A New Strategy for the Australian General Aviation Sector

General Aviation Advisory Network
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About the Authors

This document is a product of the General Aviation Advisory Network, which was established by the Deputy Prime Minister, The Hon Michael McCormack MP, with the aims of:

- Operating as a forum where industry representatives can identify opportunities to work collaboratively to respond to pressures facing the General Aviation sector;
- Providing advice to the Minister for Infrastructure and Transport on matters impacting on General Aviation particularly where existing consultative processes are not addressing the issue; and
- Acting as a reference group for the General Aviation Study, conducted by the Bureau of Infrastructure, Transport and Regional Economics.

Members of the Network have been selected based on their skills and expertise in the aviation industry and work collaboratively to respond to pressures facing the GA sector. They come from a cross section of the diverse GA sector, covering rotorcraft and fixed wing services, including flight training, aerial application, sport, recreational, regional, business, aeromedical, remotely piloted aircraft systems and aircraft maintenance and manufacturing.

Executive Summary and Synopsis

Consistent with its role and through its regular meetings, the GAAN has developed this strategic paper to assist government in its consideration of General Aviation issues and opportunities, on behalf of the sector as a whole, in order to frame and communicate its recommended strategy for the sector's success.

The GAAN's vision for General Aviation in Australia is as follows:

A critical aviation sector contributing to the national economy, job creation and the well-being of communities, strengthened by government policies and cooperative regulation underpinned by deep engagement with industry, that is fair, risk-based, responsive to cost and innovation and which promotes the value of the sector.

In order to attain this vision, the unique characteristics of the General Aviation sector are examined, identifying wide diversity, limited political influence, high sensitivity to market influences, over-regulation and lack of incentives to investment.

The extensive economic, environmental and social benefits to the Australian economy have been listed with a view to further study and analysis. Nevertheless, it is clear from the listing provided that General Aviation is an over-achiever in terms of national contribution, yet too-often ill-considered in national policy formulation and related settings.

The strategic position of the General Aviation sector as an enabler of many national benefits is considered and from these, eight strategic initiatives are derived. These initiatives condense the ten point plan made by the GAAN in its submission to the Australian Government's *Future of Australia's Aviation Sector - Issues Paper*[1], which calls for input to a five-year aviation industry plan.

These strategic initiatives are arranged in issues-solutions-actions themes to support practical consideration. They are as follows:

1. **Economic review of the sector** to identify its value to the economy, looking behind frontline participants to the users of, and demand for, GA services and to provide all levels of government and industry with better information for supportive policy implementation;
2. **Creating a world-class regulatory environment for General Aviation,** to address cultural, systemic and practice-based issues currently hampering GA's relationship with and the effectiveness of CASA through the adoption of a better Classification of Operations policy, cooperative regulation principles, and the application of GA sector risk profiles, along with the reform of GA-specific rulesets imposing unnecessary costs and red tape;
3. **Review of the *Civil Aviation Act 1988*** to ensure that CASA and the regulations it creates do not impose unecessary costs on industry while providing the capability for a modern approach to regulation of General Aviation including harmonisation with best international practice, outcome-based regulations, cooperation with industry to access expertise and to

[1] Prepared by the Department of Infrastructure, Transport, Regional Development and Communications ("the Department of Infrastructure" hereafter) in August, 2020. https://www.infrastructure.gov.au/aviation/future/index.aspx

drive continuous improvement, improve CASA's governance and reduce the potential for impediments to innovation and economic harm;

4. **Training pathways** to ensure the ongoing availability of skills and competencies for the sector by dealing with student support programs, duplication between government agencies, better outcomes for trainees and reduced cost and complexity for industry;
5. **Airports and infrastructure facilities and policy** to support General Aviation flight and ground-based activities for all aspects of the sector;
6. **Airspace for GA operations**, to address equitable airspace access and support new technologies, national security, safety and operational efficiency;
7. **Aviation design, manufacture and export** to capitalise on Australia's proven innovation to create jobs and compete in international markets by identifying and removing unecessary red tape while championing the potential of the industry to grow significantly while providing national capability enhancements and sustainable jobs; and
8. **Early adoption of technology and a facilitation process** to support, extend and leverage Australia's aircraft engineering, research and development capabilities, fostering innovation and realising economic, environmental and social benefits that reach beyond the sector.

GAAN has addressed each of these issues with practical initiatives that will reposition General Aviation to take advantage of its opportunities and to make an even greater contribution to the Australian community and the national interest.

An Appendix is included, containing the Policy Note previously developed by the GAAN, directed to the linkage between risk-based regulation and understanding of risk in various aspects of the sector.

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1 Introduction

A healthy, innovative and well-regulated General Aviation (GA) sector is fundamental to the Australian national interest.

General Aviation does not exist as an end in itself, but rather serves a variety of downstream purposes including rural and regional freight and transport, community safety, tourism, recreation, training and education; as well as executive and specialist mobility for primary and secondary industries, along with many others.

The national and local economies, job creation and communities - both rural and city - benefit from the facilitating and services roles played by General Aviation.

