Richard Pearse

1877 – 1953

No wonder Gordon Ogilvie titled his book *The Riddle of Richard Pearse*. It is the definitive examination of the aviation exploits of Richard Pearse. The title is appropriate because we will never know for sure when he first flew. Research into his early flights began too late (1950s) to gather conclusive evidence that could be substantiated.

There is no doubt, though, about the remarkable achievements of this backyard inventor. Note the features on his first aircraft that are used on today’s aircraft: pneumatic tyres, steerable nose-wheel, tricycle undercarriage, ailerons, elevator, rudder, and vertical stabiliser.

The wings of the aircraft were constructed of bamboo and fabric, and they were supported on a metal tricycle undercarriage that stood about five feet above the ground. The combustion engine he developed was a double-acting, horizontally-opposed design, which developed considerable power.

Ogilvie’s book states, “From all this evidence, both documentary and circumstantial, it would appear that Tuesday 31 March 1903 is the most likely date for Richard Pearse’s historic takeoff.”

This took place where Pearse lived at Waitohi in South Canterbury. In 2003 the people of Waitohi and Timaru held a “Centenary of Flight” Air Pageant to celebrate the achievements of Pearse, with a special re-enactment at Waitohi on 31 March 2003.

Cover photo: Graham Mitchell in the replica of Pearse’s aeroplane constructed by members of the South Canterbury Aviation Heritage Centre.

Further information on Richard Pearse:

The *Riddle of Richard Pearse*, by Gordon Ogilvie

*Wings Over Waitohi*, by Geoffrey Rodliffe
Throughout the world this year aviation communities are celebrating 100 years of powered flight. Only a few years ago we were celebrating a new century and new millennium. At that time candidates were sought for mankind’s greatest achievement in the last century. One of the most legitimate contenders was flight, because of the way it has transformed the world. A colleague’s daughter has just travelled to London for her first OE and phoned mum within 24 hours to say that she arrived safely. Consider what the journey would have been like for those flying on the early flying boats with the journey taking 10 days.

This year our Profile celebrates 100 years of flight, with recognition of the pioneers, and marks the growth of the role of the aviation regulator. New Zealand’s pioneer aviator, Richard Pearse, was remarkable in his invention and foresight. The Wright Brothers studied, experimented, documented, and achieved what is now recognised as the flight that gave birth to aviation as we know it.

We report on the aviation industry’s progress toward the safety targets for 2005. There are shining examples of aviation operators doing it right. More effort than ever is going into consultation with industry, and educational assistance to reduce risk and improve safety performance.

Many thanks to Cliff Jenkins for his help in the research and production of this Profile. Thanks also to the many people who helped with photographs and illustrations: Geoffrey Rodliffe; Cindy Byron; Richard Waugh; Brian Lockstone; Evan Gardiner; Janie Geelen; Grant Pease; Geosmart (Whites Aviation collection); the Alexander Turnbull Library; the South Canterbury Aviation Heritage Centre; IPONZ; the Experimental Aircraft Association (EAA); and the National Air and Space Museum, Smithsonian Institution. Thanks to John Alexander for permission to use the drawings of the late Ron Alexander from his book High Adventure. The insightful, delightful, and in some cases cheeky quotes are all around the place in aviation literature, but these could not have been assembled without the help of Dave English’s web site www.skygod.com/quotes/.

“You haven’t seen a tree until you’ve seen its shadow from the sky.” — Amelia Earhart
From the Chair

The Civil Aviation Authority is a Crown Entity, responsible to the Minister of Transport and the Government of New Zealand, with responsibility for managing the civil aviation safety and security environment in New Zealand.

The tragic events of 12 October 2002 in Bali and the severe acute respiratory syndrome (SARS) posed new security issues and financial risks for the CAA. It was necessary to review security measures and developments already in place from the 2001 terrorist attacks. Also, the potential loss in revenue through the possible decline in passengers required the CAA to closely monitor its spending. In the event domestic passenger numbers in New Zealand actually increased, while departing international passenger numbers recovered quickly.

With the volatility in the international aviation arena, CAA management continued to maintain a firm control on discretionary expenditure while ensuring that safety was not compromised. Once more the effectiveness of this approach was apparent in the year-end result of a $1.173m surplus which was significantly better than budgeted. A major contributor to this surplus was the growth in passenger levy income.

The financial risk to the CAA arising from the dependence on third-party based levy revenue continues to be of concern. Consequently, the CAA is pressing on with a full funding review. The recommendations from the review, which will follow extensive consultation with the aviation community, will hopefully enable this risk to be largely mitigated.

There is a high expectation from the New Zealand public for safety in aviation, and this expectation is met in the airline sector, where safety standards match the best in the world. The partnership approach between the CAA and airline operators continues as a shining example to the remainder of the industry.

The safety performance of some General Aviation (GA) activities continues to be of concern. The CAA monitors safety performance of the various aviation sectors and targets measures appropriately. For the last two years safety forums have been held to ensure that the whole aviation community has input into strategies for improved safety. In 2003, resources were put into educational seminars to directly address problem areas identified at the safety forums.

A major survey of CAA client satisfaction carried out during the year showed an improvement compared with the last survey completed in 1998. It was pleasing to see the CAA is now seen to be professional, authoritative and approachable. In some areas, such as the usefulness of CAA publications, forums, workshops and seminars, a large majority of clients rated the CAA as excellent. There are still areas that could be improved, however, and these will be dealt with in the medium term.

During the year Tom Ryan and Gordon Vette retired from the Authority, and I thank them both for their significant input. Ron Tannock joined the Authority in January 2003 and Darryll Park in November 2003. Both bring significant aviation and business experience to the Authority.

New Zealand's civil aviation regulatory system is recognised as world-leading, with the CAA continuing to receive enquiries and visits from overseas regulators wanting to learn from our example and experience. The CAA must have the leadership, management skills, structure, and resources to maintain and improve on such standards.

There have been few significant staff changes in CAA management, and I am pleased that the organisation, under the leadership of John Jones, has been able to move quickly to address the complex issues that the increasingly changeable international and domestic aviation industry poses for the regulator.

Rodger Fisher
Chair

“The airplane has unveiled for us the true face of the earth.” — Antoine de Saint-Exupéry, 1939
The Authority

The CAA is governed by a five-member board, known as the ‘Authority’. Members are appointed by the Governor General on the recommendation of the Minister of Transport. They are chosen to represent the public interest in civil aviation. The same Authority governs the Aviation Security Service.

In December 2002 Tom Ryan retired from the Authority, and Ron Tannock was appointed. In October 2003 Gordon Vette retired, and Darryll Park was appointed to the Authority.

Rodger Fisher (Chair)

Rodger Fisher is the principal of Rodger Fisher and Associates, and a former managing director of Owens Group Limited.

Hazel Armstrong (Deputy Chair)

Hazel Armstrong is a Wellington barrister. She was a director of ACC from 1986 to 1991, a Wellington city councillor from 1992 to 1995, and a Government appointee to the ACC regulations review panel in 1994.

John Gabriel

John Gabriel began his career as an RNZAF pilot, and subsequently served with the National Airways Corporation, Air New Zealand and Thai Airways International. He was a flight simulator instructor with Air New Zealand until his retirement in 1999.

Ron Tannock

Ron Tannock has been involved in aviation since 1956 and has worked across the aviation spectrum. At the time of his retirement in 2000, he was General Manager Operations for Air New Zealand.

