 working days) or less</li> <li>• 2 between 18 months and two years (331–440 working days)</li> <li>• 3 took longer than two years (440 working days).</li> </ul>				
* Performance measure for the appropriation for this output class.				

## Activity by mode Te mahi ā-aratau

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This final section summarises data and information about our work over the year. It starts with caseload information:

- the inquiries that were open at 30 June 2020
- a table of volume and timeliness data for the last three financial years.

The rest of the section is divided by mode. For each mode, we summarise data and information about:

- notifications received
- themes in open inquiries
- volume and timeliness of reports published
- recommendations made
- the impact information (as represented by the key lessons, safety actions and recommendations) for the inquiries completed in 2018/19.

Please note the carefully worded contents of inquiry reports have been extensively précised in the impact summaries. The purpose is to give a quick impression of the inquiries' complexity and impact. **The published inquiry reports are the definitive record**, which must be referred to for any other purpose.

Recipients' responses to the Commission's recommendations, at the time of issue, are included in the information. Some of these are précised; again, the published inquiry reports, which contain the recommendations, are the definitive record.



# **Caseload data**

## **Raraunga kawenga take**

***Te Ara Haumarū – the safe and risk-free path***



## Inquiries open at the end of the year

Table 6 lists all inquiries open at the end of the financial year (domestic and overseas assist), ordered by date launched. The review sections for each mode contain information on the inquiries closed during the year.

Table 6: Inquiries open at 30 June 2020

Inquiry #	Mode	Description	Launched	Type
17-005	Aviation	Australian-registered Fletcher aeroplane, impact with terrain, Bathurst, Australia	20/06/2017	Overseas assist
17-009	Aviation	Boeing 787-900, engine abnormality, Auckland	5/12/2017	Domestic
17-010	Aviation	Boeing 787-900, engine abnormality, Auckland	7/12/2017	Domestic
18-001	Aviation	Tandem skydiving operation, passenger fatality, Lake Wakitipu	10/01/2018	Domestic
18-003	Aviation	PAC 750 XL Aeroplane, engine abnormality requiring engine shut-down and glide landing, Sentanui Airport, Jayapura, Papua, Indonesia	25/05/2018	Overseas assist
18-004	Aviation	Bob Frederick, Titan T-51, N51FB, engine failure on approach to landing, Goodyear, Arizona	28/05/2018	Overseas assist
18-005	Aviation	Hughes MD600N Helicopter, impact with terrain, North East of Waiouru	14/06/2018	Domestic
18-006	Aviation	Robinson R44 Helicopter, ZK-HTB, collision with lake, Wanaka	23/07/2018	Domestic
18-007	Aviation	New Zealand-manufactured Pacific Aerospace Ltd 750XL aeroplane, landing gear failure, near Dubendorf, Switzerland	18/08/2018	Overseas assist
18-008	Aviation	PAC 750XL aeroplane, flight into terrain, Oksibil Airport, Papua Indonesia	5/09/2018	Overseas assist
18-009	Aviation	Hughes 369D, ZK-HOJ, impact with terrain, Wanaka	18/10/2018	Domestic
18-206	Maritime	Bulk carrier <i>Alam Sari</i> , loss of control and contact with seabed, Port of Bluff	29/11/2018	Domestic
19-001	Aviation	AS350 Helicopter, heavy landing, Pigeon Valley, Nelson	17/02/2019	Domestic

Inquiry #	Mode	Description	Launched	Type
19-002	Aviation	Two Q300 aircraft, loss of separation, Wellington Airport	12/03/2019	Domestic
19-003	Aviation	Diamond DA42 aeroplane, impact with terrain, 22 nautical miles south-southeast of Taupo, Kaimanawa Ranges	24/03/2019	Domestic
19-004	Aviation	Australian-registered Boeing 787-7, abnormal engine performance, Kansai, Japan	17/04/2019	Overseas assist
19-005	Aviation	BK117 helicopter, impact with water, vicinity of Auckland Island	23/04/2019	Domestic
19-104	Rail	Work train and hi-rail vehicle, potential collision, Taimate	6/06/2019	Domestic
19-006	Aviation	Cessna 185 and a Tecnam P2002 light aeroplane, mid-air collision, near Hood Aerodrome, Masterton	16/06/2019	Domestic
19-105	Rail	Freight train, derailment, Wellington yard	3/07/2019	Domestic
19-106	Rail	Passenger train, safe working irregularity, Rolleston	5/09/2019	Domestic
19-204	Maritime	Passenger vessel <i>Henerata</i> , capsize, Stewart Island	13/09/2019	Domestic
19-007	Aviation	Airways outage, Christchurch	2/10/2019	Domestic
19-008	Aviation	PAC 750XL, Landing gear collapse, Efogi Airstrip, Central Province, Papua New Guinea	25/10/2019	Overseas assist
19-107	Rail	Passenger train, signal passed at danger, Wellington Station	7/11/2019	Domestic
19-108	Rail	Freight train, level crossing collision with road vehicle, Piako Road	9/12/2019	Domestic
19-009	Aviation	Singapore Airlines Boeing 747 freight aircraft, engine pod strike, Auckland International Airport	13/12/2019	Overseas assist
20-201	Maritime	Fishing vessel <i>Leila Jo</i> and bulk carrier <i>Rose Harmony</i> , collision, four miles from Lyttelton	13/01/2020	Domestic

Inquiry #	Mode	Description	Launched	Type
20-101	Rail	Passenger train and road vehicle, collision, Mulcocks Road level crossing	10/02/2020	Domestic
20-001	Aviation	Impact with terrain, Pacific Aerospace Cresco 08-600 aircraft, Wairarapa	24/04/2020	Domestic
20-102	Rail	Collision between freight train and hi-Rail vehicle, Limeworks Road level crossing	24/04/2020	Domestic
20-002	Aviation	Schleicher ASK 21 glider, impact with terrain, near Taupo	31/05/2020	Domestic

## Caseload data

Table 7: Caseload data 2017/18 to 2019/20

		Air			Rail			Maritime			Total		
		Jun-18	Jun-19	Jun-20	Jun-18	Jun-19	Jun-20	Jun-18	Jun-19	Jun-20	Jun-18	Jun-19	Jun-20
<b>Caseload at year end</b>													
Inquiries	Opened	5	7	3	4	5	6	3	6	2	12	18	11
	Continued	7	7	11	2	1	1	3	2	1	12	10	13
	Inquiries open at year end	12	14	14	6	6	7	6	8	3	24	28	24
Elapsed WD	Opened	554	615	222	501	342	790	228	604	277	1,283	1,561	1,289
	Continued	2,656	2,703	4,282	553	251	235	913	500	349	4,122	3,454	4,866
	Total	3,210	3,318	4,504	1,054	593	1,025	1,141	1,104	626	5,405	5,015	6,155
Average WD	Opened	111	88	74	125	68	132	76	101	139	107	87	117
	Continued	379	386	389	277	251	235	304	250	349	344	345	374
	Average age open inquiries (WD)	268	237	322	176	99	146	190	138	209	225	179	256
<b>Completed by year end</b>													
	Inquiries closed	9	5	3	5	5	5	7	4	7	21	14	15
	Elapsed WD	4,431	2,745	1,975	1,872	1,593	1,291	2,642	1,464	1,953	8,945	5,802	5,219
	Average age closed inquiries (WD)	492	549	658	374	319	258	377	366	279	426	414	348
<b>Total active inquiries during year</b>													
	Active inquiries	21	19	17	11	11	12	13	12	10	45	42	39
	FTE investigators	5.3	5.3	4.3	3.3	3.3	3.3	3.3	3.3	3.3	12.0	12.0	11.0

### Notes:

- Opened = opened in that year and remaining open at the end of the year, Continued = remained open throughout that year, Completed by year end = closed in that year.
- WD = working days (220 WD is one calendar year).
- Inquiry numbers exclude assistance to overseas inquiries, which also consumes investigator time.
- The investigator establishment is 13.0 full time equivalents (FTE), with one working across all modes. At 30 June 2020, two investigator roles were vacant, one maritime one aviation. The numbers exclude the Chief Investigator of Accidents and the two modal managers.

# **The aviation year in review** **Te arotake rererangi ā-tau**

*Ngā hau e whā – the four winds*

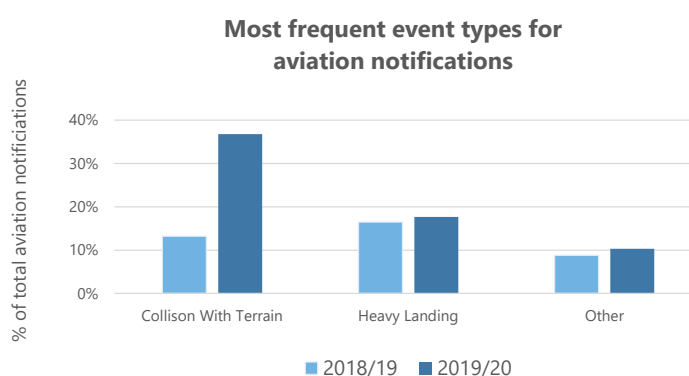


## Notifications

Over the year, the aviation mode received 72 notifications, compared with 95 in 2018/19. The graph below shows the most frequent notifications by event type. These event types comprise more than 10 per cent of the total aviation notifications.

The information is indicative only. There may be more than one notification for an occurrence, the reporting categories are broad, and from time to time classifications are reviewed. The numbers of notifications are too small for changes to have statistical significance, but the Commission considers notifications when deciding whether to open an inquiry.

	2019/20	2018/19
Accidents	44	72
Incidents	28	23
Total	72	95
Inquiries launched	3	7
Launch rate	4%	7%



## Themes

The Commission has become aware of anecdotal evidence about potential safety issues in relation to gliding, but been unable to determine a clear trend. Unfortunately, a fatal gliding accident occurred near Taupo in late May in which two people died. We opened an inquiry into the accident<sup>22</sup> to allow us to look in more depth into this area of the aviation sector.

Accidents involving helicopters remain a significant part of the Commission's casebook. At 30 June 2020, five out of 14 open aviation inquiries involved helicopters. The most recent was opened in April 2019.

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<sup>22</sup> AO-2020-002: Schleicher ASK 21 glider, impact with terrain, near Taupo, 31 May 2020

## Published inquiry reports

The Commission published three aviation reports over the year.

