General Aviation Industry Action Agenda

Issues Paper

April 2007

Foreword

General aviation commonly refers to that part of the aviation industry that engages in activity other than scheduled commercial airline activity.

This may include 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.

In recognition of the importance of general aviation in Australia, particularly in regional and remote areas, and recognising recent challenges faced by the industry, the Australian Government has established an Industry Action Agenda for general aviation.

The primary purpose of Action Agendas is to promote industry leadership, help industries develop strategies for growth, agree on priorities and make commitments to change.

For further information on Action Agendas please visit the Department of Industry, Tourism and Resources website at *www.industry.gov.au*.

The Deputy Prime Minister and Minister for Transport and Regional Services, the Hon Mark Vaile MP, has appointed a nine-member Strategic Industry Leaders Group, chaired by Dr J Roland Williams CBE, to drive the Action Agenda.

Public submissions

The General Aviation Action Agenda Strategic Industry Leaders Group has prepared this issues paper as a basis for discussion and to encourage wider industry input to the Leaders Group's consideration of key issues.

Submissions are invited from interested parties and should be addressed to the Action Agenda secretariat.

To enable timely consideration of issues by the Strategic Industry Leaders Group, submissions or comments should be provided no later than Friday 18 May 2007.

Further information and Contact Details

The Department of Transport and Regional Services is providing secretariat support for the General Aviation Industry Action Agenda.

For further information please contact:

General Aviation Action Agenda Secretariat
Department of Transport & Regional Services
GPO Box 594
CANBERRA ACT 2601

Phone: +61 2 6274 6040
Fax: +61 2 6274 6749

Email: actionagenda@dotars.gov.au

Contents

1: Introduction

1.1 Background

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. The Australian Government established the Action Agenda in recognition of the important role general aviation plays across the country, particularly in regional and remote parts of Australia, and in recognition of the ongoing challenges the industry faces.

Action Agendas are a central element of the Government's industry strategy. Their primary purpose is to foster industry leadership, and in doing this they have succeeded in helping industries develop strategies for growth, agree on priorities and make commitments to change. The focus in Action Agendas is on the actions industry itself can take to achieve its objectives.

The Deputy Prime Minister and Minister for Transport and Regional Services, the Hon Mark Vaile MP, has appointed a Strategic Industry Leaders Group to drive the General Aviation Action Agenda. It comprises:

- Dr J Roland Williams CBE, Chair
- Mr Tony Brand, Chief Engineer/Director, Horsham Aviation Services
- Mr Gerard Campbell, Chief Executive Officer, Archerfield Airport
- Captain Ross Carrington, Managing Director, General Flying Services
- Ms Marj Davis, President, Royal Federation of Aero Clubs of Australia
- Mr John Gardon, New South Wales State President, Recreational Aviation Australia
- Captain Ron Magrath AFC OAM, Chief Executive Officer, Ad-Astral Aviation Perth
- Mr Col Rodgers, National President, Aircraft Owners and Pilots Association
- Mr Dennis Wisbey, Managing Director, Aero Service

1.2 What is General Aviation?

Issue: How does the general aviation industry define itself, in terms of its membership, common interests and views, operational environment and strategies for the future?

The Bureau of Transport and Regional Economics (BTRE), in its study General Aviation: an Industry Overview[1] described the general aviation industry as a complex amalgam of groups and individuals that share a common interest in the operation of small aircraft. There is no easily demarcated general aviation industry. Instead general aviation is commonly defined along two primary lines, namely:

- Aircraft (General aviation typically refers to small—usually piston engine—aircraft of perhaps 5.7 tonne or less)
- Activity (Typically general aviation activity is defined as all non-scheduled flying activity such as charter and training, thereby excluding all regular public transport operations).[2]

[1] Bureau of Transport and Regional Economics [BTRE] 2005, General Aviation: An Industry Overview, Report 111, BTRE, Canberra ACT.

[2] Regular public transport comprises all air service operations in which aircraft are available for the transport of members of the public, or for use by members of the public for the transport of cargo

These two dimensions are not necessarily consistent. Aircraft engaged in typically general aviation activity may also fly some regular public transport operations and conversely, some large turbine aircraft may perform some typically general aviation activity such as training or charter. The BTRE study used a definition based on activity—excluding aircraft that fly purely for regular public transport purposes from the general aviation fleet, but including aircraft that performed some scheduled flying activity and large turbine aircraft used for general aviation activities such as charter.

The United Kingdom Civil Aviation Authority has also attempted to define general aviation in its 206 review of the sector.[3] It noted:

> 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 5700kg 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 General Aviation (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.

BTRE, in conducting its annual General Aviation Survey, provides data on the size of the aviation industry sectors in Australia, with the major focus being on General Aviation operations. The BTRE General Aviation Survey is the major source of GA data in Australia and provides source data for the industry overview provided in Report 111, quoted above.

General Aviation, for the purposes of the BTRE survey is defined as all non-scheduled flying activity in aircraft allocated a VH- registration by the Civil Aviation Safety Authority, except for that performed by the major airlines, but including non-scheduled flying by the regional airlines.

The Australian Civil Aviation Safety Authority (CASA), which regulates aviation safety in Australia, defines 'General aviation' as all non-scheduled flying activity in the aircraft, with Australian registered aircraft allocated a VH-registration by CASA, but excluding VH-registered sail planes (powered or nonpowered). Also excluded are ultralight aircraft, non VH-registered military aircraft, hang gliders, balloons and gyroplanes.[4]

(freight and/or mail) which are conducted in accordance with fixed schedules to and from fixed terminals over specific routes.

[3] UK Civil Aviation Authority, Strategic Review of General Aviation, July 2006

[4] CASA Corporate Plan 2006-07 to 2008-09

The Department of Transport and Regional Services notes that, while CASA's definition of general aviation may be appropriate for regulatory purposes, any analysis of the sector for the Action Agenda will also need to consider non-CASA regulated activity such as sail planes, ultralight aircraft, hang gliders, balloons and gyroplanes. This recognises that the non-CASA regulated sector may be operating in competition to the traditional VH-registered piston-engine aircraft sector and that some of these activities offer an alternative training pathway to traditional general aviation activity.

1.3 An overview of the Industry

Issue: How do various industry sectors inter-relate and what impacts are changes in one industry sector having on other parts of the industry?

Hire and reward i.e., commercial, general aviation (training, charter and aerial work) comprises about two thirds of general aviation flying hours. In 2004 the Australian commercial general aviation industry had over 700 active operators, employed about 4700 people, and had a turnover of $1.05 billion. In addition, there were about 300 maintenance operators which employed approximately 2000 people.[5]

BTRE Report 111 observes that an important demarcation exists between commercial – hire and reward flying and non hire and reward flying. To operationalise this definition where possible the report considered:

- Hire and reward refers to all activities undertaken by commercial air operators—or more specifically, holders of air operators' certificates
- Non hire and reward refers to other flying activity—this includes recreational flying—flying for private purposes in sport aircraft and VH registered aircraft—as well as business flying.

These two groups must fulfil substantially different regulatory requirements. Further, demand for each type of flying is influenced by largely different factors.

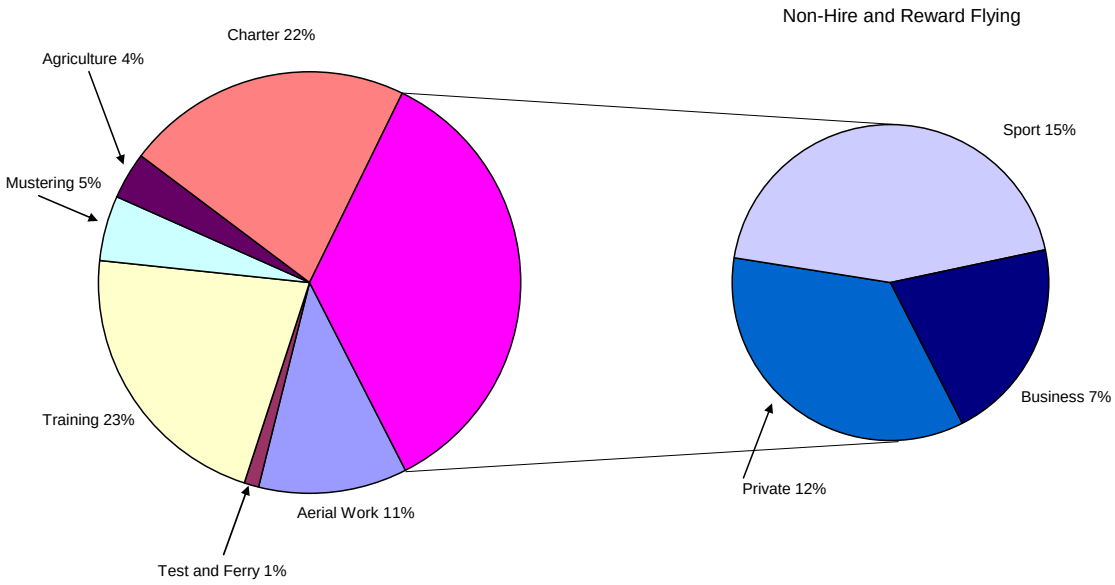
Flying for business purposes does not neatly fit the commercial–recreational split. Business flying is—by definition—a business input. However, if it is not conducted on a hire and reward basis then it is not possible to quantify its cost and difficult to conduct any meaningful analysis of the trends. Business flying can include a range of activities and it is a substitute for some hire and reward flying activities and private flying. For example, a flight from Dubbo to Sydney will be reported as private flying if it is undertaken solely for pleasure, or possibly business flying if it includes a business meeting. However, the same flight will be reported as charter if the plane and pilot are hired—irrespective of the purpose of the journey.