Darryll Park

Darryll Park joined Air New Zealand’s commercial graduate scheme, spending his last six years as South Island manager before leaving in 1998, ultimately to establish Christchurch and Canterbury Marketing Limited, where he was CEO. He is now Managing Director and part-owner of corporate travel provider Signature Travel, a Fellow of the NZIM, and a member of the Institute of Directors.

Retiring Authority Members

Tom Ryan

Tom Ryan is a former general manager of Macair Airlines in Queensland, Australia, and is a chartered accountant.

Gordon Vette

Gordon Vette commenced his flying career with the RNZAF and worked for a considerable time with Air New Zealand. He is well known for his work in the area of pilot training.

T M Wilkes

In 1920, Thomas Martin Wilkes was the only officer in the New Zealand Staff Corps who was qualified as a pilot. His appointment to the Air Board in 1920 followed, thus beginning a 20-year career that helped lay the foundations of both military and civil aviation in New Zealand. His responsibility for developing and regulating civil aviation was practically continuous for 20 years, apart from a two-year exchange posting with the Air Ministry in England.

Key appointments

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>September 1917</td>
<td>Seconded for duty with RFC (9 months)</td>
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<tr>
<td>July 1920</td>
<td>Secretary to Air Board</td>
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<tr>
<td>June 1923</td>
<td>Transferred to NZPAF (Director Air Services)</td>
</tr>
<tr>
<td>August 1929</td>
<td>Air Liaison Officer, Air Ministry, England (21 months)</td>
</tr>
<tr>
<td>October 1931</td>
<td>Re-appointed Director Air Services</td>
</tr>
<tr>
<td>June 1933</td>
<td>Appointed Controller Civil Aviation (in addition to Director Air Services)</td>
</tr>
<tr>
<td>April 1937</td>
<td>Appointed Controller Civil Aviation in Air Department</td>
</tr>
<tr>
<td>March 1940</td>
<td>New Zealand Air Force and Army Liaison Officer with RAAF Melbourne</td>
</tr>
</tbody>
</table>

The Minister of Defence, speaking on the death of Wilkes in 1958, said, “In the face of much scepticism and opposition, he worked tirelessly for something he earnestly believed in. The subsequent achievements of the RNZAF and the fine position we are in today with regard to civil aviation are themselves monuments to his early efforts.”

“Airplane travel is nature’s way of making you look like your passport photo.” — US Vice President, Albert Gore
Aviation in New Zealand and throughout the world is constantly changing, and the rate of change appears to be increasing. Although events that affected world and local aviation again presented major challenges to the Civil Aviation Authority in 2002 and 2003, the organisation continued to operate in a professional manner while meeting, or exceeding, its statutory and public obligations.

I’m very pleased with the way that the relationship between the aviation community and the CAA continues to strengthen, as shown by the recent stakeholder survey. We will continue to work at enhancing relationships, stressing the importance of free and open communication as a major step in reducing safety risks across all sectors of the aviation community.

New Zealand has a small but very active aviation community, with the airline sector representing 95 percent of the seat-hours flown. Safety standards in this sector are very good and getting better. It is pleasing to see the growth of a close safety partnership between the larger airline operators and the CAA, and the continuing development of a healthy safety culture in the airline sector of the industry.

The decision by Air New Zealand to re-equip its fleet with Airbus aircraft is a major change, not only for the company, but also for the regulator. The CAA has worked closely with Air New Zealand and Airbus Industrie to ensure that the regulator is fully conversant with the new technologies, and can certificate the new aircraft from an expert position. Along with the arrival of the Airbus in New Zealand, we are also seeing an increasing segmentation of the airline industry, and the return of business jets. This requires wider and technically progressive surveillance from the CAA now and into the future.

With completion on time of the Part 119/135 operator re-certification programme in February 2003, all small aeroplane and helicopter air transport and commercial operators are now fully included in the CAA audit programme. As a consequence of the certification process, we expect safety standards to improve in this commercial sector.

From the Director

Targeted initiatives in the General Aviation (GA) sector have included the running of a series of educational seminars, particularly for maintenance controllers and flight instructors, and the implementation of a partnership between the CAA, the Accident Compensation Commission, and the Aviation Industry Association to raise awareness of safety risks across all sectors of general aviation.

The CAA will continue to focus on the agricultural sector, light aircraft, and helicopter operations, since these still deliver unacceptable safety results. With the rapidly increasing numbers of microlight aircraft and adventure aviation activities, particular attention will be focused on this sector of the community.

Moving the CAA from Market Grove, Lower Hutt to 10 Hutt Road, Petone was achieved over the weekend of 6–7 September with a minimum of disruption as a result of good planning and the major effort made by all members of the staff.

The CAA was recently designated as responsible for the administration of the Health and Safety in Employment Act for civil aircraft while in operation. The management and monitoring systems to enable the CAA to meet these new responsibilities are already in place and will be developed during the year ahead.

The CAA has a central role in managing the aviation safety risk environment in New Zealand. It is a professional, well motivated, and focused organisation that clearly understands its responsibility to the public of New Zealand. However, the CAA is only one party in the aviation safety partnership, and the continual improvements in safety that the public demand can only be achieved through the CAA and all members of the aviation community working closely together to resolve aviation safety issues.

John Jones
Director of Civil Aviation

“The air up there in the clouds is very pure and fine, bracing and delicious. And why shouldn’t it be? — it is the same the angels breathe.” — Mark Twain, 1886
Director’s Awards 2003

New Zealand’s largest international airport and a rural North Island medical examiner were awarded the Director of Civil Aviation Awards for 2003. The Awards, which began in 1995, recognise the individual and the organisation that encourages others to adopt a safety culture and philosophy.

The winner of the Individual Award, Dr Dave Baldwin, is a CAA grade one medical examiner based in Bulls. Four years ago he established a service to provide pilot medicals in some of New Zealand’s more isolated areas. ‘Dr Dave’ and his Cessna 172 have become a familiar sight to the flying communities of the North Island’s East Coast, the West Coast of the South Island, Aoraki-Mt Cook, Te Anau, and South Westland areas. Dr Baldwin said the official support for the flying doctor service represented by the Award was a personal and professional milestone.

Auckland International Airport Limited (AIAL) took the Organisation Award for its runway rehabilitation project. This involved construction of a standby runway from the main taxiway over a two-year period, for use while the main runway was being upgraded. It took 23 days to replace about 16,000 square metres of concrete in the middle section of the main runway. Over the period 8,730 aircraft movements were conducted on the standby runway.

“The most pleasing aspect of this project was the way such a wide range of aviation industry stakeholders became a team and worked together,” Steve Reindler, General Manager Engineering at AIAL, said.

Two Director’s Commendations were also presented. One marked the outstanding service and leadership in aircraft engineering of Mel Payne, who retired after 45 years at Air New Zealand. The other acknowledged the outstanding efforts of a young flying instructor at the beginning of a promising career – Ardmore-based Aviation Safety Coordinator Claire Walton.

The CAA Service Charter

The Service Charter is a commitment to you by the CAA on the standards of service we aim to achieve in carrying out our functions.

The CAA Service Charter sets out:
- The general standards of service that you can expect us to provide in carrying out our functions.
- The steps you can take if you consider that these standards have not been met.
- What we will do to ‘put it right’ where both agree that these standards have not been met.
- The options for resolving the matter if we can not agree.

Our Standards of Service

We, the CAA management and staff, while carrying out our day-to-day functions, will use our best efforts to achieve the following standards of service:
- Treat everyone with courtesy and respect.
- Provide timely, accurate and useful responses to all inquiries.
- Act in a helpful, cooperative and professional manner.