	Number of published reports			Timeliness of closed inquiries	
	Total	Final	Interim	Average age (working days)	No. completed within 440 working days
2019/20	3	3	0	658	0
2018/19	7	5	2	549	1

The aviation mode continues to experience a relatively heavy workload. Of the 39 inquiries active over the period, about half (17) were in the aviation mode; and of the 24 open at 30 June 2020, 14 were aviation inquiries. Adding to the workload demands, the aviation team has been below full complement: one role was vacant for the year and another for three months (both vacancies are now filled). One investigator, who began employment in early 2020, is yet to have built the experience to be considered fully effective (usually this is two to three years).

The result has been that some aviation inquiries have extended beyond 440 working days (two years). Three inquiries open at 30 June 2020 were older than about two-and-a-half years; all were in the aviation mode. The Commission is giving priority to these inquiries.

All three aviation inquiries closed over the period were older than 440 working days. One was an inquiry into the failure of landing gear on an aircraft carrying 71 passengers into Nelson in April 2017. Two were inquiries into helicopter accidents, one in Reefton in March 2017<sup>23</sup>. The second helicopter inquiry involved a forced landing into Porirua Harbour in May 2017<sup>24</sup>.



During the year, we completed a draft report into the accident, and circulated it to interested parties for comment. The Commission received an extensive submission on the draft, which included additional evidence. After further clarification and analysis, we incorporated the additional evidence, which did not alter our findings, into the report. The report was published in June 2020.

*Figure 13: The helicopter being lifted out of the harbour*

<sup>23</sup> AO-2017-002: Robinson Helicopter Company R22, ZK-IHA, Impact with terrain, Near Reefton, 27 March 2017

<sup>24</sup> AO-2017-004: MBB BK117 A-3 helicopter, ZK-IED, Loss of control, Porirua Harbour, 2 May 2017



## Recommendations

We made one recommendation to the Civil Aviation Authority as a result of the inquiry into the forced landing of the helicopter into Porirua Harbour. The helicopter had not undergone all the inspections and verification-of-maintenance tasks required before the Civil Aviation Authority issued the certificate of airworthiness.

We recommended the Civil Aviation Authority amend its policies and procedures for issuing certificates of airworthiness for imported second-hand aircraft to ensure audit and assurance processes are in place and the procedures consistently applied.

The findings, identified safety issues, and recommendations from the closed inquiries are summarised in the following pages.

## Aviation inquiry AO-2017-003: ATR72, ZK-MCY, Landing gear failure, Nelson, 9 April 2017

Event type	Landing gear failure
Safety issues <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	1 safety issue was identified: <ul style="list-style-type: none"> <li>The maintenance inspection programme was unlikely to detect the corrosion cracking that was found, and there was no preventive maintenance to limit the extent of corrosion damage.</li> </ul>
Findings (number) <i>Greater ≈ more complex</i>	8
Key lessons (number & précis) <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	3 key lessons were identified: <ul style="list-style-type: none"> <li>Pre-flight visual inspection of critical components is important, particularly when their integrity relies on these inspections.</li> <li>Re-cycling the faulty landing gear did not follow flight crew operating manual procedures.</li> <li>Operators should strictly adhere to post-occurrence procedures for preserving on-board data records, which are valuable for investigation.</li> </ul>
Safety actions (number & précis) <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	4 safety actions have been taken by the operator, who: <ul style="list-style-type: none"> <li>completed a fleet-wide inspection of the locking springs installed on its aeroplanes, and initiated a programme to replace them after a certain interval</li> <li>limited the lives of the locking springs</li> <li>included cleaning and lubrication at each 500-hour maintenance check</li> <li>trained all crew in a simulation of this occurrence.</li> </ul> 1 safety action was taken by the manufacturer, who: <ul style="list-style-type: none"> <li>updated the Component Maintenance Manual (CMM) for the ATR aeroplane to provide new inspection tasks for the springs at overhaul.</li> </ul>
Recommendations (number & précis) <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	No new recommendations were identified.
Response	N/A

## Aviation inquiry AO-2017-002: Robinson Helicopter Company R22, ZK-IHA, Impact with terrain, Near Reefton, 27 March 2017

Event type	Impact with terrain
Safety issues <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	No new safety actions were identified.
Findings (number) <i>Greater ≈ more complex</i>	8
Key lessons (number & précis) <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	3 key lessons were identified: <ul style="list-style-type: none"> <li>• All aviation participants have a responsibility to ensure they comply with the Civil Aviation Rules, which are in place to ensure the safe conduct of flight.</li> <li>• Aviation participants with concerns about other participants should raise those concerns through the Aviation Related Concerns system to help avoid accidents and incidents.</li> <li>• The circumstances of this accident show the importance of the regulator continuing to monitor sectors of the industry it deems to have a low consequence of failure.</li> </ul>
Safety actions (number & précis) <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	1 safety action was taken: <ul style="list-style-type: none"> <li>• The CAA substantially revised its website during 2019, which included improvements regarding the Aviation Related Concern system submission process.</li> </ul>
Recommendations (number & précis) <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	No new recommendations were issued.
Response	N/A

## Aviation inquiry AO-2017-004: MBB BK117 A-3 helicopter, ZK-IED Loss of control, Porirua Harbour, 2 May 2017

Event type	Loss of control
<b>Safety issues</b> <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	<p>2 safety issues were identified:</p> <ul style="list-style-type: none"> <li>• Maintenance anomalies in the operator's helicopters raised concerns about possible problems with other helicopters it had owned and later sold.</li> <li>• The CAA's process for entering second-hand imported aircraft into the New Zealand regulatory system was not clearly defined, was not clearly understood by some staff, and did not have the necessary checks to ensure the proper process was followed.</li> </ul>
<b>Findings (number)</b> <i>Greater ≈ more complex</i>	7
<b>Key lessons</b> <b>(number &amp; précis)</b> <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	<p>4 key lessons were identified:</p> <ul style="list-style-type: none"> <li>• Pilots can experience distraction during all phases of flight. Pilots must remain vigilant to ensure they fully attend to the tasks necessary for the safe operation of their aircraft.</li> <li>• Unanticipated yaw is a flight characteristic to which all types of single-rotor helicopter can be susceptible. Pilots need to remain cognisant of the conditions in which the phenomenon is likely to occur and the actions required for recovery.</li> <li>• The disclosure of medical conditions and prescribed medication to the CAA ensures that their aeromedical significance can be assessed. It does not automatically preclude a pilot from carrying out their duties, but does ensure a pilot can undertake them safely.</li> <li>• All maintenance and inspection tasks must be conducted and recorded according to the rules.</li> </ul>
<b>Safety actions</b> <b>(number &amp; précis)</b> <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	<p>2 safety actions have been taken:</p> <ul style="list-style-type: none"> <li>• The CAA issued a Continuing Airworthiness Notice.</li> <li>• The CAA arranged an independent review of the process for issuing of a certificate of airworthiness, including the conformity inspection process for second-hand aircraft.</li> </ul>
<b>Recommendations</b> <b>(number &amp; précis)</b> <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	<p>1 recommendation was made to the CAA to:</p> <ul style="list-style-type: none"> <li>• amend its policies and procedures for issuing certificates of airworthiness for imported second-hand aircraft to ensure that the appropriate audit and assurance processes are in place and the procedures are consistently applied.</li> </ul>
Response	The recommendation was accepted.

**The rail year in review**  
**Te arotake rerewhenua ā-tau**

*Rerewhenua – flowing across the land*

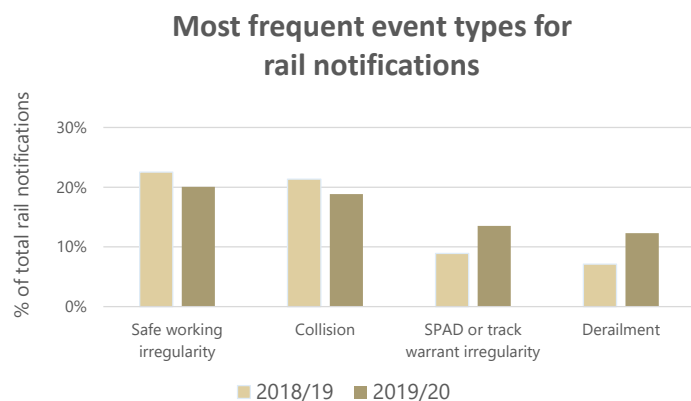


## Notifications

Over the year, the rail mode received 238 notifications, compared with 323 in the previous year. The diagram below shows the most frequent notifications by event type. These event types comprise more than 10 per cent of the total rail notifications.

The information is indicative only. There may be more than one notification for an occurrence, the reporting categories are broad, and from time to time classifications are reviewed. The numbers of notifications are too small for changes to have statistical significance, but the Commission considers notifications when deciding whether to open an inquiry.

	2019/20	2018/19
Accidents	23	47
Incidents	215	276
Total	238	323
Inquiries launched	6	5
Launch rate	3%	2%



## Themes

Over the year, we opened three inquiries involving collisions at level crossings. One of the accidents resulted in fatal injuries to the driver of a truck.<sup>25</sup> The inquiries are ongoing and findings yet to be determined.

Level crossing safety is a priority issue for the Commission, and it has been on the Watchlist since 2016. Commission recommendations on aspects of the road/rail interface remain open.<sup>26</sup>

Three inquiries into worksite occurrences were active during 2019/20, with one closed.<sup>27</sup> Findings from the closed inquiry related to ineffective use of non-technical skills. (Non-technical skills are the 'how' of doing a task, rather than the 'what' – for example communication skills).

<sup>25</sup> RO-2019-108: Freight train, level crossing collision with road vehicle, Piako Road, 7 December 2019; RO-2020-101: Passenger train and road vehicle, collision, Mulcocks Road level crossing, 10 February 2020; RO-2020-102: Freight train and hi-Rail vehicle, collision, Limeworks Road level crossing, 24 April 2020

<sup>26</sup> Refer to the Watchlist item: <https://www.taic.org.nz/watchlist>

<sup>27</sup> RO-2019-101: Safe-working occurrence, Westfield yard, Ōtāhuhu, Auckland, 24 March 2019

The Commission has raised the matter of non-technical skills in several rail inquiries. We have previously made a recommendation to Waka Kotahi NZ Transport Agency to require the Executive of the National Rail System Standard to develop standards.<sup>28</sup> The recommendation remains open, so we made no new recommendations.

Over 2019/20 four inquiries into derailments were active. We had previously identified an increasing trend in derailments and opened the inquiries to determine reasons for the increase. We published reports for three of the four inquiries over the year. We identified no safety issues that were common across the three occurrences. One inquiry is continuing.

### Inquiry reports published

The Commission published five inquiry reports over the year. All inquiries were completed within 440 days.