It should also be noted that there is substantial interrelation between these two groups. For example, recreational aviators generate demand in the commercial training sector. Further, owners of VH registered, type certified fixed wing aircraft that fly for non-hire and reward purposes often cross-hire their aircraft to commercial aircraft operators.

[5] Bureau of Transport and Regional Economics [BTRE] 2005, General Aviation: An Industry Overview, Report 111. BTRE, Canberra ACT. pp 4-5

As can be seen from figure I-1 below, non-hire and reward activities constitute around 680 000 or 35 per cent of all flying hours[6]. About half of this 680 000 hours is conducted in type certified aircraft.

FIGURE 1 TOTAL GENERAL AVIATION ACTIVITY IN HOURS 2003



Note Sports hours includes hours flown by ultralights, hang gliders, gliders and autogyros. Figures for sport aircraft may include a higher degree of error than other activities.

Source BTRE General Aviation Survey 2003, RAA, HGFA, ASRA

Hire and reward flying includes training, charter and aerial work such as aerial photography and surveying. Only holders of CASA issues air operators' certificate can perform hire and reward flying.

Commercial general aviation activities account for approximately 1.26 million hours of flying or 65 per cent of all flying hours—this excludes hours flown for training in sport aircraft as well as hours flown by aircraft that fly purely for the purpose of regular public transport.

Of this 1.26 million hours, charter and training account for around 34 per cent and 33 per cent respectively; aerial work constitutes a further 18 per cent and the remainder is divided between aerial agriculture (6 per cent) and aerial mustering (8 per cent). Test and ferry accounted for 2 per cent.[7]

Any consideration of the general aviation industry also needs to include supporting activities and businesses. For example, maintenance is a vital input to general aviation. There are an estimated 380 maintenance organisations with current certificates of approval that primarily perform maintenance on general aviation aircraft. These businesses employ an estimated 2,000 people.[8]

[6]This includes sport aircraft hours, private and business hours. Figures for sport aircraft are estimates with varying degree of accuracy.
[7] Ibid pp 3-4
[8] Ibid pg 5

Access to airport infrastructure is an important input for general aviation activity in Australia. Australian airports fall broadly into three categories:

- The 22 major international, regional and secondary general aviation airports, previously administered by the Federal Airports Corporation, now privately operated under long-term lease from the Commonwealth,

- Former Aerodrome Local Ownership Plan airports which include a further 234 smaller regional airports, generally operated by local councils,

- Privately owned and operated airstrips which vary in size from airports supporting large jet aircraft operations to small grass or dirt airstrips used by small aircraft.

The Aircraft Owners and Pilots Association provides for its members details on almost 2,000 airfields in Australia from all of the above categories.[9]

Pilot training providers represent an important general aviation business sector in its own right, and also provides an important business input to current and future industry needs. Traditionally, initial pilot training was undertaken almost exclusively in small piston-engine aircraft. It is becoming more common for some stages of training to be undertaken in the sport aviation sector or using flight simulators. While this training pathway offers a lower cost entry into the profession, alternative training pathways may have a negative impact on businesses traditionally engaged in pilot training.

1.4 The state of the industry

Issues: With regard to the level of activity and participation in the general aviation industry:

- *Is the industry in a state of decline?*
- *Is the industry transitioning to a more sustainable level of activity through restructuring? Are there differential levels of growth in different sectors?*
- *How does general aviation activity and participation in Australia compare with overseas experience?*
- *How does industry use the conclusions regarding factors driving or impeding growth in various sectors of the industry to better plan and promote future growth?*

BTRE data from 1994 to 2004 shows that total general aviation flying hours decreased from 1.71 million hours in 1994 to 1.64 million hours in 2004, with an overall trend rate decrease of 0.8 per cent per year. BTRE Report 111 identified a three per cent increase in commercial hours flown between 1993 and 2003 while non-hire and reward hours decreased by two per cent over the same period.

Within these overall trends, BTRE noted that sports aircraft hours had increased by 52 per cent over the study period, while business and private flying decreased 20 per cent, the latter stabilising after 2000. Also, the use of helicopters for all purposes has increased and there has been significant growth in the number of amateur built aircraft.

[9] National Airfield Directory 2006, Aircraft Owners and Pilots Association, 2005

BTRE Report 111 notes that key influences on general aviation have been: increased costs, significant improvement in transport substitutes—such as regular passenger air transport and road transport—and the advent and growth in the number of sport aircraft such as ultralights.

The change in general aviation's cost competitiveness with regular passenger air transport was highlighted by the Vice President of the Royal Federation of Aero Clubs of Australia in evidence before the Senate Committee on Rural and Regional Affairs and Transport:

> *We need to get people off the roads and into the air and we need to keep air travel cheap in order to do that. There have been significant savings in airline travel in particular. When I owned my own aeroplane it was always cheaper, if I had two other people, to fly myself. That is not so anymore, particularly when going between capital cities. The air travel costs between Sydney and Melbourne, Sydney and Canberra, and Brisbane and Canberra today simply cannot be beaten by flying yourself. We need to get people into the air.*[10]

BTRE Report 111 continues:

Even 15 years ago, general aviation enjoyed a range of cost advantages. Aircraft, maintenance and fuel were significantly less expensive in real terms. Airports were government owned and generally operated on a non-commercial basis—reducing the cost to general aviation businesses and small users.

Over the last two decades there have been a number of significant contributors to these increased costs:

- Liability issues affecting US aircraft manufacturers contributed to very large increases in the price of type certified aircraft and certified spare parts
- Increased user charges resulting from microeconomic reform—manifest as privatisation of airports as well as the removal of network pricing. These changes led to price increases in tower fees, landing, parking and other infrastructure charges as well as commercial rents at many aerodromes.

The emergence and growth of sport aircraft types has been a key influence on the general aviation industry over recent years. As one stakeholder consulted put it, in the 1970s if somebody wanted to fly, there was only one option—today the recreational aviator has the choice of a large number of different aircraft types depending on their priorities and their budget. It is important to note that, in general, non-type certified sport aviation aircraft have been less affected by these increased costs related to liability issues and user charges.

At the same time that costs have been increasing, regular passenger air transport fares have been coming down and the competitiveness of road transport has improved. Although difficult to quantify, competition in the domestic market from regular passenger transport services and improved road transport have had the effect of reducing general aviation flying hours, particularly in south eastern Australia.

Other factors that are likely to have influenced the trends in general aviation and their geographic distribution include demographic shifts, the performance of rural industries including farming,

[10] Mr Graham King, Vice President, Royal Federation of Aeroclubs of Australia, evidence to the Senate Standing Committee on Rural and Regional Affairs and Transport, Reference: Airspace (Consequentials and Other Measures) Bill 2006;Airspace Bill 2006, 31 January 2006

mining and resource industries, movements in the exchange rate, as well as international demand for commercial pilot training. Avgas contamination in December 1999 and January 2000 also affected general aviation activity.[11]

The UK CAA Strategic Review of General Aviation[12] similarly found overall 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 2004 BTRE General Aviation Survey reported 10,904 aircraft operating in the general aviation and regional airline sectors. In addition, the survey reported an additional 6,671 gliders, ultralight aircraft and hang gliders. Total hours flown were 1,896,300.[13]

By comparison, there were 284,071 general aviation aircraft, excluding gliders and lighter-than-air craft in the United States in 2005. Total hours flown were 26,714,885.[14] In the United Kingdom, there were 27,000 registered aircraft, including gliders, hang-gliders and paragliders. Estimated hours flown was 1.35 million.[15]

In terms of the number of licensed pilots, there were 36,722 pilots licensed in Australia in 2005-06[16], compared to over 600,000 in the United States[17] and 47,000 in the United Kingdom.[15]

The following table summarises this information and provides comparisons on a per-capita basis.

	Pilots	Population per pilot*	Aircraft	Population per aircraft *	Hours flown	Hours flown per capita *
Australia	36,722	547	10,904	1,843	1,896,300	0.0944
United Kingdom	47,000	1,281	27,000	2,230	1,350,000	0.0224
United States	609,737	489	284,071	1,049	26,714,885	0.0896

** Based on Australian Bureau of Statistics, US Census Bureau and UK Office for National Statistics population estimates*

This comparison shows Australian general aviation activity comparable with the United States, with a lower per capita level of aircraft registrations but slightly higher number of hours flown, and per capita activity on both indicators significantly higher than the United Kingdom.