In aiming to achieve these standards we, the CAA management and staff, will:
- Acknowledge all written inquiries within 10 working days.
- Provide progress reports where matters proceed over a period of time, that is, if a full response can not be completed within 10 working days.
- Identify ourselves by name when communicating by telephone.

The full Service Charter includes a complaints procedure and provision for remedies. There are also exceptions, such as when enforcement action is being taken. For a printed copy of the Service Charter, contact the CAA (details on page 26).
The CAA in 2003

**Vision:** New Zealand aviation free from safety failure.

**Mission:** To lead and foster an environment where New Zealand aviation operates safely.

The principal function of the CAA is stated as “to undertake activities which promote safety in civil aviation at a reasonable cost.”

A reasonable cost is “where the value of the cost to the nation is exceeded by the value of the resulting benefit to the nation.”

In order to carry out its principal function, the functions of the Authority also include:

- establishing safety and security standards relating to entry into the civil aviation system
- monitoring adherence to these standards
- ensuring regular reviews of the civil aviation system
- investigating and reviewing civil aviation accidents and incidents
- notifying the Transport Accident Investigation Commission of certain categories of accidents and incidents
- maintaining and preserving records and documents relating to activities within the civil aviation system
- ensuring the publication of charts and aeronautical information
- providing the Minister of Transport with information and advice
- providing safety and security information and advice, and fostering safety and security information education programmes
- establishing, maintaining, and operating a National Rescue Co-ordination Centre, and
- carrying out such other civil aviation functions and duties as the Minister of Transport may from time to time prescribe by notice in the Gazette.

The Senior Management Team

“...The most beautiful dream that has haunted the heart of man since Icarus is today reality.” — Louis Bleriot
A CAA client satisfaction survey was carried out in 2003 by Colmar Brunton. Interviews were conducted with 302 clients from the New Zealand aviation community to find out how they viewed the CAA.

In terms of overall satisfaction, 31 percent of those surveyed rated the CAA’s performance as excellent, and a further 56 percent rated the performance above average. Thirteen percent rated the performance as poor (see graph below).

The CAA Chairman, Rodger Fisher, said that the survey showed pleasing improvement compared with the last survey completed in 1998, but he acknowledged that there were some criticisms.

“In some areas, such as the usefulness of CAA publications, forums, workshops and seminars, a large majority of clients rated the CAA as excellent. We acknowledge that there are still areas that could be improved, such as turnaround time, and dealing with complaints.

“One of the most satisfying results was in the area of medical certification, where 72 percent of clients surveyed viewed the systems as satisfactory, or better, with 26 percent rating it as excellent.

**International Agreements**

**United States**

On 1 April 2003 the first Implementation Procedures (IP) were signed as part of the Bilateral Aviation Safety Agreement (BASA). The BASA is an agreement between the United States and New Zealand Governments. This IP was for Airworthiness, and recognises the airworthiness certification processes in each country as being acceptable to the other country. The next IP is likely to be for maintenance, and in 2003 the CAA began discussions with the FAA (Federal Aviation Administration) on this.

The CAA will host the 2004 Bilateral Partners meeting in Wellington. This is the annual meeting of the eight authorities in the Asia Pacific region that have bilateral safety agreements with the FAA. The theme for the meeting is “The Regulator’s Challenge – Keeping Pace with Technological and Organisational Change”.

**Canada**

A Technical Arrangement for Maintenance was made between the CAA and Transport Canada in October 2002. It is a mutual acceptance agreement that is limited initially to the Christchurch Engine Centre. This is to allow for the legislation and rule changes needed to give the Arrangement more general application. These changes are being processed now, and when completed will provide for acceptance by Transport Canada of maintenance performed on Canadian products by New Zealand Part 145 organisations, and vice versa.

**Australia**

Mutual recognition of aviation-related certification with Australia has achieved important milestones during 2003. Legislation was introduced in Australia and New Zealand in mid 2003 that will establish the unique mutual recognition regime between the two countries. Under this regime, air operators conducting domestic passenger and freight operations in each country will be able to conduct domestic operations in the other (the ‘host’ country) without the issue of an Air Operator Certificate by the host authority. It is expected that arrangements for large aircraft will be completed in 2003, or early 2004, with coverage extended in future to related activities such as training and maintenance.

**Other Countries**

The CAA has held preliminary discussions with the JAA (Joint Aviation Authority) on the prospects for a Technical Arrangement with the European authority.

Similar contact has been made with the Hong Kong Civil Aviation Authority.

The Mongolian CAA has made excellent progress with the adoption of New Zealand Civil Aviation Rules. They have now adopted 57 Parts from the New Zealand Rules system and are highly complimentary about the simplicity and clarity of our Rules.

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“When once you have tasted flight, you will forever walk the earth with your eyes turned skyward, for there you have been, and there you will always long to return.” — Leonardo da Vinci
Civil Aviation Regulation in New Zealand

The development of civil aviation regulation in New Zealand is traced by examining the legislative blue-prints, the advisory reports of foreign experts, the resulting organisations, and the appointments of persons to exercise statutory responsibility.

1918 to 1933 – Child of Defence

During World War One, the New Zealand Government stood back as private enterprise trained pilots for the allied air forces. Responding to wartime aviation developments, and to continual lobbying by men of vision, the Government passed the Aviation Act 1918, effective March 1919. Advice was sought from a British expert, Colonel Bettington. His reports focused on the size and shape of an air force, but he also recommended “Subsidising the civil flying schools at Auckland and Christchurch”, and “Experiments with an airmail service”.

Bettington’s recommendations fell on stony ground, but the Government set up an advisory committee of its own, an Air Board, established in July 1920. Government policy, issued 25 September 1920, required this Board to “act as an Advisory Body to the Government on: Matters of Defence; Commercial Undertakings; and Aviation Generally”.

Regarding “Commercial”, the Government wanted to be advised “with respect to:
- Companies or private individuals that may be subsidised for the conveyance of mails, passengers, etc, on approved routes
- Inspection of privately owned machines
- Regarding the reservation of rights of particular companies or individuals to fly for hire within prescribed areas”.

The Board comprised representatives of Defence, Post and Telegraph, Public Works, and Lands and Survey Departments. None having any knowledge of aviation, an experienced aviator, Captain T M Wilkes, was appointed Secretary to the Board. In March 1921, regulations under the 1918 Act were issued, but the Air Board ceased to function in February 1922.

The formation of the New Zealand Permanent Air Force in June 1923 was a significant step in New Zealand aviation. A position was created in Defence Department, “Staff Officer Air Services” (later “Director of Air Services”), to which T M Wilkes was appointed.

In 1928 the Government invited Air Marshal Salmond to advise on aviation. Recommendations focused on military aviation but took little effect because of the depression. Salmond recommended the establishment of 41 emergency landing grounds.

Growing awareness of aviation, however, followed events such as the importation of De Havilland Moths from 1927, and attempts to fly the Tasman in 1928. Seven aero clubs were in existence by the end of 1928, and another five the following year. The “ZK” aircraft registration scheme was started in 1929.

In 1929 Parliament passed the “Local Authorities Empowering (Aviation Encouragement) Act 1929”. It gave County Councils, Harbour Boards, etc, power to establish and maintain aerodromes.