	Number of published reports			Timeliness of closed inquiries	
	Total	Final	Interim	Average age (working days)	No. completed within 440 working days
2019/20	5	5	0	258	5
2018/19	5	5	0	319	5

### Recommendations



Figure 14: The derailed wagons at the incident site

We made one rail recommendation during the year. The recommendation arose from an inquiry into a derailment.<sup>29</sup> The Commission identified a safety issue where there was no procedure for identifying, evaluating and rectifying track twists of a repetitive cyclic nature. The Commission recommended that KiwiRail identify cyclic track conditions on the national rail network and develop a standard that prioritises actions to reduce the likelihood of a derailment.

The findings, identified safety issues, and recommendations from the closed inquiries are summarised in the following pages.

<sup>28</sup> RO-2011-101: Wrong line running irregularity, leading to a potential head-on collision, Papakura – Wiri, 14 January 2011. Open recommendation 002/12

<sup>29</sup> RO-2019-103: Derailment of Train 626, Palmerston North, 4 April 2019

## Rail inquiry RO-2018-101: Metropolitan passenger train derailment, Britomart Transport Centre, Auckland, 9 May 2018

Event type	Derailment
Safety issues <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	No new safety issues were identified.
Findings (number) <i>Greater ≈ more complex</i>	6
Key lessons (number & précis) <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	No new lessons were identified.
Safety actions (number & précis) <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	<p>2 safety actions were taken:</p> <ul style="list-style-type: none"> <li>• The KiwiRail track inspection regime has moved from a reactive inspection to predictive assurance.</li> <li>• An independent wheel/rail interface working group has been established to resolve potential rail wear issues within the Auckland passenger network.</li> </ul>
Recommendations (number & précis) <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	No new recommendations were issued.
Response	N/A



## Rail inquiry RO-2018-102: Freight train SPAD and wrong routing, Taimate 1 October 2018

Event type	SPAD and wrong routing
Safety issues <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	No new safety issues were identified.
Findings (number) <i>Greater ≈ more complex</i>	4
Key lessons (number & précis) <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	2 key lessons were identified: <ul style="list-style-type: none"> <li>• Knowledge of, and adherence to, operating rules and procedures is key to safe operations.</li> <li>• Train drivers must confirm that information they receive is correct, and drive with caution until the information is confirmed.</li> </ul>
Safety actions (number & précis) <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	4 safety actions were taken by KiwiRail, which has: <ul style="list-style-type: none"> <li>• retrained staff involved in the incident, and developed an 'end of day' checklist to ensure a standardised approach to leaving a worksite</li> <li>• issued documents related to the incident for discussion at team safety briefings</li> <li>• issued a Staff Briefing to freight train drivers about changes to the placement of some sensors that detect train movements, and reinforced the requirement for drivers to be able to stop their train before a signal or other feature if needed</li> <li>• issued a safety message about the isolation procedure for the types of points incorrectly set and isolated at Taimate.</li> </ul> 3 further safety actions are being taken by KiwiRail to: <ul style="list-style-type: none"> <li>• review and audit the track warrant system</li> <li>• audit communications to ensure standardisation</li> <li>• review current communication-recording technology to understand the best method to ensure standardised communication across the rail network.</li> </ul>
Recommendations (number & précis) <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	No new recommendations were issued.
Response	N/A

## Rail inquiry RO-2019-102: Clinton derailment, 29 March 2019

Event type	Derailment
<b>Safety issues</b> <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	<p>2 safety issues were identified:</p> <ul style="list-style-type: none"> <li>• Driver distraction, together with the downhill gradient of the track allowed the train to reach a speed above the maximum permissible.</li> <li>• A phenomenon known as dynamic interaction very probably caused the derailment. The excessive speed combined with the track geometry at the point of derailment and the centre of gravity of the fully loaded coal wagons caused the wagon to oscillate from side to side. One or more wheels then lifted and climbed the rail, resulting in derailment.</li> </ul>
<b>Findings (number)</b> <i>Greater ≈ more complex</i>	6
<b>Key lessons</b> <b>(number &amp; précis)</b> <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	<p>2 key lessons were identified:</p> <ul style="list-style-type: none"> <li>• A train driver can become distracted at any time, which under some circumstances can have adverse consequences.</li> <li>• Learning from previous incidents can help avoid repeat accidents and incidents. However, when procedural control measures have been identified they should be implemented, checked and monitored properly to ensure the desired results have been achieved.</li> </ul>
<b>Safety actions</b> <b>(number &amp; précis)</b> <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	<p>3 safety actions were taken by the operator:</p> <ul style="list-style-type: none"> <li>• A briefing was issued to all train drivers reinforcing the need to adhere to speed limits when passing through turnouts/points, for example when departing crossing loops.</li> <li>• A redesign of the points configuration at Clinton is planned. The redesign is intended to change the curve alignment and reduce the effect of excessive speed.</li> <li>• A new local instruction was formalised and published. It aims to ensure that fully laden coal trains heading to Dunedin use only the main line when passing through Clinton. This means that the speed of empty Invercargill bound trains entering the loop is reduced by the uphill geometry of the track. It also avoids fully laden trains having to proceed through the crossing loop points.</li> </ul>
<b>Recommendations</b> <b>(number &amp; précis)</b> <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	No recommendations were issued.
Response	N/A

## Rail inquiry RO-2019-101: Safe-working occurrence, Westfield yard, Ōtāhuhu, Auckland, 24 March 2019

Event type	Potential safe working incident
Safety issues <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	No new safety issues were identified.
Findings (number) <i>Greater ≈ more complex</i>	2
Key lessons (number & précis) <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	1 key lesson was identified: <ul style="list-style-type: none"> <li>All personnel undertaking safety-critical roles should adhere to the principles of non-technical skills. This would ensure they share the same mental models and have a clear understanding of what is required of themselves and others to complete the tasks safely.</li> </ul>
Safety actions (number & précis) <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	No new safety actions were identified.
Recommendations (number & précis) <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	No recommendations were issued.
Response	N/A

## Rail inquiry RO-2019-103: Derailment of Train 626, Palmerston North, 4 April 2019

### Event type

Derailment

### Safety issues

*"What contributed to the occurrence, or might contribute to another occurrence?"*

1 safety issue was identified:

- The operator had no procedure for identifying, evaluating and rectifying track twists of a repetitive cyclic nature.

### Findings (number)

*Greater ≈ more complex*

6

### Key lessons

*(number & précis)*

*"What did we identify that others should take heed of to avoid it happening to them?"*

2 key lessons were identified:

- Planned and preventive maintenance is a key safety requirement for any transport-related operation.
- A speed limit is a key risk-control measure that helps to reduce the likelihood and consequences of an incident on the rail network. It is essential that train drivers keep their train's speed under control at all times.

### Safety actions

*(number & précis)*

*"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"*

4 safety actions were taken by the operator:

- A notice was issued reinforcing the need for train drivers and remote-control operators to adhere to maximum authorised line speeds until the complete trains had cleared the sections of track to which those speeds applied.
- A rolling stock dynamic performance standard has been adopted.
- The bogie fleet concerned is being retired as new wagons are introduced. The new bogies show a lower derailment rate.
- The re-use of inner springs on the type of bogies involved in the incident is now prohibited at overhaul.

### Recommendations

*(number & précis)*

*"What needs to change to reduce the likelihood of a recurrence?"*

1 recommendation was issued to the Chief Executive of KiwiRail:

- To identify cyclic track conditions on the national rail network and develop a standard that prioritises actions to reduce the likelihood of a derailment.

### Response

The recommendation was accepted.

# **The maritime year in review**

## **Te arotake reremoana ā-tau**

***Ara Wai – waterways***

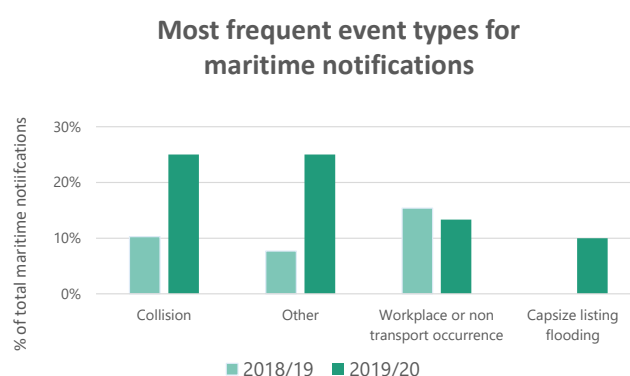


## Notifications

Over the year, the maritime mode received 58 notifications, compared with 39 in the previous year. The diagram below shows the most frequent notifications by event type. These event types comprise more than 10 per cent of the total maritime notifications.

The information is indicative only. There may be more than one notification for an occurrence, the reporting categories are broad, and from time to time classifications are reviewed. The numbers of notifications are too small for changes to have statistical significance, but the Commission considers notifications when deciding whether to open an inquiry.

	2019/20	2018/19
Accidents	7	12
Incidents	51	27
Total	58	39
Inquiries launched	2	6
Launch rate	3%	15%



## Themes

Ten maritime inquiries were active over 2019/20. The nature of the inquiries varied, although some circumstances were similar: two related to workplace fatalities; two, which happened within a month of each other in early 2019, related to jet boat accidents; and three were groundings.

### Inquiry reports published

Of the ten inquiries active over the year, seven were closed by 30 June 2020. This included the two workplace accidents, the jet boat accidents, and two of the groundings. The seventh was a fire on board a fishing trawler. We identified no safety issues common to the inquiries; however in two inquiries safety issues related to Watchlist items.

In one of the closed inquiries into a grounding<sup>30</sup> identified safety issues related to our Watchlist item on navigation in pilotage waters.

In one of the jet boat accidents, which involved a recreational vessel, one person died and another two were seriously injured. The Commission found it was virtually certain that the

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<sup>30</sup> MO-2018-203: Grounding of container ship *Leda Maersk*, Otago Lower Harbour, 10 June 2018

consumption of alcohol impaired the driver's ability to make good decisions and to operate the jet boat safely.<sup>31</sup>

The Commission has previously recommended appropriate legislation or rules to prohibit people in safety-critical roles – including people operating recreational vessels – being impaired by alcohol or drugs. This recommendation remains open.<sup>32</sup>

Impairment of people in safety-critical roles is a high-priority safety issue for the Commission, which continues to be a factor in inquiries. It has been an item on the Watchlist since we began publication in 2014.<sup>33</sup>

All seven inquiries were closed within 440 working days.