[11] Bureau of Transport and Regional Economics [BTRE] 2005, General Aviation: An Industry Overview, Report 111. BTRE, Canberra ACT. pp xvi - xvii
[12] UK Civil Aviation Authority, Strategic Review of General Aviation, July 2006
[13] Bureau of Transport and Regional Economics, 2006, Aviation Statistics, General Aviation 2004
[14] Federal Aviation Administration, 2005 General Aviation and Air Taxi Activity Surveys
[15] UK Civil Aviation Authority, Strategic Review of General Aviation, July 2006, pp iii-v
[16] CASA Annual Report 2005-06
[17] Federal Aviation Administration, 2005 U.s. Airmen Statistics

Comparisons are similar for the number of licensed pilots, with United States participation levels slightly higher than those in Australia, but Australian participation per capita significantly higher than in the United Kingdom.

1.5 Building on the success factors

Issue: What factors sit behind the success and growth of recreational aviation, helicopters and sports aviation? Why are they growing at a faster rate both here and in the United Kingdom and United States? What are the success lessons from this experience?

One of the significant growth areas in the VH registered general aviation fleet is in the number of amateur built and experimental aircraft. The number of amateur built aircraft – including inactive aircraft – has increased by 114 per cent between 1993 and 2003, albeit from a low base.[18]

Sports and recreational aircraft include aircraft across a wide range of size and complexity. Traditionally these aircraft have been categorised as ultralights (microlights in the UK or experimental aircraft in the US) but may include larger aircraft comparable with traditional fixed-wing piston engine aircraft, heritage aircraft, warbirds, powered parachutes and trikes, sailplanes and gyroplanes.

There is also a range of regulatory requirements applying to this sector. Some of the aircraft are uncertified. Some are commercially manufactured and type-approved by CASA. Many are self-administered under Civil Aviation Administrative Orders, in Australia by Recreational Aviation Australia (RA-Aus).

> RA-Aus was established in 1983 as the *Australian Ultralight Federation*. During the 23 years of its existence Australian recreational/light sport aviation has experienced pronounced growth, certainly there has been a considerable growth in the RA-Aus membership, the number of aeroplanes with RA-Aus registration, the capabilities of the aircraft types available and the number of training facilities and clubs but, far more importantly, there has been real growth in knowledge, efficiency, effectiveness and safety. Ultralight aviation is no longer purely the realm of dedicated sports and recreational afficionados but has matured into an established, authoritative industry well endowed with professional aviation business people
>
> Recreational Aviation Australia Inc — a recreational aviation administration organisation — is a non-profit association consisting of individual members and affiliated clubs. Currently [January 2007] RA-Aus has 7000 members, 90% of whom hold, or have held, RA-Aus Pilot Certificates received after flight training at an RA-Aus approved Flight Training Facility. The establishment and growth of these 115+ FTFs was nurtured, post 1985, by RA-Aus after contracting to do so with the Australian Civil Aviation Safety Authority's predecessor. RA-Aus and CASA have together put in place one of the best, if not the best, system of very light [650 kg or less] aircraft training in the world. RA-Aus itself doesn't particularly want to grow bigger but it certainly wants to grow better; and we want to re-instil in the hearts of our younger Australians, and indeed younger people all over the world, an enthusiasm for aircraft and for flying as a recreational sport. [19]

[18] Bureau of Transport and Regional Economics [BTRE] 2005, General Aviation: An Industry Overview, Report 111. BTRE, Canberra ACT. pg 9

[19] Recreational Aviation Australia Inc Web site http://www.auf.asn.au/admin/mission.html

BTRE Statistics show that hours flown in ultralight aircraft have increased by 25 per cent between 1994/05 and 2004/05, an average of 2.3 per cent each year. However, within this sector, there has been an increase of over 800 per cent in activity in amateur built aircraft regulated under various Civil Aviation Orders covering amateur-built and privately-built aircraft.

Similar trends are evident in the United States and United Kingdom. The US-based Experimental Aircraft Association (EAA) now claims 170,000 members while in the UK:

> There has been very strong growth in the use of microlights … The strong growth in microlights reflects changing consumer preferences. Some recreational flyers have moved away from traditional light aircraft towards microlights, and the cheaper microlights have allowed more people to fly. This increase has been driven both by the relative affordability of microlights compared with conventional light fixed-wing aircraft, and also the increased flexibility of microlights, in that they can take advantage of smaller airstrips or farm strips and may be more easily stored or hangared when not flying.

and *[relating to amateur-built aircraft]*

> This segment has seen steady growth, resulting in a big increase in numbers from 650 in 1984 to 1750 in 2005, and while the rate of growth has fallen off in recent years, flying hours appear to be growing more quickly.

Representatives of the general aviation industry have begun to consider a proposal to self-administer safety regulation of GA more generally similar to arrangements already in place for some categories of sport and recreational aircraft. The following represents the views of Leisure Flight Australia:

> Self administration has proved to be a workable concept providing a safety outcome acceptable to our society. As in all areas of aviation, there have been safety concerns from time to time with self administered activities. However the combination of overarching surveillance by CASA and the responsible self interest of the self administering organisations, has meant that the concerns have been satisfied. Because the informed acceptance of risk is achieved through a club structure, the same structure can bring effective peer pressure on uncooperative participants and is an effective channel for ongoing safety education.
>
> An appropriate structure for self administering organisations has evolved over the years through experience and negotiation among the industry, government and the regulator. It is being captured for sport aviation in CASR Part 149. In addition, there is a “one stop shop” Part 103 covering operations, maintenance, training and related activities for Part 149 organisations. Apart from some aspects of operations, Part 149 organisations operate largely independently of the Parts applying to other areas of aviation. While CASA is ultimately responsible for safety matters, the question of which qualified organisations are permitted to self administer is decided by the Minister for Transport and Regional Services.
>
> Sport aviation administered by potential Part 149 organisations is growing significantly. Experimental aviation, specifically Amateur Built, is doing likewise. By contrast, GA is slowly declining. CASA has been directed by the government to

recover a high proportion of its service costs, and the potential fees are likely to have a significant effect on private GA in particular.

The charter members of LFA have approached CASA to permit the private section of GA to become self administering. Provided informed consent, discipline of participants and protection of uninformed parties can be achieved, such a development would fit with CASA's priorities.

It could be argued that the success and growth of sport aviation is a result of its being the lowest cost option for those who wish to fly. However, this argument does not explain the success of the GA Experimental (Amateur Built) sector. It is more likely that the success comes from tailoring of standards and procedures to the operations by those with the expertise and interest in the outcome. The regulator's role is to provide the necessary flexibility in the regulations without compromising safety for the uninformed. The industry can then chart its own future.[20]

[20] Leisure Flight Australia web site http://www.leisureflight.com.au/content/view/14/28/ 22 March 2007

2: Airport Access

2.1 Background

Issue: Microeconomic reform, in particular, privatisation of secondary airports, has resulted in general aviation operators being exposed to a commercial charging regime not fully experienced under the previous system of government ownership. How has this impacted on general aviation businesses and what strategies does the industry need to put in place to ensure that access to airport infrastructure does not impede industry viability and growth?

Beginning in the early 1990s, Commonwealth governments began withdrawing from airport ownership in order to be consistent with broader economic policy of a free market complemented by various consumer protections. Prior to the lease of the former Federal Airports Corporation airports, general aviation airport pricing was allocated on a network basis and did not reflect the true cost of providing these services at individual airports. After location-specific charging was introduced, aeronautical charges at some airports increased.

BTRE Report 111 notes increased user charges have resulted from microeconomic reform such as privatisation and transfer of airports and the consequent shift to user pays policies.[21]

BTRE Report 111 considered two groups of airports:

- Former Federal Airports Corporation (FAC) airports include the 22 major international, regional and general aviation airports, 21 previously run by the FAC.
- Former Aerodrome Local Ownership Plan (ALOP) airports made up of a further 234 smaller regional airports.

Former Federal Airports Corporation Airports
Airports that were administered by the FAC were: Sydney Kingsford Smith, Melbourne, Brisbane, Perth, Adelaide, Alice Springs, Canberra, Coolangatta (Gold Coast), Darwin, Hobart, Launceston, Townsville, Mt Isa, Tennant Creek, Archerfield, Essendon, Jandakot, Moorabbin, Parafield, Bankstown, Camden and Hoxton Park. Between 1997 and 2002 FAC airports were leased to private operators with the condition of sale that airport lessees offer access to aircraft operators on reasonable commercial terms.[22]

The Aerodrome Local Ownership Plan (ALOP)
The ALOP was established in 1958 by the Commonwealth to provide technical advice and financial assistance to 234 regional aerodromes. Financial assistance was given in the form of 50 per cent funding of the cost of approved maintenance works.

