Preface

This report has been prepared for the Civil Aviation Authority by MartinJenkins (Martin, Jenkins & Associates Limited).

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Our over-riding goal is to build the effectiveness of the organisations we work with. We do this by providing strategic advice and practical support for implementation in the areas of:

- organisational performance
- public policy and economic analysis
- evaluation and research.

MartinJenkins was established in 1993. The firm is directed by Doug Martin, Kevin Jenkins, Michael Mills and Nick Davis in Wellington and Nick Hill in Auckland.

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We have not been required, or sought, to independently verify the accuracy of information provided to us. Accordingly, we express no opinion on the reliability, accuracy, or completeness of the information provided to us and upon which we have relied.

The statements and opinions expressed herein have been made in good faith, and on the basis that all information relied upon is true and accurate in all material respects, and not misleading by reason of omission or otherwise. We reserve the right, but will be under no obligation, to review or amend this Report, if any additional information, which was in existence on the date of this Report, was not brought to our attention, or subsequently comes to light.

This Report is issued pursuant to the terms and conditions set out in our Agreement for Services dated 15 October 2010.
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Executive Summary

The Civil Aviation Authority (CAA or the Authority) has regulatory oversight responsibilities in relation to New Zealand’s civil aviation system. The purpose of the review is to determine whether the activities and functions carried out by the CAA provide value-for-money (VfM) to the Government, participants and users of the civil aviation system.

The review has considered all aspects of the CAA’s activities. This report, and particularly the key findings and recommendations, focus on those areas where there is a need, or opportunity, for enhancing effectiveness and efficiency. By implication, for those areas of activity that are not discussed in any detail in this report, the inference that should be drawn is that there are no material issues for the CAA to address.

Key findings

The key findings of this review are as follows.

- New Zealand has a good aviation safety record. There has not been a fatality in the commercial airlines sector since 2004/05 and fatalities have averaged around one person a year since the CAA was established. The overall trend in the general aviation (GA) sector points to declining numbers of fatalities and fewer aircraft accidents per 100,000 hours flown although there are some parts of this sector where safety needs to improve.

- Based on the most recent (2006) International Civil Aviation Organisation (ICAO) audit, together with stakeholder views expressed to us during the course of the review, New Zealand’s aviation regulatory framework and the regulatory oversight provided by the CAA are generally regarded as being in the top tier worldwide.

- In addition to safety benefits, the good reputation that has been established confers important economic benefits for New Zealand; particularly users of, and operators in, the airlines sector. These include:
  - enabling access to foreign markets for Air New Zealand
  - reducing the cost, and improving the quality and safety of air services through allowing the adoption of new technologies
  - minimising the costs and time delays associated with security clearances, and
  - facilitating the supply by New Zealand-based enterprises of aviation services to a worldwide market through having CAA approvals recognised and respected by other jurisdictions.

1 For the purposes of this report, we generally use the acronym CAA when referring to the entity and the term Authority when referring to the governing Board of the entity.
The annual budget for the CAA is currently around $29 million. Taking into account the size of the aviation sector in New Zealand, this cost is at the lower end of the range for aviation regulatory bodies in those jurisdictions New Zealand normally compares itself against. The CAA’s costs have increased in real terms (i.e. adjusting for inflation) over the last 10 years but taking into account growth in the aviation sector (e.g. measured by the number of aircraft and hours flown), the CAA’s costs have fallen in relative terms. Given this, and in light of the safety performance and economic benefits noted above, we conclude that the CAA has delivered reasonable VfM.

This conclusion should not, however, be interpreted as signalling that the CAA is doing as well as it can (or needs to). Indeed, the aviation industry is dynamic and there are increasing expectations being placed on regulators (e.g. as part of the requirements of a State Safety Plan). There are risks that the performance of New Zealand’s regulatory system could fall behind that of others. Establishing a good reputation is hard won, but easily lost. There are a number of key features that we would expect to see in place for a modern regulator but which are either missing, or under-developed in the CAA. Furthermore, the need to implement the safety management system (SMS) model poses particular challenges for the CAA and parts of the aviation industry.

The issues we have identified with aspects of the CAA’s regulatory performance are not, on the whole, new issues. Most have been identified in other reviews, but to date there has not been the momentum for change that is required in order to meet the challenges, and to maintain New Zealand’s position at the forefront of sound regulatory oversight. A step-change in performance is required.

In particular, in terms of its regulatory oversight roles, the CAA needs to develop a robust regulatory strategy and ensure that this is consistently implemented across the organisation. In support of this, the CAA needs to:
- refresh its statement of regulatory philosophy so that it provides a clear vision of the CAA and what it is trying to achieve
- engrain the analysis and management of risk into its core regulatory work. More and better safety analysis and use of safety information is a key part of this
- enhance its analysis and understanding of the effectiveness of the interventions that the CAA employs in order to achieve safety and security outcomes, and
- work more effectively with industry to develop solutions to safety and security issues.

In addition, there is a need to strengthen leadership and management capabilities within the CAA. The CAA has a strongly technical and operational orientation which is at the expense of a better balance with management and strategic capabilities. The lack of the right balance is inhibiting the ability of the CAA to deliver to its full potential. Instituting an outcomes-oriented performance management system is also a key aspect of strengthening organisational performance. The efficiency of the CAA could also be improved through making greater use of technology in areas currently dominated by paper and manually-based processes.
The CAA will need to invest in people, systems and processes to deliver the lift in performance that we consider is needed and achievable. Taking into account various initiatives that the CAA is able to fund from existing resources, the net additional investment over the next three years is estimated to be slightly over $7 million. Additional funding will be required for this investment. It should be noted that this estimate is subject to revision as the CAA develops a business case to support the changes proposed.

Outcomes

Traditionally, and as reflected in the CAA’s Statement of Intent (SoI), the outcomes to which the CAA contributes are typically characterised in safety and security terms such as the number of fatalities and incidents. The safety performance of most parts of the aviation sector is at, or better than, the targets set out in the SoI. While the safety and security of those who participate in, and use, the civil aviation system is important in its own right, having a robust regulatory system, and regulator, confers significant and wide ranging economic and other benefits for New Zealand.

The key benefits manifest themselves in various ways such as:

- access to international markets, especially for operators
- the ease with which it is possible to win and maintain business from international clients, and
- the ability to deploy improved technologies for benefit of operators, passengers, and importers / exporters of air freight.

Based on a subjective assessment, it is likely that the largest of the economic benefits relate to air-freighted goods, to providers of aviation maintenance services, aviation manufacturing and design activities and to Air New Zealand (in terms of access to international markets). Although not quantified, it is reasonable to suggest that these benefits are likely to run to the hundreds of millions of dollars.

While it is not the objective of the CAA to promote economic development (the government has other agencies for this purpose), the significance of the economic benefits and where those benefits fall should have some impact on the allocation of the CAA’s resources and on how the CAA’s activities are funded.

Being an effective regulator

We have assessed the CAA and how it operates against the features we would expect to see in a modern and effective regulator and against the features we would expect to see in a high-performing organisation. In our view, a step-change in performance is required in some key aspects of the CAA’s regulatory oversight role in order to ensure that the substantial benefits that stem from having an effective regulatory system and regulator are not put at risk.
• There is a need to refresh the CAA’s statement of regulatory philosophy; this statement is intended to set out the overall objectives of regulating the civil aviation industry and high level principles that guide regulatory conduct.

• The analysis of risk needs to be more engrained in the work of the CAA. Currently, there is limited systematic formal use of intelligence and analysis to inform assessments of risk and, in turn, assessments of risk are not playing a large enough role in the allocation of resources and the choice of regulatory interventions.

• Although the CAA exhibits elements of a graduated and proportionate approach to achieving compliance, the organisation lacks the equivalent of a compliance pyramid (used by many regulators) to help guide the level of interaction with participants based on their level of compliance.

• The existing regulatory approach is primarily input and output oriented. There is a need for more clearly defined impacts and outcomes by which to measure the effectiveness of regulatory interventions in managing risk.

• The CAA needs to work more effectively with industry to develop solutions to safety (and security) issues. In the absence of a strategic vision, CAA’s interaction with industry is not always clear and can be overly issues-led, rather than strategy-driven.

• Notwithstanding the previous point, specific issues do arise (e.g. terrain awareness) which means there is a need for the CAA to take more of a project-based approach to the development and implementation of solutions.

The terms of reference have required us to consider whether there are functions performed by the CAA that it could stop doing. We have considered the issue of further delegating certain regulatory functions (particularly in relation to medical certification and aspects of personnel licensing) but are not convinced that this would lead to better outcomes. More generally, all of the outputs produced by the CAA align with its statutory mandate and we do not consider there is a case for terminating any of these. As noted above, however, there are steps that the CAA needs to take to enhance the effectiveness of its regulatory functions.

**Being a high-performing organisation**

We have also assessed the CAA through the lens of the features we would expect to see in any high performing organisation. Our assessment from this perspective has identified some dimensions of organisational capability that are under-developed. As a result, the CAA is constrained in being able to reach its full potential. Moreover, unless the issues noted below are addressed, it will be difficult for the CAA to make progress with implementing the desired features of a modern regulator. Our concerns are as follows.

• The lack of vision and strategy within the CAA reflects a lack of strong and effective leadership. The CAA’s senior management team is not acting as a co-ordinated leadership team that is capable of providing the required oversight and guidance. A specific example
of this is in relation to SMS where there appear to be differing understandings of this approach to civil aviation safety among senior managers.

- The CAA needs enhanced leadership capability in an organisational as well as regulatory sense. The position of Chief Executive is pivotal in any organisation, but the role is made even more challenging because the Chief Executive must also be the Director. There is an issue as to whether it is realistic to expect one individual to provide the leadership that is required in both roles.

- There are several aspects of the culture of the CAA that are acting as a constraint on overall organisational effectiveness. These include the strongly technical and operational orientation of the organisation which is at the expense of a better balance with management and strategic capabilities. The organisation also has quite a strong individualistic culture and resistance to change which results in people doing things the way they always have and demonstrating slowness to adapt. Taking responsibility and holding people to account are also not prevalent cultural characteristics of the CAA. This also inhibits responsiveness to the need for change.

- Some managers are striving to exercise their management accountabilities for planning, staffing and performance monitoring and review, but this is not, however, consistent across all managers. The management capability of CAA managers needs to be supported with strategic HR management and management development and training.

- There are a number of management practices that need to be addressed to enhance efficiency and effectiveness. We include among these, a need for an outcomes oriented performance management system, changes to delegations (many issues are being dealt with at too high a level within the organisation), under-developed programme and project management capability, a focus on transactional at the expense of strategic HR management and insufficient collaborative strategic planning and direction setting among the senior leadership team.

**Efficiency**

Compared to various other jurisdictions (which are normally considered as appropriate comparators), the costs of the CAA are at the lower end of the cost spectrum notwithstanding that the New Zealand is a relatively aviation-intensive country. There are, however, opportunities for further improving the efficiency of the CAA and reducing costs for both the CAA and aviation sector participants:

- better use of technology could be made to reduce the reliance on manual and paper-based processes that support transactional activity in relation to medical certification and personnel licensing

- technology could also be used to improve the efficiency of data collection including updating relevant software so it better aligns with that used by industry
the CAA should look to reduce its dependence on in-house and bespoke systems and increase its use of outsource and co-sourcing arrangements, a consequence of which is that we would expect the size of the Information and Communications Technology (ICT) team to reduce over time

within the finance team, the balance of resources should shift toward greater reliance on permanent staff and reduced numbers of contractors, and

the CAA should review time recording practices across the General Aviation, Airlines and Personnel Licensing and Aeronautical Services (PLAS) Groups to ensure that workloads are optimised and that work performed is being funded in the appropriate manner (fees versus levies).

We note that the analysis of the CAA’s costs that has been undertaken as part of the review, has been conducted primarily at the output class and output levels rather than at the activity level. This reflects the availability of cost information.

Resources and capability

To achieve the step-change in performance that is required, the CAA will need some different capabilities (people, processes and systems) to those it currently has. In particular, we have identified a need to build some core capabilities around leadership and management as well as regulatory capability. To support enhanced regulatory capability, we recommend:

the appointment of a strategic adviser who would assist with development of organisational strategy (including and embracing the development of a refreshed statement of regulatory philosophy) and ensuring that this cascades down into organisational business plans

increases to the CAA’s analytical capability

establishment of a small SMS implementation taskforce and provision of operational training in relation to SMS, and

replacement of the CAA’s core safety information (and associated legacy) system.

There is also a need to address a number of core tools and processes including:

risk management

data quality standards, and

the framework for measuring the effectiveness of the CAA’s interventions.

There is a significant amount of change ahead for the CAA if it is to implement the findings of this review. Our expectation is that implementing the recommendations of this review is likely to take in the order of three years to execute. Change, of itself, requires careful management and, accordingly, we recommend that a fixed-term change manager and support be appointed to
help design and guide the change process. We propose a one-year appointment with a view to change management responsibilities passing to appropriate CAA personnel beyond that period.

**Cost and funding**

The need to invest in the CAA’s capability was foreshadowed in the consultation documentation issued last year by the CAA in support of increased funding. While there is overlap between the requirements listed in that document and those outlined above, we consider that the capability requirements recommended in this report represent a prioritised view of the key elements needed to enhance the effectiveness and efficiency of the CAA.

The cost of the preferred capability scenario included in the consultation document amounted to approximately $14 million over the period to the end of June 2014 ($5.9 million capital expenditure and $8.3 million operating expenditure). At this stage, we have estimated the cost of the “prioritised” capability requirements to be approximately $7.2 million over the next three years (2011/12 – 2013/14) comprising $3.7 million capital expenditure and $3.5 million operating expenditure. Several points should be noted regarding the cost estimate for the “prioritised” capability requirements:

- there are several capability requirements recommended in this report which we have assumed, based on discussions with the CAA, can be funded from within existing resources (either because they are already provided for in existing budgets or as a result of reprioritising and redeploying resources)
- the estimate does not include transition costs that might come about as a result of any changes to roles and responsibilities. In particular, no provision has been made for the costs associated with recruiting people into new positions or transitioning staff from existing positions
- some of the elements of expenditure that make up this estimate are preliminary and indicative only. They rely on estimates prepared by the CAA which, in some areas, need considerably more work in order to obtain greater confidence over the sums of expenditure involved. Further work on refining the cost estimates is expected as the CAA develops its business case in support of the recommended initiatives, and
- the estimate does not include any provision for addressing the CAA’s existing and forecast operating deficit.

**Overall benefits**

The degree of change that arises from this review, and the investment that is required to effect that change, is substantial. We are confident that the scale of what is proposed is warranted in order to avoid the risk of eroding the reputation that attaches to New Zealand’s regulatory framework and the regulatory oversight provided by the CAA.
We note that in recent years, the CAA has been criticised for not making sufficient change where it is needed. The recommendations included in this report are aimed at ensuring that change occurs. The benefits of change are, in our view, substantial. It is our expectation that by implementing the recommendations in this report, the impacts will include:

- a much more effective and strategic allocation of resources across functions and between sectors reflecting the robust assessment of risk and benefits of having a robust civil aviation system and regulator and the use of a framework for assessing the effectiveness of regulatory interventions
- much greater consistency across the CAA in the approach to regulatory intervention and alignment with regulatory philosophy
- more effective interplay between the CAA and participants in the light of much clearer regulatory strategy and vision
- improved safety and security outcomes arising from key regulatory activities, particularly surveillance and enforcement activities, as a result of making more and better use of information and analysis and embedding a graduated and proportionate approach to achieving compliance
- a more responsive CAA reflecting the investment in leadership and management capabilities, and
- enhanced effectiveness and cost efficiency through the better use of technology and focus on performance management.
1 **Introduction**

1 Air transport is vitally important for New Zealand’s economic and social linkages both domestically and with the rest of the world. Our country also has a large, and growing, recreational (and sport) aviation sector. Maintaining confidence in the safety and security of New Zealand’s civil aviation system is a “must have”. Key to this is the role played by the CAA and its ability to effectively manage risks within the system.

2 New Zealand’s civil aviation system operates on the principle that participants (e.g. pilots, engineers, airlines, maintenance organisations, airports and operators) can only enter the system when they demonstrate that they can fulfil the requirements of civil aviation rules and operate safely. The certification functions performed by the CAA are a key part of the entry process. Once in the system, participants are responsible for their safety. The CAA’s surveillance functions (which include audits, inspections and spot checks) are a key part of monitoring compliance by participants with safety and security standards including adherence to the Civil Aviation Act 1990, civil aviation rules and operators’ exposition. The CAA (or more formally, the Director of the CAA) has the power to exit participants from the system as part of its role of enforcing civil aviation legislation and rules.

3 The CAA is a Crown entity and its statutory mandate is set out in the Civil Aviation Act 1990. Its objective is to:

   “Undertake its safety, security and other functions in a way that contributes to the aim of achieving an integrated, safe, responsive and sustainable transport system.”

4 In fulfilling its mandate, and in addition to the regulatory functions alluded to above, the CAA also has responsibility for:

   - analysing and investigating accidents and occurrences to identify where it needs to take action to mitigate safety (and security) risks
   - promoting safety and security through the provision of information, advice and education to the industry and in accordance with New Zealand’s international obligations
   - providing information to the Minister of Transport
   - administering the Health and Safety in Employment Act 1992 with respect to aircraft in operation, and
   - developing Civil Aviation Rules under a contract with the Ministry of Transport.
Context

5 In October 2010, the CAA issued a consultation document for a review of CAA funding. The CAA is undertaking the funding review as part of its programme to ensure its long term ability to achieve its safety and security objectives, apply good business practice and financial management and address drivers for change. The consultation document has set out various options for changes to levies, fees and charges which, in combination, currently provide around 85% of the CAA’s income.²

6 In addition to the funding review, the CAA has also initiated a significant programme of work to improve organisational performance. Earlier reviews undertaken by the Office of the Auditor General (OAG) have raised concerns regarding the performance of aspects of the CAA’s core regulatory functions (specifically certification and surveillance). The CAA is responding to the OAG’s concerns in the context of a wider and longer-term organisational change effort.

7 The Value for Money (VfM) Review (the Review) that is the focus of this report is intended to provide essential information to inform both the funding review and the longer term work programme initiated by the CAA.

Value-for-money review

Purpose

8 The purpose of the review is to determine whether the activities and functions carried out by the CAA provide VfM to the Government, participants and users of the civil aviation system. To this end, the review is required to:

- demonstrate a clear understanding of the costs involved in the performance of the CAA’s activities and functions
- determine the economic and social value that the services performed by the CAA deliver to industry participants, the aviation sector and the New Zealand economy
- assess how the delivery of the CAA’s activities can be undertaken in a sustainable and more efficient and effective manner, and
- compare the CAA’s performance by benchmarking against comparable New Zealand regulatory agencies and overseas civil aviation regulatory authorities.

² Based on 2009/10 actual income. CAA 2009/10 Annual Report page 120 refers
As set out in the terms of reference for the review, there are a number of key questions that need to be addressed in order to meet the requirements outlined above. These are as follows.

- What must the CAA do?
- What benefits are provided by the CAA’s activities?
- Who benefits from what the CAA does?
- How does the CAA currently deliver its functions and services and what is the cost of doing so?
- What can the CAA do more efficiently and effectively and how can this be achieved?
- What is the CAA doing well?
- What can it stop doing?

Scope

In terms of scope, the review is to consider all of the CAA’s aviation safety activities, but the work of the Aviation Security Service is outside of scope. The corporate functions (human resources, finance, information technology, etc) that support the delivery of the CAA’s safety and security oversight roles are within scope.

Report structure

Beyond this introductory section, the report comprises four main sections as follows.

- Section two discusses the benefits of having an effective regulator and system of regulatory oversight. This provides insight regarding the issue of who benefits from the provision of the CAA’s activities.
- Section three provides an assessment of the effectiveness of the CAA. This includes:
  - an overview of the allocation of resources across the various activities performed by the CAA
  - a description of the key features that we are looking for in an effective regulator. This is based on modern regulatory practice and our observations of good regulatory practice based on having worked with a number of regulatory agencies (including the other transport sector regulatory agencies)
  - a discussion of how well the CAA aligns with the features of good regulatory practice and comments on specific aspects of the CAA’s activities
– an assessment of how well the CAA aligns with the attributes of a high performing organisation, and
– recommendations for enhancing the effectiveness of the CAA and ensuring that the conduct of its regulatory oversight roles aligns with good regulatory practice.

- Section four addresses the issue of the CAA’s efficiency. This section includes a comparison with other jurisdictions, examines long run cost trends within the CAA and comments on, and makes recommendations in relation to, some specific areas of CAA activity where there appear to be opportunities to enhance efficiency.

- The resources and capabilities that are needed to enhance effectiveness and efficiency are considered in section five of the report. This section discusses required capabilities and then sets out the investment that is needed in people, processes and systems in order to bring about the desired level and mix of capability. It should be noted that the cost estimates provided in this section are indicative only. There is a need for the CAA to develop a business case in support of the investment in capability that is recommended in this review. Cost estimates will need to be refined as part of the business case process.

The final section of the report contains conclusions and recommendations.
2 Benefits of an Effective Regulator

Air travel is critical to New Zealand

New Zealand has a large and varied aviation sector, with annual revenues being estimated at close to $10b in 2010. It is a rapidly developing sector. Annual revenues were estimated at less than $7b in 2005, and revenues are forecast to continue to increase.\(^3\)

The types of first order benefits that accrue to New Zealand from the aviation sector include income generated from operating New Zealand-based aircraft, and income generated from related industries – such as training and maintenance and repairs.

