

The General Aviation Industry Action Agenda



Chairman's Foreword



When I was first approached by the then Deputy Prime Minister, the Hon Mark Vaile MP, to chair the General Aviation Industry Action Agenda Strategic Industry Leaders Group, my experience with the industry was limited to that of an appreciative passenger over many years of travel in remote and isolated parts of both Australia and overseas during my time with the petroleum industry. Through the work of the Leaders Group I discovered a fascinating and diverse industry; indeed an old industry by Australian standards facing a range of business challenges in an environment that has changed fundamentally over the last twenty years.

The skills built up through the post-war years facilitated the maturing of an invaluable Australian industry; an industry responsible for providing medical evacuations for the sick and injured Australians in remote areas, for fighting summer bushfires, for agricultural spraying, surveying and mustering, for transport over the long distances of the Australian outback and for training the pilots that go on to careers in commercial air transport. But the technical skills that have built this capacity have not embraced what the industry needs to manage change. The environment for aviation operators in Australia has changed significantly since the 1980s. While this has created on the one hand numbers of growing airports and - for many- cheaper flights, the predominantly commercial forces driving this evolution have proved problematic, especially for the small businesses in the sector.

Having identified the main challenges facing the industry, the Strategic Industry Leaders Group has sought to establish a track through them without undermining the commercial environment that has been so important to the provision of growth opportunities. In doing so, we consulted widely and aimed to ensure that no single view emanating from the industry was excluded from our analysis.

Our consultations identified four major themes as recurring issues in the General Aviation industry. The first of these was the challenge posed by secondary airport privatisation in the early 1990s. This situation remains uncomfortably new for many operators and relationships between tenants and airport operators are at times neither constructive nor conducive to their mutual interests.

The second was skills. Australians justly command high regard in the aviation world but the boom in commercial airline activity over the past few years has created shortages of pilots and aircraft engineers. In Australia, small businesses in particular are struggling to recruit and retain skilled personnel.

The third was regulation. Aviation is, by its nature and consistent with community expectations, highly regulated. Safety is not negotiable. Achieving the high levels of safety rightly expected of the industry while not imposing unnecessary costs is an ongoing challenge.

And finally, the General Aviation aircraft fleet is ageing. On average, small piston-engine aircraft in the Australian fleet are around thirty years old. Wholesale modernisation of the fleet over the next ten years is a compelling need to break an ageing continuum. Many businesses see the cost of this as prohibitive.

This report identifies the factors that both drive and test the Australian General Aviation industry and the opportunities open to improve its performance. It is impossible to exaggerate the importance of General Aviation to Australia. It is in our national interest that this industry, together with government, plans and builds for the future.

Dr J Roland Williams, CBE, Chair, Strategic Industry Leaders Group

A handwritten signature in black ink, appearing to read 'Roland Williams', is written over a horizontal line.

The Strategic Industry Leaders Group

Strategic Industry Leaders Group Chair

Dr J Roland Williams CBE was appointed by the then Deputy Prime Minister and Minister for Transport and Regional Services, the Hon Mark Vaile MP to lead the General Aviation Industry Action Agenda Strategic Industry Leaders Group.

He is currently a non-executive Director of Origin Energy Limited and of Boral Limited. He was previously Chairman and Chief Executive of Shell Australia Limited, Managing Director of Shell International Gas, President of Shell Coal International, Director of Woodside Petroleum Limited, Chairman of Australian Magnesium Corporation Limited, President of the Institution of Chemical Engineers in Australia, Chairman of the Advisory Council to the Centre for Energy and Resources Law of the University of Melbourne, President of the Business/Higher Education round table of Australia and a member of the Council of the Australian Strategic Policy Institute.

Dr Williams also holds a Chemical Engineering degree and a Doctorate of Philosophy. He was made a Commander in the Order of the British Empire in 2000 for services to British-Australian relations.

Strategic Industry Leaders Group Members



Mr Tony Brand is the Chief Engineer and a Director of Horsham Aviation Services. Mr Brand has over 25 years' experience in maintaining General Aviation aircraft. Horsham Aviation Services is presently responsible for the maintenance of more than 130 aircraft.

Mr Brand represents General Aviation on the board of the Aviation Maintenance Repair Overhaul Business Association. He has over 30 years' flying experience, holds a Commercial Pilot's Licence and has an instructor rating through Recreational Aviation Australia.

Mr Gerard Campbell is the Chief Executive Officer of Archerfield Airport Corporation, a position he has held since June 2006. Mr Campbell was formerly the Manager of the Royal Queensland Aero Club and, under his direction, the Club became the first major pilot training organisation in Queensland to secure a contract to train pilots for a major overseas airline.



Mr Campbell has a wealth of experience in the aviation industry, including stints with the Airline Academy of Australia and Aviation Training for Engineers.



Ms Marj Davis OAM is President of the Royal Federation of Aero Clubs of Australia and is active in the General Aviation industry, particularly the flight training sector. Ms Davis currently holds representative positions on the Australian Aviation Council, Australian General Aviation Administration (formerly Leisure Flight Australia) and various Government aviation bodies.

Ms Davis is President of the Old Bar Heritage Airstrip Committee and has been President of the Manning River Aero Club in Taree for 20 years. Ms Davis was awarded the Medal of the Order of Australia in 2007 service to the development of the aviation industry through a range of executive and administrative roles, particularly with aero clubs.

Mr John Gardon is the President of Recreational Aviation Australia. Mr Gardon served the Royal Australian Air Force, for 30 years, where he had both operational and policy experience. He is a current Commercial pilot and owns both a GA and a Recreational aircraft. He currently holds a Chief Flying Instructor and Pilot Examiner ratings. He also has a Master Degree in Strategic Studies.



Mr Col Rodgers is the President of the Aircraft Owners and Pilots Association of Australia (AOPA), and has had extensive experience in the General Aviation industry. AOPA has been the voice of recreational flying and General Aviation for over 50 years.

Mr Rodgers also holds a multi-engine command instrument rating with turbo-jet endorsement.

Mr Dennis Wisbey is the Managing Director of Aero Service Pty Ltd, a maintenance organisation located at Parafield Airport, Adelaide.

Over the last 40 years Mr Wisbey has been involved with the maintenance, coordination & management of aircraft repairs, servicing, modification, upgrades and inspection of ageing aircraft. Mr Wisbey has also been widely involved in General Aviation industry organisations and training establishments.



Australia has long been a leader in world aviation and the General Aviation industry is an industry of great importance to the nation. Our geography demands that this remains so. It is however an old industry in Australian terms and parts of it are struggling to cope with the pace and scale of change in a modern global commercial environment.

Identification of where change is needed to allow the industry to deal with current issues and prepare for the future is the basis of this report. To this end, the report contains recommendations for governments at all levels and for the industry itself and associated entities.

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Executive Summary

1 What is General Aviation?

The term *General Aviation*, or GA, refers to a range of aviation-related activities, individuals and businesses, primarily occurring in smaller aircraft and at secondary airports.

These activities include:

- Charter and low-capacity passenger-carrying operations
- Business flights
- Aerial agriculture
- Commercial pilot training
- Aeromedical, search and rescue, aerial fire fighting and coast watch
- Other aerial work such as surveying and photography
- Aircraft maintenance and repair work
- Private pilot training;
- Sports aviation
- Recreational flying

Added to these, there is the operation of the airports themselves and the regulatory environment in which they operate.

Chapter 2 goes into more detail about how GA may be defined. While other studies and jurisdictions have attempted to more accurately define GA, a practical approach is to assume GA commonly refers to civil aviation activities other than scheduled airline activity. However, the Action Agenda Strategic Industry Leaders Group (SILG) detected some limitations in using this definition too narrowly. Firstly, this simple definition would embrace activity in very large jet aircraft such as major mining charters and air freighters that share little with the majority of the GA industry. Secondly, a number of small businesses operating scheduled or pseudo-scheduled airline services in regional Australia share more of a commonality of interest with GA operators than they do with the major airlines.

Essentially, the issues featuring in this report affect all small aircraft operators and the businesses that support them. The report relates to the wider Australian aviation industry with the exception of major domestic airlines such as Qantas, Jetstar, Virgin Blue and Tiger Airways and the major capital city international airports.

The compelling issues confronting the industry fall into one of five categories:

- The competitive position of the industry and the overall viability of GA businesses;
- Access to secondary capital city and regional airports where GA businesses have traditionally been based;
- Skills, particularly availability of pilots, instructors and engineers;
- The regulatory environment; and
- The ageing aircraft fleet.

2 The State of General Aviation

The Australian GA industry is in a state of transition. Some sectors are growing strongly while others are in decline with some individual businesses struggling to remain viable.

In particular the less regulated, recreational part of the industry is growing strongly, a positive development in its own right but also presenting effective competition for private flying which finds itself in a more traditional regulated environment. The rapid growth of commercial airline activity worldwide has also created export opportunities for professional flight training and it is important that the industry participates to the full in meeting this growth potential.

Aviation is a comparatively old business by Australian standards, dating back to the first two decades of the twentieth century and sharing common elements in its development with military flying. These factors have helped to create a conservative industry that, while well-suited to operating in a highly regulated environment, has not necessarily developed the skills to successfully manage change.

Changes surrounding the GA industry over the past twenty years have been profound. Privatisation of airports, increases in the cost of aircraft and fuel and changes in the safety and security regulatory environment have all played important parts.

To assist both in building the skills required and in identifying strategies to help the industry prosper and grow into the future, this report puts forward eighteen specific recommendations which together convey the need for:

- Industry involvement in implementing the recommendations of this report;
- Improved marketing of professional aviation careers;

- Improved awareness in the GA industry of already existing state and Commonwealth government business assistance programmes;
- Establishment of targets for growth in the exciting scope for exporting aviation services; and
- Effective communication between State and Commonwealth governments on issues relevant to the industry.

3 Airports

It is stating the obvious that aviation needs airports but the parameters of access have changed significantly over the past decade and left many long-term tenants unable to cope with the pace of change.

Twenty-two federally owned airports have been leased to private operators since the late 1990s and are now run as fully commercial organisations. Many tenants had come to view previous long-term lease arrangements as a reliable indicator of future costs but have found that many previous access arrangements were priced below market value and the adjustment has been significant. This has also occurred at some regional airports under local government control. These issues are covered in detail in Chapter 5.

The commercial tension that has resulted from these changes has created difficulties for both tenants and airport operators. While not a universal view, there is widespread acceptance that airports should continue to operate as efficient commercial operations. This report puts forward several recommendations aimed at improving communication and planning at airports; which is in some cases deemed no less than imperative:

- That tenants engage more actively in the master planning process at airports;
- That a formal mediation process be established for use when best endeavours commercial negotiations at GA airports fail to improve communication and wider relationships between airport operators and tenants;
- That local governments work with industry to improve development and planning procedures for existing airports in their jurisdiction; and
- That the Australian Government confirms the requirement that leased Commonwealth airports must remain in effective use as airports and not be totally converted to other purposes.

4 People

Like all businesses, GA operations require competent and professional owners and managers. They also require people with a range of sophisticated technical skills covering pilots, instructors and maintenance engineers.

The profession of an airline pilot is one that has traditionally been highly respected and sought after. However, the career pathway towards that goal has also been difficult and has often involved significant individual investment and sacrifice. Instructor positions, charter flying and other aerial work activities which build flying hours experience have traditionally been poorly paid and do not offer the same status or rewards as major airline employment.

The traditional employment path for pilots has accelerated over the last several years. Worldwide airline growth has drawn relatively inexperienced pilots who traditionally filled positions in flight schools, charter services, regional airlines and emergency services into larger airline jobs more quickly than the industry has been able to cope with.

The industry needs to adapt quickly as the shortage of instructors in particular may have a longer term impact on the ability of the industry to ensure its future supply of pilots.

Safe and reliable aviation also relies on properly trained aviation maintenance engineers. The industry also faces challenges in attracting young people into aviation maintenance careers. Initiatives in Queensland to address the question of training engineers in that state are noted and might serve as a model for other jurisdictions.

Participants in the GA industry carry a great deal of responsibility for the safety of others. It is important that the industry operates with the professionalism commensurate with these responsibilities and continues to build its capability in that regard. This report puts forward several recommendations for:

- Industry to improve its workforce planning;
- Industry and Government to work together to ensure that the aviation industry's needs are recognised as part of the Government's wider consideration of skills training;
- University level aviation courses to be established and/or expanded in all Australian states and territories including training in management as well as technical skills;
- Support of aviation maintenance training in the technical education sector; and
- The Civil Aviation Safety Authority (CASA) continue to work with industry to ensure safety outcomes are maintained without impacting unnecessarily on training effectiveness or efficiency.

5 Regulation

The Australian public has very high expectations of a safe aviation environment. This is particularly true when that situation impacts on fare paying passengers who have relatively little control over their own safety.

Aviation safety regulation is the responsibility of the Civil Aviation Safety Authority (CASA). Many submissions to the Strategic Industry Leaders Group highlighted the need for CASA to be an effective, efficient and responsive regulator. Of late, CASA has been undergoing a series of reforms targeting improvement in its performance. The industry is broadly supportive of these efforts while also placing high priority on completion of CASA's regulatory reform programme in the near future.

The Leaders Group also investigated industry support for self-regulation or self-administration of existing regulations.

It found little support for self-regulation. As well as the risks to the public, there was recognition that low levels of safety compliance could result in unhealthy, unsustainable competition between operators. There was qualified support for self-administration under the oversight of CASA but generally only for private, non-commercial operations.

There have also been significant changes since 2001 to the regulatory regime governing security requirements. While the industry accepts these changes, there is a common view that security requirements can be disproportionate to the risks involved and need periodic review.

Chapter 7 details issues around GA regulation. In conclusion the Leaders Group has recommended that:

- Government ensure CASA's funding and structure is appropriate to allow CASA to complete its regulatory reform programme while also continuing industry oversight;
- Current processes to achieve self-administration continue but proceed with caution; and
- Security regulation be periodically reviewed across the various categories of airport to determine that regulatory measures are compatible with current risks and threats.

6 Aeroplanes

The majority of Australians' experience of flying is in modern jet aircraft with the associated comfort and levels of safety offered by contemporary aircraft design. It may surprise many people to know that the average age of aircraft in the GA fleet is over 30 years old and rising.

The issue of ageing aircraft in Australia is a complex, multi-faceted problem. A range of economic factors come into consideration when operators decide either to replace aircraft or to extend the life of existing units. These logically include purchase price of new aircraft, exchange rates, aircraft production rates and operational profitability.

The marginal nature of many small GA businesses and the intensely competitive make-up of the industry have meant that many operators have failed to plan and invest for the longer term and now face an unmanageable short-term dilemma in upgrading their aircraft fleets.

To assist with this, the Strategic Industry Leaders Group recommends:

- That the Government consider the establishment of a case-by-case facility to assist suitable operators to buy new aircraft, subject to a minimum 50 per cent contribution from the operator and the establishment of a proven commercial business case.

Summary of Recommendations

The Strategic Industry Leaders Group has developed the following recommendation to assist the General Aviation Industry in identifying and exploiting opportunities for growth and to assist the industry in managing change and future challenge.

General Industry

Recommendation 1: Without industry commitment and resources the recommendations of this report are unlikely to be successfully implemented. Industry should decide the best way to take forward the recommendations of the report. This may be coordinated by an existing industry organisation but should include representatives from major airlines.

Recommendation 2: The Royal Federation of Aero Clubs of Australia, in association with Recreational Aviation Australia, oversee a targeted marketing campaign to alert recreational aviators to the possibilities of aviation careers through further pilot and instructor training.

Recommendation 3: Industry to work with relevant State, Territory and Commonwealth industry departments under existing business assistance frameworks to identify characteristics of healthy businesses and improve planning and decision making for small enterprises.

Recommendation 4: Industry needs to expand and improve its marketing activities to attract new participants into the industry, highlighting the edification and opportunity that learning to fly can provide.

Recommendation 5: It is important to continue to improve communication between governments to take account of issues relevant to the General Aviation industry. These communications can be focussed in the Australian Transport Council Aviation Working Group comprising Commonwealth and State transport officials and the Australian Local Government Association.