Between 1992 and 1993, 230 of the original 234 ALOP aerodromes were transferred, largely to local councils, along with $73.8 million of grants to provide councils with financial support for the future maintenance of their aerodromes. With the transfer of ownership, local governments gained the ability and responsibility to make decisions regarding maintenance and capital expenditure. [23]

Typically, the ALOP Transfer Deed between the Commonwealth and the local council contained, inter alia, the following:

---

[21] Bureau of Transport and Regional Economics (BTRE) 2005, *General Aviation: An industry overview* Report 111, BTRE, Canberra ACT. pg 19
[22] Ibid pg 19
[23] Ibid pg 32

- The local council agreed to operate the aerodrome and to keep it open for public use.
- The local council accepted full financial responsibility for the aerodrome, and agreed to maintain the aerodrome to a certain standard.
- The local council would not be permitted to sell, lease or otherwise dispose of the aerodrome without the written consent of the Secretary of the Department of Transport and Communications (now the Department of Transport and Regional Services).

In addition to the transfer of these assets, upon execution of ALOP Transfer Deeds, the Commonwealth transferred to councils and local governments an amount for specified works and future aerodrome maintenance. The grants were intended to assist in meeting expected net operating losses during adjustment to local ownership and long-term business management, and were generally equivalent to the expected net losses over the following 10 years.

The ALOP Transfer Deeds clarified that these payments would be the full extent of the Australian Government's commitment. As a result, the Australian Government no longer has a direct role in the operation, maintenance or development of local aerodromes.

In January 2004, to maximise the commercial opportunities for airports, the Australian Government waived its rights of enforcing the relevant transfer deed clause that required aerodrome owners to seek consent from the Secretary of the Department of Transport and Regional Services for alternative use of their aerodrome, except where the alternative use would result in the closure of the aerodrome or change its use to the extent that it no longer operates as an aerodrome.

Other Airports

The Australian Aircraft Owners and Pilots Association lists a total of almost 2,000 airfields for the information of its members. These sites vary in size from airports supporting large jet aircraft operations, such as the former FAC airports, to small grass or dirt airstrips used by small aircraft.

Regulatory and planning requirements for these strips vary according to whether the strip is publicly or privately owned and according to local and state planning requirements.

2.2 Current status

Issue: Australian Government policy is to encourage continued growth of the aviation sector by allowing commercial businesses to negotiate business outcomes with no or minimal Government intervention. This light-handed regulatory approach provides airports with greater scope to price, invest and operate more efficiently and has resulted in significant investment in Australian airports. How would general aviation propose to reconcile concerns about cost increases with the need for airports to price and invest on a commercial basis?

In many circumstances, rents levied on hangars, commercial premises and land have been increasing, particularly at the major metropolitan general aviation airports. These leases are commercial agreements between airport owners and their tenants and therefore the BTRE Report was not able to comprehensively report on changes.[24]

It is likely that these price changes will have lead to some spatial reorganisation of general aviation activity. Price sensitive recreational fliers and infrequent users may have moved away from higher cost aerodromes, trading off reduced costs for a less convenient location and perhaps more limited

[24] Ibid pg 36

infrastructure. It should be noted that relocation costs can be significant as some tenants may lose sunk capital costs such as buildings if they choose to relocate.[25] [26]

Many rents have increased significantly reflecting the fact that former FAC rents were set at very low levels and commercially driven airport owners adopted rents more commensurate to 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. For example one aero club believed that they were able to negotiate a lower rent due to their not for profit status. Also, some airport owners argued that the general aviation tenants still received favourable rents in comparison to other tenants and non aviation related businesses.

Although operators understand the need for airport managers to derive a commercial return from their assets, some stakeholders believed that the process of rental increases at some airports had generated animosity. In particular, GA operators cited the inconsistency of methods used to calculate rent increases for each tenant, and that the rent review process is not transparent as a significant issue.

2.3 Other airports

Issue: While 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. What role do all levels of government have in providing airport infrastructure and what strategies can industry propose to build support for aviation infrastructure with local and state governments?

The transfer of ownership of aerodromes to private owners and to local councils has resulted in price increases in tower fees, landing, parking and other infrastructure charges. Commercial rents have also increased to be more in line with comparable non-aviation business leases.[27]

Airports transferred to local councils under the Aerodrome Local Ownership Plan (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.

[25] ibid pg 38
[26] Ibid pg 31
[27] Ibid pg 31

3: Education and skills in the general aviation sector

3.1 Pilots

Issue: How adequate is the current and future supply of pilots to the general aviation industry and what are the impediments to the supply of general aviation pilots? Can the industry identify strategies to ensure an adequate supply of pilots to the sector?

BTRE Report 111 investigated the supply of pilots to the general aviation industry as part of its research into a range of industry inputs. It concluded:

> A number of industry stakeholders has described the general aviation industry as a feeder industry into the commercial airline industry. In particular, there may be some difficulty in general aviation operators retaining pilots who may be required by larger regional airlines. These airlines may, in turn, face challenges in retaining pilots against the demand from larger domestic and foreign airlines. Future demand for pilots from the growing aviation economies of China and India is frequently raised as an issue of concern to the Australian aviation industry.
>
> Flight training provides an essential input to the whole aviation market, including commercial regular public transport operations. CASA annual reports between 1997 and 2003 indicate that number of most types of licences declined. However, the number of current air transport licences increased.
>
> Some industry stakeholders consulted nominated the inability to attract and keep staff as a significant issue affecting their business—in particular Chief Flying Instructors and Chief Pilots. Air operators in remote parts of Australia indicated a general inability to attract quality personnel. Chief Pilots must be approved by CASA for an Air Operators' Certificate holder to operate. Reasons given for this being an issue included.
>
> - The time taken to complete the CASA approval process contributes to significant business costs, particularly when replacing a Chief Pilot.
> - Some in the industry believed recent growth in the regular public transport sector was drawing skilled and experienced pilots away from general aviation.
>
> Several in the industry noted the low salaries paid to most pilots in particular those starting out in the industry. Competition for jobs at the bottom end of the market was described as fierce. Many new commercial pilots choose to relocate to remote parts of northern Australia where the job market was described as less competitive. The shortage of pilots described by some stakeholders appears at odds with generally low wages[28].

In a public hearing before the Senate Standing Committee on Rural and Regional Affairs and Transport, the Vice President of the Royal Federation of Aero Clubs of Australia highlighted the cost of pilot training:

> I read now that airlines are anticipating a major shortfall in pilots in the near future. If we are to keep this country flying, we have to keep the cost of flying down because

[28] Ibid pg 49

there is no subsidy for flying training. You cannot even get HECS for it. To train to commercial pilot level costs about $50,000. To get a private licence is about $8,000 on current charges. It those charges increase, even fewer pilots will be coming through than are now.[29]

3.2 Engineers

Issue: Like many industries, the ageing of the workforce will impact on the supply of labour to the general aviation industry.

- *How adequate is the current and future supply of aircraft maintenance engineers to the general aviation industry and what are the impediments to the supply of engineers for general aviation?*
- *Can the industry identify strategies to improve supply of engineers to the sector?*
- *Is cost recovery of regulatory services a significant factor in the cost of training?*

BTRE Report 111 investigated the reliable supply of engineers to the general aviation industry as part of its research into a range of industry inputs. It concluded:

> Evidence suggests that while there may be local difficulties in attracting the appropriate professional to a position, there is unlikely to be a current aggregate shortage of Licensed Aircraft Maintenance Engineers (LAMES). None of the consulted maintenance organisations indicated the ability to attract staff was the primary issue currently facing their business. However, low wages were identified as a deterrent to entry to the industry.
>
> The aging demographic of maintenance professionals was raised by a number of organisations consulted. The Australian Licensed [Aircraft] Engineers Association believed there would be a national shortage of LAMES in about 2 years. The Association said that the average age of its members was over 50 and there were not enough new apprentices—given that it can take up to eight years to gain the necessary licenses and experience. The industry has a low profile and people were looking elsewhere for a career as apprentice wages were non-competitive—the new CASA licence fee structure was considered to be an added disincentive—and working conditions were unfavourable when compared to IT or finance.
>
> On 12 July 2004 CASA increased rates for existing charges for regulatory services covered by fees regulations. Several stakeholders said that these fee increases had a major impact on the cost of becoming a LAME. Indicative estimates show that these fee changes increased the administrative cost of licences for a general aviation Avionics Engineer from around $1 500 to approximately $3 800.
>
> The 12 July 2004 increases in charges followed a 2003–04 review of CASA's long term funding arrangements which found that fee levels were well below the cost of providing services. CASA had also absorbed the cost of GST where applicable (CASA 2003–2004 Annual Report).