The existence of a vibrant airline business is pivotal to New Zealand’s economic performance in a range of ways. The most obvious of these are the effects on tourism, business interconnectedness and opportunities for movement of high-value freight, all of which would be diminished with a less vibrant airline service.\(^4\) This is particularly important given our geographic isolation.

New Zealand currently enjoys a situation where it is classified as a low risk nation in terms of safety and security, and is able to leverage economic opportunities off its good international reputation in terms of its aviation industry.

Improving the aviation sector has clear benefits

Improving New Zealand’s aviation sector has a range of benefits for users but also more generally through the economy. Benefits fall to the following:

- domestic and international air passengers
- exporters and importers of air freighted goods
- participants in the civil aviation system
- suppliers of aviation industry related services, and
- the broader New Zealand economy.

\(^3\) New Horizons, A Report on New Zealand’s Aviation Industry, Knotbridge Ltd, June 2010

\(^4\) The importance of New Zealand enjoying vibrant air services is terms of producing and exporting high value goods is highlighted by the fact that in 2010, the less than 0.4% (by weight) of our exported freight that travelled by air accounted for over 13% of our export receipts received from freight (Statistics New Zealand 2011).
The benefits of improving the aviation sector manifest themselves in a number of ways. Prominent amongst these are:

- improved safety
- reductions in the cost of service
- improvements in the comfort of service
- improvements in the frequency of service, and
- improvements in the ease of service.

These benefits would result in greater levels of travel and/or volumes of air freight being carried, with commensurate economic and social benefit. By way of scale, Castalia estimated that a decrease in costs of travel of 5% would generate GDP benefits of over 0.4% per year, plus also consumer benefits to domestic air travellers of nearly $85m per year (in terms of reduced travel costs). The GDP benefits were primarily made up of increases in air freighted exports, but also increased economic activity resulting from more tourists coming into New Zealand.

How does the CAA affect these benefits?

Not all of the benefits that can be attributed to the airline industry are attributable to the CAA however. Some of New Zealand’s relative strengths (e.g. being a low risk nation from a security viewpoint) reflect at least as much on the nature of New Zealand’s society as they do on the effectiveness, or otherwise, of the CAA. Other benefits of the aviation industry are heavily influenced by incentives (and structures) implicit in the industry (e.g. the airline industry has very strong incentives to operate in a safe and efficient manner; the effectiveness of airport security is driven at least as much by the effectiveness of the Aviation Security Service (Avsec) as it is driven by the CAA).

There are three main challenges in estimating the benefits that the CAA brings to New Zealand. These are:

- determining the counter-factual
- drawing the linkages, and
- quantifying the benefits.

Environmental impacts (discussed later in the report) are mixed as there are both positive and negative environmental impacts.
Determining the counter-factual (defining the most likely alternative scenario)

22 It is not credible to assume that there would not be any regulation of the aviation industry. Further, even in the extreme event that there was not any effective regulation of the airline industry, there would still be an airline industry operating in New Zealand.

23 At a conceptual level, the most useful scenario to consider is a comparison between a well operating CAA and regulatory system compared against a less highly performing regulatory system.

24 Changes to the current system need to be considered against the current baseline. The CAA compares relatively well against its international peers (the CAA was rated above the OECD average in terms of ICAO's assessment of the level of implementation of critical elements (airlines and major airports)). When last assessed in 2006, the CAA had the same overall average rating as Australia.

Drawing the Linkages

25 Beyond the issues associated with assessing the counter-factual, it is necessary to determine causation and relationships implicit. The CAA does not operate aircraft, nor does it run maintenance workshops etc, but it is a key enabler that allows the operation of the aviation industry. The primary ways in which the CAA affects the aviation industry (in addition to directly impacting on safety outcomes) are as follows:

- maintaining and enhancing New Zealand’s reputation in terms of aviation safety standards
- maintaining and enhancing New Zealand’s reputation in terms of aviation security standards, and
- maintaining and enhancing New Zealand’s agreements with other countries and their regulatory authorities.

26 These are dealt with in turn (it is worth noting that these three categories overlap in practice (e.g. the ability to gain appropriate working arrangements with other countries is influenced by the way in which New Zealand’s regulatory system is perceived internationally)).

Maintaining and enhancing New Zealand’s reputation in terms of safety and processes

27 As noted, ICAO’s most recent assessment of the CAA is that it performs relatively well against international norms. This brings with it a number of benefits in terms of the ability of New Zealand aviation to operate in the international aviation system.
The converse is also true. In particular, if it were to be perceived that the CAA’s safety and security oversight arrangements were not sufficiently robust then a very likely direct outcome would be an investigation of the CAA by the Federal Aviation Administration (FAA) or other states with whom New Zealand has aviation links. This would be, at the minimum, a resource intensive activity, but, more seriously, may result in a downgrade of New Zealand’s status as a Category 1 nation in terms of aviation safety (this would affect all New Zealand certified airlines, and potentially could also affect code share elements of the Star Alliance).  

The effects of a possible downgrade to New Zealand’s status to Category 2 are unclear as the FAA, amongst others, is likely to seek to employ a graduated response. It may mean that New Zealand certified airlines are constrained (especially in terms of expansions or changes to existing practices), or it could be more significant. Similar considerations also apply to access to Europe, as the relevant regulator (the European Aviation Safety Agency) also takes a strong interest in the performance of the regulatory system of countries whose operators fly in and out of Europe.

The major beneficiaries of a robust regulator and regulatory system in this regard are New Zealand certified airline operators that fly internationally (mainly Air New Zealand). Their passengers and users of their air freight services are also beneficiaries, although it is very important to note that if New Zealand’s status were to be downgraded, airline services would continue to be offered to and from the US and Europe, albeit by operators from other countries.

There may however be a loss of competition on certain routes, with costs manifesting themselves in increased fares or decreased frequency of travel opportunity, or both. At the minimum, there would be some loss of consumer surplus for passengers that otherwise would have flown with Air New Zealand, as well as the loss in producer surplus for Air New Zealand noted above. Air New Zealand is the only international airline focused primarily on serving the needs of New Zealand and New Zealanders, so it is reasonable to expect that while other airlines would fill some of the gaps, they would not necessarily fill those gaps as well as Air New Zealand might, nor would they

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6 An investigation by the FAA was undertaken into the effectiveness of the Australian airline regulatory system as a result of the most recent ICAO assessment of CASA. Although this did not result in a downgrade of Australia’s status, it does demonstrate that the risk of investigation, and then possible downgrade, is real, if the regulatory system (and the regulator) are not perceived to be sufficiently robust. Poland has however recently been downgraded by the FAA from having Category 1 status to having Category 2 status, and constraints have been placed on Polish airlines as a result.

7 The consumer surplus is the difference between consumers’ willingness to pay for a product, and the price that they have to pay to receive a product (e.g. if a consumer is willing to pay $200 for an airfare but only has to pay $150 then they enjoy a consumer surplus of $50). A producer surplus, in contrast, is the difference between the revenue from that service received by the producer and the amount that they would be willing to supply that service for (e.g. if, for the same airfare of $150, the producer would be willing to supply the service for $80 then the producer surplus would be $70).
be likely to promote New Zealand as a destination to the extent that Air New Zealand does.\textsuperscript{8}

32 Perception (and performance) risks are not only relevant to access of New Zealand certified airlines to international markets. Air New Zealand leases aircraft on a long-term basis (e.g. 10 years) from aircraft lease firms such as the International Lease Finance Corporation (ILFC). Air New Zealand undertakes design changes and repairs on those leased aircraft under the certification of the CAA. These changes also need FAA approval if the leased planes were to be returned to US-based service and the perception that the CAA operates a sound regulatory system eases the ability of Air New Zealand to gain the requisite FAA approvals (at times, the FAA will accept CAA approvals for at least part of the design work).

33 Perception is also important when it comes to the international acceptability of new features of aircraft design and operation. Air New Zealand is about to introduce Skycouches to some of its long-haul services, and this has required regulatory approval from the CAA. While the approval of other regulators is not required for this innovation, if Air New Zealand were to sell (or return leased) aircraft with Skycouches in place then the reputation of the CAA would influence the ease with which these aircraft could be on-sold (or returned to the lessor).

34 Further to this, it is critical to the effective operation of key suppliers of aviation services (e.g. Altitude – aircraft interiors) that the New Zealand regulatory system, and the New Zealand regulator, are perceived as being robust.\textsuperscript{9} Altitude has accreditation for its services through CASA and EASA (and the FAA through a partnership agreement). Gaining and maintaining these accreditations would be significantly more difficult if the CAA were perceived to be insufficiently robust. The CAA is a key enabler for Altitude to carry out its business.\textsuperscript{10}

35 Finally, but not least in terms of significance, we note that maintaining a strong reputation for the safety of the aviation system impacts upon the premiums charged for insurance cover of New Zealand certified aircraft. Loss of reputation could result in higher premiums.

\textsuperscript{8} New Zealand’s interest in Air New Zealand falls into 2 broad categories. These are firstly as a supplier of New Zealand focused air services, and secondly, New Zealand and New Zealanders have a major ownership interest. Both of these interests are important.

\textsuperscript{9} Altitude is a 100% Air New Zealand-owned aircraft interiors business. It has a mix of domestic and international clients.

\textsuperscript{10} Altitude also noted that having a relatively robust CAA with a solid reputation enhances Altitude’s ability to discuss issues with other jurisdiction’s regulators (i.e. Altitude is used to dealing with aviation regulators). Further, if the CAA did not have a good international reputation then it would be more difficult for Altitude to sell its products, particularly to international clients.
Maintaining and enhancing New Zealand’s reputation in terms of security

36 The Transportation Security Administration (TSA) recently undertook an extraordinary review of New Zealand’s security arrangements, with particular reference on air freight security. Dependent on the outcome of this review, and other reviews of our security arrangements, there could be significant impacts on the air freight industry (both airfreighted imports and exports are valued at over $5b per year).

37 New Zealand currently operates a “secure supply chain” approach to the security of air freight whereby the security of air freighted pallets is assured through the use of known shippers and secure supply chain. Cargo from unknown shippers requires screening. In the US, there are proposals to move to a system whereby 100% of air freight is screened (i.e. this would mean opening and examining each pallet to be air freighted). The TSA review is designed to assess whether New Zealand’s secure supply chain approach will provide an equivalent level of security to that provided by screening.

38 It is not only the CAA that is being assessed as part of the TSA review; the entire operation of the New Zealand secure supply chain system is being assessed. While there is no guarantee that the outcome of the TSA’s review will be positive (and it is important to note that the TSA’s review looks wider than just the CAA’s role), it is highly likely that any significant weaknesses in the CAA’s role would have an adverse impact of the review’s outcome.

39 The costs to New Zealand – if it were required to move to 100% screening of air freight – would be considerable. For perishable items such as seafood and cut flowers, it is likely that the time delays implicit as well as the food safety implications (in the case of food) may well make the airfreighting of these goods unviable. For non-perishable items, the implications are likely to be in terms of additional costs, and also time for the product to get to market.

Maintaining and enhancing New Zealand’s agreements with other countries and their regulatory authorities

40 In addition to the treaties with the US and Australia that cover mutual recognition of aviation regulatory systems and outcomes there are a number of working arrangements with other countries’ regulators that provide for mutual recognition/acceptance of regulatory processes. These treaties / working arrangements confer specific benefits on New Zealand and New Zealand firms. The nature and scale of

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11 The Ministry of Transport has indicated that the recent annual value of air-freighted goods to the US was $774m (this is the value of goods with a final destination of the US and does not include goods passing through the US). Perishable items make up a significant proportion of this.

12 The treaty with the US is known as the Bilateral Aviation Safety Agreement (BASA) while the Australia New Zealand Aviation (ANZA) is a mutual recognition principle between the CAA and CASA.
benefit received by New Zealand and New Zealand firms depend on the nature of the specific agreement as well as the extent to which New Zealand firms utilise the opportunities available under these agreements.

41 Dealing with US, Canadian and Australian examples, the BASA allows New Zealand designed and manufactured aircraft to be sold in the US without additional regulatory costs and hurdles. The primary beneficiaries of this are New Zealand aircraft designers and manufacturers. The skills and expertise of New Zealand firms, operating under the regulatory system that the BASA accepts, determines the extent to which New Zealand benefits from this arrangement.

42 In terms of Canada, there is a specific agreement between Transport Canada and the CAA (i.e. a working arrangement between regulators). Without such an agreement, New Zealand aviation firms would find servicing the needs of Canadian airlines significantly more challenging (or alternatively, would incur greater expense in gaining the requisite certification).

43 In terms of Australia, a mutual recognition arrangement (referred to as the Australia New Zealand Aviation Agreement) allows New Zealand certified airlines to operate within Australia without separate CASA approvals, and vice versa. While the activities of New Zealand certified airlines operating within Australia are currently relatively small, these may grow in the future, and a requirement to gain separate CASA approval would add cost, time delays and uncertainties to these operations.

13 Unless sufficiently robust bilateral agreements exist, the costs of gaining international certification can act as a barrier to entry for smaller firms that are considering entering into the international aviation market.
Identifying the nature of the benefits that the CAA brings

The table below examines possible sources of (first order) economic benefit to New Zealand from changes in the effectiveness of the regulator, the nature of the relationship between the regulator and the benefit involved. It also assesses whether the benefit of a more effective CAA is perceived to be relatively large or small.

The table does not focus heavily on safety benefits (although they are noted); rather it focuses on benefits associated with the CAA over and above safety benefits. Having said this, improved safety outcomes will contribute to benefits that extend beyond safety-related matters.\(^\text{14}\)

To the extent that having an effective CAA influences travel patterns, there are also environmental and social impacts. The social impacts tend to be positive (greater interconnectedness, greater comfort, less intrusiveness for passengers), whereas the environmental impacts are more mixed (there may be fuel savings associated with use of improved technologies, but more travel may lead to more fuel use in aggregate and a greater environmental footprint associated with that travel).

\(^{14}\) Valuing the safety benefit associated with the CAA is problematic for the reasons relating to counter-factuals identified in the text. Having said this, some level of scale is provided by examining the value of a statistical life (the CAA currently assumes $3.6 million per fatality) and the number of aviation-related fatalities (refer Figure 4 below). Such analysis does not include any loss of equipment (particularly expensive in the aviation area), and flow on costs if there were to be a loss of confidence in New Zealand’s aviation sector.
Table 1: Assessing the Changes in the Effectiveness of the CAA

<table>
<thead>
<tr>
<th>Immediate effects of improving / worsening the effectiveness of the CAA</th>
<th>What changes to outcomes – over and above safety – might occur</th>
<th>Affected party / first order beneficiary</th>
<th>Nature and possible scale of benefit / cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes in safety for passenger services, leading to differing levels of loss of life and equipment.</td>
<td>To the extent perceptions of New Zealand and trust for New Zealand are affected, changes in volumes of travel.</td>
<td>Passengers, both domestic and international, and airline operators.</td>
<td>Economic (productivity) and social (lives and injuries). Effects unlikely to be major on travel patterns to New Zealand, but could be significant to affected airline operators (if a major adverse event occurs).</td>
</tr>
<tr>
<td>Different speed of decision-making (without compromising the quality of decision-making) allowing adoption of improved technologies leading to either improved service (e.g. seats) or cost savings (e.g. allowing quicker implementation of modern navigational systems).</td>
<td>Changes in passenger volumes due to increased comfort and / or decreased cost. Changes in freight volumes due to decreased cost.</td>
<td>Passengers, especially international, and airline operators. Exporters and importers of air freighted goods.</td>
<td>Economic (increased volumes of travel – including freight) and social (greater interconnectedness and greater comfort). Reduced operating costs for operators. Effects related to scale of change.</td>
</tr>
<tr>
<td>Change in confidence in CAA (and / or New Zealand regulatory systems) from a safety perspective leading to increased scrutiny of New Zealand’s systems, and a possible downgrade in FAA categorisation (and / or the categorisation of other regulators).</td>
<td>Constraints placed on Air New Zealand’s operations in key markets. Change in the international attractiveness of New Zealand’s aviation related services such as design and engineering workplaces, consultancies and training school activities.</td>
<td>New Zealand-based international operators, their passengers and their freight. Providers of aviation related services.</td>
<td>Loss of shareholder value for owners of Air New Zealand (in particular). Loss to New Zealand Inc through less focus on New Zealand as a tourist destination of choice. Loss of consumer surplus for existing Air New Zealand customers. Could be significant.</td>
</tr>
<tr>
<td>Immediate effects of improving / worsening the effectiveness of the CAA</td>
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<td>---</td>
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</tr>
<tr>
<td>Change in confidence in New Zealand aviation security systems, especially with regard to air freight, leading to a move towards 100% screening of air freight to the US.</td>
<td>Cost increases and time delays for some air freighted goods, loss of viability for others.</td>
<td>Exporters of air freight and the carriers of this air freight.</td>
<td>Could be very significant, especially for exporters of air freighted perishables.</td>
</tr>
<tr>
<td>Increase / decrease in recognition of New Zealand’s regulatory system in terms of international agreements leading to increases / decreases in costs for New Zealand firms supplying international markets and the ease with which these markets can be accessed.</td>
<td>Loss of economic activity, especially with regard to maintenance / manufacturing activities.</td>
<td>Owners of relevant activities; often Air New Zealand.</td>
<td>Could be significant loss if there is a loss of recognition in this area. If there are improvements in this area the benefits are likely to be small.</td>
</tr>
<tr>
<td>Changes in administrative efficiency of the CAA, leading to changes in levies, fees and charges on operators.</td>
<td>Changes in costs of travel leading to changes in travel volumes.</td>
<td>Passengers, both domestic and international, and operators.</td>
<td>Economic (productivity gains; consumer surplus) and social (greater interconnectedness). Not likely to be particularly significant.</td>
</tr>
</tbody>
</table>
Conclusions

47 Because of issues associated with determining the counter-factual and the interdependencies implicit in the aviation industry, valuing the benefits that the CAA brings is very difficult. This does not mean that it is impossible to draw conclusions from an analysis of potential benefits.

48 It is clear that many of the benefits associated with the CAA are about maintaining and enhancing New Zealand’s reputation for having a robust aviation regulatory system. Reputations are easily lost – and hard earned – and are linked to performance. This reputational risk is not linked to one particular output of the CAA, nor is it entirely linked to the CAA in itself.

49 The benefits which stem from New Zealand having a robust aviation regulatory system are enjoyed by New Zealand as a whole – but clearly fall more on the larger airline operators (and particularly Air New Zealand), and their customers. The key benefits manifest themselves in various ways such as:

- access to international markets, especially for operators
- the ease with which it is possible to win and maintain business from international clients, and
- the ability to deploy improved technologies for benefit of operators, passengers, and importers / exporters of air freight.

50 Relatively marginal differences in the CAA’s performance are unlikely to have major effects, but there are asymmetries involved. If New Zealand’s performance in terms of aviation regulatory systems were to decrease (or be perceived to decrease) in any significant manner then the costs involved could be significant indeed.

51 In terms of specific valuations, in no case is there an absolutely direct relationship between the effectiveness of the CAA and the benefit involved. In some cases (e.g. certain maintenance and design activities), having an effective CAA is a key enabler of the benefit involved. The benefits that New Zealand gains through Altitude, for example, reflect the capability and capacity of Altitude in terms of their business offerings, but without a strong underpinning regulatory system, gaining those benefits would be significantly more challenging.

52 Based on a subjective assessment of the benefits, it is likely that the largest of the non-safety related benefits relate to potential risks to air freighted goods, to providers of maintenance, manufacturing and design activities, and to Air New Zealand in terms of access to key international markets. Notwithstanding the comments about difficulties of valuation of the CAA itself, the CAA is a key enabler of business well into the hundreds of millions of dollars per annum to New Zealand.
Further work is required to obtain information on the scale of those benefits which are amenable to quantification in terms of a range of metrics – turnover of the relevant firms, number of employees etc. This can give a first order effect of the scale of some of these activities, but does not go so far as to provide an assessment of the value that the CAA provides. The extent to which this is possible is likely to be constrained by the level of data that is available (and non-confidential) and, accordingly, the extent of further work, which is likely to push beyond the timeframe and scope of this review.

The nature of the types of business that the CAA enables is such that it would be difficult to regain all of the requisite skills, expertise, trust and contacts if these are not maintained and continually renewed. Given this, the impacts of a drop in CAA performance (with flow-on implications on New Zealand businesses) may last for a significant period, even if that drop in performance were to be for a relatively short period.

The level of the economic benefit that the CAA enables may well be as great, or even greater, than the direct safety benefit associated with the CAA’s activities. As such, it is possible to draw two separate but related conclusions.

Firstly, the objectives of the CAA are currently focused on the CAA fulfilling its functions in a way that “contributes to the aim of achieving an integrated, safe, responsive, and sustainable transport system”. There is no mention of economic benefit in the objective even though this analysis suggests that the economic benefit enabled by the CAA is large. As such, consideration should be given to ensuring the economic benefits that the CAA enables are reflected appropriately in the objectives of the CAA.

Careful consideration of the wording of such an objective would be required to ensure that the right balance between safety / security outcomes and economic benefits is struck. It would not be appropriate, for example, for the CAA to be concerned with the profitability of aviation-related firms but it would be appropriate for the CAA, in fulfilling its functions, to take into account possible economic benefits that may accrue to New Zealand.

Related to this, there may well be implications for the way in which the CAA allocates its resources. There is likely to be a level of trade-off implied between assisting New Zealand – and New Zealand firms – to capture possible economic benefits associated with aviation, and the achievement of safety and security outcomes. These trade-offs are not necessarily simple, but these types of trade-offs are relatively common in areas where multiple objectives are present.