	Number of published reports			Timeliness of closed inquiries	
	Total	Final	Interim	Average age (working days)	No. completed within 440 working days
2019/20	7	7	0	279	7
2018/19	4	4	0	366	3

## Recommendations

Nine recommendations were included in the maritime inquiries published over the year.

- Two were to operators to improve practices for workers on board vessels.<sup>34</sup>
- Two were to Maritime NZ, the result of separate jet boat accidents. One was to improve the quality of its fatal accident database so the risks of alcohol and drug use in recreational boating can be better understood.<sup>35</sup> The second recommendation was to ensure operators identify systems critical to the safe operation of a jet boat and have maintenance schedules.<sup>36</sup>
- A further two recommendations issued to Maritime NZ were about improving the safety standards on older fishing vessels. The recommendations arose from an inquiry into the fire on a fishing vessel.<sup>37</sup> (Refer to the case study on page 27.)

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<sup>31</sup> MO-2019-202: Fatal jet boat accident, Hollyford River, Southland, 18 March 2019

<sup>32</sup> Recommendation 012/13 from inquiry AO-2012-001: Hot-air balloon collision with power lines and in-flight fire, near Carterton, 7 January 2012

<sup>33</sup> Refer to the Watchlist item: <https://www.taic.org.nz/watchlist>

<sup>34</sup> MO-2019-203: Bulk log carrier *Coresky OL*, Crew fatality during cargo securing operation Eastland Port, Gisborne 3 April 2019; MO-2018-205: Fatality on board the factory trawler, *San Granit*, 14 November 2018

<sup>35</sup> MO-2019-202: Fatal jet boat accident, Hollyford River, Southland, 18 March 2019

<sup>36</sup> MO-2019-201: Jet boat *Discovery 2*, contact with Skippers Canyon wall, 23 February 2019

<sup>37</sup> MO-2018-202: Accommodation fire on board, fishing trawler *Dong Won 701*, Timaru, 9 April 2018

- A third recommendation from the same inquiry was addressed to the owner to ensure the fire safety of all vessels in its fleet, including appropriate crew training. (Refer to the case study on page 27.)
- Two recommendations arose from an inquiry into the grounding of a container ship in April 2018.<sup>38</sup> One recommendation was to the operator to take steps to ensure a high standard of navigation and pilotage across its fleet. The other was to Port Otago to identify areas where pilotage operations can be improved.

The findings, identified safety issues, and recommendations from the closed inquiries are summarised in the following pages.

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<sup>38</sup> MO-2018-203: Grounding of container ship *Leda Maersk*, Otago Lower Harbour, 10 June 2018



## Maritime inquiry MO-2018-204: Dolphin Seeker, grounding, 27 October 2018

Event type	Grounding
<b>Safety issues</b> <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	1 safety issue was identified: <ul style="list-style-type: none"> <li>The operator's safety management system did not fully address the risk of vessel groundings and collisions where its skippers were in effect working alone in the wheelhouse.</li> </ul>
<b>Findings (number)</b> <i>Greater ≈ more complex</i>	4
<b>Key lessons</b> <b>(number &amp; précis)</b> <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	1 key lesson was identified: <ul style="list-style-type: none"> <li>When skippers are operating vessels alone in high-risk situations, there should be adequate measures in place to minimise the risk of one-person errors resulting in maritime accidents and incidents.</li> </ul>
<b>Safety actions</b> <b>(number &amp; précis)</b> <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	5 safety actions have been taken by the operator who: <ul style="list-style-type: none"> <li>conducted an internal investigation, and group debriefs</li> <li>carried out a hazard review of skippers giving commentary and maintaining navigational watch</li> <li>made the use of depth alarms, where fitted, compulsory</li> <li>changed policies and procedures across the company's Maritime Transport Operator Plan</li> <li>increased management oversight of conduct on the water with the use of electronic tools.</li> </ul> 1 safety action was taken by Maritime NZ who: <ul style="list-style-type: none"> <li>carried out a Maritime Operator Safety System audit.</li> </ul>
<b>Recommendations</b> <b>(number &amp; précis)</b> <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	Nil
Response	N/A

## Maritime inquiry MO-2018-203: Grounding of container ship Leda Maersk, Otago Lower Harbour, 10 June 2018

Event type	Grounding
<b>Safety issues</b> <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	<p>2 safety issues were identified:</p> <ul style="list-style-type: none"> <li>Port Otago's safety management system fell short of the standards for pilot training outlined in maritime rules, and the principles of safety management systems outlined in the NZ Port and Harbour Marine Safety Code.</li> <li>Bridge operations fell short of good practice in planning and executing the passage under pilotage and bridge resource management.</li> </ul>
<b>Findings (number)</b> <i>Greater ≈ more complex</i>	6
<b>Key lessons</b> <b>(number &amp; précis)</b> <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	<p>3 previous key lessons were repeated:</p> <ul style="list-style-type: none"> <li>The bridge team and the pilot must agree, and mutually understand, the passage plan and monitoring against that plan.</li> <li>Bridge teams must actively promote and use the concept of bridge resource management.</li> <li>The ECDIS (electronic chart display and information system), used for monitoring the progress of the vessel, must be configured correctly.</li> </ul> <p>1 new key lesson was identified:</p> <ul style="list-style-type: none"> <li>Portable pilot units can be useful aids to navigation; however, the equipment must be accurate and pilots fully trained in their use.</li> </ul>
<b>Safety actions</b> <b>(number &amp; précis)</b> <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	<p>5 safety actions have been taken by Port Otago who:</p> <ul style="list-style-type: none"> <li>completed an internal investigation</li> <li>requested cargo planners to reconfigure stacking of some containers</li> <li>allocated tasks and monitoring parameters to the bridge team during the master/pilot exchange</li> <li>reinstated the annual assessments of pilots</li> <li>arranged for the manufacturer to provide training in the use of portable pilot units.</li> </ul> <p>3 safety actions have been taken by Maersk Line A/S who:</p> <ul style="list-style-type: none"> <li>provided additional information fleet vessels going to Port Chalmers about navigation in the area</li> <li>advised the next master to audit navigation and carry out a bridge discipline meeting for closing any existing gaps in bridge procedures</li> <li>provided senior crew from the vessel with training on bridge resource management.</li> </ul>

## Recommendations (number & précis)

*"What needs to change to  
reduce the likelihood of a  
recurrence?"*

---

1 recommendation was made to the Chief Executive of Maersk Line A/S:

- To review the implementation of the company's safety management system across its fleet with respect to navigation and pilotage.

1 recommendation was made to the Chief Executive of Port Otago:

- To note from this report areas to improve pilotage operations.
- 

## Response

Both recommendations were accepted.

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## Maritime inquiry MO-2018-202: Accommodation fire on board, fishing trawler Dong Won 701, 9 April 2018

Event type	Fire on board
<b>Safety issues</b> <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	<p>2 safety issues were identified:</p> <ul style="list-style-type: none"> <li>Aspects of crew response to the fire fell short of industry good practice.</li> <li>Inconsistencies in the application of Maritime Rules may mean up to 12 NZ-flagged fishing vessels do not fully comply with the relevant safety standards. Under the Rules, a further 50 fishing vessels are allowed to operate indefinitely without meeting current safety standards.</li> </ul>
<b>Findings (number)</b> <i>Greater ≈ more complex</i>	6
<b>Key lessons</b> <b>(number &amp; précis)</b> <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	<p>3 key lessons were identified:</p> <ul style="list-style-type: none"> <li>Safety-critical systems such as fire-detection and alarm systems must be routinely tested to ensure they remain functional.</li> <li>On discovering a fire, it is important that the ship's general alarm is used as soon as possible to alert crew to the danger.</li> <li>To slow or prevent a fire spreading, all openings that allow air to feed or to be drawn into the location of the fire must be closed as soon as possible.</li> </ul>
<b>Safety actions</b> <b>(number &amp; précis)</b> <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	<p>16 safety actions have been taken by the owner who has:</p> <ul style="list-style-type: none"> <li>debriefed and offered counselling to all crew on the accident vessel</li> <li>held safety meetings on the other 2 vessels in the fleet to discuss the immediate lessons of the incident, and hold drills on fire in port</li> <li>verified the fire detection system and maintenance in asset management systems</li> <li>checked and verified for operations all fixed fire-fighting CO2 flooding systems and fire dampers</li> <li>inspected all cabin electrical fittings</li> <li>re-written the corporate safety management system</li> <li>held safety meetings on board to explain policies and commitment to safe operations, and conducted drills</li> <li>audited the remaining vessels with regard to personnel training, procedure implementation and vessel asset improvements</li> <li>provided advanced fire safety training to crew</li> <li>fitted heaters in cabins with guards</li> <li>increased the inspection and scrutiny of housekeeping and escape routes</li> <li>reviewed crew and contractor vessel familiarisation inductions</li> <li>rolled out a new safety management system for trial on one vessel</li> <li>held general safety meetings on both remaining vessels before docking</li> </ul>

## Recommendations (number & précis)

*"What needs to change to  
reduce the likelihood of a  
recurrence?"*

- 
- conducted a fire drill and general evacuation of the dry dock, followed by a general safety meeting for all crew and vessel management
  - provided refresher firefighting training for all crew.

2 safety actions have been taken by Maritime NZ which:

- is considering issues of the status of fishing vessels as part of a wide-ranging reform project of Maritime Rules Part 40 series
  - continues to work closely with the sector and surveyors to support better compliance and clarify rules under the existing law pending the outcome of the 40 Series reform project.
- 

1 recommendation was made to the owner:

- To assess the overall fire safety of each vessel in its fleet and ensure that the risks and consequences of fire are reduced to as low as possible, including ensuring that crews are appropriately trained and practised in responding to fires.

2 recommendations were made to the Director of Maritime NZ:

- To take any measures available to them to make post-2004 fishing vessels comply with as many of the design, construction and equipment standards prescribed in the current Rules as are reasonable and practicable.
  - To work with the Ministry of Transport to amend the Rules to ensure that aging fishing vessels are not permitted to remain in the system indefinitely without being required to meet contemporary safety standards.
- 

## Response

The owner did not agree with the findings of the report, but will implement the recommendation.

Maritime NZ accepts the first recommendation. It partly accepts the second, but actions depend on the outcome of the reform project.