In August 1929 Wilkes went to the United Kingdom on exchange posting, and an Englishman, Stuart Grant-Dalton filled the Director of Air Services post. Wilkes returned and resumed as Director of Air Services in October 1931. The following month, the Air Navigation Act 1931 came into force, this generating Air Navigation Regulations in June 1933.

1933 to 1947 – Teenager and Beyond

With the 1933 Regulations, the power to appoint a Controller of Civil Aviation was exercised, and on 13 June 1933 T M Wilkes was appointed (he also remained Director of Air Services).

It was a small beginning, but civil aviation regulation now had its own chief, albeit shared.

In 1934 the Transport Licensing (Commercial Aircraft Services) Act 1934 came into force, heralding the beginning of regulated airline passenger services; within a little over a year four airlines were operating scheduled services.

In 1936 the Government invited Wg Cdr Cochrane, RAF, to advise on aviation. His report in December 1936 recommended setting aviation aside from the Defence Department to form a new body, Air Department, to cover both military and civil aviation.

Cochrane recommended that “Civil air transport … continue to be encouraged with the object of enabling it to take its place in the transport system of the country, and thus provide a valuable backing to the regular [air] force. The aero-club movement shall also be supported …”

The Controller of Civil Aviation now headed the Civil Aviation Branch within the Air Department. The position was filled by Wilkes. He relinquished the post in 1940 to proceed overseas. He was succeeded by J M Buckeridge, who was appointed Acting Controller of Civil Aviation through and beyond the war years, until March 1947.
1947 to 1964 – Growing to Maturity

New Zealand was among the 52 States that had signed the Chicago Convention on 7 December 1944. With 26 more ratifications received, ICAO came into being 4 April 1947.

E A Gibson was appointed to the new post of Director of Civil Aviation on 28 March 1947.

Formal actions followed with the Civil Aviation Act 1948, which:

• Ratified New Zealand acceptance of the Convention on International Civil Aviation
• Authorised the issue of regulations
• Created the statutory position of Director of Civil Aviation.

The Government now invited a British team to review New Zealand civil aviation. Headed by Sir Frederick Tynms, it spent two months visiting the aviation industry and reported in November 1948. While some of the report was ignored, it provided Gibson with valuable guidance.

The Civil Aviation Regulations 1953 were gazetted in August 1953. Issued after consultation with interested parties in the aviation industry, they took into account many of the Tynms recommendations. Under these regulations the Director could now issue Civil Aviation Safety Orders and Civil Airworthiness Requirements.

A change of title followed the 1953 regulations. The Civil Aviation Branch became the Civil Aviation Administration, and remained in the Air Department.

In November 1956, Gibson relinquished the post of Director of Civil Aviation. He was succeeded by Sir Arthur Nevill, who remained in the position until June 1964.

1964 to 1968 – Striking Out Alone

A new Civil Aviation Act came into force in November 1964. It provided for “appointment of a Secretary for Civil Aviation as the administrative head of the Department. It also provides for the appointment of a Director of Operations and Technical Services with regulatory powers in respect of air safety.”

For the first time a Minister of Civil Aviation portfolio was created. Hitherto, ministerial authority had rested with the Minister of Defence.

L F P Taylor served as Director of Operations and Technical Services throughout the Department of Civil Aviation period.

1968 to 1987 – Family Gathering

The Ministry of Transport Act 1968 provided for the amalgamation of the Departments of Civil Aviation and Transport. Aviation regulation was now carried out by the Civil Aviation Division (CAD).

The statutory position was now styled Director of Civil Aviation Division, and it retained responsibility to the Minister of Transport rather than to the Secretary. L F P Taylor continued in the new position. Successive appointments were I F B Walters in 1972, E T Kippenberger in 1978, and S McIntyre in 1983.

In 1984 the Government replaced quantitative air service licensing with a qualitative one; safety and financial viability were now the criteria, and this led to a major expansion in the industry, the number of operators doubling in three years.

1987 Onwards – Releasing the Apron Strings

Further drivers for change emerged – Government policies of user-pays and devolution of service provision activities. Air traffic and other services were devolved from CAD on 1 April 1987 to form a new state-owned enterprise, Airways Corporation.

In 1988, the remainder of CAD were renamed Air Transport Division (ATD). The work of another group of invited experts, the Swedavia-McGregor report, was issued in 1988. It proposed a fundamental change in regulatory philosophy. It advocated the concept of organisation approval that depended on a systems approach to management, and a culture of participant responsibility.

Director McIntyre saw much of this change through before relinquishing his position in early 1990. He was succeeded in July 1990 by R V Dalziell.

A new Civil Aviation Act came into force on 1 September 1990, embodying the Swedavia-McGregor principles. The prime purpose of the regulator now was to undertake activities to promote safety in civil aviation at reasonable cost. The Director’s position was restyled Director of Civil Aviation Safety.

The 1990 Act provided for the Minister to make rules, and a programme involving a complete re-write of New Zealand’s aviation rules was embarked upon.

ATD was significantly downsized. Government funding was reduced to about 25 percent of ATD’s budget. Fees, charges and levies on industry were introduced to cover the other 75 percent.

A significant departure from the Swedavia-McGregor report was the Government’s unwillingness to form a stand-alone body. The organisation was retained within the Ministry of Transport, and the statutory powers were vested in the Secretary for Transport. Aviation industry opposition was vociferous.

In 1991, the Government decided to create a stand-alone authority. An Establishment Board was created and legislation was drafted. The Civil Aviation Amendment Act 1992 passed into law 10 August 1992, and the stand-alone CAA was in being. Three weeks later, the first of the new Directors of Civil Aviation, K W Ward, took up his duties. He was succeeded on 2 October 2001 by J G Jones.
The Aviation Industry in New Zealand

Certificated Operators

The following table shows the number of certificate holders as at 30 June 2003.

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<td>Part 92</td>
<td>Dangerous Goods Packaging Approval</td>
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<td>Part 119</td>
<td>Air Operator</td>
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<td></td>
<td>Part 108 Security Programme</td>
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<tr>
<td></td>
<td>Part 121 Large Aeroplanes</td>
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<tr>
<td></td>
<td>Part 125 Medium Aeroplanes</td>
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<td>Part 135 Helicopters and Small Aeroplanes</td>
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<td>Part 174</td>
<td>Meteorological Service Organisation</td>
<td>2</td>
</tr>
<tr>
<td>Part 175</td>
<td>Aeronautical Information Service Organisation</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: The figures for 30 June 2003 show the number of organisations holding Part 172 certificates. The figures for 30 June 2002 showed the total number of approvals held by organisations with Part 172 certificates.

Licences

The following table summarises the number of private pilot, commercial pilot, air transport pilot, air traffic controller, and aircraft maintenance engineer licence holders on the register as at 30 June 2003.

<table>
<thead>
<tr>
<th>Licence Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Pilot Licences</td>
<td>3,762</td>
</tr>
<tr>
<td>Commercial Pilot Licences</td>
<td>3,317</td>
</tr>
<tr>
<td>Airline Transport Pilot Licences</td>
<td>1,608</td>
</tr>
<tr>
<td>Air Traffic Controller Licences</td>
<td>305</td>
</tr>
<tr>
<td>Licensed Engineers</td>
<td>1,847</td>
</tr>
<tr>
<td>Total Licences</td>
<td>10,839</td>
</tr>
</tbody>
</table>

Note — The statistics above for pilot licences count only those with active class 1 or active class 2 medical certificates. This means that for CPL licences and above, the number with a class 2 medical must only be exercising PPL privileges (or not flying at all). The statistics above for Air Traffic Controller Licences count only those with an active class 3 medical certificate.