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15 See Section 72AA of the Civil Aviation Act 1990.
3 Assessment of the CAA’s Effectiveness

Introduction

In this section of the report, the effectiveness of the CAA is assessed. Effectiveness is primarily about doing the right things and doing them in a way that creates the most impact. Accordingly, the assessment of effectiveness focuses on the level and mix of activities undertaken by the CAA and the contribution that these make toward the achievement of outcomes.

The terms of reference have required us to consider whether all existing services are still needed and whether they should be delivered differently in order to maximise the contribution to goals and outcomes. This includes addressing the following questions:

- What must the CAA do?
- What can the CAA do more effectively?
- What is the CAA doing well?
- What can the CAA stop doing?

Although the review has considered all aspects of the CAA’s activities, the approach taken to this report has been to focus on those aspects of CAA activity where there are issues arising and where there is a need for, or opportunity to, enhance effectiveness. By implication, for those areas of CAA’s activity that are not discussed in any detail below, the inference that should be taken is that there are no material issues for the CAA to address.

This section of the report is divided into three main sub-parts. The first of these provides some context for the analysis that follows in later parts of this section. It does this by providing a brief overview of the safety performance of the aviation sector and by presenting, in high level terms, a summary of the allocation of the CAA’s resources across its regulatory functions.

The second part of this section provides an overview of the features of being an effective regulator that we are looking for in the CAA. This is based on modern regulatory frameworks and design principles and is used as a reference point against which to provide comment on the effectiveness of the CAA’s approach to regulatory oversight. We provide a summary of key findings in terms of how well the CAA aligns with desired features and supplement this with some more detailed comments around specific aspects of the CAA’s regulatory functions and how effectively these are being performed.
The third sub-part of this section assesses the effectiveness of the CAA through an organisational performance lens and in this respect focuses on how well the CAA functions as an organisation. While there are overlaps between effectiveness in organisational terms and in a regulatory sense, equally there are some distinctions that can be made. The format is similar to the first sub-part in that we set out some of the elements that we would expect to see in a high performing organisation and then comment on how well the CAA aligns with these expectations.

**Allocation of resources and safety trends**

The CAA has four main output classes:
- Policy advice
- Safety and security assessment and certification
- Safety and security investigation, analysis and education, and
- Enforcement.

The policy advice output class includes the development of Civil Aviation Rules (Rules) under contract to the Ministry of Transport. Rules are an integral part of the regulatory machinery. They state the minimum levels of safety and they set a standard so that everyone in aviation can have a shared understanding of the right way to operate. All participants in the civil aviation system must comply with civil aviation Rules.

Many of the requirements for entering into, and participating in, the civil aviation system reflect international requirements operating in other jurisdictions. International obligations play a big part in the regulatory framework that operates in New Zealand. Reflecting this, a significant part of the policy output class includes work arising from, or in connection with, international obligations including, in particular, those relating to the ICAO.

The assessment and certification output class is primarily focused on controlling entry into, and exit from, the civil aviation system. Functions include certification (of airlines, aircraft and operators), personnel licensing and surveillance activities (audits, inspections, spot checks and monitoring).

The third output class - investigation, analysis and education - focuses on understanding the causes of safety and security events and seeking to learn from such events how the design and operation of the aviation system can be improved. The CAA publishes safety analysis reports and provides information and education through a variety of channels.
The last of the four output classes - enforcement - includes investigating alleged breaches of civil aviation regulatory requirements and taking appropriate action which can range from issuing a warning through to commencing summary proceedings.

Looking back over the last 14 years\textsuperscript{16}, the overall allocation of resources across the four output classes has seen some significant change.\textsuperscript{17} There has been a considerable increase in the assessment and certification output class (which in 2009/10 accounted for approximately two thirds of total expenditure).

\textbf{Figure 1: Expenditure by Output Class}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{expenditure.png}
\caption{Expenditure by output class (000s)}
\end{figure}

An analysis of the trends in the assessment and certification output class indicates that the growth in expenditure over the last ten years has been a function of growth in transaction volumes (Figure 2 below) rather than in expenditure per transaction (Figure 3 below).

\textsuperscript{16} Prior to 1996/97, the CAA had a fundamentally different output class structure which makes it difficult to extend the trend analysis prior to this time.

\textsuperscript{17} Developing a clear understanding the costs involved in the performance of the CAA’s activities and functions is part of the review’s terms of reference. The analysis of effectiveness has focused on costs at the output class and output levels only. In general, the CAA does not have cost information at the activity level.
It should be noted that the dip in expenditure per transaction in 2003 (Figure 2 above refers) is due to an abnormally high number of reported certification transactions.\footnote{There were approximately 2000 more transactions than normal relating to Part 21H Airworthiness Certificates/Flight permit applications.}

The main growth in transaction volumes has been in respect of “other certification transactions” (these mainly involve amendments to existing certificates) and licence transactions. There has also been some growth in the volume of new certificates issued and most of these have been medical certificates.
The volume of surveillance activity (i.e. audits, inspections and spot checks) has been relatively constant over the last 10 years although there has been almost a doubling in the number of routine audits in relation to general aviation over the last five years compared to the previous five years. This growth rate outstrips growth in the number of general aviation (GA) aircraft (roughly 20%) and the number of hours flown by GA aircraft (roughly 30%).

A possible reason for growth in surveillance activity in relation to GA could be the safety record of this sector compared to that of the airline sector. As can be seen from Figure 4 below, the safety record of the GA sector\(^\text{19}\) (measured in terms of the number of fatalities) is inferior to that of airline operations (large and medium aircraft).

![Figure 4: Number of Fatalities](image)

Source: CAA

The CAA also reports the number of aircraft accidents per 100,000 flight hours. Accident data provided in the CAA’s Aviation Safety Summary Report\(^\text{20}\) indicates that the trend line for large and medium aircraft is trending downwards. The trend line for GA overall also points toward reducing numbers of fatalities. There are, however, three sub-groups within the GA sector - small aeroplanes, agricultural aeroplanes and helicopters - for which the accident rate is either flat or increasing. The inferior and deteriorating safety record among these elements within GA could provide justification for increased and/or more targeted surveillance activity (we comment further on the role of risk in guiding the allocation of resources in later parts of this section).

\(^{19}\) GA is defined to include airline operations involving small aircraft and helicopters together with other commercial operations and non-commercial operations.

\(^{20}\) Quarter ending September 2010 page 3
While there are plausible reasons to help explain the growth in expenditure in the assessment and certification output class, those reasons do not assist as well with explaining the lack of growth in the other output classes. In real terms (i.e. allowing for inflation) expenditure on two output classes — “Investigation, analysis and education” and “Enforcement” has increased by less than one percent per annum since 1997. Expenditure on the policy output class increased by only 12% over the period 1997 – 2010 which, in real terms means that this output class shrank by about 17%. While it is reasonable to expect there to be some economies of scale in terms of the relationship between the amount spent on policy and the size of the aviation industry, we question whether growth in the industry should be accompanied by a reduction in expenditure on policy advice. If anything, we would expect growth in the aviation sector to lead to new and more complex issues and, hence, a need for some increase in policy activity.

International comparison

The ICAO conducts an ongoing programme of audits of its member states. Information reported in the CAA’s latest Statement of Intent shows New Zealand’s level of implementation of eight key elements used in ICAO audits of national aviation safety performance. The data covers the airline sector and major airports and does not include the GA sector. The ICAO comparison is summarised in Figure 5 below.

Overall, the data indicates that New Zealand ranks ahead of the OECD average for five of the eight criteria, equally on another of the criteria and slightly below the average on two criteria - primary aviation legislation (which is not the CAA’s responsibility) and specific operating regulations. Compared to Australia, New Zealand’s overall ranking is the same. In two areas, the CAA rates ahead of Australia (specific operating regulations and the qualification and training of technical personnel), but in three areas, Australia rates ahead of the CAA. These areas include legislation, the state aviation system and safety oversight function and the provision of technical guidance and safety-critical information.
1. **Level of implementation**: 1=not implemented, 10=fully implemented

2. **Critical elements**:
   - 1 primary aviation legislation (in New Zealand, it’s the responsibility of the Ministry of Transport);
   - 2 specific operating regulations;
   - 3 state civil aviation system and safety oversight function;
   - 4 technical personnel qualification and training;
   - 5 technical guidance, tools and the provision of safety-critical information;
   - 6 licensing, certification, authorization and approval obligations;
   - 7 surveillance obligations; and
   - 8 resolution of safety concerns.

3. **OECD average** comprises 20 countries of the total 30. Republic of Korea has a perfect score of 10; France: 9.5; USA and Canada: 9.38; Poland: 8.75; and New Zealand, Australia, and Czech Republic: 8.38.

Although these results are becoming dated, they are consistent with observations we have of the CAA. In particular, and as discussed later in this report, there are opportunities for the CAA to strengthen its core surveillance functions (a key part of safety oversight) and for the CAA to make more and better use of safety information. We note that expenditure on safety analysis and education has been relatively constant in nominal terms for the last 10 or so years suggesting that this might need to change if New Zealand is to attain the higher rating achieved by Australia in this area.

The conclusions we take from the ICAO results, coupled with our own observations, are that:

- overall, New Zealand’s regulatory framework is in the top tier worldwide
the operation of that framework including the regulatory oversight provided by the CAA is of good standard

there are, however, areas for improvement if the CAA is to keep pace with developments in aviation and regulatory practice, and the increasing expectations being placed on aviation regulators more generally.

In our view, a step up in performance is required in some key aspects of the CAA’s regulatory oversight role in order to ensure that the substantial benefits that stem from having an effective regulatory system and regulator are not put at risk. In the next part of this section, we assess in more depth the effectiveness of the CAA both from a regulatory perspective and from an organisational performance perspective.

CAA as an effective regulator

In this part of the section we consider the extent to which the CAA has the features we would expect to find in a high performing modern regulator, taking into account the aviation context and the role of the CAA.

Regulating aviation

In general sense of the term, regulation is the imposition of rules in order to change outcomes. Regulation can exist for different reasons ranging from minimising negative externalities (for example through polluting practices), through standardisation to support economic benefits, to enhancing equity in access to services.

Regulation in aviation is primarily about enhancing safety outcomes and is a cost effective way of providing users and providers in the aviation system with assurance regarding safety. There are a number of specific features of the aviation sector in this regard. There are already strong incentives for safety as those harmed in accidents usually are operators or passengers. The intensive media attention given to accidents provides an additional commercial incentive for safety. The unforgiving nature of the aviation environment means that the consequences of safety failures are typically very serious.

The approach to regulating the aviation sector needs to take into account risk and the incentives acting on participants in the sector. Risk has the twin dimensions of the probability of an adverse event occurring as well as the impact when accidents occur. As shown in Figure 6 below, the nature of risk, impact and incentives is not uniform across all parts of the aviation sector. Regulatory responses need to be tailored accordingly.
Figure 6: Risk and Regulatory Response

Risk and regulatory response Schematic illustration of how risk profiles of sub-sectors can inform the nature of the regulatory response. A good regulator tailors the nature of its regulatory activities accordingly.

<table>
<thead>
<tr>
<th>Large pax operators</th>
<th>Small pax operators</th>
<th>Non pax operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>RISK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Higher direct cost of adverse events</td>
<td>• Lower incentives and capability to manage risk leads to a greater probability for adverse events</td>
<td></td>
</tr>
<tr>
<td>• Higher reputational cost of adverse events</td>
<td>• Lower direct and indirect costs per accident</td>
<td></td>
</tr>
<tr>
<td>• Lower tolerance for risk</td>
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Impact

The sector is evolving rapidly in some respects, particularly in relation to the adoption of new technology and the growth of adventure aviation. Evolution often enhances the value added to the economy by the sector and effective regulation supports this.

The implications for the regulatory approach are that it needs to:

- ensure very high standards of safety
- complement existing safety incentives and not substitute for operators’ safety responsibilities
- be compliant with international standards (which may reduce some degrees of freedom)
- create an environment of trust in the provision of safety information and incident reporting by the sector, and
- accommodate innovation and support the value added to the economy by the sector.
In addition, regulation in aviation relies on self-reporting of safety issues or failures by participants. This means that there needs to be a high degree of trust by the sector in the fairness of the regulator.

We have taken these factors into account in the assessment below. Although the mix of factors is specific to aviation, it is not unique. While the appropriate regulatory strategy will be specific to the sector, we would expect it to have the same broad elements as are found in other well-developed modern regulatory regimes.

The extent to which the CAA has the features of an effective and modern regulator

At a high level, we would expect a modern regulator to have a clear regulatory philosophy and vision and to have an effective regulatory strategy consistent with that vision.

We would expect a statement of regulatory philosophy to set out the overall objectives of regulation and some high level principles. The CAA’s document ‘The Regulation of Aviation Safety in New Zealand: Statement of Philosophy’ is intended to meet this requirements, but it dates from 2005. The statement of regulatory philosophy needs updating and refreshing and it would benefit from having a greater profile within, and outside of, the CAA.

In updating, particular attention should be given to:

- elaborating the objectives to reflect the wider benefits identified in this review
- revising matters affecting the relationship with the sector particularly to reflect the implications of SMS, and
- sharpening the formulation of principles to allow easy reference in subsequent documents.

This exercise could usefully be integrated with the development of the CAA strategic plan currently in progress to ensure alignment of objectives and approach.

Once the statement has been updated the key principles should be widely promulgated through the regulatory strategy and relevant action plans.

**Recommendation**

The CAA should refresh its statement of regulatory philosophy and vision as part of the CAA strategy that is currently under development and promulgate it through the regulatory strategy and other planning documents.
We would expect the statement of regulatory philosophy and vision to be realised through a regulatory strategy that has a number of elements. Table 2 below sets out our assessment of the extent to which the CAA’s de facto regulatory strategy has the elements we would expect.
Table 2: Features of an Effective Regulatory Strategy

<table>
<thead>
<tr>
<th>Expectations</th>
<th>What we found</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Focusing on risk</strong></td>
<td>The CAA has made recent progress in risk profiling. Risk profiling is carried out at the operator level and is used to a degree to prioritise interventions between operators within subsectors.</td>
</tr>
<tr>
<td>We would expect the CAA to have a risk management framework that underpins its regulatory approach – within any constraints imposed by the Act and ICAO. An intelligence-led risk-based approach should inform the use of compliance tools in individual cases or for particular segments of the regulated sector. The CAA should be able to:</td>
<td>However, it is not moderated and does not form a basis for prioritising the CAA's interventions across sub-sectors. Our understanding is that the prioritisation that does take place is largely judgemental and ad hoc.</td>
</tr>
<tr>
<td>- identify, analyse and quantify risk</td>
<td>While managers have a strong sense of which sub-sectors are the most risky, risk is not quantified or used to inform the use of compliance tools in a systematic way and there may be opportunities to further stratify the assessment of risk within subsectors.</td>
</tr>
<tr>
<td>- prioritise risk, based on an assessment of its likelihood and potential consequences, and</td>
<td>There is limited systematic or formal use of intelligence and information to inform assessments of risk. While other cross-cutting risk issues are identified from time to time, this is usually again based on judgement and it is possible that opportunities to identify and manage risk are missed.</td>
</tr>
<tr>
<td>- plan and conduct activities to eliminate and mitigate risk</td>
<td>Overall there are significant opportunities to further strengthen the use of risk management approaches.</td>
</tr>
<tr>
<td>The risk management approach should draw on an understanding of the drivers of compliance and non-compliance and should segment individuals and organisations based on evidence.</td>
<td></td>
</tr>
<tr>
<td>The risk management framework should be applied at operator, sub-sector and system levels, and on the basis of a range of other categorisations.</td>
<td></td>
</tr>
<tr>
<td><strong>A graduated, proportionate approach to achieving compliance</strong></td>
<td>The CAA lacks a formal 'compliance pyramid' type model developed by many regulatory agencies to inform its interaction with sector participants at different levels of compliance, but it does in practice have a graduated approach. However, there may be opportunities to improve the efficient use of tools by giving further consideration as to when to use softer versus more punitive tools.</td>
</tr>
<tr>
<td>We would expect proportionate and flexible use of tools to achieve compliance with safety standards, tailored according to segments of the sector.</td>
<td>We were provided with a number of examples in which information received by the CAA could have been used more judiciously – either because a stronger response would have been appropriate, or because the approach was too strong, undermining the willingness for the provision of additional information.</td>
</tr>
<tr>
<td>This would include a view as to when to use information and education, when to use formal powers such as restrictions on operation, and when to undertake severe measures such as prosecution or revocation of certification.</td>
<td></td>
</tr>
<tr>
<td>The approach should establish an environment of trust around the provision of information to the CAA – there should be a 'just culture'.</td>
<td></td>
</tr>
<tr>
<td>Expectations</td>
<td>What we found</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>A results-oriented approach</strong></td>
<td>The CAA’s overall regulatory approach is primarily input and output oriented. This is driven by (1) a focus on adherence to the rules, which are not themselves outcome based, and (2) formal external accountability measures which are oriented around transaction volumes for various activities – notably surveillance and certification functions. The CAA publishes regular aviation safety reports which report numbers of accidents and safety incidents, together with an assessment of social cost per unit of exposure by sub-sector. However, it does not appear in practice to inform either operational or strategic priorities. There may be opportunities to develop ex-ante indicators of safety (closely linked to the development of risk-based approaches) that would better inform CAA’s strategic approach.</td>
</tr>
</tbody>
</table>
| *We would expect clearly defined impacts and outcomes by which to measure effectiveness in managing risks over time and a sound agency-level performance management framework that enables the CAA to:*  
  - Define its strategic and operational objectives and priorities  
  - Plan its activities and manage its resources efficiently and effectively  
  - Define and enforce quality standards, and  
  - Measure and report on its regulatory and organisational performance. |                                                                                                                                                                                                              |
| **Collaboration and co-operation**               | Consistent with the transactional approach outlined above, working with the industry to develop solutions is a relatively small but not insignificant part of the CAA’s role in practice. The industry observed that in the absence of an overall strategic vision, the CAA’s work in this area is not always consistent – less strategic and more issues driven. In practice, a significant portion of surveillance effort is devoted to informal educational purposes. While this is in the spirit of cooperation, care needs to be taken that this does not crowd out warranted surveillance effort nor run counter to wider organisational strategy regarding the level and nature of education and information services provided as part of Output Class Three. |
| *We would expect the CAA to be adept at working with the aviation sector to develop responses to safety issues in general and specific compliance issues. This should lead to an increased understanding of the sector by the CAA, and increased buy-in from sector participants.* |                                                                                                                                                                                                              |
| **A project-based approach to solving problems** | While the CAA does identify and address specific issues (a recent example is terrain awareness) the level of project-based development and implementation of solutions to safety is lower than we might have expected. Several factors contribute to this situation:  
  - there is little analysis of safety information or formal use of intelligence that would underpin the identification of issues for this type of approach  
  - pressures of transaction processing appear to allow little headroom for project based working  
  - project management in the CAA is poorly executed. |                                                                                                                                                                                                              |
<table>
<thead>
<tr>
<th>Expectations</th>
<th>What we found</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>An emphasis on information and analysis</strong></td>
<td>Much less use is made of information and data than we would expect. While the regular safety analysis reports provide a high level overview of trends, they provide little insight into issues or drivers of overall safety at a level that informs a response. Overall, there is not enough formal analysis – the ‘analytical brain’ is underdeveloped. Several factors contribute to this stage of affairs. There is inadequate connection made between the holders of data and the consumers of information. There is insufficient analytical capability, and data systems make it difficult to access information required.</td>
</tr>
<tr>
<td>We would expect robust arrangements to be in place to record and analyse data arising from regulatory activities, and to draw on other sources of intelligence including from the sector and from overseas regulators. We would expect this analysis to significantly inform regulator priorities and the evolution of the regulatory strategy.</td>
<td></td>
</tr>
</tbody>
</table>
Overall, while the CAA does have in place the elements of a modern regulatory strategy, those elements are, to varying degrees, either underdeveloped or not well defined, and they tend to rely to too great a degree on instinct and judgement in their application. While instinct and judgement are valuable, we would expect them to be supplemented by more robust frameworks supported by information analysis and intelligence than is currently the case.

In the absence of a robust documented regulatory strategy, and related effectiveness measurement framework, there is no basis for stating whether or not current approaches and interventions are as effective as they might reasonably be and it is hard to know whether the existing allocation of resources is optimal in the sense of maximising the contribution to desired outcomes. Notwithstanding the inability to be conclusive regarding effectiveness, we would, however, expect development of a regulatory strategy to identify opportunities to increase effectiveness, and possibly involve significant change priorities.

**Recommendation**

The CAA should develop a comprehensive, robust regulatory strategy. The strategy should:

- be results-oriented consistent with the regulatory vision established in the strategic plan
- be informed by assessments of the effectiveness of regulatory interventions (using a framework currently under development)
- establish a comprehensive risk-based framework for prioritisation of effort
- establish parameters for a graduated proportionate response
- set parameters for collaboration and cooperation, and
- strengthen the role of project-based responses to regulatory issues.

**Regulatory strategy and policy**

Our assessment above is based on the regulatory strategy as observed in practice. The CAA does not have complete documentation of this regulatory strategy. The absence of documentation is of itself a concern. It means that staff are not provided with context that informs the exercise of judgement in their particular area. As a result, decision making can be inconsistent, and not always aligned with strategic objectives.

Although there is an absence of regulatory strategy, there are elements of regulatory policy which are documented. These are as follows.
Surveillance policy

101 Dated 16 June 2009, the surveillance policy is available on the CAA website as a Level 2 Executive Management Policy. It is designed to provide the foundation for the day-to-day operation of the CAA’s safety monitoring function. It covers the functions of monitoring adherence to safety and security standards, and the carrying out of safety and security inspections and monitoring as prescribed by the Civil Aviation Act.