Airports

Recommendation 6: A formal mediation process to be established with the following characteristics:

1. To apply at secondary capital city airports;
2. Should follow initial best endeavours commercial negotiations between operators and tenants;
3. Funded by users;
4. Not replacing existing regulatory protection.

Recommendation 7: Tenants are apparently not always adequately engaged in the master planning process at airports. There is a need for relevant industry associations and airport operators to raise awareness of airport master planning processes, particularly when airport master plans or development proposals are issued.

Recommendation 8: Local and state governments to work with industry to improve existing airport development procedures. This should enable the process to be transparent and ultimately encourage investment in new or existing airports, acknowledging the need for appropriate community consultation and, where appropriate, obligations under ALOP Deeds of Transfer.

Recommendation 9: The Australian Government to confirm the requirement that leased Commonwealth airports must remain in use as effective airports and not be totally converted for other purposes.

People

Recommendation 10: General Aviation businesses to develop strategies to attract and retain skilled employees. Examples might include:

- Contributing to the cost of training through measures such as cadetships, scholarships and loan schemes;
- Developing more creative retention strategies. This will inevitably require partnerships with airlines;
- Taking measures to respond to a tight labour market such as increasing advertising and offering more attractive salary/working arrangements;
- Industry bodies to better market aviation careers at schools and to organisations specialising in retraining mature aged workers.

Recommendation 11: The Department of Infrastructure, Transport, Regional Development and Local Government and the General Aviation industry to liaise with the Department of Education, Employment and Workplace Relations and the Transport and Logistics Industry Skills Council to ensure that industry needs are recognised as part of the Government's wider consideration of skills training.

Recommendation 12: Careers in aviation are thoroughly professional and the development processes available to candidates for aviation careers must be mindful of this. Tertiary level courses should be established and/or expanded in all Australian states and territories to offer places in aviation management, pilot training and aviation-related engineering. Funding should be allocated to universities on a funding-per-place basis.

Recommendation 13: State and Territory jurisdictions to work with industry and the Commonwealth to ensure sufficient support for aviation maintenance engineer training in the technical education sector.

Regulation

Recommendation 14: CASA and industry to continue to work together to ensure appropriate balance of safety and training effectiveness. At the same time, it is important that the industry realises what is already available.

Recommendation 15: CASA and industry continue to explore a workable model for self-administration but that this process proceed with caution and be limited to flying activity excluding passenger transport operations.

Recommendation 16: That Government periodically review security requirements for airports and aviation operators to ensure that security measures are commensurate with the most current risk and threat environment at respective locations and are not imposing unnecessary costs on industry.

Ageing Aircraft

Recommendation 17: To address the problem of the ageing small aircraft fleet the Government consider the establishment of a facility to assist suitable operators to buy new aircraft. Criteria for such a scheme should be developed in consultation with the industry and may include:

- Case by case assessment of commercial business positions;
- At least 50% capital contribution by operators acquiring new aircraft.

Recommendation 18: The SILG notes the potential for new technologies such as composite airframes, glass panel avionics and new engine types to improve the performance and raise the safety standard of General Aviation aircraft.

The SILG is mindful that when **assessing** the potential benefits of new navigation technologies, it is imperative to take account of the General Aviation industry's particular needs as well as those of major airlines.

1: Introduction

1.1 Action Agendas

From 1996 to 2007 Action Agendas provided a framework for industries to develop sectoral priorities and plan for the future in partnership with governments. Action Agendas also helped industry sectors develop a cohesive approach to whole-of-government issues such as regulatory reform, education and training, market access and development, investment, regional development, environmentally sustainable development, workplace relations and innovation.

Action Agendas were intended to facilitate industry leadership in specific sectors to realise opportunities and overcome impediments to growth, with particular emphasis on identifying the actions that industry could take to realise its full potential.

1.2 The General Aviation Industry Action Agenda

On 14 September 2006 the then Minister for Transport and Regional Services, the Hon Warren Truss MP, and the Minister for Industry, Tourism and Resources, the Hon Ian Macfarlane MP, jointly announced the establishment of an Industry Action Agenda for General Aviation (GA).

The GA Industry Action Agenda was established in recognition of the important role GA plays across the country, particularly in regional and remote parts of Australia and in recognition of the ongoing challenges the industry faces.

The then Deputy Prime Minister and Minister for Transport and Regional Services, the Hon Mark Vaile MP, subsequently appointed a Strategic Industry Leaders Group (SILG) to drive the GA Action Agenda comprising:

- Dr J Roland Williams CBE, Chair
- Mr Tony Brand, Chief Engineer/Director, Horsham Aviation Services
- Mr Gerard Campbell, Chief Executive Officer, Archerfield Airport
- Ms Marj Davis AOM, President, Royal Federation of Aero Clubs of Australia
- Mr John Gardon, President, Recreational Aviation Australia
- Mr Col Rodgers, National President, Aircraft Owners and Pilots Association
- Mr Dennis Wisbey, Managing Director, Aero Services Pty Ltd, Parafield Airport

1.3 Development of the General Aviation Industry Action Agenda

The Strategic Industry Leaders Group appointed to drive the GA Action Agenda first met on 26 March 2007. At its first meeting the SILG established working groups to consider specific issues affecting the industry in more detail. These were:

- Industry Competitiveness;
- Infrastructure Issues;
- Education and Skills Issues;
- Regulatory Issues; and
- Investment, technology and innovation.

Following its first meeting, the SILG published an issues paper that summarised key issues affecting the industry. The Issues Paper invited stakeholders to focus on key areas where the SILG might develop strategies to assist industry in ensuring future growth and opportunities and where challenges may need to be overcome. Contributors are listed at Appendix A.

The SILG was concerned to ensure that opportunities existed for broader industry input to the development of the Action Agenda and used a multi-site industry consultation strategy. Consultations were held at:

- Cairns – Australasian Aviation Group;
- Perth – Subiaco;
- Newcastle – Australian Local Government Association Congress;
- Sydney – Bankstown Airport;
- Melbourne – Consultation with secondary airport operators during the Australian Airports Association Conference;
- Brisbane – Archerfield Airport
- Adelaide – Parafield Airport

1.4 Terms of Reference

The terms of reference required of the GA Industry Action Agenda were:

1. Examine industry trends and the factors driving growth and participation in key segments of the General Aviation industry viz:
 - Sports aviation;
 - Aerial agriculture;
 - Charter and other aerial work;
 - Commercial pilot training;

- Maintenance and repair, including licensing and training of Licensed Aircraft Maintenance Engineers (LAMEs);
 - Private pilot training, including development and training of flying instructors and recreation flying.
2. Identify growth and development opportunities for each segment of the industry.
 3. Determine impediments to growth and development in the General Aviation sector, having regard to:
 - The competitive position of the industry, particularly in relation to alternative transport modes, demographic and economic trends, market segmentation and alternative recreational activities.
 - Regulatory issues impacting on the General Aviation sector, including potential for self-administration and self-regulation, and General Aviation's contribution to the airspace reform process.
 - Education, training and skills requirements for the industry, including licensing and training of LAMEs.
 - Investment, fleet planning and aircraft replacement issues.
 - Technology and developments in aircraft design and operation, including regulatory implications.
 - Access to airport infrastructure including development and planning at General Aviation Aerodrome Procedures airports, development and planning at regional and rural airports and planning for new airport infrastructure.
 - Export potential of the industry including potential to export pilot training services, engineering training services and packaged General Aviation services.
 4. Develop respective strategies for the General Aviation industry and governments to remove impediments and maximise future growth and participation, including key performance milestones which the industry should aim for.

Scope of the report

The General Aviation industry under consideration comprises aircraft operators providing non-scheduled air services including charter operators, aeromedical operators, agricultural aviation businesses, aviation-based fire-fighting services, training and aerial work such as aerial photography and surveying. It also includes private, business, recreational and sports aviation activity and supporting businesses such as maintenance providers, airport operators and industry regulators.

The Industry Leaders Group will report to the Australian Government by 30 April 2008

The General Aviation industry is a diverse collection of groups and individuals that share a common interest in the operation of small aircraft. Many segments of the industry provide essential services in Australia and are essential elements of the Australian economy.

2: What is General Aviation?

2.1 Definitional Issues

The Issues Paper published by the Strategic Industry Leaders Group in April 2007 explored a number of existing definitions of the General Aviation (GA) sector. In particular it drew on work by the Bureau of Transport and Regional Economics (BTRE, 2005) which observed that GA is commonly defined along two primary lines, namely:

- Aircraft (GA typically refers to small - usually piston engine - aircraft of 5.7 tonne or less), and
- Activity (Typically GA activity is defined as all non-scheduled flying activity such as charter and training, thereby excluding all Regular Public Transport (RPT) operations).

Also, the United Kingdom Civil Aviation Authority (CAA) had attempted to define GA in its 2006 review of the sector noting (CAA, 2006):

The term 'General Aviation' does not mean the same thing throughout the world, or even within countries. Many consider it to mean all aviation activity except that performed by major airlines and the military. Some find it helpful to recognise that all operations below a particular maximum weight threshold (say 5,700kg for aeroplanes) share much in common, irrespective of the purpose of the flight. In scoping the Strategic Review, it was agreed that there would be little merit in attempting to create a definitive interpretation of what is and what is not GA. For the purpose of scoping the Strategic Review General Aviation was considered to mean 'a civil aircraft operation other than a commercial air transport flight operating to a schedule.'

The UK study also noted that:

The GA sector covers a very wide range of activities. It includes flying for the purposes of recreation, personal transport, and business. The types of operation are also very different. At one end of the spectrum are balloons, gliders, hang gliders, microlights, gyrocopters and small helicopters, all of which will tend to operate from relatively small sites that may not even be readily recognisable as airfields. At the other end of the spectrum are corporate jets, which may include variants of airliners. In between are thousands of aircraft of all shapes and sizes from amateur-built to mass-produced touring aircraft to ex-military fast jets.

Since the publication of the SILG's Issues Paper on 14 May 2007, the Civil Aviation Safety Authority (CASA) published its updated Industry Sector Priorities and Classification of Civil Aviation Activities policy.

The policy creates three broad classes of aviation activities for the purposes of safety regulation; passenger transport, aerial work and general and freight-only activities.

The passenger transport class covers flights that carry passengers in large or small aircraft, scheduled or non-scheduled. In other words, this class covers operations CASA has previously described as RPT and charter flights.

The aerial work class covers a wide range of activities where aircraft are involved in specialised activities and may carry people who are not crew, known as task specialists under the policy. Aerial work activities include emergency and medical flights, law enforcement, aerial agriculture and aerial survey.

The general and freight-only class covers most private operations, flying training, freight-only operations and other activities where only the crew is on board an aircraft. It also includes people who choose to fly on aircraft where they know and accept the level of safety provided, such as recreational and sports aviation. The policy will be implemented as CASA issues new Civil Aviation Safety Regulations (CASR).

The issue of defining what constitutes GA activity generated a number of views from submissions to the Issues Paper and indeed within the Leaders Group itself. It is not possible, nor necessary, to agree on a single definition of the industry as the industry will demarcate along different lines for different purposes.

CASA's view of the industry is important as regulatory oversight of safety is a critical input to GA businesses. Broadly, in terms of CASA's Classification of Operations, operators in the general and freight-only class are agreed to be General Aviation businesses, even though a small proportion of these businesses may utilise large aircraft. Importantly, recreational and sports aviation is explicitly included in this classification, though some segments of the industry see this sector as a competitor rather than a part of the same industry.

With some exceptions, most stakeholders also classified operators in the aerial work class as GA businesses. The SILG notes that these operations were included under the Terms of Reference issued by the Government and were therefore regarded as in scope for the GA Industry Action Agenda.

There was also support from industry for the consideration of limited passenger transport activities as GA activities. Charter operations have traditionally been regarded as GA operations but the new CASA classifications will remove the distinction between scheduled and non-scheduled passenger transport flights. Smaller regional airlines often operate a combination of scheduled and charter services and have tended to identify with the concerns of the GA industry. This commonality of interest decreases in larger airline businesses. However, the SILG notes that many important issues that have

been considered in the development of this Action Agenda are relevant to the wider aviation industry and not confined to the GA industry. For example education and skills issues including the future supply of pilots and engineers to the industry, commercial relationships between airport operators and tenants and regulatory issues are all thoroughly relevant to the wider Australian aviation industry.

2.2 An Industry Dealing with Change

In establishing this Action Agenda, it was acknowledged that the industry has been facing a number of challenges in recent years. Broadly, those challenges have resulted from the withdrawal of special industry arrangements that have applied to many aspects of aviation in its post-war development.

In the decades following the Second World War, aviation developed with significant support from governments as it was seen as an industry critical to nation building and broader economic considerations. As the industry matured, it was no longer seen as appropriate that aviation be treated as a 'special case' industry and that it be regulated and developed under broader government policies relating to industry, tourism, competition and taxation regimes.

The particular changes relevant to the General Aviation industry have been:

- The termination of the two-airline policy in 1990 allowing the entrance of new airlines to the Australian domestic aviation market. This has resulted in an expansion and restructuring of the domestic airline industry with the number of passengers on domestic services almost trebling, from 15.6 million in 1990 to 45.8 million in 2006-07, driven by lower air fares and more choice for consumers.
- In the early 1990s, the transfer of local, council-operated airports under the Aerodrome Local Ownership Plan (ALOP) to local governments.
- In the late 1990s/2000s, the privatisation of 22 Commonwealth-owned airports under leasehold arrangements.
- The transition to user cost recovery arrangements for aviation safety regulation in recent years, though not new, represents an increase in the proportion of activities cost-recovered by CASA.

In addition, the industry has faced more recent challenges following the 1999 avgas contamination crisis and changes to security arrangements following the September 2001 terrorist attacks on the United States. Like many industries, it now confronts possible growth constraints through an ageing workforce and labour shortages in key areas.

In Australia, the industry has encountered increased competition from alternative transport modes over the past several decades with significant improvements in road infrastructure and motor vehicles and in scheduled commercial airline services.

In addition, over the past twenty years alternative recreational activities have grown strongly, often not requiring the same level of commitment, training and time as private flying. These activities range from improved tourism experiences to improved leisure and entertainment products, cheap personal computer simulation of flying and, in particular, recreational and sports aircraft activity.

The growth of recreational and sports aviation, which grew from the ultralight movement from the late 1970s onwards, is viewed with mixed perspectives in the GA industry. On the one hand, recreational aviators see their hobby as an affordable alternative to the higher cost and more highly regulated traditional GA sector, thus contributing to an overall growth in flying activity. On the other hand, many traditional general aviators see the recreational industry as enjoying unfair advantages over small CASA-registered aircraft owners offering lower regulatory and cost imposts to these new participants in the industry. Whichever perspective one takes, there is no doubting the growth of this sector. Latest statistics (BTRE, 2007) show that hours flown in ultralight operations have increased from 76,500 hours in 2001 to 120,200 hours in 2006, an increase of 57 per cent over the five year period. Over the same period, hours flown in private flying have decreased from 261,700 hours to 227,200 hours, a decrease of 13.2 per cent. The combined activity in these two categories is relatively stable, with 338,200 hours in 2001 and 347,400 hours in 2006, a growth of 2.7 per cent.

The Strategic Industry Leaders Group identified Australia's GA industry as a comparatively old industry by world standards, with a tendency towards conservative behaviour. While this trait is understandable and indeed desirable in an industry accustomed to high standards of safety and discipline in day to day operations, it can be limiting in developing the managerial skills required to negotiate changes in the industry's economic environment. This was seen as a key development need for many GA businesses.