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## Maritime inquiry MO-2019-201: Jet boat Discovery 2, contact with Skippers Canyon wall, 23 February 2019

Event type	Collision
Safety issues <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	2 safety issues were identified: <ul style="list-style-type: none"> <li>The operator's planned maintenance programme did not ensure the jet boat's steering and control system met the manufacturers' specifications.</li> <li>The operator's hazard identification system had not identified the risk that a system critical to the safety of the jet boat could fail.</li> </ul>
Findings (number) <i>Greater ≈ more complex</i>	6
Key lessons (number & précis) <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	3 key lessons were identified: <ul style="list-style-type: none"> <li>The onus is on the maintainer of equipment to follow the manufacturer's instructions and ensure an appropriate maintenance regime is in place.</li> <li>In the past, investigations of jet boat accidents have attributed the causes mainly to operational conditions and driver training, but it is essential that operators pay equal attention to mechanical equipment that can significantly affect safety.</li> <li>The Maritime Rules provide minimum safe standards, but operators are responsible for identifying and mitigating risks and hazards specific to their operations and should use that process to improve their safety standards above the minimum.</li> </ul>
Safety actions (number & précis) <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	5 safety actions have been taken by the operator to: <ul style="list-style-type: none"> <li>ensure all jet unit components are maintained to manufacturers' specifications</li> <li>replace the jet unit components aft of the transom on all the jet boats it operates</li> <li>increase the frequency of maintenance checks</li> <li>require the qualified maintenance engineer to approve all maintenance work</li> <li>check jet unit components before use and at the end of each day's operations.</li> </ul>
Recommendations (number & précis) <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	1 recommendation was made to the Director of Maritime NZ: <ul style="list-style-type: none"> <li>To ensure all operators working under Maritime Rules Part 82 have identified on each jet boat all systems that are critical to the safe operation of the boat, and to have a documented inspection and maintenance system in place that covers those critical systems and also ensures they meet manufacturers' specifications.</li> </ul>
Response	Maritime NZ accepted the recommendation.

## Maritime inquiry MO-2019-202: Fatal jet boat accident, Hollyford River, Southland, 18 March 2019

Event type	Collision with rock
<b>Safety issues</b> <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	1 safety issue was identified: <ul style="list-style-type: none"> <li>Data about alcohol and drug use in the New Zealand recreational maritime sector is limited.</li> </ul>
<b>Findings (number)</b> <i>Greater ≈ more complex</i>	6
<b>Key lessons</b> <b>(number &amp; précis)</b> <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	3 key lessons were identified: <ul style="list-style-type: none"> <li>The driver or skipper of a recreational watercraft is responsible for the safety of all persons on board. For the safety of everyone on board, all factors must be considered when passage planning, especially on rivers where operating conditions can change rapidly it is essential.</li> <li>The consumption of alcohol can impair a person's performance significantly. It can adversely affect their risk perception, reaction time and co-ordination.</li> <li>It is important that safety actions are taken on the Commission's recommendations without delay to help avoid similar accidents or incidents occurring in the future.</li> </ul>
<b>Safety actions</b> <b>(number &amp; précis)</b> <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	1 safety action is being taken: <ul style="list-style-type: none"> <li>Maritime NZ is continuing its work on improving the fatal events dataset so that it better captures alcohol and drug use in recreational boating accidents.</li> </ul>
<b>Recommendations</b> <b>(number &amp; précis)</b> <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	1 recommendation was made to the Director of Maritime NZ: <ul style="list-style-type: none"> <li>To continue to develop its fatal accident database to improve the quality of the data so that the maritime sector is better able to understand the risks of alcohol and drug use in recreational boating accidents.</li> </ul>
Response	Maritime NZ accepted the recommendation.

## Maritime inquiry MO-2018-205: Fatality on board the factory trawler San Granit, 14 November 2018

Event type	Fatality on board factory trawler
<b>Safety issues</b> <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	<p>2 safety issues were identified:</p> <ul style="list-style-type: none"> <li>The risks associated with operating the piece of machinery where the accident occurred were not fully understood. The safety controls relied on the operator following generic instructions and procedures.</li> <li>Crew training on the configuration of the emergency stops probably resulted in confusion about which emergency stops serviced which system.</li> </ul>
<b>Findings (number)</b> <i>Greater ≈ more complex</i>	7
<b>Key lessons</b> <b>(number &amp; précis)</b> <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	<p>1 key lesson was repeated from a previous report:</p> <ul style="list-style-type: none"> <li>It is unacceptable for workers to be affected by performance-impairing substances, regardless of the roles they perform.</li> </ul> <p>1 new key lesson was identified:</p> <ul style="list-style-type: none"> <li>Task analysis on any piece of machinery is an important safety function that helps to identify practicable control measures to reduce risk to operators. If an identified hazard can't be eliminated, a task analysis helps to ensure operating procedures are in place to assist user training requirements.</li> </ul>
<b>Safety actions</b> <b>(number &amp; précis)</b> <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	<p>6 safety actions were by the operator who engaged an expert to assess the safety of the automatic plate freezer area on board the <i>San Granit</i>. The resulting project involved:</p> <ul style="list-style-type: none"> <li>replacing the automatic plate freezer guards with permanent guarding</li> <li>reconfiguring the factory emergency stop system</li> <li>fitting interlocks and anti-tamper devices to gates to the guarded area</li> <li>installing a light curtain above the scales to prevent access to the guarded area over the scales</li> <li>fitting a safety valve to the hydraulic system to release any residual pressure in the system when an emergency stop or an interlock is activated</li> <li>revising the risk assessment and safe operating procedures for the automatic plate freezer area.</li> </ul>
<b>Recommendations</b> <b>(number &amp; précis)</b> <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	<p>1 recommendation was made to the operator:</p> <ul style="list-style-type: none"> <li>To implement training for the crew on the configuration of the emergency stops to avoid confusion on which emergency stop services which system. This will reduce the likelihood of crew accessing running machinery after pressing incorrect emergency stops.</li> </ul>
Response	The recommendation was accepted.



## Maritime inquiry MO-2019-203: Bulk log carrier Coresky OL Crew fatality during cargo securing operation, Eastland Port, Gisborne, 3 April 2019

Event type	Fatality on board bulk log carrier
Safety issues <i>"What contributed to the occurrence, or might contribute to another occurrence?"</i>	1 safety issue was identified: <ul style="list-style-type: none"> <li>The operator's SMS (safety management system) was not supported by an effective safety assessment of log-cargo-securing operations, which should have identified the hazards present. This resulted in ineffective controls to mitigate the risks to crew when completing these tasks.</li> </ul>
Findings (number) <i>Greater ≈ more complex</i>	8
Key lessons (number & précis) <i>"What did we identify that others should take heed of to avoid it happening to them?"</i>	2 key lessons were identified: <ul style="list-style-type: none"> <li>Securing logs can be a hazardous operation that should be fully risk assessed. Only then will comprehensive procedures and instructions be developed to help create a safe working environment.</li> <li>Those involved in a securing operation need to be aware of the likely loads involved and the potential dangers to which they may become exposed. In addition, relevant information needs to be recorded in the cargo securing manual for future reference.</li> </ul>
Safety actions (number & précis) <i>"What has been done while the inquiry's been underway that's removed the need for a relevant recommendation?"</i>	5 safety actions were taken by the operator who: <ul style="list-style-type: none"> <li>shared an internal investigation report with the fleet for all crew's attention</li> <li>revised the relative SMS procedures and checklists</li> <li>required the crew to examine all cargo securing equipment, with defective equipment found removed from service</li> <li>enhanced the education and training of newly joined crewmembers, especially for log carriers</li> <li>issued a fleet circular on lashing of timber on deck for the crew's attention.</li> </ul>
Recommendations (number & précis) <i>"What needs to change to reduce the likelihood of a recurrence?"</i>	1 recommendation was made to the operator: <ul style="list-style-type: none"> <li>To carry out a comprehensive safety assessment of vessels engaged in carrying and securing deck log cargo. The assessment is to result in appropriate procedures and guidance being contained in the safety management system and ensure that a safe system of work is established.</li> </ul>
Response	The operator did not respond to the recommendation.

# Financial statements Ngā tauākī pūtea

## TRANSPORT ACCIDENT INVESTIGATION COMMISSION

### STATEMENT OF COMPREHENSIVE REVENUE AND EXPENSE FOR THE YEAR ENDED 30 JUNE 2020

	Notes	Actual 2020 \$000	Budget 2020 \$000	Actual 2019 \$000
<b>Revenue</b>				
Funding from the Crown		5,520	5,520	5,520
Interest revenue		16	23	21
Other revenue	2	70	46	158
<b>Total Revenue</b>		<b>5,606</b>	<b>5,589</b>	<b>5,699</b>
<b>Expenditure</b>				
Audit Fees		21	20	20
Commissioners' fees	3	235	271	271
Depreciation and amortisation expense	6&7	157	205	165
Lease, rentals and outgoings		594	685	677
Personnel costs	3	3,321	3,383	3,496
Other expenses		865	1,025	1,138
<b>Total Expenditure</b>		<b>5,193</b>	<b>5,589</b>	<b>5,767</b>
<b>Net Surplus/(Deficit)</b>		<b>413</b>	<b>-</b>	<b>(68)</b>
<b>Other Comprehensive revenue and expense</b>		<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Comprehensive revenue and expense</b>		<b>413</b>	<b>-</b>	<b>(68)</b>

Explanations of major variances against budget are provided in note 15.

*The accompanying notes form part of these financial statements.*

**TRANSPORT ACCIDENT INVESTIGATION COMMISSION**  
**STATEMENT OF FINANCIAL POSITION AS AT 30 JUNE 2020**

Assets	Notes	Actual 2020 \$000	Budget 2020 \$000	Actual 2019 \$000
<b>Current assets</b>				
Cash and cash equivalents	4	1,997	1,419	1,409
Receivables	5	7	2	6
Prepayments		32	24	18
Total current assets		2,036	1,445	1,433
<b>Non-current assets</b>				
Property, plant and equipment	6	180	198	234
Intangible assets	7	183	186	277
Total non-current assets		363	384	511
Total assets		2,399	1,829	1,944
<b>Liabilities and taxpayers' funds</b>				
<b>Current liabilities</b>				
Payables	8	225	145	255
Employee entitlements	9	327	250	265
Total current liabilities		552	395	520
<b>Non-current liabilities</b>				
Employee entitlements	9	28	35	18
Total non-current liabilities		28	35	18
Total liabilities		580	430	538
Net assets		1,819	1,399	1,406
<b>Equity</b>				
General funds		1,819	1,399	1,406
Total equity		1,819	1,399	1,406

Explanations of major variances against budget are provided in note 15.