102 This policy is currently being reviewed and is expected to be completed late in 2011. The review is being undertaken in the context of:

- a review of the CAA’s certification and surveillance activities by the OAG in June 2010 which highlighted a number of areas that require further development. The review expressed concern that these issues had been identified in previous OAG and other reviews but there had been limited progress in addressing them, and

- an internal audit of the CAA’s surveillance audit framework and methodology (undertaken by PricewaterhouseCoopers) which noted several weaknesses within the audit framework and recommended a ‘way forward’.

Regulatory tools policy (exposure draft)

103 This document is intended to provide guidance on how the CAA determines the regulatory action it will take in any given situation where there is a risk to the safety of people and property and whether there has been a breach of aviation law. The exposure draft dates from mid-2009 and currently has no standing.

104 The draft introduces the concepts of the compliance pyramid, and sets out criteria for using regulatory tools but is currently focused on ex post response to events. Whilst this is an appropriate matter for consideration and exposition, there is an opportunity to consider ex-ante interventions as well.

105 For any regulator, documented strategies are intended strategies and, almost by definition, these will vary to a greater or lesser degree with the de facto strategy as reflected by operations in practice. This is because intentions usually are set to change the nature, and raise the standards, of what occurs in practice. It follows that variance might arise because the documented strategy requires change that has yet to be implemented, or as a result of deliberate response to changing circumstances. While documentation of strategies is not essential, there is a risk that otherwise the de facto strategy will reflect past practice more than future requirements. Our assessment suggests that this is certainly the case at the CAA and given our concerns about the regulatory strategic in practice, we recommend that a written one is developed. This could be done either as a part of the overall proposed CAA strategy, or as a separate linked document and developed in a way that is aligned with ICAO’s requirements regarding the State Safety Plan.
The documentation of the strategy should support its robust development and provide a platform for ensuring that all CAA personnel understand it – this might be supported by the development of additional material for the purposes of internal (and external) communication.

**Recommendation**

The CAA should document its regulatory strategy and use this, and/or derived materials, as a basis for internal and external communication of that strategy. A first priority is to complete the draft regulatory tools policy.

**Putting the regulatory approach into operation**

The assessment above of the effectiveness of the CAA as a regulator is focused at a strategic level. In addition, we have also considered aspects of the way in which the CAA’s regulatory functions are performed. Most of our focus has been on the CAA’s certification and surveillance functions because these functions:

- account for around two thirds of the CAA’s overall budget and so as by far the most significant, in resource terms, of the CAA’s outputs
- are critical parts of allowing entry into, and maintaining privileges within, the civil aviation system and, accordingly, can be expected to have a very direct and important influence on overall confidence in operation of the regulatory system, and
- have been identified by the CAA as a priority area for review (in light of the OAG and internal audit reviews referred to above).

**Certification**

Certification is the term used to cover all activities associated with the issuing of an aviation document (licences, permits, certificates). It includes the process to renew or amend an existing document.

Reviews by the OAG in 2005 and 2010 have identified a number of concerns with the operation of the CAA’s certification function including:

- insufficient evidence to support certification decisions
- work undertaken as part of the certification process not being adequately documented
- inefficiency arising from the lack of automation of some aspects of certification processes
- ineffective governance and management oversight of certification (and surveillance) functions
- under-developed understanding and measurement of the effectiveness of certification (and surveillance) functions, and
- inconsistencies in approach between the Airlines Group and GA Group.

The CAA is reporting quarterly to the Minister on progress with addressing the concerns raised in the OAG report on certification and surveillance functions. As part of the reporting process, the CAA has developed output quality measures for the certification function. The results for the quarter ending December 2010 are shown in the graphs below.

**Figure 7: Airline Group Certification**
Figure 8: General Aviation Group Certification

Figure 9: PLAS Group Certification
Although the sample size is small (and so there are dangers in extrapolating to form comments about the overall operation of the certification function), the graphs above:

- help in assessing progress over time (in general, the results from the second quarter indicate improvements across each of the three business groups compared to the quarter ending September 2010)
- confirm that inconsistencies between the CAA’s groups remains an issue (albeit the differences between the groups are narrowing compared to the quarter one results)
- provide a useful guide to those aspects of certification where performance is least well aligned with desired standard, and
- raise an issue as to whether aspects of sound process may be being compromised for the sake of achieving timeliness standards.

**Surveillance**

Significant concerns with the surveillance function persist. Notwithstanding the intent that is signalled in the CAA’s surveillance policy, it is our observation, consistent with the findings of other reviews, that there is not an entrenched risk-based approach to surveillance activities.

Consistent with the findings of other reviews, our concerns with audits are that they:

- lack a clear sense of purpose and what they are intended to achieve
- are too broad in scope and too thin in depth
- are not risk-based – risk analysis does not yet play enough of a role in influencing audit scope
- lack adequate planning
- contain conclusions regarding overall compliance that are drawn from only a very partial view of an organisation (this is misleading, at best)
- are too focused on compliance with rules rather than the effectiveness of safety systems
- are not well supported by tools – the tablets used by auditors in the field have a number of issues with them
- generate information that is then not well codified and, hence, is hard to make best use of, and
- for all of the reasons above, do not fully comply with the CAA’s own surveillance policy.
The absence of comprehensive guidelines around the application of the surveillance policy contributes to an organisational culture which is characterised by field staff tending to do things the way they have always done them rather than adopting best practice. This situation creates room for inconsistencies in the approach to the conduct of surveillance activities between field staff.

Work is underway within the CAA on a review of the surveillance function\(^\text{21}\) (complementing a review of the certification function and safety data analysis). Progress with implementing the OAG’s recommendations in relation to surveillance is being reported to the Minister on a quarterly basis (alongside the reporting on certification functions). The results of the assessment for the quarter ending December 2010 are shown in the graphs below.

Figure 10: Airline Group Surveillance

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\(^{21}\) The Surveillance Process Improvement Project
Although the reports for the second quarter indicate general improvement compared to the quarter ending September, the latest reports continue to indicate that there are issues with the surveillance functions performed by the General Aviation Group (and, to a lesser extent, the Airlines Group).
**Recommendation**

As part of the work on the surveillance review and policy, the CAA should:

- ensure that a risk-based approach becomes an entrenched part of the approach to surveillance activities, and
- develop comprehensive guidelines to ensure a consistent approach to surveillance activities.

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**Safety analysis and information**

**Just culture**

Access to, and analysis of, information is a key part of the regulatory function. The CAA uses safety data and information to understand what is happening within the civil aviation system. Some of the data and information that the CAA uses is obtained through the work of the CAA including audits, inspections and safety investigations. The CAA cannot, however, maintain sight over all participants all of the time. It is reliant, therefore, on data and information coming to it through a number of other channels including complaints from the public, mandatory reporting by participants (as set out in the Act and Rules) and through Aviation Related Concerns (ARCs) which can be lodged by anyone.

Participants in the industry are a key source of information. The extent to which information is provided depends, in part, on the successful maintenance of a just culture. Just culture is defined as a culture of trust in which people are encouraged to provide essential safety-related information but in which there is also clarity about where the line is drawn between acceptable and unacceptable behaviour. An effective reporting culture requires an appropriate handling of blame and sanction. In a just culture environment, the culpability line is drawn, and understood, clearly.

Based on comments raised during the course of interviews (both internal and external), there is a level of concern that the environment of just culture is not working as effectively as it should. There is anecdotal evidence of reluctance to provide information to the CAA for fear of retribution. This issue has also been identified in other reviews (including an internal audit performed by PwC). As a consequence, information that the CAA should be getting (and using) is not available.

There are potentially multiple reasons as to why the just culture environment is not working as well as intended. In part, the legislative framework may be a contributor; the CAA has expressed concerns that sections of the Act (S.43, S.43A and S.44) inhibit just culture because the line of culpability is drawn at “causing unnecessary danger” and being “careless”. In other jurisdictions, the level of culpability is drawn at recklessness or gross negligence.
Based, however, on comments made by some interviewees, the actions of CAA personnel may also be affecting the operation of the just culture environment. In particular, examples were provided to us of inconsistencies in approach to handling safety concerns and incidents drawn to the CAA’s attention. This creates uncertainty in the mind of providers of information about whether or not they will face punitive sanction.

We understand that the Aviation Industry Association is developing a web-based confidential reporting system with a view to providing links to the CAA. While this could be a useful additional mechanism through which to channel information, there remains a need to ensure that the principles of just culture are clear and understood across the CAA.

**Recommendation**
The CAA should ensure that the principles of just culture are clear and understood across the CAA.

**Safety/risk information and analysis**

123 Gathering safety-related information is not of much benefit unless it is analysed and used to inform regulatory approaches and decision making. Overall, for the reasons outlined below, we consider that safety analysis undertaken by the CAA is not as effective as it could be.

124 The CAA produces safety analysis reports (quarterly and six monthly). These are ineffective. No, or little, use is made of them either for operational, or strategic, decision making. The reports are hard to penetrate with a myriad of detailed safety statistics but no sense of what overall picture the statistics are painting. The reports lack analytical depth. They are a record of what has occurred rather than an analysis of trend let alone underlying causes and reasons.

125 Because the safety analysis reports are not perceived as being particularly useful for operational or strategic decision making, they are largely ignored, a consequence of which seems to be that there is not a strong impetus for change and improvement (and, as a result, change does not come about).

126 There are a number of underlying issues regarding safety information held by the CAA and its use.

- We have concerns about the ease with which information can be extracted from the CAA’s core safety information system. The system (and database) is old. It was considered to be leading edge when developed, but that was in the mid-
1990s. The database is, effectively, bespoke. It has been modified many times over the years. As a consequence, interrogating the system to extract data requires in-depth understanding of the structure of the database/system. Comprehensive knowledge is limited to one individual – the manager of safety analysis - and training in how to use the system is limited.

- Unless queries are appropriately specified, there is no certainty that the data the system generates contains all relevant data. The complexity of structure means that data extraction is not always a swift process (we experienced this for ourselves when several days were needed to extract very basic information regarding the number of certification transactions undertaken by the CAA). In general, the safety information system has quite limited reporting capability. Data has to be extracted and then downloaded into Excel spreadsheets and Access databases to generate reporting information. This process creates scope for errors and gaps.

- The CAA does not have a clear sense of the safety information and analysis that it wants in order to perform its oversight roles effectively. Several of the CAA’s business groups have indicated to us that they do not feel as though they are getting quality service from the safety analysis unit, but equally, the safety analysis unit contend that the business units are not clear on their needs.

- There are issues with the way in which safety information is codified. An example of this is occurrence reports. Occurrences are classified into one of minor, major and critical, but there does not appear to be clear or shared understanding of the definitions given to each. Occurrences can be miscoded accordingly. More generally, it has many years since the system of codification has been reviewed and the lack of appropriate structure and consistent application of the structure is inhibiting the quality of safety analysis.

Enhancements are needed to the Aviation Safety Management System (ASMS) to help improve data quality received from industry participants. A version of the ASMS, referred to as the Aviation Quality Database (AQD), is used by key airline operators and the Airways Corporation and this, in theory, should facilitate capture of data. However, the CAA’s ASMS version of the software is dated (compared to that used by industry) and this has contributed to inconsistent capture of data. More generally, there is an opportunity to consider alternative, web-based, platforms for data capture.

Lastly, but not least, we consider that there is not sufficient analytical capability within the CAA to make the most of the data that is available to it. The safety analysis unit currently has two people in analyst roles (and a third position which is unfilled). Our assessment is that this level of capability is not deep enough.
Recommendation
To make more and better use of safety information, the CAA should:

- develop a clearer sense of the safety information and analysis needed to perform its regulatory oversight roles and in light of this review and develop the requirements the CAA has for a replacement safety management system
- review the system for codifying safety information
- assess options for enabling enhancements to the Aviation Safety Management System in particular and options for web-based capture of data more generally, and
- ensure it has the capability in place to perform both the type and quantum of safety analysis required to support adequately its regulatory decision-making

Risk profiling
The CAA has developed a risk assessment tool (in use since early 2007) as part of an earlier project aimed at improving the risk profiling of operators. Generally, the CAA is confident that the system is identifying the high-risk operators. We have, however, two concerns.

- The analysis of risk is focused predominantly at the operator level and, accordingly, this does not necessarily assist in identifying and analysing risk at a sector level. The culture toward risk is something that can operate at a sector-wide level as well as at the individual operator level. Understanding of the attitude toward risk at the sector level should be used to help shape and inform the approach to regulation.
- The analysis of risk at the operator level is not being used consistently enough to target surveillance activity and to determine the frequency and depth of audits (although the tool is being used in some instances).

We note also that the OAG has raised a concern that the risk assessment tool does not include an assessment of the financial risk of operators. Although CAA has indicated it is not convinced of the need to include this, our (anecdotal) experience from other transport sector regulators is that the financial situation of operators can have a bearing on the attitude toward, and efficacy of effort in, managing risk, particularly for smaller operators. CAA may wish to consider this issue further.

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22 Risk Assessment and Intervention Project
**Recommendation**

In support of a risk-based approach to regulation, the CAA should:

- seek to ensure that risk assessment looks beyond profiling risk at the participant level to include sector-wide and system-wide perspectives, and
- reconsider whether the financial risk of operators should be an element of the risk assessment tool.

**Enforcement**

131 The CAA does not have a clear framework for determining when, and how, to use enforcement tools. Although the CAA has criteria for decision making to guide which action to take (and whether to take an action), the criteria are not calibrated or weighted. As a result, the criteria amount to matters to take into account without any guidance as to how they should be exercised.

132 There is inconsistency between different areas within the CAA in terms of referrals made to the enforcement team by the operational units (Airlines and GA). There are several filters which are used in order to determine when a referral should be made including:

- the seriousness of the offence and degree of “unnecessary danger” posed to persons or property
- the extent to which the breach was flagrant
- the previous history of the participant including whether the participant has heeded any previous warnings or prosecutions
- whether or not the offence was self-reported, and
- the degree of public interest involved.

133 Application of the filters involves judgement. How judgement is exercised influences whether referrals are made to the enforcement team. While judgement needs to be exercised there is a need for consistency so that two situations, with like circumstances, result in the same decision regarding the appropriateness of referral. Concerns have been expressed to us by CAA personnel that there are differences in approach between, and within, the operational groups. Underlying this is a concern about the level of guidance provided to help ensure consistency of understanding and application of the filters.

134 We question whether the CAA is using prosecutions in a sufficiently strategic manner to gain greatest impact. In this respect, the criteria listed above could be expanded to
include consideration of the impact that is likely to be achieved through taking a prosecution. Prosecutions potentially send a strong deterrence message and, accordingly, the extent to which the message is widely felt could usefully be added to the criteria noted above.

135 We note that the CAA has completed some earlier work on developing a framework for measuring the effectiveness of interventions (October 2009). There is an opportunity to revisit this framework to explore how it might now be operationalised to assist with the assessment of the impact of specific interventions, including enforcement and, therefore, to inform the choice of an intervention in any particular situation.

**Recommendation**

To ensure the effectiveness of enforcement, the CAA should:

- develop a clearer framework for determining when and how to use enforcement tools
- support the framework with guidance to ensure consistency in application, and understanding, of the framework, and
- utilise enforcement in a strategic manner to ensure that when taken, enforcement maximises impact in terms of compliance with regulatory objectives.

**International policy and related work**

136 New Zealand is a representative on the Council of the Pacific Aviation Safety Office (PASO). The role of PASO is to assist pacific island states by providing advisory and technical expertise, with the functioning of their aviation regulatory systems (PASO does not have regulatory powers of itself – these still vest with the relevant authority in each state).

137 There are performance and capability issues surrounding the functioning of PASO which mean that states are not receiving the support required for the effective conduct of regulatory functions. Most, but not all, of the member states who rely on PASO have adopted the New Zealand framework and rules for the regulation of their own aviation systems. As a consequence, the member states are increasingly looking to New Zealand to assist in the absence of effective support from PASO. This is placing increasing demand on scarce CAA resource.

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23 Cook Islands, Fiji, Kiribati, Niue, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.
New Zealand benefits from having effective regulatory systems operating in the Pacific if only for the reason that New Zealanders are well represented among travellers to, from and between the islands and Air New Zealand has air services links to those islands. More generally, New Zealand and other countries have keen interest in ensuring security in the Pacific.

Although CAA, in theory, gets recompenesen for PASO work, the reality is that this tends to be for only the direct costs involved. There is a large opportunity cost imposed on the CAA because resources are directed away from other activities the benefits of which exceed the direct costs involved.

Notwithstanding the benefits which New Zealand obtains from having effective regulatory systems operating across the island states, the issue of whether the CAA should provide additional resource to assist PASO depends on several factors including resources, funding and the preferences of the member states (NZ cannot impose itself as the provider of expertise).

In terms of resources, we are not convinced that support for PASO is the best use of the CAA’s resources. There is a large opportunity cost imposed on the CAA (and New Zealand generally) because the resource currently used to assist PASO could, in our view, be better deployed on other aspects of international work including bi-lateral and multilateral agreements with foreign regulatory authorities. Work in these areas has much more direct benefit for New Zealand than the somewhat less direct benefits gained from improving safety and security across pacific states. As discussed in section two, facilitating access into offshore markets is a key outcome of the CAA’s work and, moreover, confers substantial (albeit not quantified) benefits for New Zealand.

If additional support is to be provided by New Zealand to PASO, then the CAA will need additional resource to match the added commitment. We note in this regard that, based on advice provided by the Ministry of Transport, there is funding available from within the Foreign Affairs portfolio to pay for a CAA person to become a full-time resource available to work with PASO. Funding would also be required for any technical support (e.g. audit and inspection capability) required by PASO although in theory this support could be contracted from sources other than the CAA.

We note, by way of final comment on the PASO issue, that it would not be a good outcome if CAA resource was directed toward assisting PASO (and member states) if this came at the expense of diverting CAA attention away from the steps which it needs to take in order to deliver the step up in performance described above (in the context of being an effective regulator) and below (in terms of being an effective organisation).
**Recommendation**
If the CAA is to be required to provide dedicated support for PASO, a funding bid should be prepared in support of additional resource for the CAA.

**CAA as an effective organisation**

This section of the report assesses the CAA as an effective organisation for achieving the outcomes required of it as the regulator of New Zealand’s civil aviation system. The capability characteristics of a high performing organisation are first outlined and then a commentary is provided on the CAA’s position regarding this.

**Characteristics of a high-performing organisation**

The capability in place in a high performing organisation spans a range of dimensions including strategy, leadership, culture, structure, management practices, processes, systems, technology and people. This is represented in Figure 13 below.

**Figure 13: Organisational Capability**

The organisation performs as required in response to the external environment through applying its capability across a number of dimensions. Directional capability encompasses organisational strategy, leadership, culture, structure and accountabilities i.e. the defining characteristics for the organisation which act as
underpinning drivers for organisational behaviour and performance effectiveness in the immediate and the longer term. The operational elements of capability give effect to strategy and leadership direction for the organisation. They encompass aspects of management practices, people and resources, processes, systems and technology. These elements are no less important for ensuring the efficiency and effectiveness of the organisation.