The statistics above do not show the number of licence holders as each client may hold more than one licence (e.g. PPL helicopter and PPL aeroplane held by one client counts as two licences).

Selected Historical Statistics

<table>
<thead>
<tr>
<th></th>
<th>31 May 1933</th>
<th>31 March 1947</th>
<th>31 March 1959</th>
<th>31 March 1974</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Pilot Licences</td>
<td>165</td>
<td>863</td>
<td>1,291</td>
<td>3,752</td>
</tr>
<tr>
<td>Commercial Pilot Licences*</td>
<td>33</td>
<td>200</td>
<td>657</td>
<td>1,555</td>
</tr>
<tr>
<td>Licensed Engineers</td>
<td>28</td>
<td>125</td>
<td>313</td>
<td>660</td>
</tr>
<tr>
<td>Aircraft on Register</td>
<td>65</td>
<td>154</td>
<td>647</td>
<td>1,430</td>
</tr>
</tbody>
</table>

* including ATPL, etc

“The Wright Brothers created the single greatest cultural force since the invention of writing.” — Bill Gates
Registered Aircraft

The following table summarises the number of aircraft on the register by aircraft group.

<table>
<thead>
<tr>
<th>Aircraft Group</th>
<th>30 June 99</th>
<th>30 June 00</th>
<th>30 June 01</th>
<th>30 June 02</th>
<th>30 June 03</th>
</tr>
</thead>
<tbody>
<tr>
<td>13,608 kg and above</td>
<td>73</td>
<td>75</td>
<td>77</td>
<td>77</td>
<td>83</td>
</tr>
<tr>
<td>5,670 to 13,608 kg</td>
<td>67</td>
<td>69</td>
<td>67</td>
<td>82</td>
<td>74</td>
</tr>
<tr>
<td>2,721 to 5,670 kg</td>
<td>104</td>
<td>109</td>
<td>107</td>
<td>105</td>
<td>117</td>
</tr>
<tr>
<td>Below 2,721 kg</td>
<td>1,539</td>
<td>1,522</td>
<td>1,506</td>
<td>1,492</td>
<td>1,505</td>
</tr>
<tr>
<td>Sport</td>
<td>1,124</td>
<td>1,127</td>
<td>1,129</td>
<td>1,172</td>
<td>1,245</td>
</tr>
<tr>
<td>Helicopters</td>
<td>420</td>
<td>411</td>
<td>420</td>
<td>450</td>
<td>506</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,327</strong></td>
<td><strong>3,313</strong></td>
<td><strong>3,306</strong></td>
<td><strong>3,378</strong></td>
<td><strong>3,530</strong></td>
</tr>
</tbody>
</table>

Flying Hours

The rate of change in the total number of hours flown by New Zealand registered aircraft between the year ended 31 March 1999 and the year ended 31 March 2003 is on average a 1.0% increase each year.
Accidents

Historic Fatal Accidents

The five accident milestones listed below record the low points in fatal accidents to New Zealand passenger-carrying aircraft. The crash on Mt Richmond in 1942 was significant as New Zealand’s first fatal accident involving a scheduled commercial airline service. Each of the accidents listed caused the worst number of fatalities on a scheduled airline service up to that time. There were no survivors in any of the accidents.

The steady increase in the number of fatalities essentially reflects the increasing size of passenger aircraft. In every case, however, these accidents have involved aircraft striking the ground in a location that was not accurately known to the crew. Mountains and ranges all bespeak hostile terrain, and each of these fatal accidents occurred in weather circumstances challenging for the crew. The aircraft and ground equipment for bad-weather flying, while better than primitive, was still basic, except for the DC10 equipment, which was technically sophisticated. Investigations into the DC10 accident became a watershed in drawing attention to the complex nature of aviation accidents in modern air operations.

- 7 May 42  Lockheed Electra ZK-AFE, Mt Richmond, 5 fatal.
- 23 Oct 48  Lockheed Electra ZK-AGK, Mt Ruapehu, 13 fatal.
- 18 Mar 49  Lockheed Lodestar ZK-AKX, Tararua Ranges, 15 fatal.
- 3 Jul 63  Douglas DC3 ZK-AYZ, Kaimai Ranges, 23 fatal.
- 28 Nov 79  McDonnell Douglas DC10 ZK-NZP, Mt Erebus, 257 fatal.

Aircraft Incidents

The following table summarises the number of accidents by aircraft group.

<table>
<thead>
<tr>
<th>Aircraft Group</th>
<th>1 July 98 – 30 June 99</th>
<th>1 July 99 – 30 June 00</th>
<th>1 July 00 – 30 June 01</th>
<th>1 July 01 – 30 June 02</th>
<th>1 July 02 – 30 June 03</th>
</tr>
</thead>
<tbody>
<tr>
<td>13,608 kg and above</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>5,670 to 13,608 kg</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2,721 to 5,670 kg</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Below 2,721 kg</td>
<td>43</td>
<td>49</td>
<td>45</td>
<td>47</td>
<td>23</td>
</tr>
<tr>
<td>Helicopters</td>
<td>23</td>
<td>27</td>
<td>24</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>Sport</td>
<td>34</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>Hang Gliders</td>
<td>6</td>
<td>10</td>
<td>15</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>Parachutes</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td><strong>111</strong></td>
<td><strong>119</strong></td>
<td><strong>116</strong></td>
<td><strong>117</strong></td>
<td><strong>89</strong></td>
</tr>
</tbody>
</table>

"When I took over the controls, I felt as if I were at the centre of my universe instead of orbiting someone else’s." — Barbara Cushman Rowell
Number of Fatal Accidents and Number of Fatalities

The following table summarises the number of fatal accidents and number of fatalities (shown in brackets) by aircraft group.

<table>
<thead>
<tr>
<th>Aircraft Group</th>
<th>1 July 98 – 30 June 99</th>
<th>1 July 99 – 30 June 00</th>
<th>1 July 00 – 30 June 01</th>
<th>1 July 01 – 30 June 02</th>
<th>1 July 02 – 30 June 03</th>
</tr>
</thead>
<tbody>
<tr>
<td>13,608 kg and above</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5,670 to 13,608 kg</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2,721 to 5,670 kg</td>
<td>1 (5)</td>
<td>0</td>
<td>1 (1)</td>
<td>0</td>
<td>2 (11)</td>
</tr>
<tr>
<td>Below 2,721 kg</td>
<td>7 (18)</td>
<td>4 (11)</td>
<td>2 (5)</td>
<td>5 (11)</td>
<td>3 (4)</td>
</tr>
<tr>
<td>Helicopters</td>
<td>2 (6)</td>
<td>6 (15)</td>
<td>4 (6)</td>
<td>2 (4)</td>
<td>3 (3)</td>
</tr>
<tr>
<td>Sport</td>
<td>6 (9)</td>
<td>2 (2)</td>
<td>2 (3)</td>
<td>2 (2)</td>
<td>6 (9)</td>
</tr>
<tr>
<td>Hang Gliders</td>
<td>0</td>
<td>1 (1)</td>
<td>2 (2)</td>
<td>0</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Parachutes</td>
<td>1 (1)</td>
<td>0</td>
<td>0</td>
<td>1 (1)</td>
<td>0</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>17 (39)</td>
<td>13 (29)</td>
<td>11 (17)</td>
<td>10 (18)</td>
<td>15 (28)</td>
</tr>
</tbody>
</table>

Number of Fatal Accidents

[Diagram showing the number of fatal accidents from 1994 to 2003, including a trend line.]