*The accompanying notes form part of these financial statements.*

**TRANSPORT ACCIDENT INVESTIGATION COMMISSION**  
**STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED 30 JUNE 2020**

	Note	Actual 2020 \$000	Budget 2020 \$000	Actual 2019 \$000
Balance at 1 July		<b>1,406</b>	1,399	1,474
Total comprehensive revenue and expense for the year		<b>413</b>	-	(68)
Balance at 30 June		<b>1,819</b>	1,399	1,406

Explanations of major variances against budget are provided in note 15.

*The accompanying notes form part of these financial statements.*

**TRANSPORT ACCIDENT INVESTIGATION COMMISSION**  
**STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 30 JUNE 2020**

	Notes	Actual 2020 \$000	Budget 2020 \$000	Actual 2019 \$000
<b>Cash flows from operating activities</b>				
Receipts from the Crown		<b>5,520</b>	5,520	5,520
Interest received		<b>17</b>	23	21
Receipts from other revenue		<b>68</b>	46	161
Payments to suppliers		<b>(1,779)</b>	(1,995)	(2,040)
Payments to employees		<b>(3,249)</b>	(3,383)	(3,498)
GST (net)		<b>21</b>	-	(46)
Net cash flows from operating activities		<b>598</b>	211	118
<b>Cash flows from investing activities</b>				
Purchase of property, plant and equipment		<b>(10)</b>	(90)	(24)
Purchase of intangible assets		-	-	-
Sale of property, plant and equipment		-	-	-
Net cash flows from investing activities		<b>(10)</b>	(90)	(24)
<b>Cash flows from financing activities</b>				
Net cash flows from financing activities		-	-	-
Net (decrease)/increase in cash and cash equivalents		<b>588</b>	121	94
Cash and cash equivalents at the beginning of the year		<b>1,409</b>	1,298	1,315
Cash and cash equivalents at the end of the year	4	<b>1,997</b>	1,419	1,409

Explanations of major variances against budget are provided in note 15.

The GST (net) component of cash flows from operating activities reflects the net GST paid to and received from the Inland Revenue Department. The GST (net) component has been presented on a net basis, as the gross amounts do not provide meaningful information for financial purposes and to be consistent with the presentation basis of other primary financial statements.

*The accompanying notes form part of these financial statements.*

## TRANSPORT ACCIDENT INVESTIGATION COMMISSION

### NOTES TO THE FINANCIAL STATEMENTS

#### 1. Statement of accounting policies

##### Reporting Entity

The Transport Accident Investigation Commission (TAIC) is an independent Crown entity established under the Transport Accident Investigation Commission Act 1990. Its main purpose is to inquire into maritime, aviation and rail occurrences within New Zealand with a view to determining their causes and circumstances rather than ascribe blame, and to assist overseas agencies.

TAIC's ultimate parent is the New Zealand Crown.

TAIC may also co-ordinate and co-operate with overseas accident investigation authorities or represent New Zealand during accident investigations conducted by overseas authorities in which New Zealand has a specific interest.

TAIC's investigation capability is occasionally extended, on either a pro bono public or a cost recovery basis to Pacific Island States.

TAIC has designated itself as a public benefit entity (PBE) for financial reporting purposes.

The financial statements for TAIC are for the year ended 30 June 2020, and were approved by the Board on 18 November 2020.

##### Basis of preparation

The financial statements have been prepared on a going concern basis, and the accounting policies have been applied consistently throughout the period.

##### Statement of compliance

The financial statements of TAIC have been prepared in accordance with the requirements of the Crown Entities Act 2004, which includes the requirement to comply with generally accepted accounting practice in New Zealand (NZ GAAP).

The financial statements have been prepared in accordance with Tier 2 PBE accounting standards. The Commission has elected to report in accordance with Tier 2 due to having expenditure of less than \$30m.

These financial statements comply with PBE accounting standards.

##### Presentation currency and rounding

The financial statements are presented in New Zealand dollars and all values are rounded to the nearest thousand dollars (\$000).

##### Summary of significant accounting policies

Significant accounting policies are included in the notes to which they relate.

Significant accounting policies that do not relate to a specific note are outlined below.

##### Foreign currency transactions

Foreign currency transactions are translated into NZ\$ (the functional currency) using the spot exchange rates at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the surplus or deficit.

##### Goods and services tax

All items in the financial statements are stated exclusive of GST except for receivables and payables, which are stated on a GST inclusive basis. Where GST is not recoverable as input tax then it is recognised as part of the related asset or expense.

The net amount of GST recoverable from, or payable to, the Inland Revenue Department (IRD) is included as part of receivables or payables in the statement of financial position.

The net GST paid to, or received from, the IRD, including the GST relating to investing and financing activities, is classified as an operating cash flow in the statement of cash flows.

Commitments and contingencies are disclosed exclusive of GST.

### **Income tax**

TAIC is a public authority and consequently is exempt from the payment of income tax. Accordingly, no provision has been made for income tax.

### **Budget figures**

The budget figures are derived from the statement of performance expectations as approved by the Board at the beginning of the financial year. The budget figures have been prepared in accordance with NZ GAAP, using accounting policies that are consistent with those adopted by the Board in preparing these financial statements.

### **Critical accounting estimates and assumptions**

In preparing these financial statements, TAIC has made estimates and assumptions concerning the future. These estimates and assumptions may differ from the subsequent actual results. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectation of future events that are believed to be reasonable under the circumstances.

The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are:

- useful lives and residual values of property, plant, and equipment – refer to note 6
- useful lives of acquired software assets – refer note 7.

### **Critical judgements in applying the Commission's accounting policies**

Management has exercised the following critical judgements in applying accounting policies:

- leases classification – refer note 11.

## **2. Revenue**

### **Accounting policy**

The specific accounting policies for significant revenue items are explained below:

#### *Funding from the Crown*

TAIC is primarily funded from the Crown. This funding is restricted in its use for the purpose of TAIC meeting the objectives specified in its founding legislation and the scope of the relevant appropriations of the funder.

TAIC considers there are no conditions attached to the funding and it is recognised as revenue at the point of entitlement.

The fair value of revenue from the Crown has been determined to be equivalent to the amounts due in the funding arrangements.

#### *Donated assets*

Where a physical asset is gifted to or acquired by TAIC for nil consideration or at a subsidised cost, the asset is recognised at fair value and the difference between the consideration provided and fair value of the asset is recognised as revenue. The fair value of donated assets is determined as follows:

- For new assets, fair value is usually determined by reference to the retail price of the same or similar assets at the time the asset was received.
- For used assets, fair value is usually determined by reference to market information for assets of a similar type, condition, and age.

#### *Interest*

Interest revenue is recognised by accruing on a time proportion basis the interest due for the investment.

#### *Rental revenue*

Lease receipts under an operating sublease are recognised as revenue on a straight-line basis over the lease term.

#### **Breakdown of other revenue and further information**

	<b>Actual 2020 \$000</b>	<b>Actual 2019 \$000</b>
Rental revenue from property subleases	41	41
Other revenue	29	117
Total revenue	70	158

### **3. Personnel Costs**

#### **Accounting policy**

##### ***Superannuation schemes***

##### *Defined contribution schemes*

Obligations for contributions to KiwiSaver are accounted for as a defined contribution superannuation scheme and are recognised as an expense in the surplus or deficit as incurred.

#### **Breakdown of personnel costs and further information**

	<b>Actual 2020 \$000</b>	<b>Actual 2019 \$000</b>
Salaries and wages	3,083	3,283
Defined contribution plan employer contributions	79	85
Increase/(decrease) in employee entitlements	66	(1)
Recruitment	54	69
Other staff costs	39	60
Total personnel costs	3,321	3,496



### Commissioner remuneration

The total value of remuneration paid or payable to each Commissioner during the year was:

Commissioner	Actual 2020 \$000	Actual 2019 \$000
Ms J Meares	85	98
Mr P McKenzie, QC CNZM (Deputy Chief Commissioner, retired November 2018)	-	18
Mr S Davies Howard (Deputy Chief Commissioner from November 2018)	50	51
Mr R Marchant (Commissioner)	50	51
Ms P Rose QSO (Commissioner)	50	53
<b>Total Commissioner remuneration</b>	<b>235</b>	<b>271</b>

### Employee remuneration

	Actual 2020	Actual 2019
Total remuneration paid or payable:		
\$100,000-\$109,999	3	2
\$110,000-\$119,999	1	3
\$120,000-\$129,999	5	4
\$130,000-\$139,999	5	3
\$140,000-\$149,999	-	1
\$150,000-\$159,999	1	1
\$160,000-\$169,999	1	1
\$170,000-\$179,999	1	-
\$190,000-\$199,999	-	1
\$270,000-\$279,999	1	-
\$280,000-\$289,999	-	1
<b>Total employees</b>	<b>18</b>	<b>17</b>

During the year ended 30 June 2020, no employees received compensation and other benefits in relation to cessation. (2019: \$42,353).

## 4. Cash and cash equivalents

### Accounting policy

Cash and cash equivalents include cash on hand, deposits held on call with banks, and other short-term, highly liquid investments with original maturities of three months or less.

**Breakdown of cash and cash equivalents and further information**

	<b>Actual 2020 \$000</b>	<b>Actual 2019 \$000</b>
Cash at bank and on hand	1,248	674
Short-term deposits maturing in less than 3 months	749	735
Total cash and cash equivalents	1,997	1,409

**5. Receivables****Accounting policy**

Short-term receivables are recorded at the amount due, less an allowance for credit losses. TAIC applies the simplified expected credit loss model of recognising lifetime expected credit losses for receivables.

In measuring expected credit losses, short-term receivables have been assessed on a collective basis as they possess shared credit risk characteristics. They have been grouped based on the days past due.

Short-term receivables are written off when there is no reasonable expectation of recovery. Indicators that there is no reasonable expectation of recovery include the debtor being in liquidation.

**Breakdown of other revenue and further information**

	<b>Actual 2020 \$000</b>	<b>Actual 2019 \$000</b>
Receivables (gross)	7	6
Less: Allowance for credit losses	-	-
Receivables	7	6
Receivables comprise:		
Receivables from the sale of goods and services (exchange transactions)	7	6

There have been no changes during the reporting period in the estimation techniques or significant assumptions used in measuring the loss allowance.

**6. Property, plant and equipment****Accounting policy**

Property, plant and equipment consists of the following asset classes: buildings, furniture and office equipment and computer equipment.

All assets classes are measured at cost, less accumulated depreciation and impairment losses.

*Additions*

The cost of an item of property, plant and equipment is recognised as an asset if, and only if, it is probable that future economic benefits or service potential associated with the item will flow to TAIC and the cost of the item can be measured reliably.