[29] Mr Graham King, Vice President, Royal Federation of Aeroclubs of Australia, evidence to the Senate Standing Committee on Rural and Regional Affairs and Transport, Reference: Airspace (Consequentials and Other Measures) Bill 2006;Airspace Bill 2006, 31 January 2006

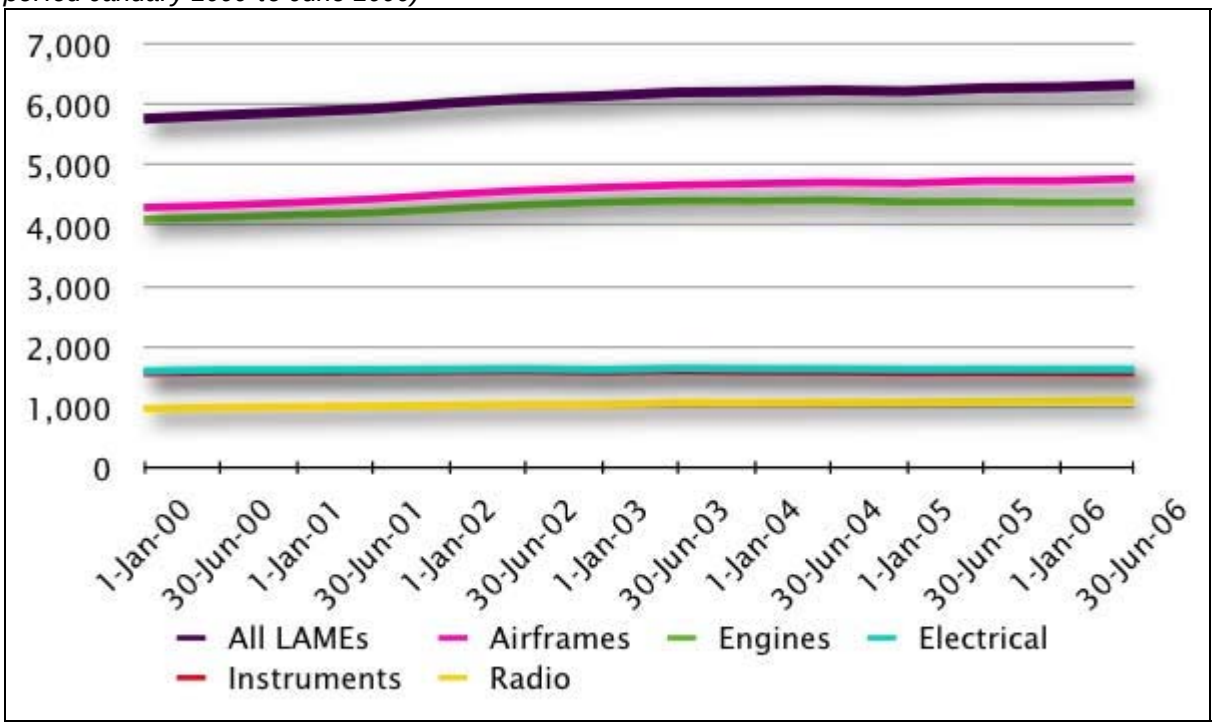
Stakeholders also raised a number of issues that may discourage young people from seeing aircraft maintenance as a viable career path:

- the low wages paid to trainees and even LAMES;
- a perceived societal change away from blue collar employment; and
- the perceived instability of the aviation sector as a career path—a perception exacerbated by the collapse of Ansett.

According to CASA annual reports, the total number of Licensed Aircraft Maintenance Engineers has grown over the period 1996–97 to 2003–04 by around 15 per cent. However, there is no way of knowing how many of these are engaged in the maintenance of general aviation aircraft.[30]

CASA provides the following graphs to illustrate the number and age profile of LAMEs in Australia[31]:

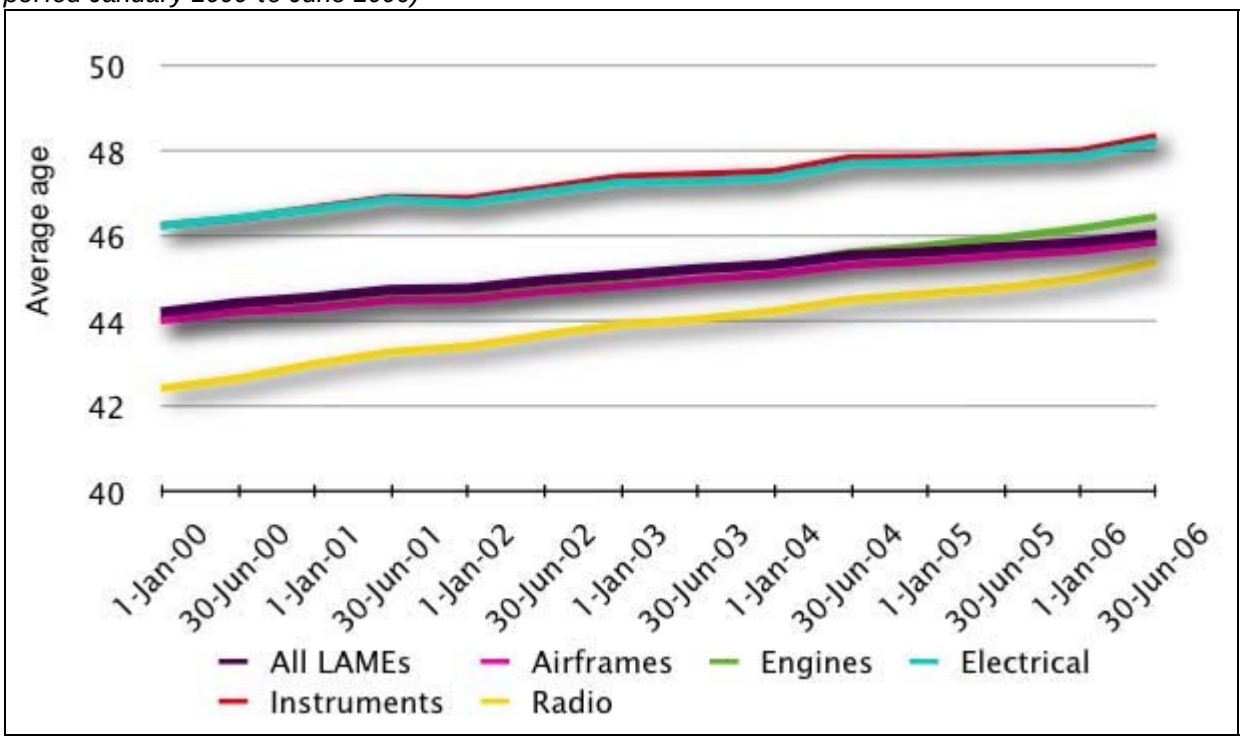
Figure 2: Total number of Australian LAMEs (Includes all LAMEs with active and valid licences during the period January 2000 to June 2006)



[30] Bureau of Transport and Regional Economics (BTRE) 2005, *General Aviation: An industry overview* Report 111, BTRE, Canberra ACT. pp 27-28

[31] CASA web site: http:/www.casa.gov.au/ame/amestats.htm, 22 February 2007

Figure 3: Average age of Australian LAMEs (Includes all LAMEs with active and valid licences during the period January 2000 to June 2006)



CASA recognises the need to support training for LAMEs through the establishment of scholarships to students seeking a career as a LAME. The scholarship provides $1000 in support for each year in a two-year period.

One scholarship is available each year for each State and Territory. Payment is provided for tools of professional quality, mandatory text books, and/or travel and accommodation to attend full-time theory training.

CASA has also recently announced the establishment of a new set of licensing and training standards for maintenance.[32] While the new standards are primarily aimed at large aircraft maintenance operations, updated rules for the general aviation maintenance sector is to be included in the final package of regulations.

A joint aviation industry-CASA team developed the training and licensing standards and will complete the full maintenance package.

There is some recognition from other Australian jurisdictions of the need to support training in aircraft maintenance. For example, the Queensland Government, through its Aerospace Industry Development Plan, supports a number of activities including facilitating the creation of aerospace maintenance clusters in Brisbane and regional centres and promoting the expansion of Aviation Australia and other aerospace training organisations as providers of quality training and education for the industry.

Industry has also recognised a role in promoting career pathways in aviation. For example, Australia's first aviation, aerospace and defence Careers and Skills Showcase was held in

[32] Civil Aviation Safety Authority media release, 19 February 2007, *Aviation maintenance industry gets a new edge*

conjunction with the 2007 Australian International Airshow and Aerospace & Defence Exposition at Avalon in March 2007.

The aim of the Careers and Skills Showcase was to inform educators, career professionals, parents and students of the career opportunities that exist in the aviation, aerospace and defence sectors and to provide information concerning the skills training and educational pathways that are involved.

A nationally focused initiative, the Careers and Skills Showcase targeted teachers and careers advisers, students and parents and demonstrated the diversity of career opportunities available within the aviation, aerospace and defence sectors.

4: General aviation regulatory environment

4.1 Overview

Issues:

- *What is the "right" level of regulation for the general aviation industry?*
- *Is there scope for the general aviation to provide some or all of its own regulatory functions? What are the opportunities and risks for the industry, regulators and the general community?*
- *Is self-administration of regulatory activities a key factor in the rapid growth of sports aviation?*

Aviation is a highly regulated industry. 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 Transport and Regional Services including the Office of Transport Security and the Australian Transport Safety Bureau form the basis of the regulatory environment in which general aviation operates.