Fatal and Serious Injury Rate

[Diagram showing the fatal and serious injury rate per 100,000 flying hours from 1994 to 2003, including a trend line.]

“Why fly? Simple. I'm not happy unless there's some room between me and the ground.” — Richard Bach, 1974
Towards 2005 Outcomes

In September 2001 the Civil Aviation Authority held a safety forum called “Towards 2005 – The Aviation Safety Plan Forum”. Its purpose was to identify problem areas in aviation safety, in order to achieve a reduction in accident rates.

Many of the problem areas were related to ‘culture’, and the CAA began a three-year strategy aimed at producing a ‘culture shift’ in the New Zealand aviation community. The CAA identified problem solutions that were already partially in place, and started projects to identify further solutions to the problem areas.

Another Towards 2005 forum was held in 2002, sub-titled “Implementing Solutions”.

The practical implementation work continued in 2003, producing a number of outcomes from the safety forums. Two of those outcomes were Flight Instructor Seminars and Maintenance Controller Courses.

The two-day Flight Instructor Seminars were held in Whangarei, Hamilton, Palmerston North, Ashburton, and Dunedin during September and October 2003. Over 200 instructors attended the seminars from all sectors of aviation, including: aeroplanes, helicopters, gliders, hang gliders, balloons, and microlights.

Re-certification of the air transport operators under Part 119/135 required operators to nominate a Maintenance Controller. Operators are also responsible for the airworthiness of their aircraft under Rule 91.603. The problem was that most operators did not know anything about the maintenance requirements of their aircraft. There was a need to achieve a culture change from one of “that’s what I employ the engineer to do” to being able to tell the engineer what is required.

Twelve courses were originally planned from Whangarei to Gore, Greytown to Rotorua, but due to demand an extra six courses are being held – three at Ardmore, two at Timaru, and one at New Plymouth.

Safety Targets

The Safety Targets are set for a reduction in aviation accident rates over a five year period in agreement with the Minister of Transport. The current targets are set for a reduction in accident rates by 2005.

<table>
<thead>
<tr>
<th>Safety Target Category</th>
<th>Safety Outcomes better than Safety Target (below the target line)</th>
<th>Failing to meet the Safety Target (above the target line)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeroplanes 13,608 kg and above - revenue pax &amp; freight</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Aeroplanes 5,670 to 13,608 kg - revenue pax &amp; freight</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Aeroplanes and Balloons 2,721 to 5,670 kg - revenue pax &amp; freight</td>
<td></td>
<td>✗</td>
</tr>
<tr>
<td>Aeroplanes and Balloons below 2,721 kg - revenue pax &amp; freight</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Aeroplanes and Balloons below 2,721 kg - revenue (other)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Aeroplanes and Balloons below 2,721 kg - non-revenue</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Helicopters - revenue pax &amp; freight</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Helicopters - revenue (other)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Helicopters - non-revenue</td>
<td>✗</td>
<td></td>
</tr>
</tbody>
</table>

Explanation of the Safety Target graphs

- The target lines (green) begin at the accident rates that existed at the start of the 5-year target period.
- The graphs use calendar years – the first quarter is 1 January to 31 March.
- The graphs show the number of accidents as a rate per number of flying hours.
- The graphs show the number of accidents per 100,000 flying hours because the number of accidents in some groups is small. Using this measure for all the aircraft activity groups ensures consistency.
- The accident rate varies widely between each group – the “Accidents per 100,000 Flying Hours” scale is based on the accident rate for each aircraft activity group that will make the graph visible. For example, 0 to 1 for large airliners, and 0 to 100 for non-revenue helicopters.
- In order to show a 10-year moving average, the number of accidents and flying hours for the previous ten years up to, and including, the quarter shown on the graph is used, for each quarter. The next quarter will use the ten years prior to that quarter, and so on. This method is used because the number of accidents is small, and it would be impossible to see any trends from a graph of the actual figures for each quarter as there would be large variations.
- The period used for each graph’s moving average is determined by the number of accidents. For example, a 10-year moving average is used for the largest airline group, because the number of accidents is so small (less than 1 per year). A 12-month moving average is used for light aircraft because the numbers are higher, but using a 12-month moving average removes any seasonal variations.

“This is the most important aviation development since Lindbergh’s flight. In one fell swoop, we have shrunk the earth.” — Juan Trippe, founder of Pan Am on the introduction of jet aircraft
### Aeroplanes 13,608 kg and Above

This group includes international and domestic airliners, such as the Boeing 737, 747, 767, the Airbus A320, and the ATR-72.

The example from the present is the latest new type, an Air New Zealand Airbus A320. From the past, a Short Empire Flying Boat operated by Tasman Empire Airways Ltd (TEAL). First registered in 1940, its MCTOW (Maximum Certificated Take-Off Weight) was 21,772 kg.

<table>
<thead>
<tr>
<th>Year</th>
<th>Trend</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This group showed consistent improvement in safety performance until 2002. The accident rate for this group is currently at the 2005 target of 0.4 accidents per 100,000 flying hours.

“I feel about airplanes the way I feel about diets. It seems they are wonderful things for other people to go on.” — Jean Kerr, 1958
Aeroplanes 5,670 kg to 13,608 kg

Aircraft used on regional routes, such as the Saab SF340A, Beech 1900, and BA Jetstream 4100.

The example from the present is a Saab SF340A. From the past comes the Lockheed 18 Lodestar, MCTOW 7,938 kg. Numerous examples served Union Airways (later NAC) from late 1943.

This group has shown substantial improvement in safety performance since 1997, but over the last three years this has levelled out. The accident rate is below the 2005 target of 0.5 accidents per 100,000 flying hours.

“There is an art... to flying. The knack lies in learning how to throw yourself at the ground and miss.” — Douglas Adams
Aeroplanes and Balloons 2,721 kg to 5,670 kg

Light twin and heavy single-engine aircraft, used to transport passengers and freight, such as the Cessna Caravan, Nomad, and Piper Chieftain.

The example from the present is a Pilatus Porter. From the past we picture a Lockheed 10 Electra, MCTOW 4,672 kg. The first examples for Union Airways were introduced in mid 1937, being New Zealand’s first all-metal airliner.

This group showed some improvement in safety performance until 2001, but is above the 2005 target of 5 accidents per 100,000 flying hours.

—I have known today a magnificent intoxication. I have learnt how it feels to be a bird. I have flown. Yes I have flown. I am still astonished at it, still deeply moved.” — Le Figaro, 1908
Aeroplanes and Balloons Below 2,721 kg

Single-engine and some twin-engine aircraft used to carry passengers and freight, carry out agricultural work, and used by flying schools and private owners. This group includes aircraft such as the Cessna 150, 152, 172, Agwagon, and Piper Tomahawk, Cherokee, Warrior, and Pawnee.

The example from the present is a Pacific Aerospace Cresco, pictured giving a top-dressing demonstration in 2003. Among the earliest airliners were the DH89 Dragon Rapides of Cook Strait Airways, introduced in December 1935, and weighing in with a MCTOW of 2,495 kg.

This group covers single-engine and some twin-engine aircraft used to carry up to seven passengers on scheduled and scenic flights. The group shows an overall trend of improving safety performance and is currently below the 2005 target of 7 accidents per 100,000 flying hours.