Work in progress is recognised at cost less impairment and is not depreciated.

In most instances, an item of property, plant and equipment is initially recognised at its cost. Where an asset is acquired through a non-exchange transaction, it is recognised at its fair value as at the date of acquisition.

### *Disposals*

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount of the asset. Gains and losses on disposals are reported net in the surplus or deficit.

### *Subsequent costs*

Costs incurred subsequent to initial acquisition are capitalised only when it is probable that future economic benefits or service potential associated with the item will flow to TAIC and the cost of the item can be measured reliably.

The costs of day-to-day servicing of property, plant and equipment are recognised in the surplus or deficit as they are incurred.

### *Depreciation*

Depreciation is provided on a straight-line basis on all property, plant and equipment at rates that will write-off the cost of the assets to their estimated residual values over their useful lives. The useful lives and associated depreciation rates of major classes of property, plant and equipment have been estimated as follows:

Fixed asset type	Useful life (years)	Depreciation rate
Buildings (store)	5 – 50	2% to 20%
Computer equipment	2 – 10	10% to 50%
Furniture and office equipment	2.1 – 14	7% to 48%

The residual value and useful life of an asset is reviewed, and adjusted if applicable, at each financial year end.

### **Impairment of property, plant and equipment**

TAIC does not hold any cash-generating assets. Assets are considered cash-generating where their primary objective is to generate a commercial return.

#### *Non-cash-generating assets*

Property, plant and equipment and intangible assets that have a finite useful life are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable service amount. The recoverable service amount is the higher of an asset's fair value less costs to sell and value in use.

Value in use is determined using an approach based on either a depreciated replacement cost approach, restoration cost approach, or a service units approach. The most appropriate approach used to measure value in use depends on the nature of the impairment and availability of information.

If an asset's carrying amount exceeds its recoverable service amount, the asset is regarded as impaired and the carrying amount is written-down to the recoverable amount. The total impairment loss is recognised in the surplus or deficit.

The reversal of an impairment loss is recognised in the surplus or deficit.

Movement for each class of property, plant and equipment are as follows:

	<b>Buildings</b>	<b>Computer equipment</b>	<b>Furniture and office equipment</b>	<b>Total</b>
	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>	<b>\$000</b>
<b>Cost</b>				
Balance as at 1 July 2018	349	240	170	759
Balance at 30 June 2019	356	249	178	783
Balance at 1 July 2019	356	249	178	783
Additions	-	5	5	10
Disposals	-	-	(2)	(2)
Balance at 30 June 2020	356	254	181	791
<b>Accumulated depreciation</b>				
Balance as at 1 July 2018	154	185	142	481
Balance at 30 June 2019	183	215	151	549
Balance at 1 July 2019	183	215	151	549
Depreciation Expense	29	25	9	63
Elimination on disposal	-	-	(1)	(1)
Balance at 30 June 2020	212	240	159	611
<b>Carrying Amounts</b>				
At 1 July 2018	195	55	28	278
At 30 June 2019 and 1 July 2019	173	34	27	234
At 30 June 2020	144	14	22	180

As at year end there was no work in progress (2019: nil) or capital commitments.

## 7. Intangible Assets

### Accounting policy

#### *Software acquisition and development*

Acquired computer software licenses are capitalised on the basis of the costs incurred to acquire and bring to use the specific software.

Costs associated with maintaining computer software are recognised as an expense when incurred.

### Amortisation

The carrying value of an intangible asset with a finite life is amortised on a straight-line basis over its useful life. Amortisation begins when the asset is available for use and ceases at the date that the asset is derecognised. The amortisation charge for each financial year is recognised in the surplus or deficit.

The useful lives and associated amortisation rates of major classes of intangible assets have been estimated as follows:

Fixed asset type	Useful life (years)	Depreciation rate
Acquired Software	2.1 – 10	10% – 48%

### Impairment of intangible assets

Refer to the policy for impairment of property, plant and equipment in note 6. The same approach applies to the impairment of intangible assets.

### Breakdown of intangible assets and further information

Movement for each class of intangible assets are as follows:

	Acquired software \$000	Total \$000
<b>Cost</b>		
Balance at 1 July 2018	1,037	1,037
Balance at 30 June 2019 and 1 July 2019	1,037	1,037
Additions	-	-
Disposals	-	-
Balance at 30 June 2020	1,037	1,037
<b>Accumulated amortisation</b>		
Balance at 1 July 2018	663	663
Balance at 30 June 2019 and 1 July 2019	760	760
Amortisation expense	94	94
Disposals	-	-
Balance at 30 June 2020	854	854
<b>Carrying amounts</b>		
At 1 July 2018	374	374
At 30 June 2019 and 1 July 2019	277	277
At 30 June 2020	183	183

As at year end there was no work in progress or capital commitments (2019: nil)

## 8. Payables

### Accounting policy

Short-term payables are recorded at their face value.

### Breakdown of payables

	Actual 2020 \$000	Actual 2019 \$000
<b>Payables under exchange transactions</b>		
Creditors	76	141
Accrued expenses	49	35
Total payables under exchange transactions	125	176
<b>Payables under non-exchange transactions</b>		
Taxes payables (GST, PAYE, and rates)	100	79
Total payables under non-exchange transactions	100	79
<b>Total payables</b>	225	255

## 9. Employee entitlements

### Accounting policy

#### *Short-term employee entitlements*

Employee benefits that are due to be settled within 12 months after the end of the period in which the employee renders the related service are measured based on accrued entitlements at current rates of pay.

These include salaries and wages accrued up to balance date and annual leave earned, but not yet taken at balance date.

#### *Long-term employee entitlements*

Employee benefits that are due to be settled beyond 12 months after the end of the year in which an employee provides a related service, such as long service leave, have been calculated based on:

- likely future entitlements accruing to employees based on years of service, years to entitlement, the likelihood that employees will reach the point of entitlement, and contractual entitlement information
- the present value of the estimated future cash flows.

#### *Presentation of employee entitlements*

Annual leave and vested long service leave are classified as a current liability. Non-vested long service leave expected to be settled within 12 months of balance date is classified as a current liability. All other employee entitlements are classified as non-current liabilities.

## Breakdown of employee entitlements

	Actual 2020 \$000	Actual 2019 \$000
<b>Current portion</b>		
Accrued salaries and wages	80	58
Annual leave	219	174
Long service leave	28	33
<b>Total current portion</b>	<b>327</b>	<b>265</b>
<b>Non-current portion</b>		
Long service leave	28	18
<b>Total non-current portion</b>	<b>28</b>	<b>18</b>
<b>Total employee entitlements</b>	<b>355</b>	<b>283</b>

## 10. Related party transactions

TAIC is a wholly owned entity of the Crown.

Related party disclosures have not been made for transactions with related parties that are within a normal supplier or client/recipient relationship on terms and conditions no more or less favourable than those that it is reasonable to expect TAIC would have adopted in dealing with the party at arm's length in the same circumstances. Further, transactions with other government agencies (for example, Government departments and Crown entities) are not disclosed as related party transactions when they are consistent with the normal operating arrangements between government agencies and undertaken on the normal terms and conditions for such transactions.

### Key management personnel compensation

	Actual 2020 \$000	Actual 2019 \$000
<i>Commission Members</i>		
Remuneration	235	271
Full-time equivalent members	0.70	0.81
<i>Leadership Team</i>		
Remuneration	673	801
Full-time equivalent members	3.05	3.40
<b>Total key management personnel remuneration</b>	<b>908</b>	<b>1,072</b>
<b>Total full-time equivalent personnel</b>	<b>3.75</b>	<b>4.21</b>

The full-time equivalent for Board members has been determined based on the frequency and length of Board meetings and the estimated time for Board members to prepare for meetings.



## 11. Operating Leases

### Accounting policy

An operating lease is a lease that does not transfer substantially all the risks and rewards incidental to ownership of an asset to the lessee.

Lease incentives received are recognised in the surplus or deficit as a reduction of rental expense over the lease term.

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### Operating leases as lessee

The future aggregate minimum lease payments to be paid under non-cancellable operating leases are as follows:

	Actual 2020 \$000	Actual 2019 \$000
Not later than one year	506	531
Later than one year and not later than five years	1,027	1,533
Later than five years	-	-
<b>Total non-cancellable operating leases</b>	<b>1,533</b>	<b>2,064</b>

TAIC leases two properties and has operating leases for photocopier equipment, meeting room hardware and i-phones. A significant portion of the total non-cancellable operating lease expense relates to the lease of one and a half floors of an office building. The lease expires on August 2023. TAIC does not have the option to purchase the asset at the end of the lease term.

There are no restrictions placed on TAIC by any of its leasing arrangements.

## 12. Financial instruments

### Financial instruments categories

The carrying amounts of financial assets and liabilities in each of the financial instrument categories are as follows:

	Actual 2020 \$000	Actual 2019 \$000
<b>Financial assets measured at amortised cost</b>		
Cash and cash equivalents	1,997	1,409
Receivables	7	6
Total financial assets measured at amortised cost	2,004	1,415
<b>Financial liabilities measured at amortised cost</b>		
Payables (excluding taxes payable)	125	176
Total financial liabilities measured at amortised cost	125	176

### **13. Contingencies**

#### **Contingent liabilities**

There were no contingent liabilities existing at balance date. (2019: Nil)

#### **Contingent assets**

At balance date reparations due to be paid to TAIC for money that was taken fraudulently were on hold due to the offender living in Australia and out of work due to Covid-19. TAIC were notified that once the offender is back in employment that payments will resume. Reparations received at 30 June 2020 were \$3,900 (2019: \$5,000). The contingent asset at balance date is \$263k (2019: \$267k).

### **14. Events after the balance date**

There were no significant events after balance sheet date.

### **15. Explanation of major variances against budget**

Explanations for significant variations from the TAIC's budgeted figures in the statement of performance expectations are as follows:

#### **Statement of comprehensive revenue and expense**

##### *Other revenue*

Other revenue is \$24k higher than budgeted due to \$10k of insurance monies received due to disrupted meetings and travel plans, some due to Covid-19. \$7k was also received for services in kind for IT mobility assessment work.

##### *Other expenses*

Other expenses are \$160k less than budget due to the impact of Covid-19 on planned training, international meetings and general savings in office and deployment costs during lockdown.

##### *Commissioner fees*

Commissioner fees are \$36k less than budget due to cancellation of international meetings during the year, some due to Covid-19.