2.3 The Diversity of General Aviation

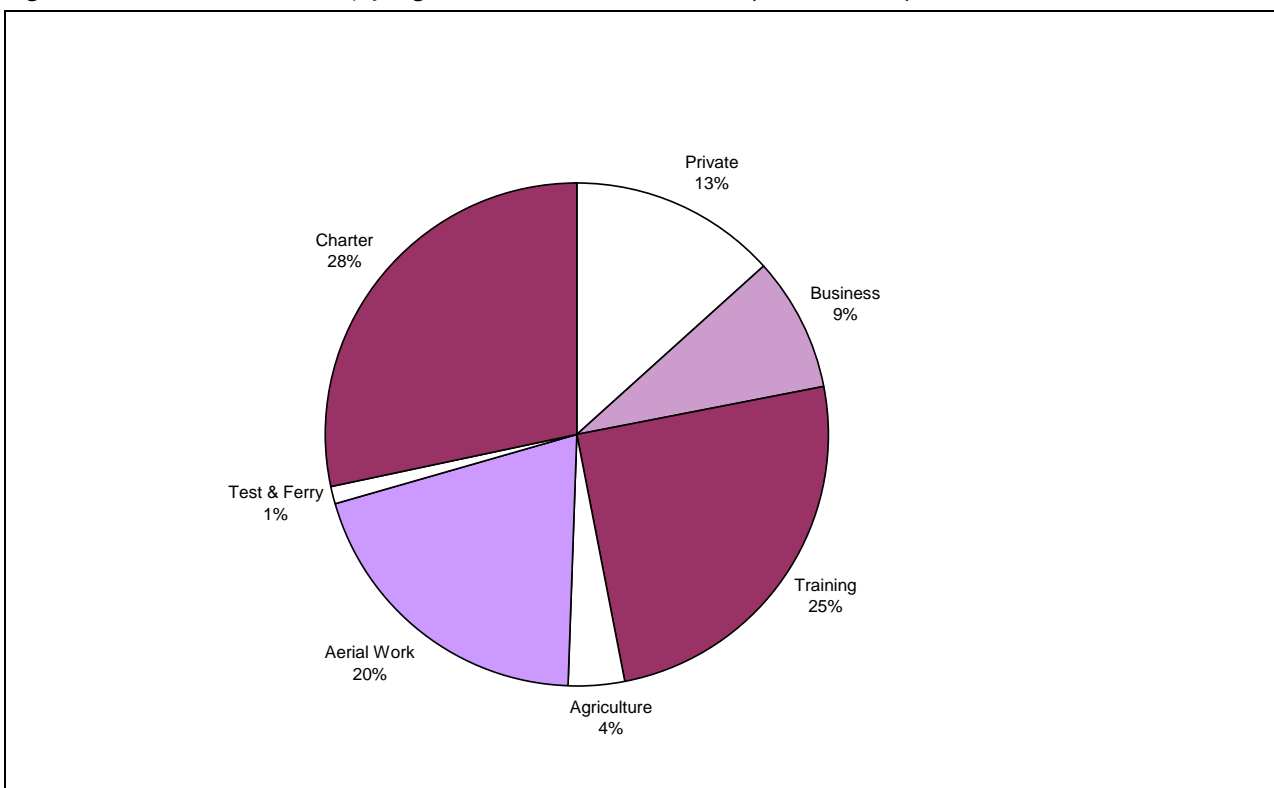
The GA industry comprises a diversity of businesses and individuals in terms of activity, location and size of business. Those identifying as part of the GA industry are likely to include:

- Small airline and charter flight operators;
- Operators of airports, particularly secondary capital city airports and regional airports;
- Flight training schools;
- Agricultural aviation businesses;
- Aeromedical operators;
- Aerial fire-fighting operators;

- Operators engaged in other aerial work such as photography, surveying, mustering;
- Air freight operators;
- Helicopter operators;
- Balloonists;
- Aviation maintenance businesses;
- Private pilots; and
- Recreational pilots.

Figure 1, shows the breakdown, by hours flown, of the various sectors of the Australian General Aviation industry.

Figure 1: General aviation flying hours – Australia 2006 (BTRE, 2007)



According to IBISWorld Business (IBISWorld, 2007), in 2005-06 the Australian non-scheduled air and space transport sector comprised 1,192 enterprises employing 3,788 people. Industry turnover was \$923.8 million, representing a 15.3 per cent increase over the previous three years, with export earnings of \$65.2 million.

Approximately a quarter of revenue is respectively generated by each of passenger transport, flight training and aerial work. The remaining share is comprised of private and business use and test and ferry operations.

Industry concentration is low, indicating a high proportion of smaller, locally-based businesses.

The diversity and number of GA businesses and interests inevitably results in a range of opinions being put forward in relation to future priorities for the industry. In conducting industry consultations and considering submissions, the SILG noted a range of very different views regarding the state of the industry and the direction it needed to take to ensure future success. While the diversity of voices ensures that all opinions can be heard, it can also mean that it is difficult for industry to consolidate views on key issues. Regulators and government and industry itself can sometimes find it difficult to see an agreed way forward for the industry as a whole. This was evident during the consultation undertaken in developing the Action Agenda and will be an important factor in implementing the recommendations of this report.

Recommendation 1: *Without the industry commitment and resources, the recommendations of this report are unlikely to be successfully implemented. Industry should therefore decide the best way to take forward the recommendations of the report. This may be coordinated by an existing industry organisation but must include active representation from the major airlines.*

The SILG saw it as important that participants entering the aviation industry through the recreational path be alerted to the broader opportunities of the aviation industry and therefore not be unnecessarily ‘lost’ to the industry.

Recommendation 2: *The Royal Federation of Aero Clubs of Australia, in association with Recreational Aviation Australia, oversee a targeted marketing campaign to alert recreational aviators to the possibilities of aviation careers through further pilot and instructor training.*

2.4 Supporting the Community

Many submissions taken in developing the Action Agenda highlighted the importance of GA services in supporting other industries such as agriculture and mining. The importance of aviation services to broader community outcomes was also highlighted. For example the operations of the Royal Flying Doctor Service of Australia (RFDS) rely both on access to airport infrastructure and on a reliable supply of pilots and engineers to maintain aircraft operations. Aerial fire-fighting services and some law enforcement activities also rely on access to airports in both city and regional locations.

It is certainly true that GA is interdependent with a number of industries and indirectly shares their fortunes. The growth of the Australian mining industry has provided a wealth of flow-on business to many aviation operators over recent years and the efficiencies inherent in access to air transport have also benefited the mining industry.

The interface between the mining sector and GA is also important because it is often excluded in dealing with common GA issues due to their focus on smaller

aircraft. The mining industry is serviced by a wide range of aircraft, from small piston-engine aeroplanes to very large jets most commonly used in mass passenger transport. The chief challenge in the present economic environment is for fly-in, fly-out operations to have access to the requisite infrastructure, skills and aircraft to continue to support the mining industry as it continues through an unprecedented period of growth.

On the other hand, the effect of the drought on agricultural production over recent years has meant that opportunities for agricultural operators have been severely limited. In 2006, agricultural operators reported only 61,700 hours of activity, less than half the activity levels of 1998 and 1999. Like many service industries in rural areas, the ability of agricultural aviation businesses to withstand the effects of drought and to manage businesses, people and assets through good years and bad is extremely demanding.

GA operators also provide an important public transport service in remote areas of Australia, indeed comparable with taxis and buses in metropolitan areas. Where scheduled airline services are not viable, charter services provide the means of allowing people in remote areas to have access to business, medical, educational and social opportunities in bigger regional centres or capital cities.

Even though many community service roles, such as those mentioned above, are dependent on aviation for delivery of important services, their funding is provided directly by either government or alternative community contributions. For example, the RFDS receives its primary funding from the Commonwealth Government. Aviation activity used for fire-fighting and law enforcement purposes is funded through relevant state governments. Supporting services for these activities, such as airport charges, regulatory and air services charges are then expected to be funded on a commercial basis, as are other charges such as building rents and utility costs.

Many of the challenges generated by the General Aviation industry relate to its passage from the more protected commercial environment of previous decades. The industry needs to move forward to realise its future in a modern, global economy.

3: The State of the Industry

3.1 Industry Trends

BTRE data (BTRE, 2007) from 1991 to 2006 show that total General Aviation flying hours have experienced a flat growth trend over the last 15 years, with a peak activity of 1.88 million hours in 1997 and a low of 1.64 million hours in 2004, an overall trend rate decrease of 0.2 per cent per year.

Figure 2: General aviation flying hours – Australia 1991 – 2006 (BTRE, 2007)

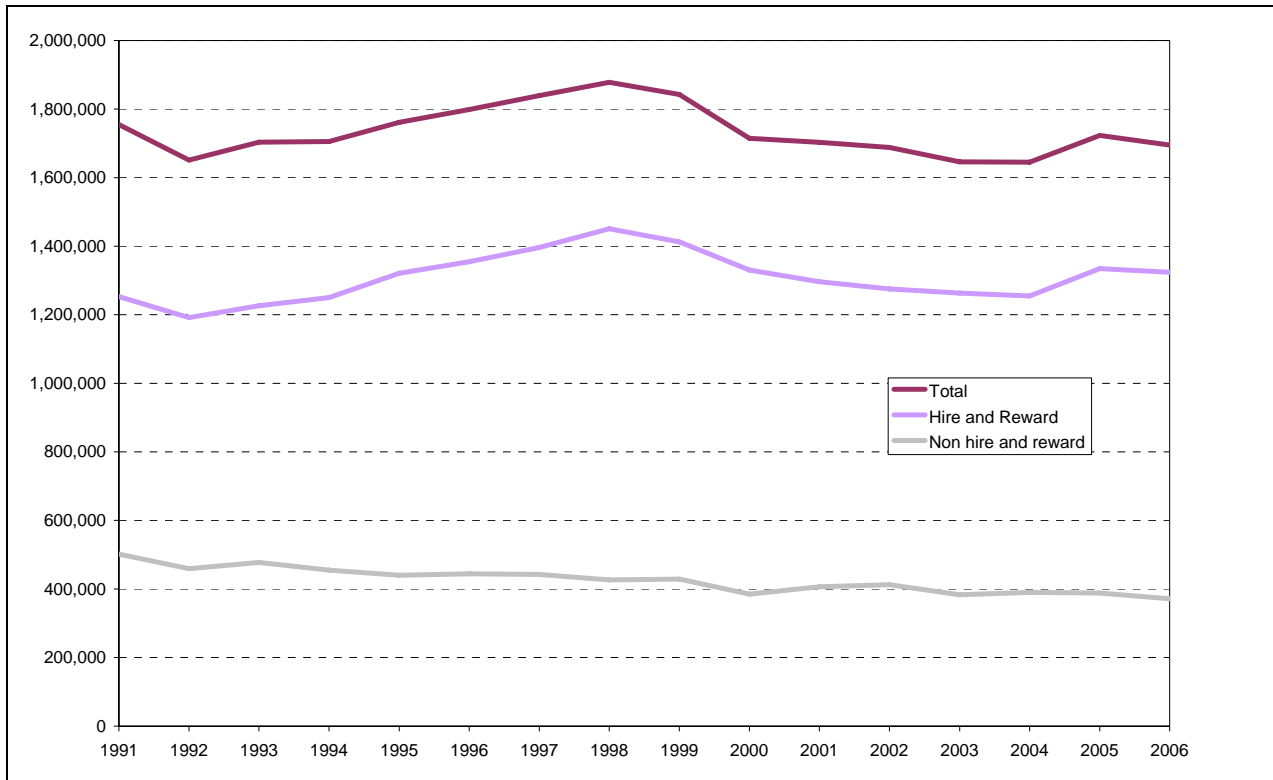
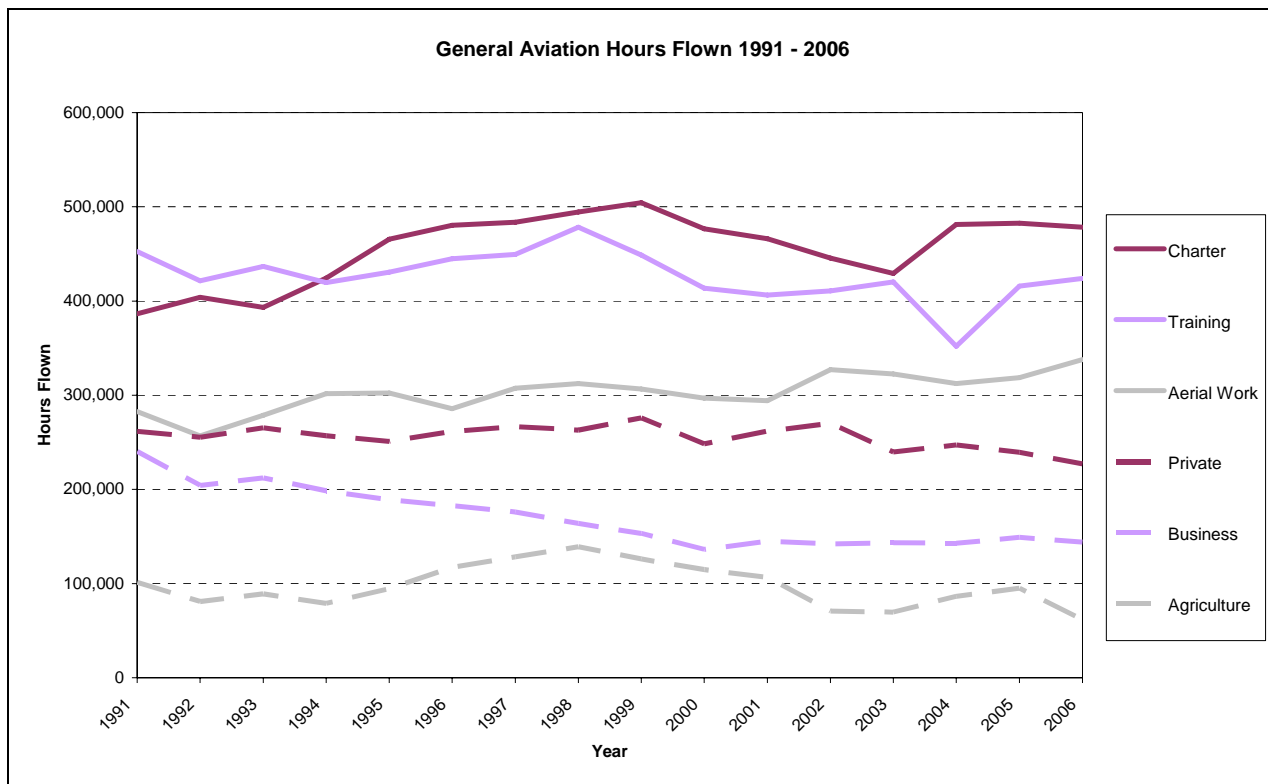


Figure 3 shows activity performance by sector, with notable declining trends in private and business flying coinciding with a strong growth period of commercial airline activity in Australia. The graph also shows the cyclical trends in agricultural activity.