Below 2,721 kg – Revenue, Passengers and Freight

Note: Accident Rate is 12-month moving average and scale is from 0 to 30

This group includes agricultural and training aircraft. The group is below the target line but has an upward trend and is above the 2005 target of 7 accidents per 100,000 flying hours.

Below 2,721 kg – Non-Revenue

Note: Accident Rate is 12-month moving average and scale is from 0 to 60

This group consists of light aircraft operated privately, including those used by flying schools and aero clubs when hired for private use. The group has shown improvement over the last three years and has a downward trend, and it is currently below the 2005 target of 21 accidents per 100,000 flying hours.

“Flying was a very tangible freedom. In those days, it was beauty, adventure, discovery – the epitome of breaking into new worlds.” – Anne Morrow Lindbergh
Helicopters

Helicopters carry out a wide variety of work, such as transport of passengers and freight, scenic flights, rescue operations and agricultural work.

The example from the present is an AS350 Squirrel. From the past, the first helicopter registered in New Zealand – a Hiller UH-12B – ZK-HAB, registered in 1954.

“Pilots track their lives by the number of hours in the air, as if any other kind of time isn’t worth noting.” — Michael Parfit, 2000

Helicopters that used primarily for agricultural spraying, rescue flights, log hauling, and training. This group showed a downward trend from 1998 to 2000, but is currently above the 2005 target of 11 accidents per 100,000 flying hours.

Helicopters used for scheduled and scenic operations. This group is below the target line, but above the 2005 target of 4 accidents per 100,000 flying hours, and the trend is not improving.

This group consists of helicopters flown privately. This group is above the 2005 target of 25 accidents per 100,000 flying hours, and the trend is not improving.
Sport and Recreation

Sport and recreation includes a wide variety of flying activities and aircraft, such as: paragliders, hang gliders, microlights, autogyros, gliders, amateur built aircraft, and parachutes. This group represents a large part of the aviation scene in New Zealand in terms of the number of aircraft and pilots. Just over one third of registered aircraft are in this group. Sport and recreation is represented in some of the accident analysis tables (pages 12 to 15), but they are not one of the Safety Target groups agreed with the Minister of Transport. The Safety Targets are based mainly on aviation sectors that carry fare-paying passengers.

Most sport and recreation flying activity is carried out through national organisations, incorporated societies or companies, that have become certificated under Part 149 Aviation Recreation Organisations – Certification. They hold delegations from the Director of Civil Aviation to issue and renew Pilot Certificates for their particular activity. Their Operations Manuals detail the standards for their activity, and they are audited by the CAA to ensure compliance. There are links to most of these organisation’s web sites on the CAA web site, www.caa.govt.nz. Several of these organisations also have Memorandums of Understanding (MOU) with the CAA which ensures regular dialogue.

Search and Rescue

The Civil Aviation Act 1990 requires the Authority to provide a National Rescue Coordination Centre (NRCC) for such aviation search and rescue (SAR) operations and other SAR operations that the Minister requires. The Minister has specified that those search and rescue operations conducted by the NRCC shall be Class III.

Class I search and rescue operations are carried out by the Police alone. Class II are those carried out by the Police but with assistance from other organisations.

Class III search and rescue operations are those other than Class I or Class II, but specifically all those associated with an activated distress beacon, any incident that involves a missing or distressed aircraft, or any SAR operation requiring coordination with the military or with other neighbouring countries within the region.

The NRCC provides SAR services whenever and wherever they are required within the New Zealand Search and Rescue Region (SRR) as part of New Zealand’s compliance with international SAR and other conventions. The SRR covers a large portion of the South West Pacific Ocean extending from Antarctica to just south of the Equator. This predominantly maritime environment includes the States and Territories of Niue, Tonga, Samoa, American Samoa, Tokelau, and the Cook Islands.

During the financial year 1 July 2002 to 30 June 2003 the Rescue Coordination Centre managed 872 Class III SAR incidents. These SAR events resulted in assistance being provided to 135 persons, but the incidents also resulted in 34 people losing their lives.

During the last three years there have been a number of reviews relevant to Class III SAR in New Zealand. The implementation of many of the recommendations of these reviews is currently under way and will affect the organisation of the NRCC and the management of Class III SAR operations during the next 12 months.

"The exhilaration of flying is too keen, the pleasure too great, for it to be neglected as a sport.” — Orville Wright
Enforcement

The CAA expects all aviation participants to comply with the Civil Aviation Rules as a means of ensuring a minimum standard of safety. The aim is to prevent an offence occurring, and enhance safety, through education and by voluntary compliance rather than prosecution.

Non-compliance must be taken seriously, however, and enforcement action is taken when necessary. Complaints of alleged or suspected breaches of the Civil Aviation Act 1990, and of Rules made under the Act, are investigated in full and then a determination is made as to the most appropriate action. Most investigations where an offence is disclosed result in the issue of warning letters.

In the financial year 1 July 2002 to 30 June 2003 there were 173 alleged offences reported, and 102 detailed investigations were undertaken. These resulted in 50 enforcement actions being taken, and 46 were successful (“enforcement actions” includes prosecutions and formal warnings).

The medical certification provisions of Part 2A, Civil Aviation Act 1990, which came into force on 1 April 2002, created new offences. These include that of failing to advise the Director of changes in the medical condition of a licence holder and making fraudulent, misleading, or false statements to obtain a medical certificate. During the year seven offences allegedly committed against these new provisions were under investigation. A decision to commence prosecution proceedings was taken in four cases (proceeding).

Security in Aviation

The threat of terrorist action against civil aviation is significant, and this level of threat will remain for the foreseeable future. The example of terrorists attempting to destroy a civil aircraft in flight, by firing a shoulder launched ground-to-air missile, is a clear signal that aviation remains a target. While threats like this may seem remote in New Zealand we cannot treat aviation security with complacency.

Security in aviation is concerned with ensuring the safety of passengers, crew, ground personnel, and the general public from unlawful interference with aircraft. Protection of airports and air navigation facilities is equally important.

The threat of terrorist action against civil aviation is significant, and this level of threat will remain for the foreseeable future. The example of terrorists attempting to destroy a civil aircraft in flight, by firing a shoulder launched ground-to-air missile, is a clear signal that aviation remains a target. While threats like this may seem remote in New Zealand we cannot treat aviation security with complacency.

Security in aviation is concerned with ensuring the safety of passengers, crew, ground personnel, and the general public from unlawful interference with aircraft. Protection of airports and air navigation facilities is equally important.

ICAO Annex 17 sets the standards for aviation security on an international basis, and New Zealand complies with these standards. The CAA maintains close links with neighbouring nations to ensure regional consistency in the application of aviation security measures, including involvement in the APEC Aviation Security Experts Group.

At security-designated airports (mostly the international airports), the Aviation Security Service (known as AvSec) carries out the basic security requirements. This is a separate organisation from the CAA, but is established by the same Act, and shares the same board of governors (the Authority), which reports to the Minister of Transport. AvSec is a Part 140 certificated provider of security services. Contact information for AvSec is on page 26.

Security measures now include the screening of domestic passengers for aircraft with more than 90 passenger seats, restrictions on the carriage of items that could become weapons, and aircraft operators being required to control access to aircraft flight decks. The screening of hold-stowed baggage will become mandatory on 1 January 2006, and planning is at an advanced stage to enable compliance before this date.

The CAA has given briefings to the General Aviation (GA) community to increase awareness of aviation security, and the role GA operators can play in maintaining standards. In conjunction with the major airlines, the CAA has produced a video to raise awareness about aviation security throughout the industry.