A high-performing organisation will demonstrate appropriate capability in all of these areas, and a high degree of alignment across strategy, leadership direction, accountabilities and culture. Table 3 and Table 4 below summarise the expectations we have of a high-performing organisation.
### Table 3: Directional Capability

<table>
<thead>
<tr>
<th>Strategy, focus and priorities</th>
<th>Leadership, direction</th>
<th>Culture, attitudes, behaviours</th>
<th>Structure, roles, accountabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear statement of vision and purpose</td>
<td>Leadership to set the standards expected from the organisation and individuals within it</td>
<td>Culture, attitudes and behaviours are consistent with those required to deliver on the vision and strategy of the organisation</td>
<td>Organisation structure supports the achievement of organisational goals (form following function)</td>
</tr>
<tr>
<td>Vision shared and understood throughout the organisation</td>
<td>Motivation and incentivising of the organisation to achieve on vision and goals</td>
<td></td>
<td>Clear roles and accountabilities for all positions within the structure</td>
</tr>
<tr>
<td>Strategic vision guides organisational strategy and planning – consistent with vision</td>
<td>Leadership which sets the tone for expected behaviours and attitudes within the organisation</td>
<td></td>
<td>Roles and accountabilities aligned with organisational vision and desired outcomes</td>
</tr>
<tr>
<td>Strategic vision drives resource acquisition, allocation and management</td>
<td>Leadership which rewards ‘good’ performance and sanctions ‘poor’ performance within the organisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear vision provides the opportunity to monitor and evaluate performance against desired vision and goals</td>
<td>Leadership is able to be demonstrated by individuals at all levels of the organisation.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4: Operational Capability

<table>
<thead>
<tr>
<th>Governance &amp; management practices</th>
<th>People, tasks, capabilities</th>
<th>Processes</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Frameworks, capabilities and practices for:</td>
<td>• People with capabilities, competencies and skills appropriate for their roles and accountabilities within the organisation</td>
<td>• Efficient processes for delivery of core and support services</td>
<td>• Systems and technology enablers in place to support service delivery and organisational strategic and management practices</td>
</tr>
<tr>
<td>- Strategic and risk management</td>
<td>• People with clear task requirements</td>
<td></td>
<td>• Strategic planning for systems and technology development and deployment (ISSP)</td>
</tr>
<tr>
<td>- Business planning</td>
<td>• Effective communication for shared understandings, collaborative approaches and knowledge sharing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Performance management</td>
<td>• Frameworks for staff development, career progression and succession planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Monitoring and evaluation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Human resource management (strategic and operational)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Knowledge and information management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Programme and project management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Change management</td>
<td></td>
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</tbody>
</table>

The following pages contrast our findings with the expected capability elements of an effective high-performing organisation.
Findings

Table 5: Features of an Effective High-Performing Civil Aviation Authority

<table>
<thead>
<tr>
<th>Expectations and recommendations</th>
<th>What we found</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategy, focus and priorities</strong></td>
<td><strong>Strategy, focus and priorities</strong></td>
</tr>
<tr>
<td>We would expect the CAA to have a clear vision and strategy to guide priorities and decision-making at both strategic and operational levels.</td>
<td>The CAA’s strategic focus is outlined in the Planning Model in the Statement of Intent 2010 – 2013. This sets out a high level outcome for ‘Safe and secure civil aviation for New Zealand’, supported by three intermediate outcomes to achieve a) ‘high level of compliance by civil aviation participants with civil aviation safety and security requirements’; b) ‘reduced number and consequences of civil aviation accidents and incidents’; and c) ‘prevention of civil aviation security incidents’.</td>
</tr>
<tr>
<td>This vision would guide approaches to civil aviation regulation, the choice and methods of deployment of regulatory interventions, and underpin decisions for organisational development and longer term sustainability.</td>
<td></td>
</tr>
<tr>
<td>The CAA vision and strategy would underpin initiatives for performance management through enabling the establishment of relevant performance measures and accountabilities at organisational and individual levels.</td>
<td></td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td><strong>Absence of a clear and communicated vision and strategy for the CAA</strong></td>
</tr>
<tr>
<td>That the CAA:</td>
<td>These statements of desired outcomes focus on results to be achieved, rather than act as a statement of vision for the organisation that can be used to guide strategy and decision-making across organisational functions and resources. The next level of planning is that of operational business planning, which is conducted by the different CAA groups in the absence of a consistent and commonly understood statement of vision for the organisation.</td>
</tr>
<tr>
<td>• Develop a statement of vision and strategy to guide priorities and decision-making at strategic and operational levels</td>
<td>The Capability and Resources Review 2006 (see CAA Website) observed that for the CAA ‘Strategy is under-developed and not effectively communicated within the organisation’, and that there was a ‘lack of depth of strategic statements’, giving rise to ‘a variety of understandings among managers and staff interviewed as to the strategic intent and purpose of the CAA’. During the current review, staff and managers commented consistently on the lack of common understandings of vision and purpose within the CAA.</td>
</tr>
<tr>
<td></td>
<td>This results in a lack of strong alignment of objectives and behaviours through the various levels of the CAA, posing significant challenges for the CAA to adopt consistent approaches to its regulatory activity, to prioritise and focus its limited resources effectively, to present a leadership role to the sector, and to evaluate the effectiveness of its interventions. Lack of a coherent vision and strategy also suppresses the ability of individuals to take a leadership role within the organisation where this might be appropriate.</td>
</tr>
<tr>
<td>Expectations and recommendations</td>
<td>What we found</td>
</tr>
<tr>
<td>----------------------------------</td>
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</tbody>
</table>
| **Leadership, direction**        | Leadership, direction  
We would expect CAA leadership to be demonstrated on two main fronts: leadership for safety and security within the civil aviation sector, and leadership to be demonstrated by the Director of Civil Aviation and the senior management team to other management and staff within the CAA. This reflects CAA as Leader in Civil Aviation Safety Standards and CAA senior staff as Leaders within the organisation. |
| **Leadership**                   | Stakeholder interviews indicate that the CAA is generally held in high regard within the civil aviation sector both within New Zealand and internationally. |
| **Challenges for leadership in civil aviation regulation** | We note, however, a consistent comment from external stakeholders regarding the lack of appropriate competency in some technical areas, and in particular, in the area of regulatory approaches, tools and techniques – especially regarding a ‘systems’ approach to civil aviation safety management. This perceived lack of competency threatens to erode somewhat the perception of CAA as leader in civil aviation regulation (‘CAA don’t get the regulator role entirely’). |
| **Leadership**                   | The CAA’s challenges regarding information management and analysis highlighted elsewhere in this report are also recognised by some external stakeholders (‘we get better data and information from IATA’) further eroding the CAA leadership position as regulator. |
| **Management**                   | The lack of vision and strategy within the organisation is a function of the absence of strong leadership within the CAA. The CAA senior management team do not act as a coordinated leadership team, providing oversight and guidance to the organisation. |
| **Management**                   | Regarding SMS, for example, there appear to be differing understandings of this approach to civil aviation safety amongst senior managers. A united and effective leadership on this change will be critical to its success within the CAA and within the aviation sector. |
| **Management**                   | The position of Director of Civil Aviation is a challenging one insofar as this position requires the application of two orientations and competency sets within the one role, each of which has demands equal to a stand-alone position. On the one hand, there is the technical regulatory role as the Director of Civil Aviation (required by statute) and on the other, the role of the Director as the Chief Executive of the Civil Aviation Authority. |
### Expectations and recommendations

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>What we found</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>That the CAA:</strong></td>
<td>Currently, the Director’s leadership role as Chief Executive of the organisation is not being discharged as it should be. This is evidenced by such things as the lack of vision and strategy, the inability of the CAA to get on top of key issues such as competency development for SMS implementation, the absence of effective performance management within the organisation (see below), the lack of traction on implementation of recommendations arising from reviews by the Auditor General, and the consistency of views expressed in interviews for the current review regarding the perceived issues with organisational leadership with the CAA.</td>
</tr>
<tr>
<td>- Separate the roles of Chief Executive and Director of Civil Aviation Safety to enable leadership to be fully exercised for civil aviation safety and organisational leadership</td>
<td></td>
</tr>
<tr>
<td>- Develop people and systems competency for effective safety information management and analysis to support CAA ‘leadership’ for regulatory approaches and decision-making</td>
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<table>
<thead>
<tr>
<th>Culture, attitudes and behaviours</th>
<th>Culture, attitudes and behaviours</th>
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</thead>
<tbody>
<tr>
<td>We would expect a high-performing organisation to have a consistent organisational culture, comprising commonly held attitudes and behaviours which are in alignment with the organisation’s vision and strategy. An organisation’s culture influences behaviours which in turn result in specific performance from the organisation.</td>
<td>CAA culture can be defined broadly as:</td>
</tr>
<tr>
<td>Effective performance is underpinned by attitudes, behaviours and decisions which are in alignment with the focus and strategy of the organisation. In particular, the CAA will require particular attitudes and behaviours in place to support the requirements of a Safety Management Systems approach to achieving civil aviation safety outcomes.</td>
<td>- technically oriented, operational</td>
</tr>
<tr>
<td>These will need to reflect good understandings of the nature of risk, respect for information and analysis to underpin decisions, a regulatory orientation (alongside technical competency) and a culture which leans towards a systems orientation to problem definition and resolution.</td>
<td>- fragmented (a range of attitudes and behaviours)</td>
</tr>
<tr>
<td>Organisation culture itself is the product of other things within the organisation. Factors which shape culture include leadership actions, performance measures, vision, purpose and strategy, people practices and</td>
<td>- tentative and reactive (decisions are pushed up the line)</td>
</tr>
<tr>
<td></td>
<td>- individualistic (staff bring their own perceptions of ‘regulatory practice’ to the job)</td>
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<tr>
<td></td>
<td>- change resistant (approaches to a risk-based approach to auditing have taken a long time to take effect)</td>
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<tr>
<td></td>
<td>- dedicated to civil aviation safety (CAA staff are generally passionate about their contribution to civil aviation safety).</td>
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</tbody>
</table>

**A highly technical orientation versus that of a modern regulator**

These traits owe themselves a lot to the absence of a clear strategy and mandate for decisions at the various levels within the organisation, and to the background and demographic of many of the CAA staff. Staff are predominantly people with a technical background (and often there is a demand for technical knowledge in the CAA job), many of whom have come to the CAA bringing views on the ways and means to achieve safety from their previous employment. In the absence of a CAA regulatory
### Expectations and recommendations

<table>
<thead>
<tr>
<th>What we found</th>
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<tbody>
<tr>
<td>to some extent, structure. In addition, the external context will influence culture as it defines strategy and priorities for the organisation.</td>
</tr>
</tbody>
</table>

### Recommendations

**That the CAA:***

- Once developed (see above), communicate its vision and regulatory philosophy and framework throughout the organisation (including in induction and training sessions)
- Include planning for, and assessment of, risk management attitudes and behaviours in performance planning and evaluation for CAA staff and managers
- Continue the current training initiatives in SMS and risk management for all CAA staff
- Ensure that the approaches to surveillance inspection and auditing are systems oriented and risk-based, and that these approaches are assessed regularly for their adherence to this
- Develop its framework for measuring the effectiveness of interventions, and involve staff regularly in the application of this framework (to reinforce the thinking and acting as a modern regulator)

**Challenges for achieving an engrained risk culture to guide decision-making**

Currently, the CAA is attempting to develop an organisational orientation and culture which leans towards using risk assessment as a key driver for regulatory decision-making. Staff have been attending training sessions in risk management and an introduction to SMS. The organisation, however, is some way from exhibiting an engrained risk culture and framework to guide the allocation of resources and how they are deployed.

See the discussion above regarding the absence of a regulatory philosophy and framework which has been developed and promulgated throughout the organisation.
### Expectations and recommendations

<table>
<thead>
<tr>
<th>Structure, roles and accountabilities</th>
<th>What we found</th>
</tr>
</thead>
<tbody>
<tr>
<td>We would expect the CAA organisational structure to be one which supports strategy and which enables the clear allocation of accountabilities to specific roles within the organisation. This includes the enabling of specialisation where necessary, and mechanisms for coordination and collaboration to support cross organisational activity.</td>
<td>The current structure is a hybrid mix of a functional structure (groups for Safety Information, Personnel Licensing &amp; Aviation Services, Business Support, Government Relations Planning &amp; Strategy, and Legal Counsel) and sector facing structure (groups for Airlines, General Aviation – and within Fixed Wing, Rotary Wing, and Sport &amp; Recreation). This structure facilitates the discharge of the key accountabilities for CAA endeavour. The current Review concludes that the existing structure has the opportunity to continue to support CAA endeavour, and requires little change. The sector relationships which are facilitated through the sector-facing structure will support the CAA’s ability to implement and manage the Safety Management Systems approach to aviation safety management. The quality of the regulator – participant relationship will be a strong determinant of the ownership and commitment of sector participants to SMS principles and practice. We emphasise, however, that the lack of need for structural change within the CAA does not lessen the need for change across the other dimensions of organisational operation and design.</td>
</tr>
</tbody>
</table>

### Recommendations

That the CAA:

- Consider separation of the Chief Executive and Director roles, to allow for the appropriate leadership focus for both, and the appropriate attention to senior management in the Chief Executive role
- Transfer commercial/public transport responsibilities of General Aviation to the Airlines Group, to enable application of the resource available within the Airlines Group to these responsibility areas
- Redefine some ‘manager’ roles as Technical Advisors and allocate Team Leader roles for management responsibilities where required
- Form a small Office of the Chief Executive to support the senior management position, including a role for Board support

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**Challenges to workload and resource management**

There are some issues, however, that might be addressed through some changes. We have already commented above on the challenges to leadership and the option of separating the Chief Executive and Director of Civil Aviation roles. Interviews with staff indicate some challenges to resource and workload management between CAA Groups. For example, the General Aviation Group is, at times, stretched to meet workload demands, and there is expertise and resource available in the Airline Group which could relieve the pressure. Some re-balancing of responsibilities would help here, particularly where the commercial/public transport responsibility areas of General Aviation are not dissimilar in kind (though of smaller size) from those of the Airlines Group. This follows the principle of grouping like with like.

We have noted the strong technical orientation and competency of many CAA staff and managers across all groups. For some managers the technical competency predominates, at the expense of management responsibilities. One solution is management development. Another is to fully recognise the technical contribution of these staff through placing them in a position of Technical Advisor, and relieving them of management responsibility. Some ‘managers’ are managers in name only, and the renaming of the position will simply recognise the true nature of their contribution. Where there is some
<table>
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<tr>
<th>Expectations and recommendations</th>
<th>What we found</th>
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</thead>
<tbody>
<tr>
<td>management responsibility, a new Team Leader responsibility could be developed for another staff member, who would be more suited to the management role.</td>
<td></td>
</tr>
<tr>
<td>Enhancements to the performance of senior management (including the Director and the Board) might include the formation of a small Office of the Chief Executive comprising a role for strategic (including regulatory support) and a role for a Board support function. The Board support role would not be administrative, but a more strategic role, which would flag for the Board the key issues they need to focus on and ensure that they were appropriately informed.</td>
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</table>

**Governance and management practices**

In any high-performing organisation, we would expect the well developed governance and management practices to exist alongside the technical competencies and skills displayed by staff in the organisation. We would expect the CAA to ensure that its managers and staff have the opportunity to develop and deploy management skills as well as their technical expertise.

As noted above, management differs from leadership and refers to the specific processes of planning, organising, staffing leading and controlling an organisation to accomplish desired goals.

 Management practices

We would expect the CAA to have in place the expected frameworks to support these activities, namely strategic and risk management, performance management, cost and productivity management, strategic and operational human resource management, knowledge and information management, programme and project management and change management.

**Governance and management practices**

The highly technical orientation of CAA managers and staff has been noted above. This, combined with the absence of strong leadership within the organisation over a period of years, has meant that, in many cases, individuals in positions of management responsibility do not exercise the required degree of management competency in their roles.

**Issues with management competency and practices**

This manifests itself in a number of ways:

- There is insufficient collaborative strategic planning and direction setting amongst the senior leadership team
- There is inadequate monitoring and managing of performance at organisational and individual levels, with under developed systems for reporting, evaluation and review.
- These issues contribute to issues for organising and prioritising the focus of CAA resources and projects
- There is under developed capability in programme and project management (projects are commenced without clear performance indicators; projects can stop and start with little pressure on performance; projects are disconnected, resulting in uncoordinated investment and so on)
- As one interviewee commented, managers are ‘often working at one level below their own position’.

There are several reasons for this – a) in some cases, managers are not delegating responsibility
### Expectations and recommendations

<table>
<thead>
<tr>
<th>Recommendations</th>
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<tbody>
<tr>
<td>That the CAA:</td>
</tr>
<tr>
<td>• Appoint a senior HR Advisor (strategic) to support the HR function and assist with the change management exercises facing the CAA</td>
</tr>
<tr>
<td>• Ensure that the CAA performance management system is applied consistently across the organisation, and that managers receive training and development to facilitate this</td>
</tr>
<tr>
<td>• Ensure CAA managers receive management (as opposed to leadership) development training which provides them with the hard skills of planning, organising, staffing, controlling and reviewing</td>
</tr>
<tr>
<td>• Review and adjust as appropriate delegations to enable accountable managers and staff to make the decisions appropriate to their effective working for service delivery</td>
</tr>
<tr>
<td>• Provide all managers with training in effective delegation and supervision of staff</td>
</tr>
<tr>
<td>• Ensure managers communicate clear roles and responsibilities to their staff so that there is no ambiguity as to which decisions should be made by staff when required</td>
</tr>
<tr>
<td>• Ensure that initiatives to strengthen programme and project management are continued and developed within the organisation</td>
</tr>
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<table>
<thead>
<tr>
<th>What we found</th>
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</thead>
<tbody>
<tr>
<td>• Where they should: b) in other cases, delegations do not allow for delegation and need to be extended; and c) in some cases, staff at lower levels within the CAA are avoiding their own accountability by referring their legitimate decisions upward.</td>
</tr>
<tr>
<td>• Individuals in management positions require management development for acquisition of appropriate management competencies – there is often little training available for this.</td>
</tr>
</tbody>
</table>

We note that the CAA has adopted the *Investing in People Programme* as an initiative. This programme provides benefits; however, it is more about people leadership than about the hard skills of people management. Management development is a priority for the CAA.

We also note that some CAA managers are striving to exercise their management accountabilities for planning, staffing and performance monitoring and review – however, this is not a consistent feature across all managers. This can lead to frustrations with managers who ultimately are not fully supported in their endeavours to apply good practice.

**Performance management is under-developed**

A key management issue is the lack of adequate performance management within the CAA. The CAA has a system for staff performance management, but interviews indicate that this system is not applied as consistently as it should be. There is opportunity to include management accountabilities in the process for managers.

**Human resource management is under-developed**

Human resource management in the CAA tends to focus on the transactional side of HR, with little attention given over to ‘strategic’ HR management. This is a real issue, given the demographic of the CAA as an older workforce with pending retirements, the scarcity of technical expertise to replace staff, the significant requirement for development of modern regulatory skills and behaviours, and the significant change process that the CAA is facing with the implementation of SMS and the recommendations of the current review.
### Expectations and recommendations vs What we found

<table>
<thead>
<tr>
<th>Expectations and recommendations</th>
<th>What we found</th>
</tr>
</thead>
<tbody>
<tr>
<td>People capabilities</td>
<td>The CAA has no strategic HR plan, and questions of staff development, career development and succession planning do not receive adequate attention. Of course, HR/ Staffing management is part of each manager’s responsibility – and management development is required to ensure that managers exercise this accountability. However, the HR resource available to support managers requires strengthening. Currently, there is one senior HR staff member (Acting HR Manager) and two relatively junior HR Administrators.</td>
</tr>
<tr>
<td>Program and project management are under-developed</td>
<td>The CAA has itself recognised the need to develop its capability in this area and has commenced training and development for this.</td>
</tr>
</tbody>
</table>

### People capabilities

The CAA is New Zealand’s regulatory agency for the establishment and monitoring of civil aviation safety and security standards; investigation of incidents; and the promotion of safety and security. It provides:

- Certification and licensing of aviation participants;
- Monitoring of compliance (surveillance) to civil aviation safety and security standards by participants;
- Education and promotion of aviation rules, advisory circulars and other safety and security-related information;
- Investigation of aviation incidents and analysis of safety trends;
- Enforcement of civil aviation legislation and rules; and publication of aeronautical information.

To discharge these responsibilities we would expect the CAA to have in place an appropriate mix of people capability across leadership, management, technical, regulatory and analytical capability.

### Leadership and management capability

We have already commented on the challenges for leadership and management within the CAA. There is a need for both leadership and management development at senior and middle management levels. This should be addressed through a programme of management development, designed to develop the ‘hard’ management skills of people which will complement the leadership focus of the CAA programme *Investing in People*. This initiative should be expressed as an initiative the recommended CAA Strategic Human Resource Plan.

Adopting these formal approaches will assist those CAA managers who are striving to exercise good management practices, as it provides a commonly applied framework within which they can feel supported and rewarded for their actions.

### Change management capability

The CAA is facing significant changes to processes, systems, culture and orientation. These will require the application of specific change management expertise to ensure their success. The current management is part of this change, and we would expect individual managers to be championing and
<table>
<thead>
<tr>
<th>Expectations and recommendations</th>
<th>What we found</th>
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<tbody>
<tr>
<td><strong>Recommendations</strong></td>
<td><strong>Recommendations</strong></td>
</tr>
<tr>
<td>That the CAA:</td>
<td>• Appoint a Change Manager (fixed term 12 months) to plan for and implement change initiatives</td>
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<tr>
<td></td>
<td>• Expedite completion of the Strategic Human Resource Plan, and include a programme of management development training for managers</td>
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<td></td>
<td>• Also as part of HR management, ensure that staff recruitment for management positions take cognisance of the management skills and competencies required for these roles</td>
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<tr>
<td></td>
<td>• Continue with the SMS and risk management training rollout for all staff</td>
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<td></td>
<td>• Expedite the completion of the Regulatory Tools Framework and Philosophy and communicate this to all staff</td>
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<tr>
<td></td>
<td>• Provide training and development to current managers and staff in modern regulatory practice, and include this content in the induction training of all new staff</td>
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<tr>
<td></td>
<td>• Appoint a position of Strategic Advisor to assist with the development of strategy, including regulatory strategy, within the organisation</td>
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<td></td>
<td>• Further refine and implement the Methodology for Measuring the Effectiveness of CAA Interventions</td>
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<td></td>
<td>• Increase its safety analytical capability through the appointment of a further two safety analyst roles, and a human factors analyst</td>
</tr>
<tr>
<td></td>
<td>• Ensure that managers base strategic and business decisions on analysis of relevant business information (financial, workflow, HR information etc).</td>
</tr>
<tr>
<td><strong>Regulatory capability</strong></td>
<td>In general, the focus of the CAA has been on ensuring that technical capability has been in place to support activity as the safety regulator. This is consistent with the general focus until recently of most civil aviation regulators internationally. In terms of the 'regulatory craft' there have been a number of developments in recent years which have changed the orientation of regulators across many jurisdictions. These have been the focus on outcomes (over inputs and processes), an orientation to a systems approach (looking at the broader picture/cause and effect), a recognition of the importance of risk and problem definition and analysis (good diagnosis), targeting of interventions (for results and cost effectiveness), and the encouragement of self management and willing compliance with standards. The CAA has made some progress in developing a draft regulatory tools framework to reflect such developments, but has some considerable way to go in developing these modern regulatory competencies in staff and managers. The implementation of SMS provides an imperative for this development – as SMS is largely predicated upon the precepts of modern regulatory practice. The CAA has also completed the first stage development of a methodology for measuring the effectiveness of its interventions (and potential interventions). This is based on good regulatory practice. Further development and implementation will assist with the embedding of modern regulatory practice, and well as assisting with the measurement of performance effectiveness.</td>
</tr>
<tr>
<td><strong>Analytical capability</strong></td>
<td><strong>Analytical capability</strong></td>
</tr>
<tr>
<td><strong>Safety and risk information analysis</strong></td>
<td>The CAA Safety Information Group has responsibility for safety analysis. We observe that safety analysis is currently limited to safety statistics within the civil aviation sector. The risk profiling framework provides additional analysis, but this is limited to the profiles of individual operators. There is</td>
</tr>
</tbody>
</table>
## Expectations and recommendations vs. What we found