Figure 3: General aviation flying hours by sector – Australia 1991 – 2006 (BTRE, 2007)

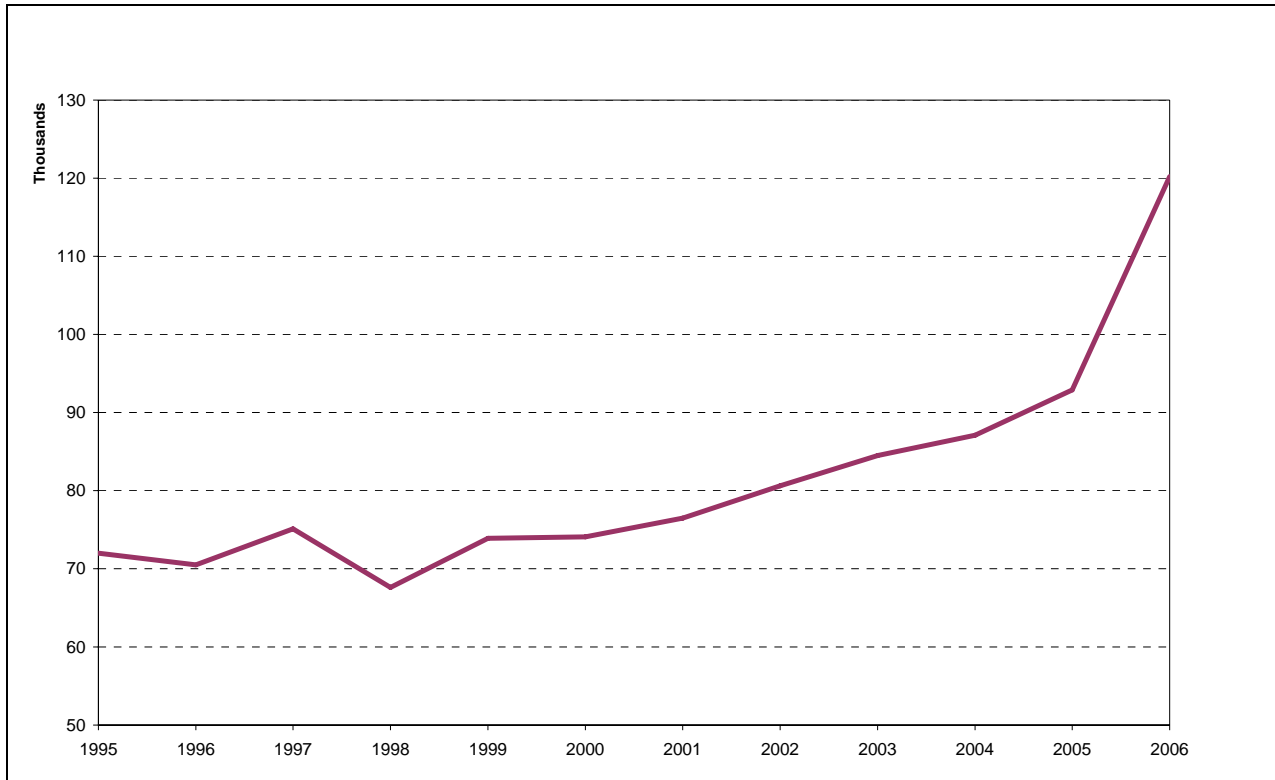


In contrast to the declines in private GA flying, recreational aircraft activity has grown significantly over the past decade, from 70,500 hours in 1996 to over 120,000 hours in 2006 (Figure 4).

These countervailing trends reflect a long-term structural adjustment within the industry as enthusiasts move into the lower cost recreational sector. Despite its origins in ultralight aircraft, the recreational sector now includes many modern, sophisticated aircraft types, often administered under a lower cost regulatory regime than those directly overseen by CASA.

Balancing this lower-cost regime are a number of limitations in the operation of recreational aircraft including restrictions from operating in controlled airspace, instrument flying conditions and night flying and a limit to two-passenger aircraft. Aircraft operating under recreational control are also limited to a maximum take-off weight of 650 kg.

Figure 4: Recreational aviation flying hours – Australia 1995 – 2006 (BTRE, 2007, Recreational Aviation Australia)



3.2 The Structure and Sustainability of the Industry

Stakeholders consulted during the development of the Action Agenda drew disparate conclusions on trends in the industry. Some were disappointed that the industry seemed to have fewer participants and aircraft than in the past. Others saw the industry as facing inevitable consolidation and restructuring as it moved forward. Indeed it may be the case that the level of participation in the industry reached an unsustainable position in the past due for instance to previous structural distortions in the investment market and subsidisation of airport pricing and regulatory services.

In particular many participants in the General Aviation industry continue to fly in old aircraft, purchased in the late 1970s at a fraction of today's costs. At that time US manufacturer pricing was much lower, the value of the Australian dollar much higher, and the Australian Government offered a 40 per cent investment allowance to contribute to the cost of new aircraft.

As noted by IBISWorld Business (IBISWorld 2007), the General Aviation industry has traditionally had many participants who are flying enthusiasts rather than business people. This has consequences for the rest of the industry as prices are kept artificially low, thereby threatening the profitability of other operators. There is no accepted transition plan out of the industry for unsustainable businesses.

There are a number of mechanisms in place to consult with small business. These include the National Small Business Forum, the Small Business Council, the Australian Competition and Consumer Commission Small Business Advisory Group and the Commissioner of Taxation's Small Business Consultative Group and Small Business Advisory Group. The Office of Small Business also conducts ongoing consultation with industry and small business representative organisations.

There is certainly the scope for the GA industry to better use existing business advisory services available from all levels of government to assist in developing better business practices and knowledge of the numerous issues associated with operating a small business.

Recommendation 3: *Industry to work with relevant state and Commonwealth industry departments under existing business assistance frameworks to identify the characteristics of healthy businesses and improve planning and decision making for small enterprises.*

3.3 The Commercialisation of the Industry

Many stakeholders who provided input during the development of this report expressed strong views about the commercialisation of the General Aviation industry, particularly privatisation of airport infrastructure.

Although management of federal airports was corporatised under the Federal Airports Corporation (FAC) in 1987, true commercial terms began with their lease to private sector operators in the late 1990s. In Sydney, this occurred in 2003 with the lease of Sydney, Bankstown, Camden and Hoxton Park airports.

Many long-term operators have found it difficult to accept the new arrangements while some airport lessees have found it exacting to manage the expectation of some longer-established tenants who have been unaccustomed to negotiating their lease in a commercial framework. The SILG considered these challenges at length and noted that improvements in communications may be beneficial in some situations but that differences and tensions are likely to remain in the short to medium term while the industry continued its transition. This issue is covered in more detail in Chapter 5.

3.4 Export of Pilot Training Services

Australia's aviation history, generally favourable weather, relatively high availability of airspace and proximity to growing Asian economies puts the industry in a special - almost unique - competitive position to export aviation skills, particularly pilot training.

While supporting data from industry were not available for this report, it is certain that the most significant growth opportunities for pilot training come from demand for pilots in Asia. Despite continued volatility in world aviation markets and an uncertain global economic outlook, forward orders for aircraft remain strong and demand for pilots is likely to remain high as the Chinese and Indian economies continue to grow.

Airport lessees and training providers agree that these opportunities need to be explored. From an infrastructure viewpoint, investment may be required in supporting accommodation and services for students. There are many opportunities for regional Australian airports to pursue these opportunities as well as the traditional training grounds of capital city secondary airports. In fact, it may be that regional areas offer a cost effective and competitive alternative for training new pilots.

As an example, the Flight Training Group, operator of Flight Training Adelaide (FTA), has announced its intention to establish a major airline pilot training facility to be known as 'Flight Training Queensland (FTQ)' in Maryborough.

FTQ will ramp up incrementally over a three year period and in its mature configuration will employ more than 100 staff, be home to approximately 40 training aircraft and fly more than 38,000 training hours per year, making use of aerodrome facilities at both Maryborough and Hervey Bay airports. Operations at FTQ are planned to commence in mid 2008.

There have been concerns raised that Australia does not lose its competitive position in supplying pilot training to overseas customers. Again, the focus of these concerns is on cost increases in airport and regulatory fees that may lead to customers moving training activity to lower cost countries.

In response to a request by the Aviation Regulatory Review Taskforce to analyse the comparative costs of flying training in Australia compared to other countries, CASA published a report in September 2007, on the comparison of costs of flying training between Australia, USA, New Zealand and the UK.

In general terms, the report (CASA, 2007b) found that the cost of obtaining a commercial pilot's licence and instrument rating in Australia, New Zealand and the USA were the lowest and similar.

Key findings included:

- In almost every aspect of flying training, the UK was significantly more expensive than Australia, New Zealand and the USA reflecting a higher cost of fuel, labour and CAA service costs. Costs to students through license and exam fees were significantly greater in the UK compared with the other three countries.
- Organisations in the USA indicated that the administrative overheads stemming from the Federal Aviation Administration (FAA) were negligible.

- There were significant differences in the cost structures between the USA and the other three countries.

While the SILG believed strongly that secondary capital city airports will, and should, remain an important part of GA infrastructure for the foreseeable future, it noted also the growth opportunities of Australia's regions and their airports in providing growth opportunities for the export of pilot training services. This is a very important prospect and should not be relinquished.

3.5 External Competition for the General Aviation Industry

Many General Aviation enthusiasts gained their experience in the industry at a time when the availability of competitive leisure pursuits was limited. Learning to fly was one of relatively few 'adventure' activities in the 1960s and 70s; its development accelerating after World War Two.

Throughout the 1980s and 1990s, competition for people's leisure time and financial commitment has intensified. Improved tourism products, home entertainment and computer simulation of flight experiences are but several competing activities that have grown strongly over the past several decades and are actively marketed by suppliers.

Also, General Aviation's traditional competitive edge in long-distance transport has been diminished by the improved access to commercial airline transport that has resulted from cheaper domestic airline fares since airline deregulation in 1990. Where it was once economic to fly one or two people interstate, the private flyer now often finds airline transport more attractive. Furthermore, improvements in roads and modern cars have outstripped product improvements in small aeroplanes for shorter distance transport also.

While it is true that some people will continue to be drawn to flying by its excitement and romanticism in any case, to remain competitive to a sustainable market the industry may have to improve its marketing activities to ensure it features in the awareness of young people starting careers as well as people assessing competing leisure activities.

Recommendation 4: *Industry needs to expand and improve its marketing activities to attract new participants into the industry, highlighting the edification and opportunities that learning to fly can provide.*

3.6 Overseas Experience

The challenges currently faced by the GA industry are not unique to Australia.

The CAA Strategic Review of General Aviation (CAA, 2006) found slight growth in overall General Aviation activity with marked disparities within the sector.

The UK Review noted (p viii) *‘the composite picture is one where GA appears to be roughly in steady-state, or perhaps experiencing slight growth.’* It also noted (p ii), *‘Although often presented as a sector in decline, this Review has not found evidence of this. Many parts of GA are growing strongly, in particular the business aviation market and the smaller end of the market (such as microlights and helicopters).’*

The UK Review found that competition for affordable access at airfields was a major issue for participants as commercial aviation grew. More so than in Australia, access to airspace was also a critical issue.

In the United States, FAA statistics (FAA, 2007) and forecasts show similar negative growth trends over recent years, with modest growth forecasts for the future. Total General Aviation hours flown fell from 30.2 million in 2000 to 27.5 million in 2006, an average annual decrease of 1.5 per cent. Forecast growth to 2020 ranges from 3.2 to 3.8 per cent.

Recent debate in the United States has focussed on future FAA funding arrangements. Proposals have been considered by Congress for new user pays charges including increased taxation on aviation fuel and congestion charging at airports. The General Aviation industry has argued for the retention of broader taxpayer funded measures for the FAA. Revised proposals are expected to be considered by Congress later this year.

The SILG also sought information on Canada’s GA industry as a useful comparison to the Australian experience. Unfortunately data could not be sourced for this purpose.

All levels of government have a role in providing both efficient and effective support and regulatory and planning arrangements for the Australian General Aviation industry.

4: Role of Governments

4.1 Background

All three levels of government in Australia have a role at the interface with the General Aviation industry.

4.2 Commonwealth

The Commonwealth has a long history of regulating and developing Australia's aviation industry dating back to the passing of the Air Navigation Act in 1920. As well as its close relationship with defence capability, the Commonwealth's role followed from its constitutional responsibility for interstate trade and therefore transport.

That responsibility continues to the present with the Commonwealth's responsibility for air navigation, aviation safety and aviation security. Also, the Commonwealth continues to regulate and oversee planning approvals on 22 major airports, including those in the eight state and territory capital cities.

The Commonwealth also provides some assistance to the industry through subsidies to small regional airlines in meeting their Airservices Australia Enroute Charges fees, assistance with meeting security upgrade requirement at regional airports, assistance to meet safety upgrades at remote airports and subsidies to ensure weekly air services to remote communities.

Commonwealth Government responsibilities also include regulation affecting the General Aviation industry. The most obvious of these are regulations specifically addressing safe operation of aircraft. These are discussed in detail in Chapter 7.

4.3 States and Territories

Australia's states, along with local councils, exercise planning control over Australian airports not covered by the Commonwealth *Airports Act 1996* and in some cases also assist with maintenance and develop costs at regional airports. The New South Wales, South Australian, Western Australian and Queensland governments also regulate intrastate air services to smaller regional communities to help ensure the viability of services where competitive markets are not possible.

Governments at all levels also have various roles in programmes that support the industry including business support programmes, education and training.

More detailed discussion of government education and training programmes is provided in Chapter 6.

States are also responsible for the levying of certain taxes such as payroll tax that are payable by General Aviation businesses. They are also responsible for regulations such as those relating to environmental and occupational health and safety requirements which impact on General Aviation businesses. While the industry accepts the necessity of these regulatory requirements, some submissions argued that there should be more communication and cooperation between jurisdictions to lessen any unnecessary regulatory burden on small businesses.

4.4 Local Governments

Local governments are responsible for the maintenance and operation of many of Australia's regional airports. In the case of the 234 airports formerly partially funded by the Commonwealth Aerodrome Local Ownership Programme, the responsibilities of investment planning and funding of major upgrades are relatively new. While some local councils are forming effective partnerships with local regional airlines and GA operators that serve both the operators and communities well, others are still finding the management of airport infrastructure an abnormal task.

Chapter 5 has more detail on these particular issues.

The SILG notes that the multi-jurisdictional nature of aviation administration can at times be difficult for industry to deal with and it is important governments are aware of this and seek to minimise any negative impact for the industry.

Recommendation 5: *It is important to continue to improve communication between governments to take account of issues relevant to the General Aviation industry. These communications can be focussed in the Australian Transport Council Aviation Working Group comprising Commonwealth and State transport officials and the Australian Local Government Association.*

Perhaps the most difficult challenge faced by the industry is in integrating planning and communications processes between airport operators and tenant businesses.

5: Airport Access

5.1 Background

Up until the late 1980s the Australian Government was actively engaged as the owner-operator of many of Australia's airports, either through the Federal Airports Corporation (FAC), established in 1987 to manage 22 of Australia's major airports, or through the 234 ALOP airports which were co-funded with individual local government authorities.

In 1997 the Australian Government commenced airport privatisation under a series of long-term leases of airports then operated by the FAC. In doing so the Government recognised that some had significant market power and introduced price regulation at all capital city and some regional airports to limit price increases in the first years of operation of the new commercial regime.

The Australian Government currently maintains a light-handed regulatory framework that encourages the continued growth of the aviation sector by allowing private businesses to negotiate business outcomes with minimal Government intervention. This has resulted in significant investment in Australian airports.

However the privatisation of secondary airports has resulted in GA operators being exposed to a commercial charging regime never fully experienced under the previous system of government ownership. This has exposed vulnerabilities in the business models of many General Aviation businesses that had not been evident previously.

Many small airport-based GA operators realise a lack of market power in their dealings with airport lease holders. Their businesses often rely on being on an airport site and they will often have the choice of only one or two airports in each capital city. Airports require significant capital investment and, as such, they tend to be geographically dispersed.

5.2 Airport Costs

In many circumstances, rents levied on hangars, commercial premises and land have been increasing, particularly at the major metropolitan GA airports. The leases concerned are commercial agreements between airport lessees and their tenants and are therefore a relatively new development in the industry. It is likely that these price changes will have led to a reorganisation of GA activity. Participants in the industry who are sensitive to changes in the price of airport access may have moved away from higher cost aerodromes, trading off reduced costs for a less convenient location and perhaps more limited

infrastructure. The costs of relocation can be significant as some tenants may lose sunk capital costs, such as the buildings situated on the site of their lease, if they choose to relocate.

Generally rents at GA airports have increased significantly since privatisation, reflecting the fact that former FAC rents were unrealistically low. Also, commercially driven airport lessees adopted rents more commensurate with commercial rates at off-airport locations. However, this is not uniform or solely the result of airport privatisation. Rents vary greatly between airports and tenants. Although operators understand the need for airport managers to derive a commercial return from their assets, some stakeholders believed that the drive for rental increases at some airports has been to such a degree that animosity has been generated. Airport tenants often focus on comparisons between the old FAC rents and current rents with little regard to movements in general capital city real estate prices. Airport lessees have pointed out that the value of real estate in capital cities has increased markedly over the last decade and airport values will to some extent reflect that.

While there was much anecdotal evidence provided by operators of a significant percentage increase in rents since privatisation, no evidence was presented that clarified the proportion of costs attributable to airport rents. This is a key question for the industry. Increased rents may be acceptable if the ability to generate a return on the investment is there. However the SILG was unable to obtain information about revenue or the proportional cost impact of airport costs.