##### *Lease, rentals and outgoings*

Lease, rental and outgoings is \$91k less than budget due to earthquake strengthening work by the landlord at 80 The Terrace that required a floor to be vacated for 5 months and a rent abatement was provided.

##### *Depreciation and amortisation expense*

Depreciation and amortisation expense is less than budgeted due to deferral of some computer replacements to the 2020/21 financial year in line with planning for the knowledge transfer system.

#### **Statement of financial position**

##### *Cash and cash equivalents*

Cash and cash equivalents are higher than budgeted mainly due to the unbudgeted net surplus as a result of Covid-19 and its impact.

##### *Payables*

Payables are higher than budgeted mainly due to larger than usual June invoices for recruitment and information technology services and timing of other creditor payments.

##### *Employee entitlements*

Employee entitlements are higher than budget due to Covid-19 impacts on staff annual leave plans, resulting in higher annual leave balances and associated liability.

### **Statement of changes in cash flows**

The statement of changes in cash flows shows a net cash flow from investing activities \$80k less than budget due to the deferral of computer and software replacement until the Knowledge Transfer System project is progressed. Net cash flows from operating activities are \$387k higher than budget mainly due to the underspend in expenditure due to Covid-19 and earthquake strengthening work disruptions.

### **16. Covid-19**

On 11 March 2020, the World Health Organisation declared the outbreak of COVID-19 a pandemic and two weeks later the New Zealand Government declared a State of National Emergency. From this, the country was in lockdown at Alert Level 4 for the period 26 March to 27 April and remained in lockdown at Alert Level 3, thereafter, until 13 May.

During the lockdown period the Commission's functions were deemed an essential service for the purpose of the Covid-19 response. Some non-essential board matters were deferred, but core inquiry work continued. The organisation was able to adapt quickly because of efforts made in building resilience.

The effects of the ongoing pandemic on the financial statements are minimal.

# Independent auditor's report

## Ripoata motuhake a te kaiarotake

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AUDIT NEW ZEALAND  
Mana Arotake Aotearoa

### Independent Auditor's Report

#### **To the readers of the Transport Accident Investigation Commission's financial statements and performance information for the year ended 30 June 2020**

The Auditor-General is the auditor of the Transport Accident Investigation Commission (the Commission). The Auditor-General has appointed me, Bonar Robertson, using the staff and resources of Audit New Zealand, to carry out the audit of the financial statements and the performance information, including the performance information for an appropriation, of the Commission on his behalf.

### Opinion

We have audited:

- the financial statements of the Commission on pages 84 to 101, that comprise the statement of financial position as at 30 June 2020, the statement of comprehensive revenue and expense, statement of changes in equity and statement of cash flows for the year ended on that date and the notes to the financial statements including a summary of significant accounting policies and other explanatory information; and
- the performance information of the Commission on pages 20 to 39 and 46 to 49.

In our opinion:

- the financial statements of the Commission on pages 84 to 101:
  - present fairly, in all material respects:
    - its financial position as at 30 June 2020; and
    - its financial performance and cash flows for the year then ended; and
  - comply with generally accepted accounting practice in New Zealand in accordance with the Public Benefit Entity Reporting Standards Reduced Disclosure Regime; and
- the performance information on pages 20 to 39 and 46 to 49:

- presents fairly, in all material respects, the Commission's performance for the year ended 30 June 2020, including:
  - for each class of reportable outputs:
    - its standards of delivery performance achieved as compared with forecasts included in the statement of performance expectations for the financial year; and
    - its actual revenue and output expenses as compared with the forecasts included in the statement of performance expectations for the financial year; and
  - what has been achieved with the appropriation; and
  - the actual expenses or capital expenditure incurred compared with the appropriated or forecast expenses or capital expenditure.
- complies with generally accepted accounting practice in New Zealand.

Our audit was completed on 18 November 2020. This is the date at which our opinion is expressed.

The basis for our opinion is explained below, and we draw attention to the impact of Covid-19 on the Commission. In addition, we outline the responsibilities of the Commissioners and our responsibilities relating to the financial statements and the performance information, we comment on other information, and we explain our independence.

### **Emphasis of matter – Impact of Covid-19**

Without modifying our opinion, we draw attention to the disclosures about the impact of Covid-19 on the Commission as set out in note 16 to the financial statements and pages 35 to 37 of the performance information.

### **Basis for our opinion**

We carried out our audit in accordance with the Auditor-General's Auditing Standards, which incorporate the Professional and Ethical Standards and the International Standards on Auditing (New Zealand) issued by the New Zealand Auditing and Assurance Standards Board. Our responsibilities under those standards are further described in the Responsibilities of the auditor section of our report.

We have fulfilled our responsibilities in accordance with the Auditor-General's Auditing Standards.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

## **Responsibilities of the Commissioners for the financial statements and the performance information**

The Commissioners are responsible on behalf of the Commission for preparing financial statements and performance information that are fairly presented and comply with generally accepted accounting practice in New Zealand. The Commissioners are responsible for such internal control as they determine is necessary to enable them to prepare financial statements and performance information that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements and the performance information, the Commissioners are responsible on behalf of the Commission for assessing the Commission's ability to continue as a going concern. The Commissioners are also responsible for disclosing, as applicable, matters related to going concern and using the going concern basis of accounting, unless there is an intention to merge or to terminate the activities of the Commission, or there is no realistic alternative but to do so.

The Commissioners' responsibilities arise from the Crown Entities Act 2004 and the Public Finance Act 1989.

## **Responsibilities of the auditor for the audit of the financial statements and the performance information**

Our objectives are to obtain reasonable assurance about whether the financial statements and the performance information, as a whole, are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit carried out in accordance with the Auditor-General's Auditing Standards will always detect a material misstatement when it exists. Misstatements are differences or omissions of amounts or disclosures, and can arise from fraud or error. Misstatements are considered material if, individually or in the aggregate, they could reasonably be expected to influence the decisions of readers, taken on the basis of these financial statements and the performance information.

For the budget information reported in the financial statements and the performance information, our procedures were limited to checking that the information agreed to the Commission's statement of performance expectations.

We did not evaluate the security and controls over the electronic publication of the financial statements and the performance information.

As part of an audit in accordance with the Auditor-General's Auditing Standards, we exercise professional judgement and maintain professional scepticism throughout the audit. Also:

- We identify and assess the risks of material misstatement of the financial statements and the performance information, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from

error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- We obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Commission's internal control.
- We evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Commissioners.
- We evaluate the appropriateness of the reported performance information within the Commission's framework for reporting its performance.
- We conclude on the appropriateness of the use of the going concern basis of accounting by the Commissioners and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Commission's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements and the performance information or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Commission to cease to continue as a going concern.
- We evaluate the overall presentation, structure and content of the financial statements and the performance information, including the disclosures, and whether the financial statements and the performance information represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the Commissioners regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Our responsibilities arise from the Public Audit Act 2001.

## **Other information**

The Commissioners are responsible for the other information. The other information comprises the information included on pages 1 to 108, but does not include the financial statements and the performance information, and our auditor's report thereon.

Our opinion on the financial statements and the performance information does not cover the other information and we do not express any form of audit opinion or assurance conclusion thereon.

In connection with our audit of the financial statements and the performance information, our responsibility is to read the other information. In doing so, we consider whether the other information is materially inconsistent with the financial statements and the performance

information or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on our work, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

## **Independence**

We are independent of the Commission in accordance with the independence requirements of the Auditor-General's Auditing Standards, which incorporate the independence requirements of Professional and Ethical Standard 1: International Code of Ethics for Assurance Practitioners issued by the New Zealand Auditing and Assurance Standards Board.

Other than in our capacity as auditor, we have no relationship with, or interests, in the Commission.

A handwritten signature in black ink, reading "Bonar Robertson". The signature is written in a cursive style with a long horizontal line extending from the end.

Bonar Robertson

Audit New Zealand

On behalf of the Auditor-General

Wellington, New Zealand



## About our kōwhaiwhai

TAIC commissioned its kōwhaiwhai, Māori scroll designs, from artist Sandy Rodgers (Ngāti Raukawa, Tūwharetoa, MacDougal). Sandy began from thinking of the Commission as a vehicle or vessel for seeking knowledge to understand transport accident tragedies and how to prevent them. A 'waka whai mārama (i te ara haumarū) is 'a vessel/vehicle in pursuit of understanding'. Waka is metaphor for the Commission. Mārama (from 'te ao mārama' – the world of light) is for the separation of Rangitāne (Sky Father) and Papatūānuku (Earth Mother) by their son Tāne Māhuta (god of man, forests and everything dwelling within), which brought light and thus awareness to the world. 'Te ara' is 'the path' and 'haumarū' is 'safe or risk free'.

### Corporate: Te Ara Haumarū – the safe and risk-free path



The eye motif looks to the future, watching the path for obstructions. The encased double koru is the mother and child, symbolising protection, safety and guidance. The triple koru represents the three kete of knowledge that Tāne Māhuta collected from the highest of the heavens to pass their wisdom to humanity. The continual wave is the perpetual line of influence. The succession of humps represent the individual inquiries.

Sandy acknowledges Tāne Māhuta in the creation of this Kōwhaiwhai.

### Aviation: Ngā hau e whā – the four winds



To Sandy, 'Ngā hau e whā' (the four winds), commonly used in Te Reo Māori to refer to people coming together from across Aotearoa, was also redolent of the aviation environment. The design represents the sky, cloud, and wind. There is a manu (bird) form representing the aircraft that move through Aotearoa's 'long white cloud'. The letter 'A' is present, standing for aviation.

Sandy acknowledges Ranginui (Sky father) and Tāwhirimātea (God of wind) in the creation of this Kōwhaiwhai.

### Rail: Rerewhenua – flowing across the land



The design represents the fluid movement of trains across Aotearoa. 'Rere' is to flow or fly. 'Whenua' is the land. The koru forms represent the earth, land and flora that trains pass over and through. The letter 'R' is present, standing for 'Rail'.

Sandy acknowledges Papatūānuku (Earth Mother) and Tāne Mahuta (God of man and forests and everything that dwells within) in the creation of this Kōwhaiwhai.

### Maritime: Ara Wai – waterways



The sections of waves flowing across the design represent the many different 'ara wai' (waterways) that ships sail across. The 'V' shape is a ship's prow and its wake. The letter 'M' is present, standing for 'Marine'.

Sandy acknowledges Tangaroa (God of the sea) in the creation of this Kōwhaiwhai.



## Annual Report 2020

**Transport Accident Investigation Commission**  
**Te Kōmihana Tirotiro Aituā Waka**

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