<table>
<thead>
<tr>
<th>Expectations and recommendations</th>
<th>What we found</th>
</tr>
</thead>
<tbody>
<tr>
<td>- no deeper or broader analysis of data at a cohort or sector level. The dimensions of risk are not fully analysed by the CAA.</td>
<td></td>
</tr>
<tr>
<td>- The CAA can make better use of core safety information and codification of safety information. Risk and safety analysis could also be better linked to the use of regulatory tools.</td>
<td></td>
</tr>
<tr>
<td>- Current safety analysis is not able to adequately support the requirement for effective problem identification and diagnosis which would underpin targeted, risk-based interventions. This includes the ability to look beyond transactional data to analysis of such things as human factors and behavioural risk for aviation safety.</td>
<td></td>
</tr>
<tr>
<td>- Information and good quality analysis are key to effective regulatory decisions and the effectiveness of interventions. The CAA is quite under-developed in this area at present. In addition to people capability, the CAA also needs to have in place an effective Safety Information System. This is discussed below.</td>
<td></td>
</tr>
<tr>
<td><strong>CAA business performance information analysis</strong></td>
<td></td>
</tr>
<tr>
<td>- In addition to safety and risk analysis, the CAA needs to understand better its business performance. This includes analysis of financial information, workflow data, HR information and so on. Such analysis will be important for informing CAA strategic and performance management, and strategic human resource management. This analysis should be carried out by the respective managers (provided by CAA business systems) and should be used to inform planning and decision-making.</td>
<td></td>
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</tbody>
</table>

## Processes

<table>
<thead>
<tr>
<th>Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process design is one area where an organisation can achieve gains in effectiveness, cost effectiveness and efficiency. Where possible we would expect to see technology used as an enabler for efficient and cost effective processes. CAA uses technology to good effect to support key areas of operational activity such as surveillance and risk profiling.</td>
</tr>
<tr>
<td>Processes</td>
</tr>
<tr>
<td>- The CAA processes large volumes of transactions for personnel licensing and medical certification (see discussion above). Much of this process is manual and paper based. This creates situations of duplication of effort, and time spent in error correction. Time is also spent in following up incomplete or problematic applications. Greater use of technology in this process could reduce processing inefficiencies and increase the quality of input and output. The CAA is considering the development of</td>
</tr>
<tr>
<td>Expectations and recommendations</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>There are some areas where increased automation can produce further gains.</td>
</tr>
</tbody>
</table>

**Recommendation**

That the CAA:

- Investigate the benefits of the development of an online medical certification system, and
- Look to redesigning manual processes (e.g. medical certification, licensing) to be electronic, web-based and interactive to allow for user input.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>We would expect that the CAA would have in place an Information Systems Strategic Plan (ISSP) to support the considered development and maintenance of the technology enablers and platforms to support the organisation for the immediate and longer terms.</td>
<td>The core safety information system and associated legacy systems are hindering rather than assisting the CAA in its planning and day-to-day work. There are issues with data entry, integrity, data retrieval and searching and reporting from the information system. This system is in urgent need of replacement. Systems issues mean that the fundamental safety analysis required to support effective regulatory activity (choice and deployment of interventions, assessment of intervention effectiveness, risk analysis) is not able to be carried out.</td>
</tr>
</tbody>
</table>

**Recommendation**

That the CAA:

- Expedite the replacement of the core safety information system to enable provision of information and analysis to support the strategic, regulatory and operational decisions of the CAA
4 Assessment of Efficiency

Value-for-money requires that the CAA undertake its regulatory activities with the minimum level of resource for a given level of regulatory activity. One of the purposes of this review is to assist in identifying the efficient level of cost that then forms the basis for the quantum of revenue to be collected from levies, fees, charges and government funding.

International cost comparison

The CAA has obtained cost data for a number of aviation regulatory agencies operating in other jurisdictions and compared these to the CAA. The results are shown in Table 6 below.

Table 6: International Cost Comparison

<table>
<thead>
<tr>
<th>Measure</th>
<th>New Zealand</th>
<th>Australia</th>
<th>UK</th>
<th>Canada</th>
<th>Finland</th>
<th>Sweden</th>
<th>Switzerland</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAA staff / million population</td>
<td>40.47</td>
<td>30.68</td>
<td>9.25</td>
<td>42.31</td>
<td>25.47</td>
<td>30.42</td>
<td>34.00</td>
</tr>
<tr>
<td>Aircraft / CAA staff member</td>
<td>25.45</td>
<td>19.66</td>
<td>37.35</td>
<td>23.45</td>
<td>10.90</td>
<td>6.92</td>
<td>14.90</td>
</tr>
<tr>
<td>Pilot licences / CAA staff member</td>
<td>59.69</td>
<td>50.37</td>
<td>74.91</td>
<td>45.41</td>
<td>59.26</td>
<td>29.41</td>
<td>50.98</td>
</tr>
<tr>
<td>Budget / staff member</td>
<td>$166,667</td>
<td>$263,704</td>
<td>$248,227</td>
<td>$139,860</td>
<td>$222,222</td>
<td>$346,021</td>
<td>$576,471</td>
</tr>
<tr>
<td>Budget / aircraft</td>
<td>$6,549</td>
<td>$13,414</td>
<td>$6,647</td>
<td>$5,964</td>
<td>$20,380</td>
<td>$50,000</td>
<td>$38,684</td>
</tr>
</tbody>
</table>

Several points can be noted from the table above.

- Overall, the CAA’s costs are at the low end of the comparator group included in the table. The numbers above are not suggestive of the CAA’s costs being excessive (although this is not to say that there is not scope to reduce costs in some areas).

- New Zealand is a relatively aviation-intensive country and so the size of the CAA, measured on a staff per head of population basis, is larger than most of the comparator countries.

- The cost of the CAA per staff member is at the low end of the range compared to the other jurisdictions. This is to be expected given living standards and relative levels of GDP per person in the other jurisdictions included in the table above.

- The CAA is also at the lower end of the cost spectrum, compared to other jurisdictions, when the size of the sector (as measured by the number of aircraft) is taken into account. This is not surprising given that personnel costs account for approximately two thirds of the CAA’s operating expenditure.
Expenditure trends

The international comparison above provides a snapshot in time of the level of costs. We have also reviewed the trend in the CAA’s costs over time.

Figure 14 below shows the trend in expenditure over the last 14 years. Over the period, expenditure has doubled which equates to an annual growth rate of just over 5% per annum. This is significantly in excess of the rate of inflation over the same period as measured by the CPI (inflation grew at 2.1% per annum).

Figure 14: CAA Expenditure

The graph above does not allow, however, for growth in the size of the aviation sector. Figure 15 below, compares growth in the CAA’s expenditure against four measures of the size of the sector and level of activity within the sector. As indicated, depending on whether the size of the sector is measured with reference to the number of passengers, or measures relating to the aircraft fleet (and its utilisation) a different picture emerges regarding growth in the CAA’s expenditure.

24 The graph excludes 1996/7 and 1997/8 because of a lack of reliable passenger numbers for these years.
Although difficult to generalise, it is reasonable to suggest that relatively more of the CAA’s activity is driven by the number of aircraft (and their utilisation) than the number of passengers; for example certification and surveillance activities relate to aircraft (and aviation personnel) rather than to passengers. Some GA activity does not involve the carriage of passengers.

A different picture emerges, however, when growth in the CAA’s expenditure is adjusted for both price movements and the size of the industry (as measured by the number of hours flown). As shown in Figure 16 below, adjusted expenditure has been relatively flat for most of the decade beginning 2000 with the exception of the last three years which has seen a marked decrease in the level of adjusted expenditure. The reduction in (adjusted) expenditure in the last few years reflects decisions taken by the CAA to cut back expenditure reflecting the impact of the economic recession on passenger numbers and, hence, levy income (income from levies in the year-end June 2010 was more than $1 million below the 2008 level).
The picture that emerges from Figure 16 tends to confirm the conclusion, arising from the international comparison, that the CAA does not show obvious signs of an organisation whose costs are excessive or out of control.

**Productivity**

The CAA maintains a time recording system. We have reviewed the number of hours recorded by staff, across all of the CAA’s business units, for the month of October 2010 to obtain an understanding of the extent to which time is directly involved with delivery of the CAA’s outputs (personnel is the single largest expense category for the CAA and accordingly, the way in which staff time is used is a key influence on overall productivity of the organisation).

A number of caveats need to be registered. First, we have reviewed data for one month only and accordingly, there is a risk that the month reviewed is not typical. We are not aware, however, of any extraordinary aspects associated with the month selected. Time recording data is reliable only to the extent of the way in which personnel choose to diligently record the amount of time worked and how that time was used. This is likely to vary between individuals, but when viewed across the whole organisation, the pattern of time recording can be taken to be a reasonable guide to how time is being used.
The allocation of time across the three “front-line” groups - General Aviation, Airlines and Personnel Licensing and Aviation Services (PLAS) – is shown in the table below. Bearing in mind the caveats above, several observations can be made based on a review of the time data. The column headed “fee hours” relates to activities the costs of which are recovered by fees and charges and the column headed “levy hours” results in costs which are recovered by way of levy.

Table 7: Time Analysis

<table>
<thead>
<tr>
<th></th>
<th>Fee Hours</th>
<th>Levy Hours</th>
<th>Overhead</th>
<th>Leave</th>
<th>Policy Advice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Aviation Group</td>
<td>18%</td>
<td>55%</td>
<td>21%</td>
<td>6%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Airlines Group</td>
<td>43%</td>
<td>36%</td>
<td>0%</td>
<td>16%</td>
<td>4%</td>
<td>100%</td>
</tr>
<tr>
<td>PLAS Group</td>
<td>12%</td>
<td>56%</td>
<td>17%</td>
<td>14%</td>
<td>2%</td>
<td>100%</td>
</tr>
</tbody>
</table>

There is considerable inconsistency between, and to a greater extent within, the groups as to how time is recorded in respect of like functions. For example, there are inspectors within the GA business units who record almost all (nearly 100%) of their time against overhead and others in the same type of role who record over two-thirds of their time against “fee hours”.

The proportion of time recorded against fee versus levy hours does not look right for the GA Group and, to a lesser extent, Airlines Group. A lot of activity in these groups relates to certification and surveillance outputs. In theory, most of these functions are supposed to be funded by way of direct fees and charges rather than levies. As a consequence of the way in which time is being recorded, income from fees and charges is lower than it should be. Although this is not an issue of productive efficiency per se, current practice means that levy payers (domestic and international passengers) are paying for costs which are intended to be recovered directly from participants. From a funding perspective, that is not necessarily the most efficient arrangement.

The time recording practices of the GA group in particular appear to differ from what is intended. Possible factors contributing to this may be:

- personnel in this group are reluctant to charge for audits and inspections (notwithstanding that this is the intended method of funding) because of the financial burden imposed on GA participants, and

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25 Time recorded for the Health and Safety in Employment Unit within PLAS has been excluded because this function is funded by the Crown.
26 Certification and surveillance functions are also performed within the PLAS Group, but this group has a high percentage of staff involved in levy-funded activities including development of training standards and aviation examination. More detailed information regarding the roles performed by individual staff members would be required to assess the appropriateness of the balance between fee and levy hours for this group.
• staff engaged on audit activity treat part of the audit as providing participants with safety-related information and advice and this is being recorded either as overhead or as levy funded activity.

163 The total proportion of time recorded against fee or levy hours ranges from 69% (PLAS) to 79% (Airlines Group). We would normally expect the sum of these hours to lie within the range of 75% to 85% (the equivalent of between approximately 1200 and 1350 hours per year (assuming a 7.5 hour working day as is the contractual norm within the CAA) with managers tending to be at the lower end of this range because of their greater involvement in corporate and other activities not directly related to the provision of outputs. On this basis, the level of “chargeable” hours for PLAS and GA would appear to be below expectation.

164 We have also reviewed the time recording data to obtain a sense of the total number of hours being worked by CAA personnel. As is generally expected, there is some variation between personnel and, in general, managers are working relatively more hours.

165 During October 2010, there was a total of 20 working days (i.e. taking into account Labour day) implying that on the CAA’s standard 7.5 hour day, the time available in that month amounted to 150 hours. The time recording data indicate that most people (who were in full-time employment) were recording between 150 and 160 hours (i.e. between 7.5 and 8.0 hours per day). The Airlines Group tended to be at the top of, or slightly above, this range, GA was in the middle of the range and PLAS was at the low end of the range. Taking the time data at face value, overall this tends to indicate that the hours being worked are modest rather than being excessive.

166 We caution that the time recorded may be reflecting terms set out in employment agreements rather than the actual hours worked. Comments made by several CAA personnel suggest, however, that the level of time recorded probably is a fair reflection of the hours being worked.

**Recommendation**

The CAA should examine the reasons for the under-recording of hours recorded against “fee hours” for surveillance activities and take steps to address this.

**Opportunities for cost savings**

167 Notwithstanding the high level conclusions regarding the CAA’s costs (based on trend and comparator analysis), we have identified some possible opportunities for enhancing efficiency and reducing cost.
Medical certification processes

168 For several reasons, we consider that the costs associated with medical certification warrant further investigation with a view to confirming the scope for reducing costs in this area:

- it is a significant element of overall cost for the CAA – circa $2 million per annum
- there are large volumes of transactions involved (typically in excess of 8000 per annum), and
- medical certification processes are heavily manual and paper-based and, as a consequence, are not as efficient as they could be.

169 Much of the process associated with receiving, assessing and granting applications is manual and paper based. For example, current medical certification processes require paper forms to be completed by the applicant and medical examiner which are then sent to the CAA. Information supplied to the CAA is then entered into a range of unconnected systems by CAA personnel. This arrangement involves duplicating data capture at steps within the process and is prone to human error.

170 Considerable amounts of CAA personnel time is spent following up applications for which the information presented is incomplete, illegible or has obvious problems with it. The paper-based nature of the process means that CAA holds a considerable number of files.

171 Greater use of technology to automate processes and enable the electronic transfer of information has the potential to avoid a lot of double handing and to enable steps to be put in place to ensure that information presented to the CAA is complete.

172 These and other related issues have been identified in a draft business case prepared by the CAA in mid-2009 in support of an on-line medical certification system. Although the benefits of the proposed system have not been quantified, the benefits expected include savings in administration cost. The business case also included, as a potential benefit, increased fee income. We note that this benefit stems from the fact that the cost of applications for medical certification applications is currently met from levies rather than direct fees and charges. Notwithstanding this, we consider that the potential benefits stemming from the proposed system warrant further investigation.

Recommendation

The CAA should refresh the business case in support of enhancing the efficiency of medical certification functions through the greater use of technology.
Delegation of medical certification functions

Under section 27O(2) of the Act, the Director must delegate, to suitably qualified medical examiners, the power to issue medical certificates. Medical examiners consider the status of applicants for medical certificates and either issue or reject the application or refer the application to the Director for further consideration and decision under the flexibility provisions of the Act (section 27B(2) refers).

Interviews with, and feedback received from, several industry stakeholders have raised the option of extending the extent to which medical certification functions are delegated. We understand this to mean that the Director would no longer have responsibilities to exercise the flexibility provisions of the Act and would no longer have a role of designating suitably qualified people as medical examiners. It is unclear whether industry is also suggesting that the powers of the Director to revoke a medical certificate would also be removed (this would require legislative change).

Based on our discussions with industry stakeholders, there would appear to be two reasons behind the proposition that these functions be delegated:

- concerns about cost, and
- concerns about inconsistency of standards between New Zealand and other jurisdictions.

On the first of these concerns (i.e. cost), we are not convinced that further delegation of the Director’s functions is the best solution for several reasons.

- In our view, the best opportunity for reducing costs is to make more use of technology to automate aspects of medical certification as discussed above.
- The transactional nature of processing medical certification applications, and the large volume of transactions that occur each year, point toward there being economies of scale in the processing function. It is possible that such economies could be diminished if further delegation of medical certification also leads to fragmentation of the processing function. While it does not necessarily follow that further delegation of the Director’s roles would lead to fragmentation, it is not obvious that the dispersed nature of the aviation sector would easily enable the sector to club together to establish a provider of medical certification processing capability that had the scale of the CAA.

- If the Director was to delegate the role of designating medical examiners and/or roles in relation to the flexibility provisions of the Act, there would be a need for the Director to ensure that the performance of these functions accords with the requirements of the relevant rule (Rule part 67). Some mechanism for obtaining assurance in this regard (e.g. audits) would be required and this would involve some cost.
The second reason that appears to lie behind the call for further delegation of the Director’s medical certification functions relates to standards. Concerns have been raised with us by some in the aviation industry that New Zealand is not well aligned with other jurisdictions (including Australia) in terms of the standards applying to medical certification. We are not well placed to judge this issue but would note that the issue of alignment with other jurisdictions is not the only consideration in the setting of standards. Moreover, as we understand it, while the Director can delegate all medical certification functions other than revocation of certificates, delegation of itself does not alter the required standard. That is a separate issue.

**Personnel licensing**

Like medical certification, we consider that the costs associated with personnel licensing warrant review. Personnel licensing handles pilot, engineer and air traffic control licensing.

There are large transaction volumes involved (over 7,000 in the year ending June 2010) and there has been significant growth in the number of transactions; ten years ago, the volumes per annum were less than 3,000. The current annual cost of the personnel licensing function is approximately $2 million.

Like medical certification, existing processes involve a lot of manual handling of information. In addition, there is a lot of time spent answering queries via phones as information regarding the status of applications is not available electronically. A move from a largely paper-based system would generate efficiencies and reduce storage requirements. In our view, there are opportunities for technology, including web-based transaction channels, to drive efficiencies into this part of the CAA’s activities. We understand that the CAA has previously considered the option of some form of online process and, initial indications are that this would provide an appropriate pay-back on investment.

The issue of delegating personnel licensing functions to industry has been raised by some external stakeholders interviewed as part of the review. Because of the transactions based nature of personnel licensing, economies of scale are likely to be an important consideration. This might work against delegation being more cost effective than the alternative of continued provision of these functions by the CAA (assuming costs are brought down through better use of technology). We are also mindful of Maritime New Zealand’s experience with delegating some of its core regulatory functions which has resulted in problems with respect to aspects of the safe ship management sector.
Recommendation
The CAA should develop and assess options for the greater use of technology to reduce the costs associated with personnel licensing.

Data capture
182 The CAA relies heavily on a large number of data sources in order to undertake its regulatory oversight roles. There are two areas where better use of technology could improve the efficiency of data collection:

- updating AQD software so that the version held by the CAA is better aligned with that used by industry, and
- replacing manual processes for capturing some types of data (e.g. passenger numbers, hours flown etc). Currently, documents seeking these types of data are mailed to industry participants who then provide hard copy information back to the CAA which must then be entered into the CAA’s systems.

Recommendation
The CAA should improve the efficiency of data collection by updating its AQD software and using technology to replace manual processes for collecting industry data (e.g. passenger numbers and hours flown).

Corporate support functions
183 The Business Support Group supports the CAA through the provision of services relating to finance, human resources, information services, information and communications technology (ICT) and internal audit.

184 Based on establishment numbers, the Business Support Group comprises 36.5 FTE staff (2009/10) which is slightly under 20% of the CAA’s total FTE staff. Direct expenditure for the Business Support Group was approximately $6.3 million for 2009/10 or 22.6% of total expenditure (which is slightly below the average of 23.3% over the last 10 years). Overall, the size of the Business Support Group (and share of overall expenditure) is within the range we would normally expect for an organisation of this size (albeit toward the upper end of the range).

185 The size of the finance and HR teams are comparable with those which exist in Maritime New Zealand (which overall is comparable in size to the CAA). We note that the finance team comprises a high proportion of contract personnel rather than permanent employees. This reflects decisions by the CAA to defer permanent
appointments pending the outcome of the shared services review (with Avsec). Notwithstanding this, there is an opportunity for the CAA to consider permanent appointments as we would expect these to be more cost-efficient than the heavy reliance on contractors.

The financial and management information system (FMIS) used by the CAA (Solomon) is the same as that used by Maritime New Zealand (and is used by a number of other government agencies). The CAA has identified a need for improvements to its FMIS (and this was indicated in the funding review consultation documentation) because the existing system does not meet the CAA’s needs for timely and accurate financial information. We have not investigated these issues in any detail but note that in Maritime NZ’s case, Solomon appears to be capable of meeting that agency’s needs. An upgrade to the latest software version of Solomon should be all that is required to meet the CAA’s needs.

In terms of HR, we are not aware of any issues with the information system used by the CAA (CHRIS) although a minor upgrade and additional modules are required to address requirements relating to health and safety, learning and development and other issues.

The CAA’s ICT team is larger than we would expect for an organisation of this size. In total, the ICT team comprises 12 positions (although two are vacant). Five of the team have development roles (predominantly software development) and, in general, the resourcing of IT is heavily focused on application support and development. The size of the development team (and overall ICT team) reflects CAA’s historical approach which has been to address its IT requirements through the development of in-house solutions which has led to a highly customised IT environment.

Trends generally with respect to IT are to have much greater reliance on out-sourced solutions rather than in-house development. A strategic assessment of IT undertaken for the CAA in 2009 commented that the historical model of building and supporting solutions in-house to meet business requirements needs to be challenged. That assessment concluded that the CAA needs to look for more package solutions. The strategic assessment also concluded, consistent with the previous sentence, that outsourced arrangements are likely to provide a more robust solution for the CAA particularly in relation to IT infrastructure support with some form of co-sourcing arrangement for IT development and help desk functions.

The existing ICT team appears to be under-utilised. Longer term, and in light of the points above and findings of the IT strategic assessment, we doubt that the CAA needs a team of this size notwithstanding the points made earlier about the scope for

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27 Ernst & Young, (October 2009) IT Strategic Assessment
making more use of technology to streamline processes in the areas of medical certification and personnel licensing.