5.3 Airport – Tenant Relationships

In general the SILG has found that the relationship between airport operators and tenants can at times be characterised by a low level of trust leading to miscommunication and significant problems when attempting to negotiate arrangements which should be mutually beneficial. The SILG found in some instances that it was even difficult to engage with parties from both sides where communications seem to have broken down. It is a priority for the GA industry to move relationships between tenants and operators forward to a more mature commercial footing.

Tenants and operators have appeared to have unrealistic expectations at times. For example, there is an expectation from some tenants that rates not be commercially-based, and an expectation from some operators that very short term leases should be acceptable to tenants.

The issue of lease tenure was raised on numerous occasions during industry consultations. Many tenants expressed frustration at an inability to secure long-term leases from airport lessees. This can make it difficult to plan and finance investment in infrastructure such as hangars. Airport operators, on

the other hand, pointed out that it was difficult to engage in long-term planning of sites that comprised numerous sub-leases of varying periods, in some cases extending to 20 years or more. Some tenants also sought to negotiate longer term leases to maximise the value of their businesses for sale upon retirement.

While the industry generally accepts that airports should continue to operate on a commercial footing, the SILG believed that some of the unresolved tensions between tenants and airport operators are unproductive and damaging to the industry as a whole. While recognising that overt regulation is not necessarily the answer, a low cost mediation mechanism should be useful.

Recommendation 6: *Formal mediation process to be established with the following characteristics:*

1. *To apply at secondary capital city airports;*
2. *Should follow initial best endeavours commercial negotiations between lessees and tenants;*
3. *Funded by users;*
4. *Not replacing existing regulatory protections.*

5.4 Airport Planning

The general philosophy behind airport privatisation was to allow more efficient use of airport assets and to unlock the investment potential of the private sector to develop and modernise Australia's airports. There is a misunderstanding in some sectors of the industry that the light handed regulatory approach adopted to date by Government amounts to total deregulation.

The process by which airport lease holders plan long term and major developments on airports is however explicitly regulated. Airports must prepare 20 year master plans following legislated consultation procedures which parallel state government planning consultation requirements. Input received during these consultations is taken into account by the Commonwealth Minister for Transport and Regional Services (now Minister for Infrastructure, Transport, Regional Development and Local Government) when considering the Master Plan for approval. Master plans must then be updated following the same process each five years.

Airports must follow a similar process for major development proposals over a certain threshold value, currently \$20 million.

A number of times during the SILG's industry consultations it was apparent that airport tenants had not taken advantage of the consultation arrangements to which they were entitled, or were unaware of the process. In some cases, tenants were dissatisfied with developments at their airport but had not engaged in the formal consultation process to allow the Minister or his Department to take those views into account when assessing a proposal.

Recommendation 7: *Tenants are apparently not always engaged in the master planning process at airports. There is a need for relevant industry associations and airport operators to raise awareness of airport master planning processes, particularly when airport master plans or development proposals are issued.*

5.5 Local Government-Controlled Airports

There has been much focus on the 22 former FAC airports operated under long term leases from the Commonwealth; other airports fall under the planning and regulatory environment of state and local governments.

The transfer of ownership of aerodromes to private owners and to local councils has resulted in price increases in landing, parking and other infrastructure charges. Commercial rents have also increased to be more in line with comparable non-aviation business leases. Airports transferred to local councils under the ALOP were transferred with a requirement that the local council agreed to operate the aerodrome and to keep it open for public use. However, any decision to close or convert to alternative land use existing airports not covered by ALOP agreements is subject only to local council and state government planning processes, with no regulatory role for the Commonwealth. Concerns were raised during the development of the Action Agenda that councils are at times unprepared to assess applications for airport development including building of new airstrips or conversion of existing rural land to airstrip use.

Recommendation 8: *Local and state governments to work with industry to improve existing airport development procedures. This should enable the process to be transparent and ultimately encourage investment in new or existing airports, acknowledging the need for appropriate community consultation and, where appropriate, obligations under ALOP Deeds of Transfer.*

An unexpected development since the lease of the former FAC airports has been the uncertainty created within the industry by at least one proposal to close a leased airport and develop it for alternative uses. In one case, the proposal included plans to build a replacement airport following a land swap with the Commonwealth. Although the Australian Government has given no

support to any such proposal, uncertainty has certainly been generated for the tenants concerned. In some cases this has been compounded by difficulty in negotiating long term leases and left tenants with a critically uncertain investment environment.

Recommendation 9: *The Australian Government to confirm the requirement that leased Commonwealth airports must remain in use as effective airports and not be totally converted to other purposes.*

The SILG notes that Recommendation 9 is, in fact, mandated by the *Airports Act 1996* which states:

An airport-lessee company has a statutory obligation to use the airport site as an airport.

However, there appears to be a low level of awareness within the industry of this and the SILG believes it would be beneficial for the Government to make a clarifying statement.

The obligation for ‘airports to remain airports’ however does not guarantee the business continuity of any individual General Aviation business. As in many other industries, there has been consolidation and restructuring of General Aviation businesses and there appears to be movement ‘up the value chain’ at capital city secondary airports.

The growth of low-cost airline activity in Australia has thus far not impacted on secondary General Aviation airports in capital cities such as Bankstown, Moorabbin, Parafield, Jandakot and Archerfield. However, use of secondary airports for low-cost carriers is an essential part of that sector’s business model in Europe and the United States. It is quite likely that airport operators and airlines will look for opportunities in that regard in Australia.

Such opportunities need to be pursued following the legislated Master Plan process currently in place under the *Airports Act*.

Improved tertiary level training, including in business skills, will help develop the thoroughly professional people needed to modernise and compete in a global economy.

6: Education and Skills in the General Aviation Sector

6.1 Pilots

Airlines had traditionally been able to rely on a supply of air-force trained pilots going back to the end of the Second World War. This career path, combined with a large number of pilots prepared to self-fund their training due to a strong personal interest has allowed major airlines to attract experienced pilots as an employer of choice. The industry has benefited from the strong personal appeal of flying as a career and the offer of rewards as a major airline pilot. Although there have been cyclical peaks and troughs in supply in the past, the Australian aviation industry has in general not needed to fund entry-level training for pilots. But the industry is only now responding to the structural change in the labour market of the last few years.

The Australian airline industry has been in a continuous growth period since the collapse of Ansett in September 2001. This growth is expected to continue for the foreseeable future. Worldwide, there is significant airline growth, in particular in Asia and the Middle East. An international shortage of pilots is reportedly developing, with high demand for Australian-trained pilots particularly from Asia and the Middle East.

The impact of pilot shortages is likely to have differential impacts on the various sectors of the Australian aviation industry. Major airlines such as Qantas, Jetstar and Virgin Blue may experience increases in costs and potential limits to expansion of operations but have already taken steps to address the problem. For example Qantas has announced an expansion of its pilot training programme in partnership with several tertiary institutions that may be eligible for Australian Government assistance through FEE-HELP.

Australia's largest independent regional airline, Regional Express, (Rex) may also experience limits to its growth and expansion in regional Australia. Airlines such as Rex have traditionally acted as flight deck staff (feeders) to bigger airlines such as Qantas. Regional airlines' ability to retain pilots has reportedly declined as major airlines accept lower experience thresholds (usually expressed in hours flown) to fill vacancies. Rex has reported a 60 per cent attrition rate in pilots over the past twelve months which has caused difficulties with services on some routes.

General Aviation operators including smaller regional airlines, charter operators and providers such as the RFDS, and search and rescue operators are already reporting critical shortages that are compromising their ability to operate.

Of particular concern are common reports that experienced instructors are being recruited by airlines to fill pilot vacancies which impacts on the ability of the industry to train future pilots.

The situation overseas appears to support concerns over a global shortage of pilots, with reports (The Economist, 2007) that India has fewer than 3,000 pilots today but will need more than 12,000 by 2025. China will need to find an average of 2,200 new pilots a year just to keep up with the growth in air travel, which means it will need more than 40,000 pilots by 2025. In the meantime, with major international airlines training only a few hundred pilots a year, Asian airlines have taken to poaching them, often from each other. Philippine Airlines, for instance, lost 75 pilots to overseas airlines over the past three years and China has been trying to lure pilots from Brazil, among other places.

While these developments create opportunities for Australian flight training businesses, they also create significant challenges in ensuring there are adequate local pilots to provide for the current and future domestic industry, not to mention sufficient pilot instructors to train the next generation of pilots for the industry.

Inexperienced pilots and flying instructors have traditionally been modestly remunerated and prepared to accept low pay in the interest of building their hours for future airline experience. As demand for pilots from airlines has increased, the necessity for instructors and inexperienced regional airline pilots to build long periods of experience has declined and the turnover at training schools and small airlines has become greater.

Recommendation 10: *General Aviation businesses to develop strategies to attract and retain skilled employees. Examples include:*

- Contributing to the cost of training through measures such as cadetships, scholarships and loan schemes.
- Developing more creative retention strategies. This will inevitably require partnerships with airlines.
- Taking measures to respond to a tight labour market such as increasing advertising or offering more attractive salary/working arrangements.
- Industry bodies to better market aviation careers at schools and to organisations specialising in retraining mature aged workers.

6.2 Current Industry Initiatives

Initiatives by Australian airlines to expand the recruitment and training of pilots such as those detailed in Section 6.1 show that the industry has not been unresponsive to its current challenges in addressing pilot shortages. At this stage, however, it is not clear whether there has been sufficient take-up

of these new courses to address current shortages and meet the future skills needs of the industry.

A 'Future Pilot Task Force' has been established by industry representatives to focus on the provision of 'Solutions for Australian Aviation'. Comprising representatives from major airlines including Qantas and Virgin Blue, flying training organisations, higher education institutions, industry organisations and Commonwealth Government Departments including CASA and the Department of Infrastructure and Transport, the Task Force is addressing the significant issues facing aviation in Australia now and in the immediate future with emphasis on the pilot shortage.

Participants in the Task Force identified the major contributing factor to the pilot shortage being the inability of the training sector to retain qualified flying instructors. The Task Force participants have agreed to work together to promote the role of the flying instructor as an essential element in ensuring Australia's ability to produce sufficient pilots for the future industry demand. It was identified that the industry needed to increase instructor numbers by a sustained 15 per cent in order to meet the projected domestic pilot demand for the next five years.

Also identified was the need to promote the perceived place of a flight instructor qualification in the career path of the professional pilot. Airline representatives reinforced this need for flight instruction to be recognised as a profession by the industry and for flight instruction to be promoted as one of the best qualifications an aspiring airline pilot can have on their CV. There was consensus that pilots with a flight instructor background adapted easily and quickly to the airline environment. This was particularly true for more advanced and experienced instructors.

Another key decision of the Task Force is to establish a joint Airline Working Group to develop and introduce a unified industry 'pre-selection' process consisting of tailored psychometric, numeracy, literacy, decision making and motor skills tests to identify pilots with potential to be both instructors and airline pilots. This would give potential candidates the confidence to choose flight instruction as the most suitable career path to the airlines.

Lastly, the Task Force identified the need to promote piloting to the community as a worthwhile and rewarding career. As part of this promotion the Task Force will initially seek to entice those qualified instructors who, for a variety of reasons have left the industry, to return. The Task Force noted that the return of as few as five percent of this group would have a positive impact on the industry. Secondly, the Task Force would commence planning a 'Roadshow' around major Australian cities to promote piloting as a career with the airlines and training organisations working cooperatively in supporting and staffing these 'Roadshows'. The recent Qantas pilot recruitment 'Roadshow' would be used as a model.

The participants noted the generosity of Qantas and Virgin Blue in participating in and supporting the Taskforce and all welcomed the unified and co-operative manner in which airlines, government and the training industry were working together to create solutions and a positive outcome for the industry.

Multi-crew pilot licence

CASA is currently developing the proposed multicrew pilot licence (MPL) regulatory framework. The MPL is designed to develop the abilities needed to fly multi-crew airline aeroplanes. Compared to traditional training pathways it makes greater use of simulators, adopts competency-based-training methods and further applies human factors and threat and error management in all phases of training.

Whilst some emphasis has been placed in the industry on the advantages of the MPL in addressing pilot shortages, this is not the rationale for its introduction. The MPL is an International Civil Aviation Organization (ICAO) initiative designed to create a training and licensing system for multi-crew operations that will produce better safety outcomes.

The ability of the MPL to significantly increase the supply of pilots to airlines in the short term is doubtful. Airlines are unlikely to change from traditional methods of training overnight and timeframes and costs are yet to be established under the MPL system. The proposed introduction of MPL will result in both opportunities and challenges for the traditional GA sector. Flight training businesses will need to adapt to this new training environment to remain competitive and to explore export opportunities.

6.3 Training Framework

The Transport and Logistics Industry Skills Council, one of nine sectoral councils that form part of the National Training System, develops Training Packages for the aviation sector in consultation with industry and using funding assistance from the Australian Government. These Training Packages are key resources for Registered Training Organisations (RTO) to deliver training, assess competencies and issue nationally recognised qualifications.

A Review of the Aviation Training Package is nearing completion and is expected to be released shortly. The review has found that the existing Certificate IV in Transport and Distribution (Aviation Flight Operations) did not meet industry needs in that it did not reconcile with CASA licensing requirements.

The outcome of the review is to restructure the current framework of the Certificate IV Flight Operations qualifications to more accurately reflect industry and regulatory needs. The restructuring removes the existing

qualification TDA40203A Certificate IV in Transport and Distribution (Aviation Flight Operations) to provide for two new qualifications for commercial airline pilots - TDA40107 Certificate IV in Aviation Operations (Commercial Pilot Aeroplane Licence) and commercial helicopter pilots – TDA40207 Certificate IV in Aviation Operations (Commercial Pilot Helicopter Licence). These two new qualifications are aligned to national licence requirements.

Many flight training schools are not formally recognised RTOs as they have been focussed on helping students gain CASA licence qualifications. Reaching RTO status is important as only RTOs can:

- Deliver nationally recognised courses and qualifications
- Apply for Australian, state and territory government funding
- Create new accredited courses in response to specific demands
- Register on Commonwealth Register of Institutions and Courses for Overseas Students to provide courses to overseas students studying in Australia

Flight training providers who are yet to do so should be aware of the benefit of establishing themselves as an RTO to broaden their potential customer base.

6.4 Government Assistance for Pilots Training in the Vocational Education and Training Sector

The Australian Government announced in 2007 that FEE-HELP will be extended to full-fee paying students in diploma and advanced diploma courses that are accredited as Vocational Education and Training (VET) qualifications, where an approved VET provider can demonstrate agreed credit transfer arrangements into a university degree. The intention of the FEE-HELP for VET measure is to remove some of the barriers that exist for students who have chosen to pursue further higher-level qualifications through the VET system.

Subject to the passage of legislation, the scheme is expected to commence during 2008. It is understood that legislation, processes and guidelines are presently being developed for the administration of the scheme. This is expected to include registration criteria for providers wishing to participate and guidelines for credit transfer arrangements between VET and Higher Education providers.

To access FEE-HELP, aviation training providers will need to be RTOs and apply to the Department of Education, Employment and Workplace Relations to become approved to offer FEE-HELP.

An RTO has been assessed as compliant with the Australian Quality Training Framework Standards for RTOs and can competently deliver and/or assess the

training qualifications it is registered to provide and is authorised to issue nationally recognised qualifications.

RTOs offering aviation qualifications must apply to qualify for FEE-HELP demonstrating that they will deliver diploma and advanced diploma courses which have significant credit transfer arrangements with a Higher Education Institution. Training organisations will have to negotiate directly with a university to ensure that their vocational course is accepted to provide credit transfer for a higher education qualification. Universities with an existing vocational arm, such as Swinburne will be best placed to ensure that vocational training also provides credit for a tertiary qualification.

Given this, students are then able to apply to borrow up to the amount of the tuition fee being charged by the training provider through FEE-HELP. If approved the Australian Government pays the amount of the loan directly to the student's provider. A loan fee of 20 per cent applies for undergraduate courses of study and the loan is indexed to the CPI. Students may borrow up to the FEE-HELP limit of \$81,600 (2008 limit, indexed in future) in their lifetime.