4.2 Safety Regulation

Issues: CASA is implementing full cost recovery for its entry control-type regulatory services. While this excludes most safety activities undertaken by CASA, there is concern in the industry on the impact of rises in some fees.

Cost recovery in aviation is part of a wider Government policy adopted in 2002 in response to a Productivity Commission report recommending adoption of a formal cost recovery policy for agencies undertaking regulatory activities.

What options are available to industry to reduce the cost burden of safety regulatory oversight while maintaining safety outcomes?

How can the safety regulator continue to improve its responsiveness to industry while maintaining safety outcomes?

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 general aviation industry:

- Certifying aircraft, maintenance operators
- Licensing pilots and engineers
- Providing safety education and training programmes

In December 2002 CASA adopted a formal cost recovery policy to promote the efficient allocation of resources and to improve the consistency, transparency and accountability of the services it provides.

Cost recovery is the recovery of some or all of the costs of providing services through direct charges and cost recovery taxes (levies, excises and customs duties) where revenue is used to fund CASA's provision of regulatory services.

CASA's fee income will rise from around $10 million in 2005-06 to $20 million in 2008-09 and be partially offset by a $5m fall in fuel excise in 2008-09. CASA's budgeted income in 2008-09 is

$129 million from all sources including appropriation and fuel excise. i.e. cost recovery will account for about 16 per cent of CASA income, up from about 9 per cent last financial year.

The Government also expects CASA to deliver efficiencies in its operations as a key element of its Long Term Funding Strategy. CASA has been consulting widely with industry on the next tranche of cost recovery and regulatory charges due to commence from 1 July 2007. The new charges include reductions as well as increases in regulatory charges. For example, following reviews and consultation with the aviation industry, CASA is proposing to reduce a number of fees such as charges for the processing of medical certificates. This service, currently charged at a rate of $130, will be reduced to $75.[33]

GA operators have stated that CASA should be confined to regulating safety. Some stakeholders have questioned the safety value of some regulatory measures in particular regulation of occupational health and safety. Stakeholders have also complained of red tape and overregulation. In its submission to the Airspace Bill 2006, the Royal Federation of Aeroclubs of Australia expressed a view that CASA "tends to overkill on safety issues without regard for the economic consequences of the measures imposed" [34].

The Aviation Maintenance Repair & Overhaul Business Association (AMROBA) has also expressed concerns that the industry may be over-regulated. In particular, AMROBA differentiates "GA" from recreational flying (RAA) due to the different regulatory requirements of the respective aircraft.

> General feeling is that Government and CASA is legislating GA industry out of existence – both RAA and GA should be able to compete on same level. GA's safety record is better than RAA. Why is private and aerial work (including flying training) safety regulated different to RAA?[35]

Possible Self Administration of GA

A proposal for self administration of the general aviation 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 involvement.

Twelve peak general aviation industry groups were invited to take part in a day-long meeting in September 2006 to consider two key questions relating to self administration:

- Can self administration provide equivalent or better safety outcomes for the general aviation sector than presently apply?
- If so, what would be the most appropriate model for self administration?

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.

---

[33] http://www.casa.gov.au/corporat/fees/index.htm 22 February 2007

[34] Inquiry into the Airspace Bill 2006 and Airspace (Consequentials and Other Measures) Bill 2006 Submissions received by the Committee, Submission 3: The Royal Federation of Aero Clubs of Australia, 18 January 2007

[35] AMROBA GA Issues and Solutions, AMROBA web site, http://www.amroba.org.au/Issues%20&%20Solutions.pdf, 23 February 2007

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.[36]

Consistency of regulation

BTRE Report 111 reported that:

> Many operators complained about inconsistent application of regulation. The most common example cited was that the interpretation of the relevant regulation would change at the time that regional inspectors changed. This meant the business may have to expend resources adapting to the new requirements. Some business operators cited examples where different advice was provided concurrently by regional (area) offices and the head office in Canberra. The need for consistency has been acknowledged by CASA:
>
> > Consistency in regulatory approach and decision making is a challenge for CASA, which is a national organisation with a large number of staff dispersed across offices located across the country. Current programs for reforming safety standards, improving surveillance techniques and introducing new enforcement tools add to this challenge. While progress has been made over the past couple of years, actual and perceived inconsistency continues to be a strong source of grievance in the industry. (CASA 2003–2004 Annual Report).
>
> Related to this issue, some operators felt that there is no viable means of recourse to challenge rulings or administrative decisions—given the time delays and cost of legal appeals. However, it should be noted that the current process and costs of appeals to the Administrative Appeals Tribunal are the same as those faced by non-aviation businesses or individuals that wish to appeal administrative decisions made by the Australian government.[37]

CASA has responded to concerns of consistency of application of regulatory standards through the establishment of the CASA Licensing and Registration Centre—known as CLARC—which coordinates and delivers regulatory services to pilots, engineers, aircraft owners, and others in the aviation industry. In the past this work was done by CASA's field offices, inevitably leading to inconsistencies in the levels of service CASA provided. CLARC offers a 'one stop shop' to people in the aviation industry, as well as improving job tracking and reporting, in much the same way as the CASA Service Centre, operational since 2001, has simplified processes for all Air Operator Certificate and Certificate of Approval services for general aviation.[38]

In response to concerns regarding the complaints and appeals process, CASA has appointed an Industry Complaints Commissioner to examine complaints against CASA that cannot be resolved through normal channels. The commissioner is an experienced senior manager reporting directly to the Chief Executive Officer independent of the line areas of CASA. This ensures that complaints against CASA are reviewed without fear or favour, that recommendations for remedial action are

---

[36] http://www.casa.gov.au/seminars/selfadmin/index.htm 22 February 2007

[37] Bureau of Transport and Regional Economics (BTRE) 2005, *General Aviation: An industry overview* Report 111, BTRE, Canberra ACT. pg 55

[38] Civil Aviation Safety Authority, 2005-06 Annual Report

considered at the highest levels, and that required changes are implemented with the full backing of the leadership team.[38]

4.4 Security Framework

Issue: In the heightened security environment that has existed since September 2001, general aviation has been subject to several new security measures? How do these security requirements impact on general aviation activity? How can the general aviation industry maintain participation and activity levels while complying with security requirements?

The *Aviation Transport Security Act 2004* and the *Aviation Transport Security Regulations 2005* came into force in March 2005 following the events of 11 September 2001 and the heightened threat of terrorism involving the unlawful use of aircraft and airport facilities. The new Act and Regulations provide one security regulatory environment for everyone in the aviation industry.

The Australian Government recognises that security measures place a financial burden on general aviation, but believes the costs of security enhancements are small relative to the loss of an aircraft, the death of passengers and flow-on economic effects. There is therefore an incentive for all members of the aviation industry from private enterprise through to government to have the appropriate level of security commensurate with risk.

Direct impacts on the GA industry of this policy include:

- Owners and operators of private, corporate non-jet and recreational aircraft must take reasonable measures to protect their aircraft from being flown by an unauthorised person. Compliance usually involves fitting anti-theft devices or storing the aircraft in a secure hangar.
- Pilots flying to security controlled airports with RPT services must have an Aviation Security Identification Card (ASIC) in addition to a pilot or crew licence to access airside areas of security controlled airports. [Under the new security framework the regulation of regional airports has been significantly expanded to include 145 previously unregulated regional airports and 111 prescribed air service operators.]
- Members of the aviation industry have additional security responsibilities. For example they must follow directions given by authorised aviation security officials, report suspicious incidents and comply with requests to inspect aircraft or to take specific actions if there is a security incident.

Views have been expressed that general aviation is "currently in decline and has very little or no margin for absorbing additional security costs". In its submission to the Joint Committee of Public Accounts and Audit Review of Aviation Security in Australia, Bankstown Airport Limited reported industry perception that regulatory changes will not improve security, that regulations are designed for 'major' airports and are therefore not commensurate with the risk at small and regional airports, and that the general aviation industry in the main has not "engaged" with the legislation.[39]

The Government established the Regional Airport Funding Program (RAFP) following consideration of an ASIO threat assessment of Australia's aviation sector and the need to ensure the viability of the regional aviation industry. An assessment of these factors found that the

[39] Joint committee of public accounts and audit: Inquiry into developments in aviation security since the Committee's June 2004 Report 400: Review of Aviation Security in Australia. Submission 16 Bankstown Airport Ltd (http://www.aph.gov.au/House/committee/jpaa/aviation_security2/subs/sub16.pdf)

security of regional aviation would be better achieved through a requirement for airport operators to upgrade their physical security measures. $36.5 million has been committed to the program since its introduction.