191 Notwithstanding the points in the previous paragraph, we note that within the ICT team, there is only a single business analyst. Business analysts are an important part of understanding the needs of the overall business and helping to convert business requirements into technical requirements to better support the functioning of the organisation. In a reconfigured ICT team, we would expect there to be less development resource and an additional business analyst.

192 We note that Maritime NZ has a need for development of aspects of its IT systems. Maritime NZ has already held informal discussions with the CAA with a view to being able to utilise some of the capacity that currently exists within the CAA. Short-term, therefore, this potentially provides an opportunity for an efficiency gain pending longer term reconfiguration of the CAA’s ICT resource.

**Recommendation**

The CAA should:

- review the composition of the finance team with a view to shifting the balance toward permanent employees and away from the existing reliance on contractors, and
- review the resourcing of ICT capability with a view to moving toward greater use of outsourcing and co-sourcing arrangements.

**Certification**

193 Organisations are required to renew their aviation document at least every five years (the Act and Rules allow for a certificate to be issued for up to five years). CAA policy is to issue a certificate with a two-year validity period for organisations that do not hold a current certificate with the CAA. Renewal involves the same process as entry certification and is a complete reassessment of an organisation against entry requirements.

194 We understand that the five-yearly cycle of renewal is consistent with practice in other jurisdictions but, notwithstanding this, we question whether adoption of such a uniform approach is consistent with a risk-based approach to regulatory oversight. Re-certification creates a lot of work and, hence, cost both for the CAA and participants. Even if it is deemed appropriate to re-certify at least once every five years, we question whether it makes sense to treat the process as if the applicant was presenting to the CAA for the first time.
Our expectation is that there would be elements of the process that could be substantially streamlined (or even removed) if an applicant for re-certification has a proven track record of full compliance with rules and its exposition and, moreover, has demonstrated through audits and other mechanisms that it has well established systems for identifying and managing risk. Streamlining the process of recertification and/or relaxing the frequency of re-certification (at least for some participants), could help to save cost with no adverse impact on safety. We note that if changes to current arrangements were to be made, this would require rule and legislative amendments.

Based on analysis undertaken as part of the funding review, certification accounts for roughly one quarter of the assessment and certification output class. We do not have data to indicate what proportion of certification expenditure relates to re-certification but the potential for saving, though changes to re-certification requirements and processes, is likely to be material.

**Recommendation**

The CAA should review the processes involved with recertification to ensure that these are tailored to take account of risk.
5 Resource and Capability Requirements

To ensure that the CAA’s regulatory oversight role is both efficient and effective, a step-change in performance is required. In our view, the level of change that is required is unlikely to be achieved with the current level and mix of resources. Investment in the CAA’s capability is required.

The need for investment has been foreshadowed in a number of contexts including the consultation document issued in relation to the funding review and the quarterly reports to the Minister regarding progress with addressing the various recommendations stemming from the OAG’s review of certification and surveillance functions. The issue is the level and nature of the investment that is required and how that is to be funded.

Below, we describe the capabilities that we consider the CAA requires in order to ensure that it is an effective and efficient regulator. This is divided into several core capabilities that we regard as being the highest priority and without which the step-change in performance is unlikely to be achieved. In addition, we outline a number of supporting capabilities each of which is targeted at addressing the issues described earlier regarding the effectiveness and efficiency of the CAA’s activities. Following the description of required capabilities, we then provide comment on the specific resources that are needed in order to deliver the required capabilities. These are grouped under the headings of people, processes and systems. Lastly we comment on the scope for funding at least some of the required investment from existing resources.

Required capabilities

Core capabilities

We have identified three types of core capability that require enhancing in order to provide the platform from which the CAA can then deliver the step up in performance that is required. These fall under the headings of leadership, management and regulatory capabilities.

Leadership

We have emphasised the need for the CAA to develop a strategic vision of itself in terms of its regulatory responsibilities and more generally for the organisation as a whole. The shift to SMS and the need to develop the State Safety Plan serve to emphasise further the need for the CAA to have a clear articulation of its regulatory strategy. Development of the strategy and vision requires leadership. Leadership capability is, in our view, not sufficiently developed within the CAA and evidence for this view comes from the diagnostic assessments undertaken for the CAA as part of...
the “Investors in People (IiP) programme. In particular, we note from the IiP programme, coupled with our own observations, that:

- technical competencies receive considerable focus within the CAA but this is at the expense of leadership (and management) capabilities. Technically competent regulators do not automatically make for effective leaders (or managers)
- while there are members of the management team who at an individual level demonstrate leadership competencies, the CAA’s senior management team as a whole is not focused on the leadership dimension of its role to the extent expected in a high performing organisation, and
- the most senior managers within the organisation are heavily engaged in day-to-day operational matters and this is crowding out time for strategic visioning.

Building the required leadership capabilities is not a simple matter to address; it will require a number of inter-related initiatives. We include among these the requirements for the CAA to:

- develop a much clearer view of the leadership capabilities required for its senior personnel
- undertake an assessment of the extent to which desired leadership capabilities are matched by existing capabilities
- review individual development plans to ensure that these drive the enhancement in leadership capabilities that is desired
- review and refresh the CAA’s human resource strategy (last reviewed in late 2008) which is almost completely silent on leadership other than to note that there was no formal leadership programme in place for managers (and we would contend that this is still the case although we understand that the CAA has been looking to join the Leadership Development Centre), and
- review the position of Chief Executive with a view to creating the option of splitting the Chief Executive role from that of the Director.

With the exception of the last of these initiatives, the steps required to enhance the CAA’s leadership capabilities are fully within the control of the CAA to execute and manage. The issue of splitting the Directors role into that of chief regulator separate from that of Chief Executive would require legislative change to effect. Under the Civil Aviation Act, the Authority appoints the Chief Executive who is also deemed to be the Director of Civil Aviation.28

28 Section 72I (1) refers.
204 The role of Chief Executive is the single most important and influential position in terms of providing leadership for the organisation. In our view, the capabilities required for being an effective leader on the one hand, and on the other hand the skills and experience needed to be the chief regulator (i.e. the Director role) mean that finding all of the competencies in a single individual is extraordinarily challenging. While the possibility exists that an individual might possess the competencies required for being an effective CE and Director, we consider that this will be a rare occurrence. Accordingly, we consider that there would be benefits in amending the Act so as to create the flexibility to appoint a CE that is not also the Director. In particular, by separating the roles, we consider there to be much greater chances of being able to secure strong capabilities in each role rather than having to trade off one set of competencies against the other to arrive at some sort of compromise.

205 There are potential risks in separating the roles and, accordingly, careful consideration of the issues arising would be required before committing to a formal separation. In particular, the dynamic between the two roles will require careful management and very clear articulation and understanding of how the two roles are to mesh. We note, however, that there are many examples in the public sector where the equivalent of the chief regulator (usually described as statutory officers such as the four statutory officers within Land Information New Zealand\(^29\) is separate from the Chief Executive.

**Management**

206 Like leadership, the management capabilities within the CAA are under-developed. In part at least, the heavy emphasis that is given to technical competencies is likely to have contributed to a downplaying of the need for strong management competency. Our observation is that managers spend too much of their time “doing” and too little time managing. Moreover, the management culture within the organisation is one of compliance rather than one of performance. In general, there is not a strong culture of holding people to account or one of taking responsibility. The under-developed nature of management competencies helps to perpetuate this situation.

207 There are several elements of management that need to be addressed. In no particular order, these comprise:

- a need for greater management focus on planning and prioritising activity across the organisation. Managers will require better information and tools to enable this, but the benefits from providing better information and tools will not be fully realised unless core management capabilities are strengthened.

\(^{29}\) Commissioner of Crown Lands, Registrar-General of Land, Surveyor-General and the Valuer-General
- a review of delegations and decision-making rights. Too many managers are operating at least one level below that implied by their position. One consequence of this is that the in-trays of managers are over-full of matters that could be better dealt with at lower levels within the organisation.

- there is a need to review the description of manager positions with a view to creating team leader and technical adviser positions. As noted above, many managers spend a lot of their time doing rather than managing. While that might be a good use of the skills possessed by individuals, their role does not amount to that of being a manager; it is more akin to a team leader.

- the management culture needs to be reoriented away from compliance with corporate controls and toward performance-based management. In support of this, there is a need to develop a performance management framework and system that connects objectives at an individual level with objectives developed and embodied in organisation-wide and group/unit business plans. The combination of having a performance management system, revised delegations and a culture that is performance oriented will provide a better basis for holding people to account and encouraging them to take responsibility for results, and

- there is a need to continue to strengthen project management competencies within the organisation.

**Regulatory capability**

208 Two of the key findings of this review are that the CAA does not have a sufficiently well developed strategic vision of its regulatory oversight role and that risk is not yet well enough integrated into regulatory decision making in terms of the allocation of resources and deployment of regulatory interventions. The regulatory capability of the CAA needs to be strengthened at strategic and operational levels.

209 At a strategic level, the focus for the CAA needs to be much more oriented toward outcomes rather than being narrowly concentrated on rules compliance. A clear statement of regulatory philosophy supporting this focus is required. Additional capability is required to achieve this.

210 In support of the outcomes-based regulatory focus, regulatory capability needs to be risk-based and intelligence led. The development of the risk profiling tool is a good initiative, but of itself this does not provide all of the capability that is required. Processes and systems are needed to embed risk into regulatory activity and decision making. The work that has started on the development of the regulatory tools policy needs to be progressed as a matter of priority.

211 Making more and better use of intelligence to guide regulatory activity means a need for more reliance on analysis and less reliance on defaulting to past ways of doing things (based on the assumption that this is the best way of doing things in the future).
By investing in the capability that supports a strongly risk-based, intelligence led and analysis driven approach to regulatory activity, we would expect the resources of the CAA to be used in a much more targeted manner. As a consequence, we expect the investment to yield benefits in the form of much greater levels of effectiveness; that is, a much stronger contribution to desired outcomes from regulatory interventions.

Lastly, more and better intelligence coupled with greater reliance on robust analysis should result in much deeper insights regarding the factors that contribute to safety and security outcomes. This, of itself, should generate much greater demand for project based approaches, rather than just relying on routine regulatory activities, to drive improvements in safety and security outcomes.

Supporting capabilities

The core capabilities described above (leadership, management and regulatory) are the highest priority areas for investment because they lay the platform for enhancing efficiency and effectiveness across a number of dimensions. The full impact of the investment in core capabilities will not be realised, however, unless a corresponding investment is made in a number of supporting capabilities.

Analytical capability

There are several areas where greater analytical capability is required:

- the ability to assess and analyse the performance of the CAA as an organisation as part of the shift to a performance-based approach to management

- analysis of risk at the levels of aviation participant, sector and the aviation system as a whole and what this implies for the targeting of surveillance activity, allocation of resources across interventions and choice of regulatory tools and responses when non-compliance occurs, and

- analysis of the drivers of safety performance.

Systems capability

The core safety information system (and associated legacy systems) are hindering rather than assisting the CAA in its work. The data within the system is under-utilised because of issues with the system. As a result, the CAA is not making the best use of the information available to it. A replacement for the system is required in order to better enable core regulatory functions.

The licensing and medical certification areas of the CAA are based around largely manual based processes with information exchanged in hard copy format. Greater use of technology has the potential to make transactional functions much more efficient and reduce compliance costs imposed on sector participants.
**Human resource management**

217 The CAA's existing HR management services provide mostly transactional support and do not have sufficient focus on strategic human resource issues. There is a significant change to make in this area to support the shift to performance-based management. The CAA faces some relatively unique challenges in terms of being able to attract and retain people into a range of technical and regulatory roles. Most individuals who are interested in working in the aviation sector are not naturally attracted to becoming a regulator. A fundamental challenge, therefore, is getting the right balance between trying to make good regulators out of industry people versus recruiting those with sound understanding of regulatory frameworks and marrying these competencies with technical knowledge.

218 The CAA also faces a significant HR challenge in lifting the level of management capability across the organisation.

**Safety management system**

219 The implementation of SMS involves changes in the type of regulatory competency required. Much more emphasis goes on thinking about safety (and security) from a systems perspective. Systems thinking requires competencies that are different from more traditional compliance-oriented inspection-based skills. With the progressive shift toward safety-outcome based approaches to regulation, core regulatory functions including surveillance need to focus increasingly on how participants ensure that their own procedures are fit-for-purpose and working as intended (as well as the more traditional checks for compliance with specific safety regulations).

220 More attention needs to go, therefore, on how the management within participant organisations perform the safety management function and manage risk to an appropriate level. In turn, this requires greater capability within the CAA to understand how organisations work and what motivates the organisation and personnel within it to effectively manage risk just as much as it requires an understanding of, and focus on, technical matters. Although analysis over the years has highlighted the dominance of human factors involving technical people in accidents, it is clear that organisational factors in many cases play a major part.30

**Technical capabilities**

221 Notwithstanding the previous two paragraphs, technical competencies remain a vital part of the capability that the CAA needs to perform its regulatory responsibilities well. We are not well-placed to judge for ourselves whether or not the CAA has sufficient of the technical competencies it needs. Comments obtained from interviews with a

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range of external stakeholders provided a somewhat mixed picture on this issue. Perhaps more objectively, however, we note from the ICAO 2006 audit that the CAA’s airlines group scores above the OECD and global average in terms of technical personnel qualification and their training.

**Investment required**

222 Based on the foregoing analysis of core and supporting capabilities, we have identified a number of gaps between the desired level of capability and the level of capability that exists currently within the CAA.

223 The discussion document issued by the CAA as part of the funding review identified a significant number of capability development projects (39 in total). The preferred capability scenario developed by the CAA had an indicative cost over the four years to 2013/14 of approximately $14 million comprising capital expenditure ($5.9 million) and operating expenditure ($8.3 million).

224 We have reviewed the list of capability projects developed by the CAA against our own views as to the capability gaps where the need for investment is greatest. In short, there are aspects of required investment, particularly in relation to people, that we have identified but which did not feature prominently in the CAA’s list. Equally, there are a number of projects identified by the CAA which we do not see as being of highest priority (and in this regard we note that since the consultation document was issued, the CAA has been further prioritising its list of capability development projects).

225 Below, we set out our views on the areas where the need to invest in capability is greatest. We have segmented the recommended investments into four categories as follows.

- capability initiatives the cost of which has either been budgeted for by the CAA or which can be funded by reprioritising within existing resources
- capability initiatives that are needed in order to successfully implement SMS to address existing problems and issues
- capability initiatives that are needed in order enable the CAA to achieve the step up in performance that we consider is needed in order to ensure that the benefits of having an effective regulatory system and regulator are not put at risk, and
- capability initiatives that are aimed at enhancing the efficiency of the CAA and reducing costs for industry.

226 In total, the proposed investments have a net cost (i.e. over and above what can be funded from existing resources) over the next three years (2011/12- 2013/14) of $7.2 million ($3.5 million operating cost and $3.7 million capital expenditure).
Several points should be noted regarding the cost estimate for the proposed investments:

- there are several capability requirements recommended in this report which we have assumed, based on discussions with the CAA, can be funded from within existing resources (either because they are already provided for in existing budgets or as a result of reprioritising and redeploying resources)
- the estimate does not include transition costs that might come about as a result of any changes to roles and responsibilities. In particular, no provision has been made for the costs associated with recruiting people into new positions or transitioning staff from existing positions
- some of the elements of expenditure that make up this estimate are preliminary and indicative only. They rely on estimates prepared by the CAA which, in some areas, need considerably more work in order to obtain greater confidence over the sums of expenditure involved. Further work on refining the cost estimates is expected as the CAA develops its business case in support of the recommended initiatives, and
- the estimate does not include any provision for addressing the CAA’s existing and forecast operating deficit.
### Table 8: Proposed Capability Investments

<table>
<thead>
<tr>
<th>What</th>
<th>Why/Purpose</th>
<th>Cost (incl overheads) 2011/12 – 2013/14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiatives that can be funded from existing resources</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Strategy Adviser</td>
<td>There is a need to lift the strategic capability of the CAA. The initial focus is on development of organisational strategic plan and high-level regulatory strategy. The role includes ensuring that strategy cascades down through organisational and group business plans. The position would report directly to the Chief Executive.</td>
<td>N/A</td>
</tr>
<tr>
<td>Policy analyst</td>
<td>Duties would include preparation of regulatory impact analyses, assistance with developing regulatory tools policy and ongoing assessment of the effectiveness of regulatory interventions. Core aspects of regulatory strategy need to be developed. More robust problem definition and evidence-based analysis of options will contribute to better selection of regulatory tools and interventions and enhance the impact on safety and security outcomes</td>
<td>N/A</td>
</tr>
<tr>
<td>Measuring the effectiveness of interventions</td>
<td>Work on the development of a framework has already started and is a key part of developing a more robust basis for determining the allocation of resources.</td>
<td>N/A</td>
</tr>
<tr>
<td>Senior Strategic HR Adviser</td>
<td>Strategic HR is under-developed within the CAA. More focus is required on developing leadership and management capabilities and a performance management framework. In addition, stronger linking of HR with strategic plans is needed.</td>
<td>N/A</td>
</tr>
<tr>
<td>What</td>
<td>Why/Purpose</td>
<td>Cost (incl overheads) 2011/12 – 2013/14</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Initiatives needed in order to implement SMS and address existing problems and issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations technical support and Quality Management Systems (QMS)</td>
<td>The existing QMS has been identified as a contributor to a number of business performance issues. Rebuilding the QMS and providing ongoing support and maintenance is needed to enhance internal quality processes and drive process improvement throughout the CAA. This initiative also includes maintaining the surveillance system rule based and audit checklists in order to ensure efficient and effective safety monitoring.</td>
<td>$125k opex</td>
</tr>
<tr>
<td>Operational training (SMS)</td>
<td>As part of implementing SMS, there is a need for the CAA’s surveillance system to be modified in order to ensure that it is consistent with the State Safety Plan. The initiative includes processes for the training of auditors, defining required competencies and identifying training needs. The cost of providing training is provided for within existing budgets.</td>
<td>$125k opex</td>
</tr>
<tr>
<td>SMS Implementation</td>
<td>This initiative establishes a taskforce to co-ordinate and oversee implementation of SMS within the CAA. This includes refinement and improvement to a number of systems within the CAA that are needed in order to successfully implement SMS. This initiative also includes development of a sector risk profile and setting a reference point for the risk-based approach to regulation.</td>
<td>$250k opex</td>
</tr>
<tr>
<td>Safety Information System (and legacy systems)</td>
<td>This is a core element of the CAA’s infrastructure. Issues with the legacy system are inhibiting safety analysis and the effectiveness of regulatory interventions. Investment in system replacement is required.</td>
<td>$575k opex and $2m capex</td>
</tr>
<tr>
<td>Risk management</td>
<td>There are existing gaps in CAA’s risk management capability. This initiative is needed to better manage, monitor and report on the CAA’s risks including those relating to business continuity.</td>
<td>$240k opex</td>
</tr>
</tbody>
</table>
### What

<table>
<thead>
<tr>
<th>Data Quality Standards</th>
<th>Existing standards and policies for codification of data entering CAA’s systems have not been reviewed since 1994. Issues with data standards are impeding CAA’s safety analysis.</th>
<th>$200k opex plus $750k capex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Management</td>
<td>The current system is causing issues for document and records management and is not Public Records Act compliant.</td>
<td>$750k capex</td>
</tr>
</tbody>
</table>

### Initiatives needed in order to enable the CAA to achieve the step-up in performance that is needed

<table>
<thead>
<tr>
<th>Change Manager and support</th>
<th>A substantial programme of initiatives is required to achieve the desired step-up in performance. A dedicated change manager is needed to develop the plan for the programme and manage the co-ordination of the contributing projects.</th>
<th>$300k opex for change manager, $100k opex for support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board advisor</td>
<td>This is a fixed term (1 year) appointment to assist the Board in leading and providing governance oversight of the change programme. The adviser will help to ensure that the Board is receiving the advice from management that it needs to have high levels of assurance that the change programme is delivering the required step-up in organisational performance.</td>
<td>$75k opex (part-time role based on equivalent of $100k salary)</td>
</tr>
<tr>
<td>Project Management Office</td>
<td>The CAA is part way through an initiative aimed at strengthening project and programme management. The contractor is assumed to be appointed when the term of the incumbent terminates.</td>
<td>$125k opex</td>
</tr>
<tr>
<td>Management development</td>
<td>This initiative will develop management competencies and practices across the organisation through modularised training for tiers 1-3 of management.</td>
<td>$80k opex</td>
</tr>
<tr>
<td>What</td>
<td>Why/Purpose</td>
<td>Cost (incl overheads)</td>
</tr>
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<td>-----------------------------</td>
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</table>
| Safety Analysts (x2)       | - Analysis of safety trends and issues at operator, sector and system levels  
  - Increased quantitative analysis  
  The CAA does not undertake sufficient analysis of the data available to it. This is a key input to evidence-based operational policy and rules development. Main role will be as part of, and enhancing the capability of, the safety analysis unit. | $675k opex           |
| Human Factors Analyst      | This is a key part of regulatory analysis capability that is needed to complement more technically oriented capabilities. The focus will be on strengthening human factors analysis as part of safety analysis. Part of the time of the analyst likely to be involved with major/significant safety investigations. | $563k opex           |
| Initiatives aimed at enhancing the efficiency of the CAA and reducing costs for industry | | |
| On-line transaction processing | There are opportunities to make better use of technology to replace manual and paper based transactions in the licensing and medical certification areas. This will also enable a reduction in compliance costs for participants. | $50k opex and $192k capex |
6 Conclusions and Recommendations

Conclusions

The CAA has regulatory oversight responsibilities in relation to New Zealand’s civil aviation system. As articulated in the CAA’s Statement of Intent, the core outcome to which the CAA contributes is the safety and security of participants in, and users of, the system. Safety and security has, however, a wide range of economic, social and environmental impacts.