Students who receive FEE-HELP repay the loan either through voluntary repayments or through the tax system once their income reaches the minimum threshold for compulsory repayment of \$39,825 (2007-08 basis).

State governments are primarily responsible for vocational education. States may choose to offer supported places for vocational pilot training but are not, as far as the SILG is aware, active in this area. If such a place offered a significant contribution towards practical pilot training, they would be expensive and, as such, would probably be treated as a lesser priority for state vocational education funding than other less costly vocational training.

6.5 Government and Industry Assistance for Pilots Training in the Higher Education Sector

The Qantas Cadet Pilot Program currently contains an option to complete a Bachelor of Technology (Aviation) at Swinburne University. Cadets enrolled in this programme are able to complete the tertiary component of their studies in a Commonwealth funded place. However the flying component of the Bachelor's Degree is a self-funded course with all costs associated with flight training being the responsibility of the Cadet. Qantas advises that cadets should expect to pay at least \$75,000 for the flight training component of this qualification.

Qantas recently made three significant announcements in relation to pilot training. The first of these detailed the establishment of a new, standalone flight training business with the aim of training 3,000 new pilots for the

Qantas Group over the next 10 years and a significant number of pilots for other airlines. Qantas also announced a significant expansion of its cadet program, anticipating offering over 100 cadetships each year.

The recently announced Qantas cadetship offers improved employer support and more certainty of continuing employment with the Qantas Group than past schemes. Upon successful completion of the relevant course, cadets undertake a further two years of compulsory flying employment experience, with positions secured by the Qantas Group. This employment may include RPT, charter, instructional, regional airline, or other types of flying, at regional or city areas throughout Australia or elsewhere in the Asia-Pacific region.

After successful completion of this phase of training, cadets will be considered for employment as a Second Officer with the Qantas Group,

On 4 July 2007 Qantas in partnership with Swinburne University announced that a full fee Associate Degree of Technology (Aviation) will be offered from January 2008. However the SILG understands that there may need to be some change to these arrangements as full fee paying undergraduate places are to be abolished by the Government from 2009.

Qantas also announced a partnership with Griffith University for a new three year course where students receive a Bachelor of Aviation and a Graduate Diploma of Flight Management. Graduates leave the program holding these qualifications plus their commercial pilot licence and credit for all Air Transport Pilot Licence (ATPL) theory subjects. Upon successful completion of the three-year course, cadets undertake a further two years of compulsory flying employment experience with positions secured by the Qantas Group, following which cadets may be considered for employment as Second Officers.

Those undertaking the Griffith University Bachelor of Aviation course and a Graduate Diploma of Flight Management should be able to access FEE-HELP for the course, including the commercial flight training component. The structure of this qualification takes best advantage of current educational assistance. Students are eligible for Commonwealth support and students for units completed for the Bachelor of Aviation and are able to defer payment for these units through the HECS-HELP scheme (Australian Government supported university place to be repaid through the Higher Education Loan Programme). Units completed as part of the Graduate Diploma of Flight Management are full-fee paying and eligible for the FEE-HELP scheme (A full-fee paying/unsubsidised university place to be repaid through the Higher Education Loan Programme) but exempt from a 20 per cent loan fee as a post-graduate qualification.

Students have been able to access HECS-HELP for Bachelor of Aviation degrees at public universities however, because the flight training component of a student's training has not contributed to a higher education qualification,

students have not been able to access any Government assistance for their training. These new training initiatives reflect that, by incorporating commercial flight training into new qualifications such as Associate Degrees, a proportion of total pilot training qualifies under FEE-HELP loans.

The SILG sees the expansion of tertiary training into the GA sector as critical to giving the industry access to the skills that will transform it and make it competitive in the twenty-first century. This is important in attracting professional pilots into the sector but also in supplementing the technical skills with the necessary business and management abilities that are often lacking in the sector. To achieve this, the SILG believes it is necessary for the Government to explicitly allocate funding to aviation courses at selected universities to attract students to these disciplines.

Recommendation 11: *Careers in aviation are thoroughly professional and the development processes available to candidates for aviation careers should be commensurate with this. Tertiary level courses should be either established or expanded in all Australian states and territories to offer places in aviation management, pilot training and aviation-related engineering. Funding should be allocated to universities on a funding-per-place basis.*

6.6 Skills Australia

As a key initiative in addressing skills shortages in the Australian economy, the new federal Government will establish an advisory body, Skills Australia to advise on training and skills priorities.

The Deputy Prime Minister is consulting with relevant State and Territory Government Ministers and Industry Skills Councils seeking their urgent cooperation in prioritising the first tranche of training places in areas that are experiencing acute shortages.

The Government has announced that industries likely to receive new training places will include mining, construction, health and community services, and personal and other service industries.

It is important that the GA industry takes advantage of the relevant Industry Skills Council (in this case, the Aviation Sector Committee of the Transport and Logistics Industry Skills Council) to ensure that the industry's views as to training priorities are made clear to the Government.

Recommendation 12: *The Department of Infrastructure, Transport, Regional Development and Local Government and the General Aviation industry to liaise with the Department of Education, Employment and Workplace Relations and the Transport and Logistics Industry Skills Council to ensure industry needs are recognised as part of the Government’s wider consideration of skills training.*

6.7 Engineers

The safe operation of GA aircraft requires the support of specialised Aviation Maintenance Engineers (AMEs) and Licensed Aviation Maintenance Engineers (LAMEs). In addition to the normal apprenticeship pathway of technical workers, apprentice AMEs need to pass a series of examinations by the aviation safety regulator to qualify for specific areas of work.

A number of stakeholders raised concerns about the relative difficulty of attracting new AMEs and LAMEs into the workforce as the present workforce aged and retired. The problems appear to be localised, with some areas of Australia experiencing particular supply issues. For example, there are reportedly critical shortages of avionics engineers in northern Western Australia and Tasmania requiring operators to travel long distances for repair or maintenance work.

Previous research by the BTRE (BTRE, 2005) also raised issues concerning LAME shortages. Stakeholders reported relatively low wages and limited career prospects and at times difficult working conditions in more remote parts of the country. Many businesses reported a limited capacity to pay more or offer better conditions to staff.

In 2007, responding to research from CASA and the Australian Bureau of Statistics, the Australian Government recognised the shortages in these occupations by adding the occupations of avionic and mechanical Aircraft Maintenance Engineer to the Migration Occupations in Demand List (MODL).

The changes to the MODL mean that General Skilled Migration (GSM) visa applicants who have recognised skills in aircraft maintenance will be awarded additional points for a points-tested GSM visa, making it easier for them to come to Australia as skilled migrants. The SILG was not able to source data to confirm the uptake of GSM visas for AMEs.

The Government also added the occupation of Aircraft Maintenance Engineer to the National Skills Needs List. Inclusion on this list gives apprentice aircraft maintenance engineers access to a range of Australian Government apprenticeship incentives including:

- \$2,000 Apprenticeship Wage Top-Up

- \$1,000 Apprenticeship Training (FEE) Vouchers
- \$800 Tool Kit
- \$13,000 Wage Subsidy for Apprentices over 30 yrs
- \$1,000 Commonwealth Trade Learning Scholarship
- \$1,000 Rural and Regional Skills Shortage Employer Incentives

The Queensland State Government has also taken specific measures to address the shortage of LAMEs and other occupations in the aviation industry with the establishment of Aviation Australia. Aviation Australia was founded in 2001 in cooperation with major airlines, aerospace companies and universities. With the objective of meeting the industry's future skills requirements, Aviation Australia's training programs have been designed to co-exist with university courses from professional development and leadership, through to engineering and management. Aviation Australia has moved beyond training personnel for the major airlines or GA, specialising in courses for aerospace companies such as Boeing and civil aviation authorities from Asia-Pacific nations.

The Board of Directors receives advice from an Advisory Panel that consists of prominent personnel from major airlines and aviation organisations who advise Aviation Australia on future trends in the aviation industry and future training developments and requirements. Additionally an Industry Council has been established which consists of representatives from airlines, aerospace companies, component manufacturers, General Aviation and the Royal Australian Airforce. The Council meets triennially to offer advice to the Board of Directors and CEO on projected labour needs, the requirements of specific sectors of the Australian and Asia-Pacific region aviation industries and other issues that can be used by the organisation to ensure their training programs remain relevant to industry requirements. Information given by the Industry Council can be very specific, from types of aircraft engines that will be used in the future, to the size and layout of passenger airliners and the types of maintenance training that will be required for new engines, aircraft and electrical systems/avionics etc.

Aviation Australia operates under CASR Part 147 which ensures all engineering and cabin crew courses are also certified and recognised by the European Aviation Safety Agency (EASA) and the Hong Kong Civil Aviation Department.

With a smaller base in Cairns, Aviation Australia has positioned itself as a viable and progressive training facility in the Asia-Pacific region to manage and meet the aviation industry's growing list of skills requirements and shortages in specific positions such as aircraft maintenance engineers.

Aviation Australia has also proved to be commercially successful. On 3 December 2007 the Queensland Government announced that it will be privatised to encourage future growth.

The SILG recognises initiatives like the establishment of Aviation Australia in providing dedicated aviation training. Recognising states' primary role in providing vocational education, the SILG encourages other states to consider similar options in their TAFE sectors to train aviation maintenance engineers. Training should also include cabin crew and other aviation occupations which are attractive to foreign airlines who want a 'one stop shop' to train large numbers of employees for a variety of positions. This would make these training organisations better able to attract large foreign airlines and organisations that required training in both technical and non-technical positions. This may then open up further opportunities for Australian flight training and aviation technical organisations to establish a base in the home country of those airlines with the possibility of some form of reciprocal arrangements arising.

Recommendation 13: *State jurisdictions to work with industry and the Commonwealth to ensure appropriate support of aviation maintenance engineer training in the technical education sector.*

6.8 Regulatory Issues Affecting Pilot Training

CASA is responsible for the regulation of flight training and licensing and the SILG was concerned to examine whether there were any regulatory barriers affecting flight training.

One suggestion communicated to the SILG was that CASA should review syllabi for flight training. CASA has responded that extensive reviews of the syllabi have been undertaken in recent years as a result of the regulatory development programme. A comprehensive review of the Day Visual Flight Rules syllabus was undertaken in 2005. The Flying Training Industry Development Group conducted a review of the syllabus to validate the flight standards.

CASR Part 61 is currently nearing completion, with the associated syllabi kept up to date with any new developments. The regulation introduces broad-based competency training and represents a significant step forward in streamlining Australia's pilot training regime. Changes to the syllabi in the near term are unlikely to make any significant impact on the number of pilots undertaking professional training. If there are any industry concerns with the proposed training system in CASR Part 61 (as opposed to the current system) CASA would appreciate receiving specific detail on perceived issues with the pilot training syllabi.

CASA's role in flight training is limited. Most of the regulatory services are already performed by industry through Approved Testing Officers. The new CASR rules will also continue this involvement by industry.

A review of the costs of comparable costs of flight training in Australia, the UK and the USA, prepared for the Hawke Regulatory Review Task Force in 2007 (CASA, 2007b) found that the direct cost-recoverable CASA fees to become an ATPL holder are approximately \$1,600. This includes the security check and ID, all licences, and all 16 written examinations. This should be seen in context of the total cost from ab-initio to Commercial Pilot Licence Aeroplane with Command Instrument Rating (Multi Engine) of approximately \$80,000 to \$100,000 in total.

6.9 Regulatory Issues affecting Engineer Training

With the introduction of the new CASR regulatory suite covering the training and licensing of maintenance personnel, licensed engineer training will be undertaken by certificated training organisations in a competency based regime. It will deliver a more flexible and competitive maintenance workforce whilst maintaining and improving maintenance standards. Aspects of the licensing scheme have already been implemented, prior to the introduction of the new CASR rule parts, through the implementation of Civil Aviation Order (CAO) 100.66, aimed at the licensing of engineers for larger aircraft maintenance. The CAO is voluntary for the industry and allows engineers to gain a permission that will be equivalent to permissions within the proposed new rules.

CASA is adopting a regulatory style similar to that proven by the European Aviation Safety Agency (EASA). This regulatory style also allows for different methods of achieving the outcomes for large and small aircraft and various types of operations. The EASA rules are practical, safety-based and designed to work flexibly. In order to encourage new entrants into the industry, the 'General Aviation' licensing scheme is currently being designed to allow new starters to exercise privileges earlier than is currently allowed, building on a modular approach to acquiring the required competencies. This should encourage industry to engage apprentices who will become more productive earlier in their careers.

Recommendation 14: *CASA and industry to continue to work together to ensure appropriate balance of safety and training effectiveness. At the same time, it is important that the industry realises what is already available.*

Everybody wants a regulator that is effective and efficient and doesn't impose unnecessary cost. Getting agreement on what that regulator should look like is more difficult. There is cautious support for the current reform direction of CASA.

7: General Aviation Regulatory Environment

7.1 Overview

Aviation is a highly regulated industry. The community expects very high levels of safety in passenger carrying aviation activities and other activities which potentially impact on public safety. Regulators face the difficult task of balancing the direct and indirect cost of regulation with safety and security outcomes. The Civil Aviation Safety Authority (CASA), Airservices Australia and the Department of Infrastructure, Transport, Regional Development and Local Government including the Office of Transport Security and the Australian Transport Safety Bureau (ATSB) form the basis of the regulatory environment in which General Aviation operates.

7.2 Safety Regulation

CASA regulates the safety of civil air operations in Australia and the operation of Australian aircraft overseas and broadly provides the following services to the GA industry:

- Certifying both aircraft and maintenance operators;
- Licensing pilots and engineers;
- Providing safety education and training programmes.

CASA services are an important input to aviation businesses as many activities cannot take place without the requisite regulatory approvals. Not illogically, industry input to the Action Agenda was highly sensitive to both CASA performance and pricing of its regulatory services.

Analysis of the input costs directly related to CASA's regulatory activities (CASA, 2007b) show that in the case of pilot training activities, of a total cost of around \$50,000 to \$100,000 to acquire an ATPL, \$1,600 was attributable to CASA costs. Flying training organisations indicated that their cost of compliance with CASA requirements was some \$5,800 annually per organisation; they did not identify what percentage of total costs this represented.

The SILG attempted to ascertain the impact of CASA costs on GA businesses. While it was not able to obtain data in this regard, several businesses stated that CASA direct fee costs were not their largest concern, rather they were concerned that CASA's responsiveness and quality of service did not negatively impact on their business through delays or inconsistent regulatory decisions.

CASA has advised it has been undergoing significant cultural reform within the organisation aimed at improving performance and consistency. This has included some structural change within CASA including the consolidation of regulatory functions in its Brisbane office. Industry is generally supportive of these changes and would like to see them fully implemented as soon as possible.

While some stakeholders suggested governance changes at CASA - such as the introduction of a Board - may improve responsiveness to industry and help to remove perceptions of politicisation, the SILG was concerned that existing reforms were not delayed in the short term by such major governance changes.

Complaints arising from dissatisfaction with CASA's services can in any case be taken to the CASA Industry Complaints Commissioner for investigation and resolution. Where appropriate, this will lead to recommendations to the Chief Executive Officer and corrections to CASA's processes and procedures to prevent recurrence of problems of the kind that gave rise to one or more complaints.

The completion of the CASA regulatory programme has important implications for the General Aviation industry, particularly the completion of CASR Part 135 (Air transport operations – small aeroplanes, Part 61 (Flight crew licensing), Part 145 (Maintenance organisations) and Part 149 (Recreational aviation administration organisations). The industry's continued involvement in this process is necessary to achieve acceptable outcomes for the General Aviation sector.

The primary mechanism CASA utilises in ensuring industry involvement in regulation is the Standards Consultative Committee (SCC). SCC brings together CASA staff and representatives from a diverse range of aviation industry groups to work jointly during the development phase of regulatory material. The SCC examines proposed regulatory changes to determine if they are worth pursuing and assists CASA in the allocation of priorities to those projects. Aviation community experts then work together with CASA staff in subordinate groups (SCC sub-committees, project teams and working groups) on the detailed development of regulatory material (both new regulations and amendments).