A working group with representatives from the CAA, AvSec, and the MOT has been in place since 11 September 2001 to review all aspects of our national aviation security system. This is to ensure that we are applying best aviation security practices and to identify and correct any deficiencies. The objective of the group is to provide the Minister of Transport with confidence in our aviation security systems, and to ensure that the interests of the travelling public are foremost.
**Income and Expenditure**

The CAA is funded from a number of sources:

- A levy based on the number of domestic passengers per sector
- An international departing passenger levy
- A participation levy based on aircraft weights
- An Aeronautical Information Services levy
- Fees for services, such as certification, licensing, and Rules development
- Policy advice to the Government.

Levies totalled over 74 percent of income for the CAA in the financial year 1 July 2002 to 30 June 2003.

From these sources of income, the CAA carries out its various safety functions. It assesses organisations for certification and individuals for licensing, audits organisations, investigates accidents and incidents, carries out safety education through publications and seminars, and provides advice to the Government.

In the financial year 1 July 2002 to 30 June 2003, the CAA received $22.902 million in income, and spent $21.729 million, resulting in a surplus of $1.173 million for the period.

**Levies**

The domestic passenger levy is $1.77 + GST per passenger, per sector.

The international departing passenger levy is $0.89 + GST per passenger.

Aircraft operators who do not pay a passenger levy pay an annual participation levy, which varies according to aircraft weight from $60 to $10,000 + GST.

A levy is charged to the organisations that generate aeronautical information, eg airport operators, and this is used to fund and maintain the Aeronautical Information Publication (AIP).

**Rules Development**

The CAA develops the Civil Aviation Rules for the Minister of Transport. This work is carried out through a contract with the Ministry of Transport.

**Fees and Charges**

The hourly rate charged for audits, certificates, and approvals is $118.22 + GST.

**Further Information**

For further information on CAA levies and charges, consult the following legislation:

- Civil Aviation Act 1990
- Civil Aviation Charges Regulations (No 2) 1991
- Civil Aviation (Safety) Levies Order 2002

**Statement of Financial Performance**

<table>
<thead>
<tr>
<th></th>
<th>30 Jun 02 Actual $000</th>
<th>30 Jun 03 Budget $000</th>
<th>30 Jun 03 Actual $000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Levies</td>
<td>14,391</td>
<td>16,169</td>
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<tr>
<td>Crown (policy advice)</td>
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<tr>
<td>Fees and Charges:</td>
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<td></td>
</tr>
<tr>
<td>- Rules Development</td>
<td>1,418</td>
<td>1,418</td>
<td>1,418</td>
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<tr>
<td>- Other</td>
<td>2,836</td>
<td>2,388</td>
<td>2,985</td>
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<tr>
<td>Interest</td>
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<td>Total Income</td>
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<td>21,397</td>
<td>22,902</td>
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<tr>
<td><strong>Expenditure</strong></td>
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<tr>
<td>Personnel</td>
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<td>Other Operating</td>
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<td>Capital Charge</td>
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<tr>
<td>Depreciation</td>
<td>737</td>
<td>750</td>
<td>754</td>
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<td>Total Expenditure</td>
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<td>21,342</td>
<td>21,729</td>
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<tr>
<td><strong>Surplus/(Deficit)</strong></td>
<td>49</td>
<td>55</td>
<td>1,173</td>
</tr>
</tbody>
</table>
### Statement of Financial Position

<table>
<thead>
<tr>
<th>30 Jun 02 Actual $000</th>
<th>30 Jun 03 Budget $000</th>
<th>30 Jun 03 Actual $000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,591 Public Equity</td>
<td>2,062</td>
<td>3,764</td>
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<tr>
<td>2,347 Cash</td>
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<td>3,678</td>
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<td>2,206 Receivables</td>
<td>1,638</td>
<td>1,876</td>
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<td>200 Work in Progress</td>
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<tr>
<td>2 Prepayments</td>
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<td>4,755 Total Current Assets</td>
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<td>1,275 Fixed Assets</td>
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<td>6,030 Total Assets</td>
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<td>1,262 Payables</td>
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<td>2,177 Employee Entitlements</td>
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<td>3,439 Total Liabilities</td>
<td>3,138</td>
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<tr>
<td>2,591 Net Assets</td>
<td>2,062</td>
<td>3,764</td>
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</tbody>
</table>

The cost of running the National Rescue Coordination Centre is excluded from the information above, because it is funded separately from the CAA by the Government.

For more financial information see the Annual Report of the Civil Aviation Authority of New Zealand (including the Aviation Security Service) for the year ended 30 June 2003, which was presented to Parliament in November 2003.

### Statement of Movement in Public Equity

<table>
<thead>
<tr>
<th>30 Jun 02 Actual $000</th>
<th>30 Jun 03 Budget $000</th>
<th>30 Jun 03 Actual $000</th>
</tr>
</thead>
<tbody>
<tr>
<td>49 Net Operating Surplus/(Deficit)</td>
<td>55</td>
<td>1,173</td>
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<tr>
<td>49 Total recognised revenues and expenses for the year</td>
<td>55</td>
<td>1,173</td>
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<tr>
<td>2,542 Equity at beginning</td>
<td>2,007</td>
<td>2,591</td>
</tr>
<tr>
<td>2,591 Equity at closing</td>
<td>2,062</td>
<td>3,764</td>
</tr>
</tbody>
</table>

### Income by Source

- **Levies**: 74%
- **Fees and Charges – Rules Development**: 12%
- **Crown (Policy Advice)**: 6%
- **Fees and Charges – Other**: 13%
- **Interest**: 1%

### Expenditure by Output

- **Safety Assessment and Certification**: 66%
- **Safety Analysis and Information**: 18%
- **Policy Advice and Rules Development**: 12%
- **Enforcement**: 4%
“I have often said that the lure of flying is the lure of beauty. That the reasons flyers fly, whether they know it or not, is the aesthetic appeal of flying.” — Amelia Earhart
The Wright Brothers

Wilbur Wright 1867 – 1912  •  Orville Wright 1871 – 1948

The Wright Brothers studied the work of Lilienthal, and conducted their own experiments with gliders in a very methodical manner, before developing a powered aircraft. From tethered gliders to their first glider capable of carrying a person they learnt through experimentation, including using their own homemade wind tunnel to test the lift of different wing designs. A recurring pattern evolved. Test in the fall, then return to Dayton to study data and make modifications, then return to Kitty Hawk with a new, improved machine the following year.

In October 1902, the Wrights took to the air in a large glider that had a moveable, rather than fixed rudder. Their gains were immense. In one two-day period, they made a remarkable 250 glides, the longest being Wilbur’s 622.5 feet flight of 21 seconds. By February 1903, the brothers had created an engine that was under the required 200-pound limit, but which generated 12 horsepower – far more than they felt they needed.

On 14 December, Wilbur (who won the coin toss with his brother), made their first attempt, but crashed. By the morning of the 17th, repairs were complete and it was Orville’s turn. At 10:35 am, he began to slide along the ramp into the teeth of gusting, 27 mph winds. After 40 feet, the plane suddenly rose and flew on, Wilbur running at its side. For 12 incredible seconds it flew, finally falling to the sand again some 120 feet away. The Wrights flew four times that day, with Wilbur recording the longest with his final flight of 852 feet.

“Success four flights Thursday morning all against twenty one mile wind started from level with engine power alone average speed through air thirty one miles longest 57 seconds.” — Orville Wright
Celebrating 100 Years of Flight