Notwithstanding this, operators of general aviation airports have continued to express concern on the cost impact of maintaining security infrastructure. In evidence to the Joint Committee of Public Accounts and Audit, Mr Kim Ellis, Chief executive Officer, Bankstown Airport Corporation, stated:

> The key issues that we are facing, and which are highlighted in the submission, are firstly the current security regulations. Bankstown has been subject to a brand new security regime as part of the new aviation legislation and the subsequent regulations. The department has been particularly sensitive to the needs of that sector of the industry. The level of consultation that has occurred with the airports has been significantly improving over the past six months. There are still some areas that need to be picked up in that legislation, particularly in the communication with the operators in the industry. It is putting those in a context that it is the lower end of the industry. Many of these are almost subsistence companies, and the communication with them needs to be very accurate and very pinpoint.
>
> The other significant issue in this part of the industry is the costs. There is not the ability in this level of the industry to absorb the security costs. Rather than thousands of passengers or thousands of tonnes of cargo, we are talking tens of passengers or tens of tonnes of cargo. The costs related to security cannot be as easily distributed amongst the operating costs of the industry. The capital expenditure that has been provided by the Commonwealth under its security regulations has been well received, but the sting in the tail, of course, are the very high and ongoing operating costs of running security, including the supporting elements of staff and information technology.

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 photographic licences

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 legitimate means.

In introducing this new requirement the Government balanced the needs of the general aviation sector against 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 Transport and Regional Services estimates that the new licences cost pilots or their employers well below $200. 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.

Aviation Security Identification Card (ASIC)

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 airports, making the cards vitally important to many pilots.

Personnel working at general aviation security controlled airports (i.e. those that do not have RPT services), do not need an ASIC.

In 2005–06, to make ASICs available to all Australian pilots, CASA became a card-issuing authority for the first time. CASA had no experience in quickly processing high-volume transactions so, despite having little time for planning, needed to introduce both new staff and new processes to assist with the production of the cards. As one staff member put it, we needed to transform from a corner store into a major supermarket.

To cope with the workload, CASA allocated staff to the project for seven days a week, and at times for 24 hours a day, during February and March 2006. Thanks to [these] efforts, CASA issued more than 10,000 cards by the end of March.

Many pilots were troubled by the inconvenience of having to apply for something new, and by the time taken to process their applications. Although other agencies were involved in processing security clearances, which contributed to delays beyond CASA's control, as the public face of the card-issuing process CASA managed the high volume of complaints.

Working on the ASIC has been a learning exercise for CASA and the other agencies involved. When cards need to be issued in future, we expect to continue to implement improvements in our systems and to make greater use of IT applications.

CASA also expects fewer complaints. Most pilots now accept that security is an important matter, and that the card and other initiatives help to reduce risk and maintain public confidence in the integrity of Australia's aviation system.[40]

[40] Civil Aviation Safety Authority, 2005-06 Annual Report

5: Investment and fleet renewal

Issues:

1. *What strategies could be used by industry to identify and encourage an appropriate level of investment in general aviation aircraft and associated technologies?*
2. *What are the likely economic and service level impacts of the aging small aircraft fleet?*

5.1 Overview

The following is an extract from a recent Australian Transport Safety Bureau (ATSB) publication examining the relationship between ageing aircraft and flight safety:

An examination of the Australian aircraft fleet statistics showed that in Australia, aircraft age varies widely between aircraft of different sizes. The average age of medium size multi-engine turbofan aircraft with a maximum take-off weight between 50,000 and 100,000 kg was 6 years in 2005. This was 2 years lower than the average age in 1995. The decrease in average age is possibly a result of the sale overseas and return to financiers of Ansett Australia's aircraft fleet, and the purchase of new aircraft by the other airlines. Ansett's fleet was relatively old and included one of the oldest Boeing 767 fleets in the world.

The average age of Australia's large multi-engine turbofan aircraft (with a maximum take-off weight greater than 100,000 kg) is also low. In 2005, the average age of aircraft in this category was 11 years. In recent years, airlines in Australia that operate high-capacity aircraft have chosen to acquire new aircraft rather than spend the additional money that may be needed to maintain ageing aircraft.

The Australian aircraft fleet of multi-engine turboprop aircraft (with a maximum take-off weight of 27,000 kg or less) had an average age of 18 years in 2005. The small multi-engine turbofan aircraft (with a maximum take-off weight between 5,700 and 50,000 kg) had an average age of 16 years in 2005. While both of these categories of aircraft have relatively low average ages, there was a slight increase in their average ages over the period 1995 to 2005. If the average age continues to increase there may be concern about age-related safety issues.

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 5,700 or less). Multi-engine fixed-wing aircraft typically used in charter and small low-capacity regular public transport (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, and much 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 option of maintaining their ageing aircraft with only limited continuing airworthiness support from the manufacturer.

The single-engine piston fixed-wing aircraft had an average age of 30 years in 2005. This was an increase in the average age of 7 years over the last decade. These aircraft, typically used in general aviation, might not receive continuing airworthiness support from their manufacturer. In addition,

the maintenance requirements are not as stringent for general aviation aircraft compared with regular public transport aircraft.[41]

ATSB concluded that piston engine aircraft used in general aviation and for low-capacity RPT operations are increasing in average age. For single- and multi- engine piston fixed-wing aircraft, over 80% of aircraft are older than 20 years. The increase in average age of the Australian aircraft fleet has partly been made possible by the fact that the life of an aircraft is not determined solely by its economic design life. Rather, an aircraft's life is determined by its operational capability and maintenance costs (Tong, 2001).

5.2 Economic issues

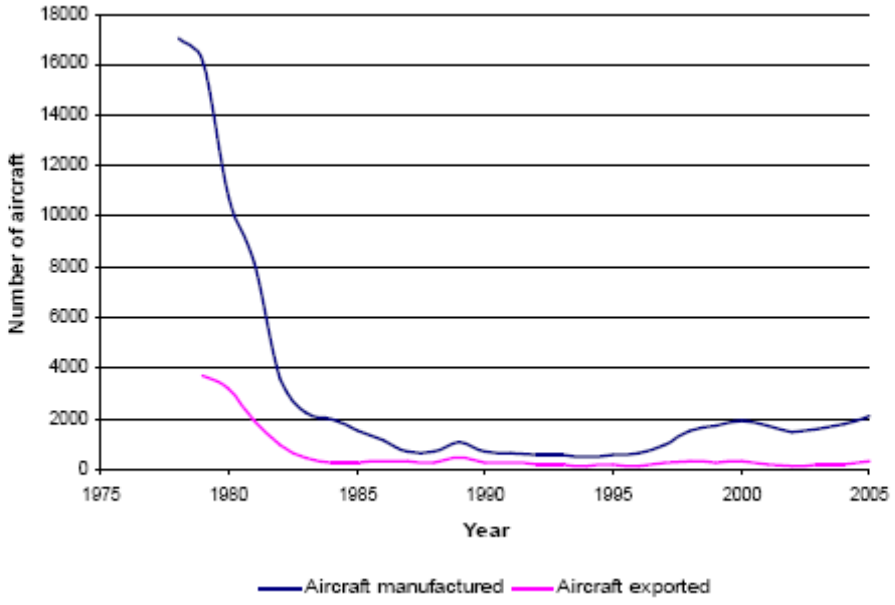
Issue: A range of economic factors come into consideration in decisions by operators to replace aircraft or to extend the life of existing aircraft. These include purchase price of new aircraft, exchange rates, aircraft production rates and profitability of operators.

Economics plays a large part in the life extension of an aircraft. With the relatively high cost of aircraft replacement, it may be more economical to maintain ageing aircraft rather than to acquire new ones. This has led to many aircraft in Australia's fleet, particularly in general aviation, being flown past their original design life, which is typically 20 years.

The majority of Australian registered general aviation aircraft were produced in the United States. Therefore, manufacturing output in the United States and exchange rate fluctuations directly affected the Australian general aviation industry. From 1982 to 2004 there has been a significant increase in the purchase price for new general aviation aircraft in the United States. In US$2004 a new Cessna 172 cost approximately $100,000 in 1982 and over $150,000 in 2004. The increase in the purchase price of new general aviation aircraft has been attributed to liability issues in the United States. 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 United States Congress responded by passing the General Aviation Revitalization Act in 1994, which limited liability for general aviation aircraft manufacturers to 18 years. Since then, the production of general aviation aircraft in the United States has started to recover (BTRE, 2005a). The situation is illustrated best is Figure 8, showing the delivery of new aircraft over the thirty years. In 1978, 17,032 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 levels of the late 1970s (GAMA, 2006).