SCC and sub-committee members serve without financial compensation. However, CASA does make funding available for the provision of venues for all SCC and sub-committee meetings. The SCC currently comprises of 39 organisations from a diverse range of industry groups. There is a combined total of over 200 CASA and industry participants in the SCC and its six sub-committees.

The principal tasks of the SCC are to:

- Consider regulatory proposals that have been submitted to the SCC by CASA with a view to deciding whether a proposal is worthy of consideration and, if so, recommend a level of priority that should be placed on the regulatory work associated with the proposal.
- Through the aviation community members of the SCC, identify individual experts to work with CASA staff on the development of regulatory proposals which are accepted as elements of the aviation safety standards development programme.

Organisations not currently represented on the SCC are able to nominate to CASA to join by providing information on how they will contribute to the SCC consultative process.

With the exception of one submission, stakeholders did not provide any adverse comments on the CASA consultative arrangements.

7.2 Self-Administration

A proposal for self administration of the GA industry is currently being investigated by the industry and CASA. Self administration means CASA would continue to set the safety regulations and oversee the performance of any administrative body, but would have a much lower level of direct involvement.

Self administration arrangements currently apply to the sports aviation sector, where peak bodies in each aviation sport administer regulations set by CASA. These peak bodies issue licences and certificates, carry out safety surveillance and provide other regulatory services.

CASA then audits the activities of the peak bodies to ensure compliance with regulatory standards. This approach means CASA only devotes a relatively small level of resources directly to sports aviation, allowing more attention to be focussed on higher priority passenger-carrying operations.

During consultations, the SILG heard mixed views on the desirability of self-administration. While there was support for achieving a more cost effective administration of regulatory environments, there was concern that safety standards not be compromised and rather, support for the existing regulator to continue to improve its own performance. The industry recognised that it is important to have a strong regulatory approach to managing the minority 'cowboy element'.

Recommendation 15: *CASA and industry continue to explore a workable model for self-administration but that this process proceed with caution and be limited to flying activity excluding passenger transport operations.*

7.3 Security Framework

Background checking and licensing of pilots

From 1 July 2004 all pilots and trainee pilots were required to undertake background checking prior to being issued with new licences bearing photographs.

Ensuring that pilots and trainee pilots are subject to background checking reduces the likelihood of persons who might pose a threat to aviation gaining access to aircraft through apparently legitimate means.

In introducing this new requirement the Government balanced the needs of the GA sector with the broader public interest and the current threat environment and has taken into consideration that the costs of security measures are now widely accepted as a normal operating cost of business.

The Department of Infrastructure, Transport, Regional Development and Local Government estimates that the new licences cost pilots or their employers well below \$200 per person. The Department has been working with CASA to streamline the introduction of this new step in the licensing process to minimise bureaucracy.

Non-powered aircraft are not included in the category of aircraft required to be secured from theft. Background checking will not be carried out on pilots of non-powered aircraft and they will not be required to have a photographic licence.

In developing the Action Agenda some concerns were raised about the potential delays caused by background checking of pilots. In some cases solo student pilot training, particularly for overseas students, had been delayed while background checking was completed.

Aviation Security Identification Card

The Aviation Security Identification Card (ASIC) was introduced through changes to the aviation transport security legislative regime in 2005. Since 31 March 2006, the new security card has been a requirement for people who need to gain access to secure areas of security controlled airports, making the cards vitally important to many pilots.

Personnel working at GA security controlled airports (airports that do not have RPT services) do not need an ASIC.

From 3 September 2007 responsibility for coordinating the conduct of background criminal and security checks on applicants for ASIC and Maritime Security Identification Cards (MSIC), and for notifying the relevant issuing authority of the outcome of the background checks, was transferred to AusCheck within the Australian Government's Attorney-General's Department.

AusCheck was established to:

- Enhance national security by establishing greater and more conspicuous control by Government of security arrangements at more air and sea ports;
- Maintain a database of up-to-date information on persons who apply for and are ultimately issued with an ASIC and/ or MSIC;
- Mitigate the risk of ASIC and MSIC cards going to ineligible persons by preventing the use of fraudulent proof of identity documents;
- Reduce duplication and improve the consistency and response time of background checking in the aviation and maritime industries;
- Provide capacity to be used for other background checking purposes.

AusCheck operates on a cost recovery basis and maintain a comprehensive database of all applicants and cardholders for the aviation and maritime industries. It also helps the aviation and maritime industries to identify individuals who should not be eligible for an ASIC or MSIC, by applying a consistent interpretation of the statutory requirements and providing a recommendation to the relevant issuing body.

The SILG understands the current cost from AusCheck for the range of ASICs is:

New ASIC with Department of Immigration and Citizenship (DIAC):	
\$90	
New ASIC without DIAC check:	\$86
Renewal ASIC with DIAC check:	\$80
Renewal ASIC without DIAC check:	\$76

These fees are set until 30 June 2008, at which time a review will be conducted of the fees charged for all services relating to ASICs.

The SILG understands the need for a secure aviation environment, particularly in the circumstances that have prevailed since September 2001. However, it is important that the measures continue to be commensurate with risks and for the measures to be effectively communicated to stakeholders.

Recommendation 16: *That Government periodically review security requirements for airports and aviation operators to ensure that security measures are commensurate with the most current risk and threat environment at respective locations and are not imposing unnecessary costs on industry.*

The average age of General Aviation aircraft in Australia is over 30 years and rising. Investment is needed to ensure the age profile of the fleet does not continue to deteriorate.

8: Investment and Fleet Renewal

8.1 Overview

The Issues Paper published by the SILG in April 2007 drew on a recent ATSB publication examining the relationship between ageing aircraft and flight safety.

The ATSB report found that the average age of Australia's large commercial aircraft fleet is relatively low but that the aircraft with the highest average age are the single-engine and multi-engine piston fixed-wing aircraft (with a maximum take-off weight of 5000 kg or less). Multi-engine fixed-wing aircraft typically used in charter and small low-capacity RPT had an average age of 31 years in 2005. This was an increase of 10 years from the average age in 1995, indicating that very few new aircraft entered service in the interim and the majority of the existing fleet remained on the register.

Many regional airlines use multi-engine piston aircraft for low capacity RPT operations, particularly to service remote communities. These airlines often operate with small profit margins that limit their capacity to acquire new or newer aircraft. Operators are therefore left with the undesirable option of maintaining their ageing aircraft with only limited continuing airworthiness support from the manufacturer.

The single engine piston fixed-wing aircraft fleet had an average age of 30 years in 2005, with the average age increasing by seven years over the preceding 10 years. These aircraft typically used in General Aviation, might not receive continuing airworthiness from their manufacturers. In addition, the maintenance requirements are not as stringent for GA aircraft as for RPT aircraft.

ATSB concluded that for piston engine fixed-wing aircraft used in general aviation and for low-capacity RPT operations, over 80% are older than 20 years.

ATSB concluded that piston engine aircraft used in GA and for low-capacity RPT operations are increasing in average age. For single- and multi- engine piston fixed-wing aircraft, over 80 per cent of aircraft are older than 20 years.

Further analysis of the usage of the GA fleet (BTRE, 2007) shows that, although the average age is over 30 years, only 17.9 per cent of all flying is done in aircraft over 30 years of age. This compares to 17.7 per cent of all flying in 2005. However, over half (53.6 per cent in 2006, 57.7 per cent in 2005) of all flying is done in aircraft over 20 years of age. 25.0 per cent of all flying is done in aircraft less than 10 years of age (22.8 per cent in 2005). The proportionate amount of flying done in aircraft of varying ages is, in addition to the average age of aircraft, an important indicator of the effective age of the fleet.

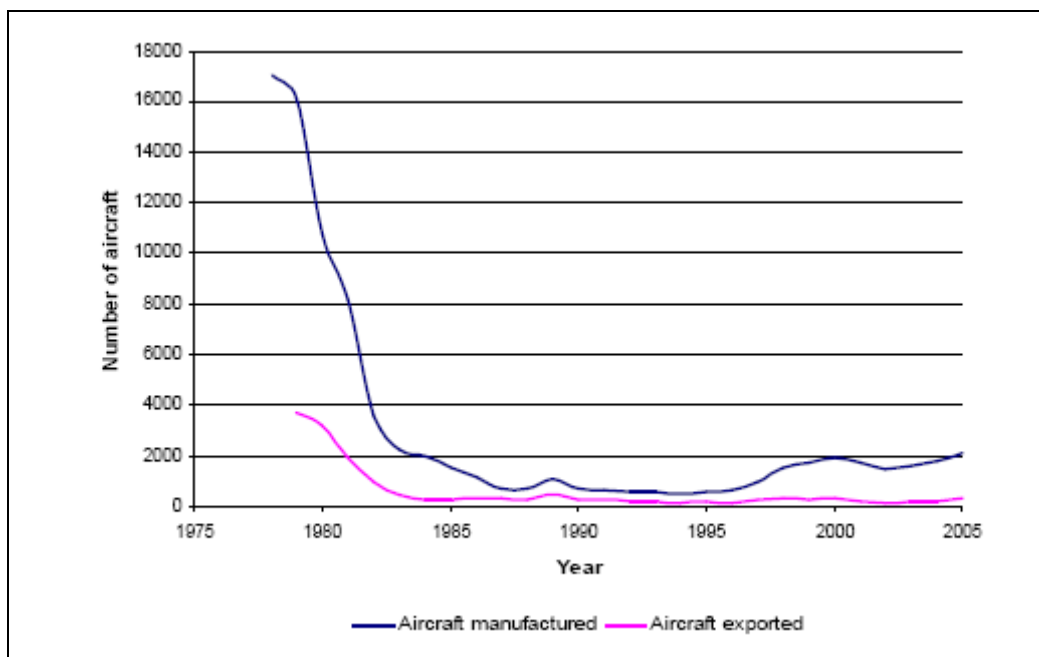
8.2 Economic Issues

When contemplating a decision regarding the purchase of a new aircraft or the refurbishment of an old aircraft, business operators will be largely driven by the economic considerations of costs and benefits. With the relatively high cost of aircraft replacement, many operators have decided that it is more economic to maintain ageing aircraft rather than acquire new ones. This had led to many aircraft in Australia's fleet, particularly in GA, being flown past their original design life, which is typically 20 years.

The United States has historically and continues to be the prime source of GA aircraft. Therefore, manufacturing output in the US and exchange rate fluctuations directly affect the Australian General Aviation industry. From 1982 to 2004 there was a significant increase in the purchase price for new General Aviation aircraft in the US. For comparison, a new Cessna 172 cost approximately US\$100,000 in 1982 and over US\$150,000 in 2004 (both these figures are expressed in 2004 US\$), while over this period aircraft prices rose faster than average weekly earnings. This comparison highlights that new aircraft have become significantly less affordable over the last 20 years.

The increase in purchase price of new GA aircraft has also been driven by the affect of product liability issues in the US. As a consequence of litigation in the 1980s and early 1990s, Cessna ceased production of single engine piston fixed-wing aircraft and the Piper Aircraft company went into bankruptcy. The US Congress responded by passing the General Aviation Revitalization Act in 1994; this limited liability for GA Aircraft manufacturers to 18 years. Since then, the production of General Aviation aircraft in the US has started to recover (BTRE, 2005 a). This situation is illustrated in figure 8, showing the delivery of the new aircraft over the 30 years from 1975 to 2005. In 1978, 1732 piston aircraft were delivered but production levels dropped quickly and have remained low since the early 1980s. By 1994, only 499 piston aircraft were delivered, of which 126 were exported. Since then, production has increased but numbers are still far below the production level of the late 1970s (GAMA 2006).

Figure 5: New General Aviation fixed-wing aircraft manufactured in the United States (GAMA, 2006)



Although the effect has been reversed to an extent by the recent hardening of the Australian dollar, the effect of exchange rate fluctuations since 1983 - when the Australian dollar was floated - have also added to the increase in price of new GA aircraft. The depreciation of the Australian dollar has meant that the cost of a new Cessna 172, in constant 2004 Australian dollars, has increased by approximately 150 per cent, from approximately \$140,000 in 1982 to approximately \$230,000 in 2004. And exchange rate fluctuations have tended to generate large changes over short periods. For example, in 2001 when the Australian dollar was valued at around US\$0.48, a new Cessna 172 would have cost approximately AUD\$340,000 (BTRE, 2005). The increase in price of new GA aircraft has therefore outstripped the comparable cost reductions associated with new aircraft, and has been a contributing factor to the increase in average age of the GA aircraft fleet.

Partly in response to the lack of suitable new replacement aircraft, and partly as a result of economic factors, amateur-built aircraft have become more popular in recent years. However, as these aircraft need to be assembled from a kit (requiring builders to acquire specific skills and invest considerable time), and because they are restricted to personal use, it seems unlikely that amateur-built aircraft will ever match the number of certified piston engine aircraft on the register.

If no steps are taken to change the situation, the average age and the number of aircraft aged over 40 years, of both piston single-engine and multi-engine fixed-wing categories - are likely to continue their current upward trend. This will mean that, by 2015, the average age of the single-engine fleet will be 37 years and the average age of the multi-engine fleet will be 40 years.

The sectors of the aviation industry that use piston engine fixed-wing aircraft often operate on thin profit margins with limited capacity to purchase aircraft aged 5 years or less. Where old aircraft are replaced, they are often replaced with younger, but not new, aircraft.

For the multi-engine piston aircraft category, over 97 per cent of aircraft are older than the typically 20-year economic design life (ATSB, 2007). Many of these aircraft are used as low-capacity RPT aircraft. As with many single-engine piston aircraft, aircraft in this category might not receive continuing airworthiness support from their manufacturers, therefore raising concerns about the sustainability of these aircraft as they age.

Australia's circumstances are not unique. Most single-engine and multi-engine piston aircraft were manufactured in the US, so the challenge of ageing aircraft is faced by many other countries. In the US, for example, the National Transportation Safety Board reported that in 2001 the average age of four seat single-engine aircraft was 32 years (NTSB, 2006). Multi-engine piston aircraft with between five and seven seats averaged 31 years, and those with eight or more seats were an average of 30 years old.

8.3 Taxation Depreciation Issues

There have been suggestions from the GA industry, and from the Australian aviation industry more broadly, that capital investment should be promoted through accelerated taxation depreciation arrangements for aircraft.

The Australian Government decided to remove accelerated depreciation as part of the reform of business taxation arrangement in 1999. This was designed to remove tax-induced distortions to investment decisions and to provide simplification by removing complex and inconsistent treatment across a host of disparate rules for different classes of capital investment. The domestic aviation industry already enjoys concessional taxation arrangements through the 2002 introduction of an effective life cap for aircraft of ten years in the income tax law. This decision followed the review of the 'safe harbour' effective life schedule, in which the Commissioner of Taxation issued a determination to increase the effective life of aircraft from eight years to 20 years, to apply from 1 July 2002. This effectively means that aircraft operators are able to depreciate their aircraft at around twice the rate of their true effective life. The statutory cap of ten years represents a substantial tax concession to the aviation industry, and is a concession that has only been extended to a few other industries which use plant and equipment with long effective lives.

Companies in the aviation industry have also enjoyed the benefits of a reduction of the company tax rate from 30 per cent from 1 July 2001, an

arrangement funded largely by the removal of accelerated depreciation as a result of the Government's earlier business taxation reforms.