Benefits

Within the context of this review, we have considered the contribution to economic benefits in particular reflecting the Government’s long-term outcomes for transport which include supporting high levels of economic productivity, providing strong international connections and meeting New Zealand’s international obligations.

The contribution that the CAA makes in these areas is considerable. New Zealand is viewed by international agencies, such as ICAO, as having a reliable and robust civil aviation system. The reputation of the system, and the CAA, is an important enabler of a wide range of economic benefits including (but not limited to):

- access to foreign markets (including Air New Zealand’s operations in key markets) that comes from having a proven safety and security record and the willingness of overseas jurisdictions to enter into mutual recognition arrangements with New Zealand
- reducing the cost, and improving the quality and safety, of air services through allowing the adoption of improved technologies (e.g. innovative changes to air navigation systems)
- minimising the costs of, and time delays associated with, security clearances for goods exported via air freight (delays which in some instances mean the difference between getting to market, or not), and
- the ability of New Zealand-based enterprises to supply aviation services (e.g. engine maintenance) to customers worldwide because the safety approvals provided by the CAA are recognised and respected by other jurisdictions.

Although not quantified, the nature and scope of these benefits are important and significant. The effectiveness of the CAA plays a role in achieving these benefits.

In our view, there is an element of asymmetry between the effectiveness of the CAA and the benefits to which it contributes. Beyond a threshold, further improvements in CAA effectiveness are likely to have diminishing impact on safety and security outcomes and the flow-on benefits that come from having a well respected regulatory
system and regulator. Conversely, however, our judgement is that if the CAA’s effectiveness falls below a certain threshold, the benefits of having a sound reputation will begin to be quickly, and substantially, eroded.

**Current situation**

233 The safety performance of the civil aviation system is, overall, generally positive. It has been several years since a fatality in the airlines sector has occurred. The trend line for the number of fatalities in the General Aviation sector has generally been downward. The improving trend in safety performance is also reflected in the number of aircraft accidents per 100,000 flight hours although the trend for some elements of General Aviation is either flat, or deteriorating.

234 The role of the CAA is an important part of the overall safety of the civil aviation system. The CAA is audited by the ICAO (along with other member states). The latest results for the CAA (based on an audit undertaken in 2006) indicate that the CAA rates well compared to OECD and other countries. Comments made to us by a range of aviation sector stakeholders during the course of the review also point to the CAA, and New Zealand’s civil aviation system, as generally having a trusted and respected reputation.

235 The conclusions we take from the ICAO results, coupled with our own observations, are that:

- overall, New Zealand’s regulatory framework is in the top tier worldwide
- the operation of that framework including the regulatory oversight provided by the CAA is of good standard, and
- there are, however, areas requiring improvement if the CAA is to keep pace with developments in aviation and in regulatory practice more generally.

236 In our view, a step-change in performance is required in some key aspects of the CAA’s regulatory oversight role in order to ensure that the CAA keeps pace with increasing expectations being placed on regulators (e.g. as part of the requirements of a State Safety Plan) and avoids putting at risk the substantial benefits that stem from having an effective regulatory system and regulator. Various reviews in recent years, including those undertaken by the OAG, have raised concerns over certain aspects of the CAA’s regulatory activities. Our own observations of the CAA confirm these concerns. There are features that we would expect of a modern regulator that are either not present, or are under-developed, within the CAA. We liken the current situation of the CAA to that of a company (or country) that has an investment grade credit rating but has been placed on credit watch by the rating agencies. Unless steps are taken to enhance performance, the rating is at risk of being downgraded. In CAA terms, that means increasing levels of risk surrounding safety (and security).
performance and, hence, increased risk that the economic, social and other benefits which flow from having a reputable civil aviation system will be eroded.

The review has considered all aspects of the CAA’s activities. This report, and particularly the key findings and recommendations which follow below, focus on those areas where there is a need, or an opportunity for enhancing effectiveness and efficiency. By implication, for those areas of activity that are not discussed in any detail, the inference that should be drawn is that there are no material issues for the CAA to address.

Effectiveness of the CAA

We have assessed the CAA against the features we would expect to see in a modern regulator and in a high performing organisation. There are several features of a modern regulator that are not as well developed as they need to be, although it must be noted that the CAA has identified many of these for itself and is in the process of addressing areas of concern. We note that there are already signs of improvement in CAA’s performance in core certification and surveillance activities (for example, as indicated in quarterly reports to the Minister regarding progress with implementing the recommendations of the latest OAG review).

The aspects of modern regulation that we consider are in need of further attention are as follows.

- There is a need to refresh the CAA’s statement of regulatory philosophy. This statement is intended to set out the overall objectives of regulating the civil aviation industry and the high level principles that guide regulatory conduct. The existing statement was developed in 2005 and aspects of it would benefit from being refreshed to reflect progress with implementing SMS and to cover in more depth some of the features of modern regulation noted below. We would see the statement as an opportunity to also recognise the wider economic benefits from having a reputable regulatory system (as well as the more traditional focus on safety outcomes and objectives).

- Risk and the analysis of risk needs to be more engrained in the work of the CAA. Currently, there is limited systematic formal use of intelligence and analysis to inform assessments of risk and, in turn, assessments of risk are not playing a large enough role in the allocation of resource and choice of regulatory interventions.

- Although the CAA exhibits elements of a graduated and proportionate approach to achieving compliance, the organisation lacks the equivalent of a compliance pyramid (used by many regulators) to help guide the level of interaction with participants based on their level of compliance.
• The existing regulatory approach is primarily input and output oriented. There is a need for more clearly defined impacts and outcomes by which to measure the effectiveness of regulatory interventions in managing risk.

• The CAA is only one part of the machinery for achieving safety in the civil aviation system. Aviation participants are required to take responsibility for safety. It follows that the CAA needs to work with industry to develop solutions to safety (and security) issues. Comments made to us by industry indicate that in the absence of a strategic vision, the CAA’s interaction with industry is not always clear and can be overly issues-led, rather than strategy-driven.

• Notwithstanding the previous point, specific issues do arise (e.g. terrain awareness). There is a need for the CAA to take more of a project-based approach to the development and implementation of solutions.

240 The terms of reference have required us to consider whether there are functions performed by the CAA that it could stop doing. We have considered the issue of further delegating certain regulatory functions (particularly in relation to medical certification and aspects of personnel licensing) but are not convinced that this would lead to better outcomes. More generally, all of the outputs produced by the CAA align with its statutory mandate and we do not consider there is a case for terminating any of these. As noted above, however, there are steps that the CAA needs to take to enhance the effectiveness of its regulatory functions.

241 We have also assessed the CAA through the lens of the features we would expect to see in any high performing organisation. Our assessment from this perspective has identified some dimensions of organisational capability that are under-developed and, as a result of which, are not enabling the CAA to reach its full potential. The issues, which are summarised below, need to be addressed in order to enable the CAA to make optimal progress towards the desired features of a modern regulator noted above.

• The lack of vision and strategy within the organisation is a function of the absence of strong and effective leadership within the CAA. The CAA’s senior management team is not acting as a co-ordinated leadership team that is providing oversight and guidance to the organisation.

• A specific example of this is in relation to SMS where there appear to be differing understandings of this approach to civil aviation safety among senior managers.

• The CAA needs enhanced leadership capability in an organisational as well as regulatory sense. The position of Chief Executive is pivotal in any organisation, but the role is made even more challenging in the case of the CAA because the Chief Executive must also be the Director. There is an issue as to whether it is realistic to expect one individual to provide the leadership that is required in both roles.
There are several aspects of the culture of the CAA that are acting as a constraint on overall organisational effectiveness. These include the strongly technical and operational orientation focus which is at the expense of management and strategic capabilities. The organisation also has a strongly individualistic culture and a resistance to change which results in people ‘doing things the way they always have’ and a slowness to adapt. Taking responsibility and holding people to account are also not prevalent cultural characteristics of the CAA. This also inhibits responsiveness to the need for organisational change.

There is a number of management practices that need to be addressed to enhance efficiency and effectiveness. We include among these, a need for an outcomes oriented performance management system and associated performance measures, changes to delegation (many issues are being dealt with at too high a level within the organisation), under-developed programme and project management capability, a focus on transactional at the expense of strategic HR management and insufficient collaborative strategic planning and direction setting among the senior leadership team.

Efficiency of the CAA

242 Value-for-money requires that resources be used in a way that delivers greatest output for a given level of input. We have reviewed the costs incurred by the CAA. It should be noted that the analysis of costs has been undertaken primarily at the output class and output levels rather than at the activity level. This reflects the availability of cost information.

243 In an international context, the CAA’s annual expenditure (circa $30 million), when adjusted for the size of the country and, more relevantly, the size of the aviation industry, is at the low end of the range compared to various other jurisdictions that have a degree of comparability with New Zealand in terms of regulatory framework (and, in some cases, size).

244 Total CAA expenditure has grown by around 5% per annum over the last 14 years. On the face of it, that is significant. The picture changes, however, when the growth is adjusted to take account of growth in the size of the sector and inflation. Taking these adjustments into account, the level of expenditure has remained relatively flat over the last 10 years except for a noticeable reduction in recent years reflecting the impact of the global financial crisis.

245 Taking these points into account, we conclude that the CAA is not an organisation that is characterised as letting costs get out of control. That said, however, growth in costs is something that all organisations need to continually monitor and address. There are several areas of CAA activity where there may be opportunities for greater efficiency.
Analysis of time recording data indicates that in the PLAS Group and, to a lesser extent General Aviation Group, there is a higher proportion of time recorded to general organisational overhead than we would expect. Across the whole organisation, the time recording data points to workloads that are modest rather than excessive.

The same time data also strongly indicates that in the core area of surveillance activities, the CAA is not recording as many hours against fee-based work (audits and inspections) as is expected. This appears to be a function of audit teams being unwilling to fully charge for the time involved in undertaking surveillance work. While this may not be a productivity issue, it is impacting on the CAA’s revenues.

The size of the HR and finance teams within the CAA is appropriate to the size of the organisation and is comparable with the size of teams within Maritime NZ. We note that there is heavy reliance on contractors in the finance team, although this reflects decisions by the CAA to defer permanent appointments pending the outcome of the shared services review with Avsec. Notwithstanding this, the opportunity should be taken to address the balance of permanent versus contract personnel as this should provide a more cost effective arrangement for the CAA.

The size of the IT team is larger than we would expect taking into account the size of the CAA and its demands for technology. The current situation reflects past in-house development of IT systems. In the future, and consistent with trends generally, we would expect less reliance to be placed on in-house and bespoke development of systems. There is potentially an opportunity for some of the IT development resource within the CAA to be utilised by Maritime NZ.

Better use of technology could be made to automate aspects of transactional activities undertaken by the CAA, particularly in the areas of personnel licensing and medical certification. Existing processes involve significant amounts of hard-copy paperwork and manual handing of data and information.

In the area of medical certification, several stakeholders have raised with us the option of delegating this function to industry participants. This is an area of significant cost (circa $2 million per annum). While we are not convinced of the case for delegation (there are risks involved), there is a need to undertake more work to assess options for reducing medical certification costs. This should include assessing the options for greater use of technology and, in the light of this, assessing whether the delegation of functions would deliver further savings.

**Capability and resource requirements**

To ensure that the CAA’s regulatory oversight is efficient and effective, a step-change in performance is required. In our view, the level of change that is required is unlikely to be achieved without investment in capability. There are several dimensions to capability needs as follows:
- stronger and more effective leadership
- improved management capabilities and supporting strategic HR management
- enhanced regulatory capability at both strategic and operational levels
- greater analytical capability including greater reliance on systems-based analysis, and
- enhanced systems capability, particularly in relation to safety information and analysis.

247 Acquiring the capabilities above will the CAA to either invest in, or source from outside, people, processes and systems.

People

248 There is a complex mix of capabilities that need to be strengthened in order to deliver the change in performance that is required. The change needs to be executed well and, accordingly, there is a good case for appointing a fixed term and experienced change manager (which could be an individual or a firm) to work with the Chief Executive and senior managers to guide and manage the change process.

249 The strategic capability of the CAA needs to be strengthened. We propose the appointment of a strategy adviser to develop a strategic plan, to assist with the development of the regulator’s strategic vision and to work across the organisation to ensure that strategy is reflected in the plans and operations of the CAA.

250 The staff of the CAA are critical to the organisation’s success, but to date, there has not been sufficient focus on strategic HR management. An appointment to this role is warranted and we favour a permanent appointment rather than some form of outsourcing arrangement to ensure appropriate focus is given to a range of issues including performance management and maintaining the appropriate balance of leadership, managerial, technical and regulatory capabilities.

251 There are analytical and technical capabilities that are required in order to better align the CAA with the features expected of a modern regulator. These are:

- additional analytical capability to enhance the breadth and depth of analysis available to the CAA to inform its decision-making and understanding of what influences safety (and security) outcomes. The capabilities include safety analysis, quantitative analysis and human factors analysis
- stronger policy skills to focus on assessing the effectiveness of regulatory interventions and to inform decisions about how best to address safety and other issues (e.g. making choices between developing new rules versus other regulatory interventions), and
• operational technical support capabilities to ensure that changes in rules are appropriately reflected in operational practices and procedures (to avoid situations where procedural changes are slow to take effect) and provide ongoing support for the CAA’s Quality Management System.

Processes

252 There are several organisational processes that need to be strengthened or developed in order to better support the functioning of the CAA. Key among these are:

• risk management processes which prior to, and confirmed by, this review, has been identified as a gap in the CAA’s capability
• data quality standards which have not been reviewed since 1994 and are impeding the CAA’s safety analysis
• a framework and processes for measuring the effectiveness of CAA interventions (this work is already underway) including the development of outcomes-oriented performance measures
• processes supporting the implementation of SMS including operational training particularly in relation to audit functions under SMS, and
• processes which support the development of management competencies and practices.

Systems

253 The highest priority for the CAA is the need to replace the existing, and core, safety information system (and associated legacy systems). The existing system is impeding the effectiveness of the CAA. We note that the cost estimate for a new safety information system that was included in the funding review discussion document was based on an early and preliminary assessment of requirements.

254 This is a major investment and one which the CAA needs to undertake more work to scope the requirements of the system and the options for meeting those requirements. There are other organisations that potentially would have an interest in safety information systems including the Transport Accident Investigation Commission and the other two transport regulatory agencies (Maritime New Zealand and the New Zealand Transport Agency) as well as elements of the aviation industry. CAA needs to develop a clear picture of its own requirements in the first instance and, with some urgency, develop options that will meet these requirements. Reflecting the potential interest of other agencies, the options need to be developed in a way that keeps the door open to some form of collaborative arrangement with the other agencies for which use of such systems is a core part of their business.
Recommendations

The recommendations which follow are aimed at enabling the CAA to achieve the step-change in performance that we consider is needed in order to ensure that the CAA’s regulatory oversight roles are performed effectively and efficiently and in accordance with good regulatory practice.

We recommend that the CAA:

Elements of being an effective regulator

Regulatory strategy

- refresh its statement of regulatory philosophy and vision as part of the CAA strategy that is currently under development and promulgate it through the regulatory strategy and other planning documents.
- develop a comprehensive, robust regulatory strategy. The strategy should:
  - be results-oriented and consistent with the regulatory vision established in the strategic plan
  - be informed by assessments of the effectiveness of regulatory interventions (using a framework currently under development) and the use of outcomes-oriented performance measures
  - establish a comprehensive risk-based framework for prioritisation of effort
  - establish parameters for a graduated proportionate response
  - set parameters for collaboration and cooperation, and
  - strengthen the role of project-based responses to regulatory issues.
- document its regulatory strategy and use this, and/or derived materials, as a basis for internal and external communication of that strategy. A first priority is to complete the draft regulatory tools policy.

Surveillance

- ensure that a risk-based approach becomes an entrenched part of the approach to surveillance activities
- develop comprehensive guidelines to ensure a consistent approach to surveillance activities, and
- ensure that the principles of just culture are clear and understood across the CAA.
Safety information and analysis

- develop a clearer sense of the safety information and analysis needed to perform its regulatory oversight roles and, in light of this, review and develop the requirements the CAA has for a replacement safety management system
- review the system for codifying safety information
- assess options for enabling enhancements to the Aviation Safety Management System in particular and options for web-based capture of data more generally
- ensure it has the capability in place to perform both the type and quantum of safety analysis required to support its regulatory decision-making
- seek to ensure that risk assessment looks beyond profiling risk at the participant level to include sector-wide and system-wide perspectives, and
- reconsider whether the financial risk of operators should be an element of the risk assessment tool.

Enforcement

- develop a clearer framework for determining when and how to use enforcement tools
- support the framework with guidance to ensure consistency in application, and understanding, of the framework, and
- utilise enforcement in a strategic manner to ensure that when taken, enforcement maximises impact in terms of compliance with regulatory objectives.

International obligations

- prepare a funding bid in support of additional resource for the CAA if the CAA is to be required to provide dedicated support for the Pacific Aviation Safety Office.

High performing organisation

Strategy and leadership

- develop a statement of vision and strategy (which embraces the statement of regulatory vision and philosophy) to guide priorities and decision-making at strategic and operational levels
- consider separating the roles of Chief Executive and the Director of Civil Aviation to facilitate appropriate leadership focus for both, and enable the appropriate attention to senior management in the Chief Executive role (legislative change would be required to enable this option), and
• develop people and systems competency for effective safety information management and analysis to support regulatory approaches and decision-making.

Culture

• communicate its vision and regulatory philosophy and framework throughout the organisation (including in induction and training sessions)
• include planning for, and assessment of, risk management attitudes and behaviours in performance planning and evaluation for CAA staff and managers
• continue the current training initiatives in SMS and risk management for all CAA staff
• ensure that the approaches to surveillance inspection and auditing are systems-oriented and risk-based, and that these approaches are assessed regularly for their adherence to this, and
• develop its framework for measuring the effectiveness of interventions, and involve staff regularly in the application of this framework (to reinforce organisational thinking and behaviour as a modern regulator).

Structure, roles and accountabilities

• seek an amendment to the Civil Aviation Act to create the option of separating the Chief Executive and Director roles
• assess the option of transferring commercial/public transport responsibilities of the General Aviation Group to the Airlines Group
• review position descriptions for existing manager roles with a view to redefining some ‘manager’ roles as Technical Advisors and allocate Team Leader roles for management responsibilities where required, and
• form a small Office of the Chief Executive to support the senior management position, including a role for Board support.

Management practices

• appoint a senior HR Advisor (strategic) to support the HR function and assist with the change management challenges facing the CAA
• ensure that the CAA performance management system is applied consistently across the organisation and that managers receive training and development to facilitate this
• ensure CAA managers receive management (as opposed to leadership) development training which provides them with the hard skills of planning, organising, staffing, controlling and reviewing
• ensure CAA managers (including senior managers) are subject to performance planning and review as well as their staff, and that management competencies and accountabilities are included in the performance attributes of all personal performance plans

• review and adjust, as appropriate, delegations to enable accountable managers and staff to make the decisions appropriate to their level of service delivery

• provide all managers with training in effective delegation and supervision of staff

• ensure managers communicate clear roles and responsibilities to their staff so that there is no ambiguity as to which decisions should be made by staff when required, and

• ensure that initiatives to strengthen programme and project management are continued and developed within the organisation.

People capabilities

• appoint a Change Manager (fixed term 12 months) to plan for and implement change initiatives

• expedite completion of the strategic human resource plan, and include a programme of management development training for managers

• ensure that staff recruitment for management positions take cognisance of the management skills and competencies required for these roles

• continue with the SMS and risk management training rollout for all staff

• expedite the completion of the Regulatory Tools Framework and Philosophy and communicate this to all staff

• provide training and development to current managers and staff in modern regulatory practice, and include this content in the induction training of all new staff

• appoint a position of strategic advisor to assist with the development of strategy, including regulatory strategy, within the organisation

• further refine and implement the methodology for measuring the effectiveness of CAA interventions

• increase its analytical capability through the appointment of a further two safety analyst roles, and a human factors analyst, and

• ensure that managers base strategic and business decisions on an analysis of relevant business information (financial, workflow, HR information etc).
Process capability

- strengthen capacity and capability for managing the CAA’s risk framework, including business continuity
- develop a business case for redesigning manual processes (e.g. medical certification, licensing) to be electronic, web-based and interactive to allow for user input, and
- establish a small SMS implementation taskforce to co-ordinate and oversee the project to implement SMS within the CAA.

Systems capability

- prepare a business case for the replacement of the core safety information system to enable provision of information and analysis to support the strategic, regulatory and operational decisions of the CAA
- investigate the benefits of developing an online medical certification system, and
- address systems requirements relating to the document management system to ensure that it is compliant with legislative requirements.

Efficiency

- examine the reasons for the under-recording of hours recorded against “fee hours” for surveillance activities and take steps to address this
- refresh the business case in support of enhancing the efficiency of medical certification functions through the greater use of technology
- develop and assess options for the greater use of technology to reduce the costs associated with personnel licensing
- improve the efficiency of data collection by updating its AQD software and using technology to replace manual processes for collecting industry data (e.g. passenger numbers and hours flown)
- review the composition of the finance team with a view to shifting the balance toward permanent employees and away from the existing reliance on contractors
- review the resourcing of IT capability with a view to moving toward greater use of outsourcing and co-sourcing arrangements, and
- review the processes involved with recertification to ensure that these are tailored to take account of risk.