[41] Australian Transport Safety Bureau, How old is too old?, The impact of ageing aircraft on aviation safety, February 2007, p xii

Figure 8: New general aviation fixed-wing aircraft manufactured in the United States



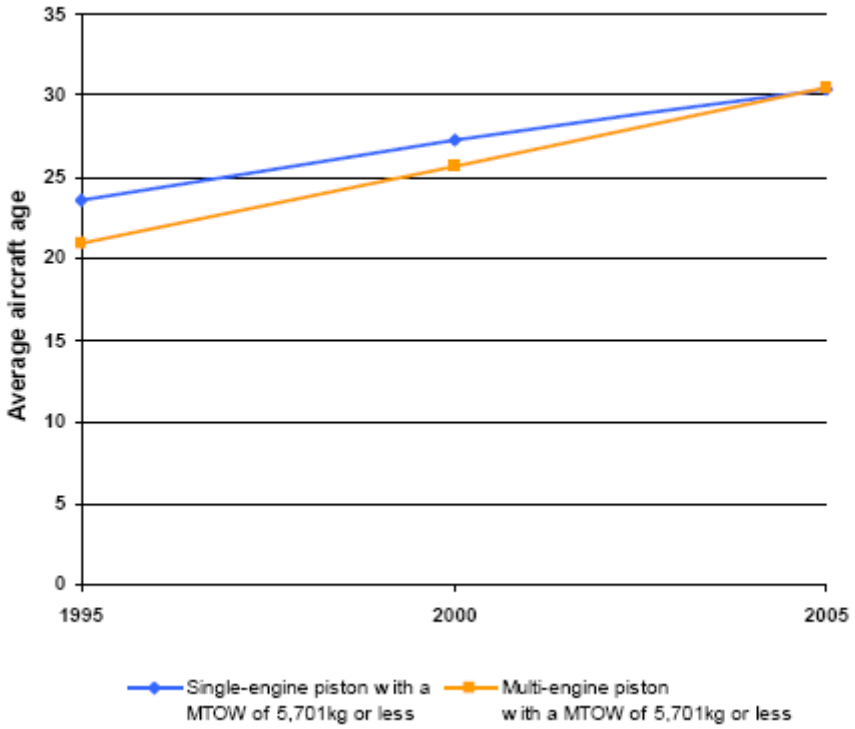
Added to the increase in the price of new general aviation aircraft has been the effect of exchange rate fluctuations since 1983, when the Australian dollar was floated. Exchange rate variations have meant that the cost of a new Cessna 172, in constant 2004 Australian dollars, has increased by approximately 150%, from approximately $140,000 in 1982 to approximately $230,000 in 2004. And exchange rate fluctuation have tended to produce 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, 2005a). The increase in price of new general aviation aircraft has decreased the affordability of new aircraft and been a contributing factor to the increase in average age of the general aviation aircraft fleet.

The change in average chronological age for each category of piston fixed-wing aircraft is shown in Figure 9. Piston engine fixed-wing aircraft have the highest average chronological age of all aircraft types and the average age is increasing.

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.

In 2005, the average age of both categories of piston engine fixed-wing aircraft was over 30 years. Of the two piston engine fixed-wing aircraft categories, the multi-engine piston aircraft weighing less than 5,700kg had the highest average age, making it the oldest category of aircraft on the Australian register.

Figure 9: Change in average chronological age of piston fixed-wing aircraft from 1995 to 2005



The average age and the number of aircraft aged over 40 years of both piston single-engine and multi-engine fixed-wing aircraft categories is likely to continue increasing. If the current trends continue, 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% of aircraft are older than the typically 20-year economic design life. 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, so 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, 2006b). 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.[42]

5.3 Taxation depreciation issues

Issue: Suggestions have been made by industry that accelerated depreciation provisions would be an appropriate incentive to encourage investment in Australia's small aircraft fleet. However, the

[42] Ibid pp 22- 24

Government has moved away from this approach in the interest of simplification and removing tax-induced distortions from investment decisions.

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

As input to a 2006 study into how Australia's taxation system compares with other developed economies the Chairman of the Aviation Safety Foundation of Australasia (ASFA), the Hon John Sharp, wrote to the Treasurer, the Hon Peter Costello MP, encouraging the Government to consider an accelerated depreciation allowance for aircraft:

> An older fleet, although not necessarily unsafe, does require a higher level of costly maintenance as parts of the aircraft reach their service lives. Replacement parts do become scarce and require replacements to be manufactured (see the WA Coroner's Report and Australian Transport Safety Bureau report no. 200303579 on the Cessna 404 accident at Jandakot Airport). In addition, older aircraft do not allow pilots to advance in technology to minimise pilot workload for example. Investment in new aircraft is a commercial decision and subject to the forces governing business investment in Australia and the profitability of ongoing operations.
>
> Many sectors of the aviation industry have suffered from an acute shortage of capital investment to replace ageing aircraft and other infrastructure. This lack of investment has seen decay in regional services, business aviation and flying training that has become more pronounced over the last 25 years. Although recreational aviation and the major airlines are in a relatively healthy position, most other sectors of civil aviation are in or near crisis.
>
> The need for investment in new aircraft and supporting infrastructure is considered critical to safety, viability and sustainability of a large proportion of Australia's aviation industry. To attract investment the Australian Government should introduce financial incentives, such as accelerated depreciation, for the purchase of new aircraft and supporting infrastructure.
>
> ASFA cites the positive effect that financial incentives such as accelerated depreciation (by as much as 50% in the 1st year) have had on reinvigorating the general aviation and business aviation sectors in the United States. During the 1970's Australia had tax concessions by way of an “investment allowance” which saw investment in aircraft that comprise a substantial proportion of the old fleet currently servicing regional Australia. Investment in new aircraft that service regional areas and flying training is urgently required to improve safety and survival of services. ASFA is prepared to coordinate a working group to collaborate with the Australian Government to formulate specific recommendations, and will seek financial incentives that include an accelerated depreciation allowance of 50% for new aircraft and associated equipment in the first year.[43]

In a response to ASFA’s suggestion the Treasurer replied that the domestic aviation industry already enjoys concessional taxation arrangements. As a result of the 2002-03 Budget, the Government introduced an effective life cap for aircraft of ten years in the income tax law. This

[43] ASFA web site http://www.asfa.org.au/index.php?option=com_content&task=view&id=58&Itemid=41

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 removal of accelerated depreciation not only was important in terms of removing tax-induced distortions to investment decisions, it also provided simplification by removing complex and inconsistent treatment across a host of disparate rules for different classes of capital investment.[44]

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.

5.4 Developments in aircraft manufacturing technologies

Issue: New aircraft manufacturing technologies such as use of composite materials, glass panel avionics and alternative engine technologies are providing new options for individuals and businesses looking to invest in new aircraft. What impact are these developments likely to have on the general aviation fleet and for the industry?

As noted in Section 5.2, traditional general aviation aircraft, such as the Cessna 172, are often perceived to have changed relatively little in the past several decades. With changes in US-Australian exchange rates unfavourable to importers, aircraft owners have seen little benefit in investing in new single piston engine aircraft. However in recent years there have been several important product developments which may prove to stimulate the new aircraft market. According to the US General Aviation Manufacturers Association (GAMA):

> 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.[45]

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 general aviation 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.

[44] ASFA web site, http://www.asfa.org.au/files/Response_Treasurer%20_ASFA%20_Ageing_Fleet.pdf
[45] GAMA Annual Industry Overview and 2007 Market Outlook

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 Flight Training Adelaide at Parafield Airport.

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

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 general aviation 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 piton 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.

5.5 New navigation technologies

Issue: New technologies such as ADSB and GNSS may lead to improved and more cost effective approaches to navigation management. How can the general aviation industry best prepare itself to take advantage of these and other new technologies?

Technological developments are also impacting on aviation operations. Of note are the International Civil Aviation Organization (ICAO) recognition of Automatic Dependence Surveillance - Broadcast (ADS-B) as a preferred surveillance technology, development of

Approach with Vertical Guidance (APV) for landing procedures and technology standards which will facilitate improved data sharing for Australia's Aeronautical Information Service (AIS).

It is natural that any airspace management changes take account of current and prospective technological developments. The key technology elements of this package, Automatic Dependent Surveillance-Broadcast (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 (ASTRA) 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 Regular Public Transport operations (both international and domestic) are fitted with ADS-B as standard equipment. Around 25% of the Australian jet airliner fleet is already equipped.

Airservices, 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.

The Australian application of ADS-B is consistent with ICAO standards and recommended practices. Full implementation of these new technologies (ADS-B and the use of GNSS as the sole means of navigation) may provide the potential to replace some secondary surveillance radar by cheaper, more effective ADS-B ground stations, and also allows for the gradual reduction in the number of ground based navigation aids. This in turn could lead to savings and efficiencies being passed on to the aviation industry without reducing safety levels. Also, increased fitment of ADS B “in” equipment has the potential to greatly enhance collision avoidance capability generally and more specifically in areas currently outside radar coverage.

There is strong international interest in ADS-B, with the US having announced that it will move to full adoption by around 2014. Australia is also having a close look at moving beyond the upper airspace program for ADS-B. The Australian Government supports the work being done to extend ADS-B as a civilian surveillance and separation tool for Australia's lower level airspace. However, this does not mean that the Government will take ADS-B, or any other new technology, at face value, rather it has undertaken to make sure that new technologies are safe and add value by improving efficiency, surveillance and separation capability, and Australian 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.