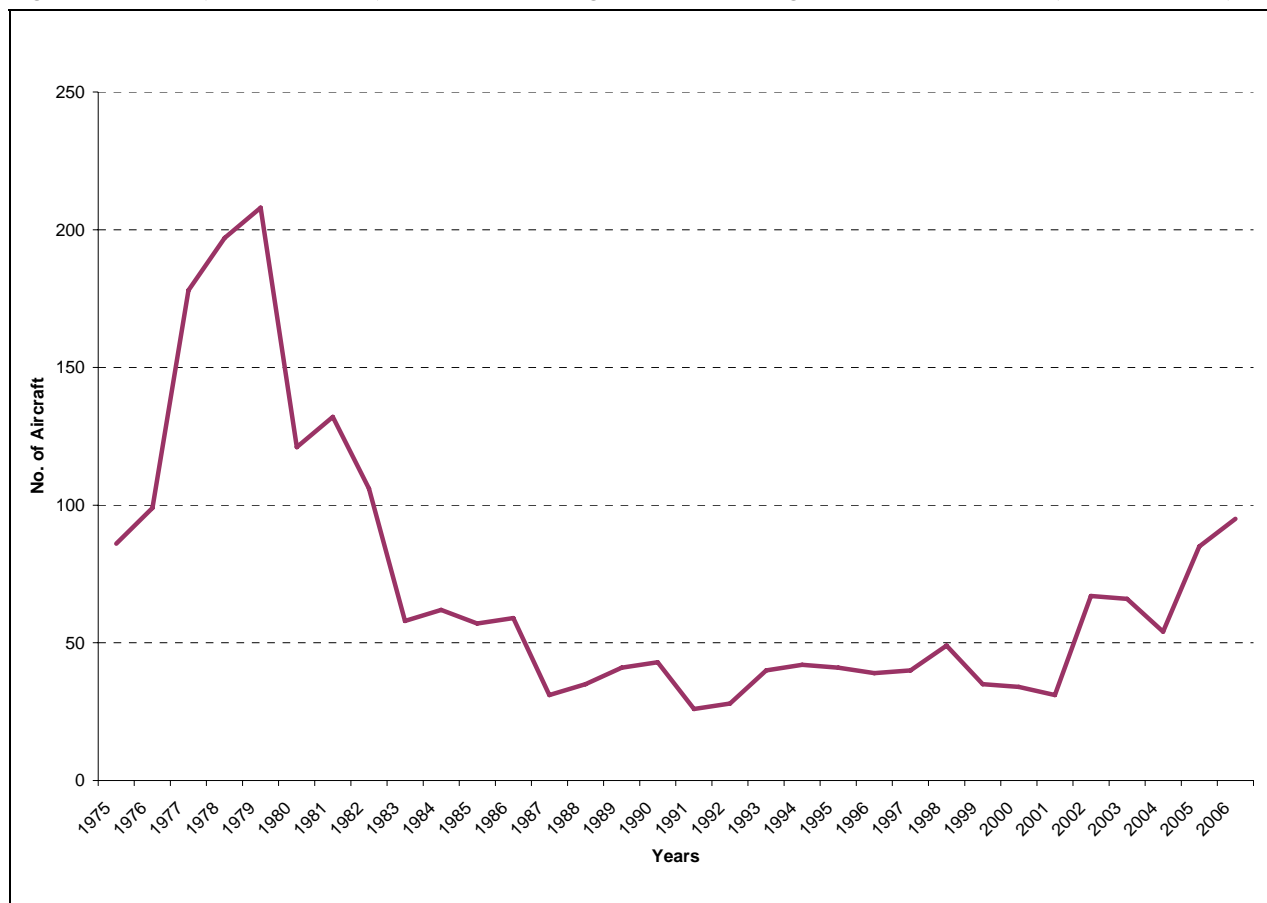
The Government announced in the 2006-07 Budget an increase in the diminishing value rate for determining depreciation deductions from 150 per cent to 200 per cent for all eligible assets acquired on or after 10 May 2006. This will increase incentives for Australian businesses to invest in new plant and equipment and make it easier for business to keep pace with new technology and remain competitive.

An analysis of the CASA aircraft register (CASA, 2007a) shows that the changes in depreciation arrangement have not impacted on the propensity of the industry to invest in new aircraft. Rather, the number of new aircraft (that is less than five years old) coming on to the register has increased by 50 per cent in the seven years following the change in depreciation arrangements compared to the seven years previous (432 new aircraft 2000 to 2006 vs 288 aircraft 1993 to 1999).

Figure 6 below shows new aircraft coming onto the Australian register since 1975. Notable is the high level of investment in new aircraft in the late 1970s influenced by a 40 per cent investment allowance available to aircraft buyers at the time.

Some stakeholders have suggested similar incentives may help the industry address the ageing aircraft problem. Another alternative to an investment allowance could be investment assistance for the industry to help commercial operators offset the significant costs of the investment needed to renew their aircraft fleet.

Figure 6: New (1-5 years old) aircraft coming onto CASA register 1975 to 2006 (CASA, 2007a)



The SILG notes that there is both a safety and operational risk in not acting to renew the GA fleet and thus suppress and hopefully reverse the fleet ageing profile. The industry needs some assistance in this regard and it is the view of the SILG that the Government should contribute in partnership with the industry towards this renewal.

Recommendation 17: To address the problem of the ageing small aircraft fleet the Government consider the establishment of a facility to assist suitable operators to buy new aircraft. Criteria for such a scheme should be developed in consultation with the industry and may include:

- Case by case assessment of commercial business positions;
- At least 50% capital contribution by operators acquiring new aircraft.

8.4 The Capetown Convention

It was suggested in one submission to the SILG that there is one area where Government can assist to potentially lessen aircraft funding costs without impact on the Budget. It is argued that ratification of the Cape Town Convention which provided for an international register of aircraft security

interests will lessen risk for purchasers and lessors, and therefore help reduce financing costs. While its benefits are, in theory, available to purchasers of aircraft of any size, the vendors, owners and lessors of high-capacity aircraft are probably most able, because of the sheer value of their transactions, to protect their interests.

The arrangements in the aircraft equipment protocol extend to aircraft carrying as few as 8 passengers, including crew, or 2750 kg of freight. Ratification of the Treaty, with recognition of its register of interests, for domestic law purposes would appear to be a very worthwhile step from the point of view of the small aircraft sector. This is particularly the case for Australia where the split of Federal and State powers has meant that the Federal Government has had no basis for acting and State registers of deeds are not adequate to deal with the issue. The use of the ICAO based register, which can be engaged by e-commerce techniques, combined with the parties' bearing their own costs, should minimise costs to Government.

In February 2008, the Department of Infrastructure, Transport, Regional Development and local Government released a Consultation Paper on the Capetown Convention for public comment.

8.5 Developments in Aircraft Manufacturing Technologies

In recent years, there have been significant developments in both aircraft manufacturing technologies and navigation technologies. It is important that an industry as mature and significant as Australia's GA sector is able to take advantage of these technologies which in many cases will improve its operational safety and efficiency. According to the US General Aviation Manufacturers Association (GAMA, 2006):

We have recently seen the development of fully integrated glass panel avionics, enhanced and synthetic vision systems, environmentally compatible fire suppression systems, new airborne de-ice systems, and advanced lightweight and efficient engines. We see the pace of new products and innovative designs that enhance safety, reliability and efficiency accelerating for General Aviation in the years ahead.

As well as incremental improvements in traditional aircraft engine design, there have been more significant developments in recent years in diesel powered aircraft engines. Several factors have driven these developments. Firstly, there is a number of new manufacturers of GA aircraft developing new designs. Secondly, in Europe in particular, avgas has become very expensive. Thirdly, in some remote locations, avgas is harder to obtain than diesel. Finally, automotive diesel technologies have improved greatly in recent years, offering higher power-to-weight ratios more suitable for aircraft applications.

For example, manufacturer Thielert GmbH produces four-stroke, liquid-cooled, geared, turbo-diesel aircraft engines based on Mercedes automotive designs which run on both Diesel and Jet Aviation fuel. Their first engine was first certified in 2002. It is certified for retrofit to Cessna 172s and Piper Cherokees which were originally equipped with the 160-hp Lycoming O-320 Avgas (petrol) engine and outperforms the original engine in several respects. The Austrian aircraft firm Diamond Aircraft Industries offers its single-engine Diamond DA40-TDI Star with a Thielert Centurion 1.7 engine and also the Twin Star with two such engines. The Star offers low fuel consumption with a very fuel efficient figure of 15.1 l/h. Several hundred Thielert-powered airplanes are now flying, and the company certified a 4.0-litre, V8, 310 HP version in 2005.

Interest in diesel aircraft in the USA has been more limited with fuel prices lower there than in Europe. In Australia, a number of diesel-powered aircraft have entered the market including four Diamond DA 42 Twin Stars (of seven ordered) entering service with FTA at Parafield Airport.

A number of other manufacturers are currently developing experimental diesel engines, many using aircraft-specific designs rather than adapted automotive engines.

Across the world, the number of refineries manufacturing Avgas has declined from 32 in 2001, to around 24 in 2006 (Shell). Whilst the loss of production has been offset by increased production at some of the refineries, it is anticipated that the number of refineries manufacturing Avgas will continue to fall. This corresponds with the diminishing demand for Avgas that has occurred since the late 1970's. Currently, only five refineries produce Avgas in the Asia-Pacific region, including two refineries in Australia.

The use of composite materials including fibreglass and carbon-fibre has also increased in recent years. These materials have been developed in military application for some time and are being used increasingly in amateur built aircraft and in commercial aircraft including the next-generation Boeing 787. Composite materials have the potential to improve strength to weight ratios and to be more cost-effective in some circumstances.

Glass panel avionics, or glass cockpits, are aircraft cockpits that feature electronic instrument displays. Where a traditional cockpit relies on numerous mechanical gauges to display information, a glass cockpit utilises computer-controlled displays that can be adjusted to display flight information as needed. This simplifies the cockpit and allows pilots to focus only on the most pertinent information. They can also eliminate the need to employ a flight engineer. This means that small jet aircraft are now able to be operated safely by a single pilot, while efficiently accommodating a small number of passengers in a pressurised cabin.

Certain GA aircraft, such as the 4-seat Cirrus Design SR20 and SR22, are available only with glass cockpits. Glass cockpits are also available as a

retrofit for older, private jets and for traditional piston engine aircraft such as the Cessna 172.

The American market has also seen an increase in fractional ownership of business aircraft allowing businesses to have the use of an aircraft without bearing full capital and running costs.

8.6 New Navigation Technologies

Technological developments are also impacting on aviation operations. Of note are the ICAO recognition of Automatic Dependence Surveillance - Broadcast (ADS-B) as a preferred surveillance technology, development of Approach with Vertical Guidance for landing procedures and technology standards which will facilitate improved data sharing for Australia's Aeronautical Information Service.

It is natural that any airspace management changes take account of current and prospective technological developments. The key technology elements of this package, ADS-B and Global Navigation Satellite Systems (GNSS) for sole use navigation, have been the subject of consultation with the aviation industry for some time through the Australian Strategic Air Traffic Management Group and the CASA discussion papers.

ADS-B is an air traffic surveillance technology being implemented in Australia that could contribute substantially to improved air traffic control surveillance coverage and separation at a lower cost than radar. Airlines support ADS-B as one of the main surveillance tools of the future: Boeing and Airbus already routinely fit ADS-B to their aircraft. Many of the newer aircraft engaged in RPT operations (both international and domestic) are fitted with ADS-B as standard equipment. Around 25 per cent of the Australian jet airliner fleet is already equipped.

Airservices Australia, with the agreement of the airlines, has started the roll out of ADS-B services in our upper airspace to provide better tracking and less restrictive air traffic control separation standards for aircraft in range of the system that have compatible avionics installed.

With the promise of higher accuracy, lower cost and greater surveillance capability and efficiency, this new air traffic management system may allow aircraft to fly more efficient tracks. By being able to fit more traffic in the same amount of airspace, aircraft operators will also be able to reduce costs and minimise delays whilst freeing up airspace and increasing capacity.

There is strong international interest in ADS-B, with the American FAA proposing that all aircraft flying in US controlled airspace be equipped with ADS-B avionics by 2020. However, the United States Congress is yet to pass

the required legislation to effect such a requirement and the proposal has generated significant debate.

Australia is also considering moving beyond the upper airspace program for ADS-B. In doing so, the Government has undertaken to make sure that new technologies are safe and add value by improving efficiency, surveillance and separation capability to Australia's airspace.

The Government has indicated that any decision about when and how to move to a wider use of ADS-B will be informed by a careful analysis of risk and a clear understanding of the benefits and costs for all sectors of the industry.

Implementation will also need support from the aviation industry, as the new technologies will not only require new approaches to air traffic services and flying operations, but will also mean new equipment in aircraft.

The SILG noted differing industry perspectives on the effectiveness of ADS-B in lower airspace particularly from the recreational sector. Recreational Aviation Australia believes that the proposed introduction of ADS-B technology would most benefit Airservices Australia and RPT operators, while the safety case for imposing greater surveillance on smaller aircraft has yet to be proven.

Stakeholders have had an opportunity to comment on a joint discussion paper released by the four Australian Government aviation agencies: Airservices Australia, the Australian Defence Force, CASA and the then Department of Transport and Regional Services in August 2007 and urges the Government to take those views into account when coming to decisions on the future use of that technology.

The GA industry must continue to be involved in any processes considering the introduction of new navigation technologies, including ADS-B.

Recommendation 18: *The SILG notes the potential for new technologies such as composite airframes, glass panel avionics and new engine types to improve the performance and raise the safety standard of General Aviation aircraft.*

The SILG is mindful that when assessing the potential benefits of new navigation technologies it is imperative to take account of the General Aviation industry's particular needs as well as those of major airlines.

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Abbreviations

ACCC:	Australian Competition and Consumer Commission
ADS-B:	Automatic Dependent Surveillance Broadcast
ALOP:	Aerodrome Local Ownership Plan
AME:	Aircraft Maintenance Engineer
APV:	Approach with Vertical Guidance
ASIC:	Aviation Security Identification Card
ATPL:	Air Transport Pilot Licence
ATSB:	Australian Transport Safety Bureau
BTRE:	Bureau of Transport and Regional Economics
CAA:	Civil Aviation Authority
CAO:	Civil Aviation Order
CASA:	Civil Aviation Safety Authority
CASR:	Civil Aviation Safety Regulation
EASA:	European Aviation Safety Agency
FAA:	Federal Aviation Administration
FAC:	Federal Airport's Corporation
FEE-HECS:	Higher Education Contribution Scheme
FEE-HELP:	Higher Education Loan Programme
FTA:	Flight Training Adelaide
FTQ:	Flight Training Queensland
GA:	General Aviation
GSM:	General Skilled Migration
GNSS:	Global Navigation Satellite Systems
ICAO:	International Civil Aviation Organization
LAME:	Licensed Aircraft Maintenance Engineer
MODL:	Migration on Demand List
MPL:	Multicrew pilot licence
MSIC:	Maritime Security Identification Card
Rex:	Regional Express
RFDS:	Royal Flying Doctor Service of Australia
RPT:	Regular Public Transport
RTO:	Registered Training Organisation
SCC:	Standards Consultative Committee
SILG:	Strategic Industry Leaders Group
TAFE:	Technical and Further Education
VET:	Vocational Education and Training

Appendix A: Submission process for the General Aviation Industry Action Agenda

The aim of the public submission process was to give the general aviation industry an opportunity to comment on and make recommendations on the issues discussed in the Issues Paper.

Details on the submission process were posted on the action agenda's webpage on the Department of Transport and Regional Services website, while the Action Agenda Secretariat and SILG wrote directly to industry organisations and groups, airport operators and parties that had expressed interest in the process.

Submissions were received from the following parties:

- Adelaide Airport
- Aerial Agriculture Association of Australia
- Aircraft Owners and Pilots Association of Australia
- Archerfield Airport
- Australasian Aviation Group – Cairns
- Australian Airports Association
- Australian Business Aircraft Association
- Australian General Aviation Administration
- Australian General Aviation Alliance Limited
- Aviation Maintenance Repair and Overhaul Business Association
- Bankstown Airport Limited
- Paul Clough – Solicitor and Pilot
- Essendon Airport
- Gold Coast Airport
- The Guild of Air Pilots and Air Navigators Australia Region Incorporated
- Scott Gurner – Director, Aircraft Electrical Services Pty Ltd
- Melbourne Airport
- Mr James Kimpton
- Mr Dafydd Llewellyn
- Moorabbin Airport
- The Royal Federation of Aero Clubs of Australia
- South Australian Department of Transport, Energy and Infrastructure
- Sydney Airport
- Mr Harold Walton
- West Australian Department for Planning and Infrastructure
- Dennis Wisbey – Director, Aero Service Pty Ltd, Parafield Airport