To maintain the benefits of a safe and viable General Aviation sector, a strategic plan is needed that establishes a long-term vision and identifies initiatives that can be taken to secure the sector's viability. The GAAN recognises that these necessarily extend to economic considerations, across the whole industry. There is also much to do to improve the effectiveness of safety regulations and the efficiency of the regulator and while they are not the only imperatives, they are critical to the sector's long term success.

General Aviation constitutes a significant proportion of non-airline aviation activity in Australia. It consists of operations such as:

- Low capacity charter;
- Private operations;
- Business operations;
- Sport and recreational operations;
- Aerial Work operations including law enforcement, agriculture, firefighting, survey;
- Remotely Piloted Aircraft operations;
- Pilot training;
- Maintenance personnel training;
- Maintenance, repair and overhaul activities; and
- Design and manufacturing of aircraft and aeronautical components.

The General Aviation sector is often recognised by its flight operations; however, these are only one aspect of the sector's economic significance. The sector also drives demand for aircraft design, manufacturing, maintenance and overhaul, training and education, airports and infrastructure. All these components must be kept fit and capable to ensure the health of the sector as a whole.

The GAAN welcomes the opportunity to provide strategic input at this critical time in the Australian aviation industry's history and would welcome questions.

2 The GAAN's Vision for Australian General Aviation

A critical aviation sector contributing to the national economy, job creation and the well-being of communities, strengthened by government policies and cooperative regulation underpinned by deep engagement with industry, that is fair, risk-based, responsive to cost and innovation and which promotes the value of the sector.

3 The Value of General Aviation

Whilst acknowledging past efforts to estimate the value of the General Aviation sector to the Australian economy, the GAAN considers that much of GA's activity occurs to provide critical services to other sectors of the economy. Consequently, attempts to understand the GA sector and its economic potential have fallen short of validating the sector's worth and perhaps more importantly, its future potential.

The Department of Infrastructure's issues paper titled *The Future of Australia's Aviation Sector*[2] seeks to recognise the value of the aviation industry as a whole, which includes the direct employment of 90,000 people and its contribution of $20 billion to the economy, prior to the COVID-19 pandemic[2]. However, the paper does not distinguish the General Aviation sector from other parts of the industry, nor quantify its economic contribution to facilitating and supporting other sectors including tourism, mining, agriculture, emergency services and regional Australia.

The COVID-19 pandemic has brought home both the weaknesses and strengths of the aviation sector. If nothing else, the pandemic has clearly established, in the public's mind, the importance of a reliable aviation industry, and the interconnected nature of the services provided by aviation.

Consequently, a detailed economic study of the General Aviation sector, its potential and its constraints will be a key step in understanding the sector and so unlocking a pathway to more jobs, more exports and even better support of the industries and cities and communities that rely on General Aviation.

The following table explores the value of General Aviation to the wider economy:

[2] Ibid. page 2

General Aviation Activity	Other Economic Sectors and Industries Served and Supported	Economic Benefits	Environmental Benefits	Social Benefits
Low Capacity Services charter and scheduled	• Tourism • Mining[3] • Agriculture • Freight • Mail • Banking • Media • Oil platforms	• Business productivity and capacity • Rapid and timely transfer of personnel and materials	• Reduced demand for roads and land clearing • Reduced environmental impact at tourist attractions	• Connecting families and communities • Safer than surface transport, especially for remote and rural locations
Freight and Delivery Services	• Postal industry • Road trunk and last mile delivery • Medical • Retail and eCommerce • Mining • Ports • Emergency services	• Efficient freight package delivery	• Sustainable infrastructure in remote locations	• Community safety
Marine Pilot Transfers	• Shipping • Ports	• Ship operational efficiency	• Reduced demand for port works such as dredging	• Vessel, personnel and community safety
Target Towing	• Defence	• Reduced workload for Defence personnel	• Reduced demand for ground based ranges and equipment	• Defence preparedness and training
Aerial Photography and Advertising	• Media • Real estate • Art	• Productivity • Real estate sales	• Reduced road vehicle usage	• Unique positioning, views, reach and art

[3] Fly-in, fly-out (FIFO) operations

General Aviation Activity	Other Economic Sectors and Industries Served and Supported	Economic Benefits	Environmental Benefits	Social Benefits
Airborne Law Enforcement, Surveillance, Search and Rescue	• AMSAR • Police • Emergency services • State and Federal law enforcement • Road safety accident investigation • National and industry asset protection	• Lower costs • More timely operations with mortality and trauma reduction • Industry asset protection	• Reduced road vehicle and maritime vessel usage	• International treaty obligations • Community safety • National security
Aeromedical Services	• Health • Emergency services	• Efficient health sector service delivery	• Reduced road vehicle usage • Reduced demand for road and other land infrastructure	• Rural, regional and remote Australians
Airborne Communications including pseudo satellite services	• Land, environment and infrastructure management • Rural and remote access to services • Emergency response	• National resilience to disasters • Service delivery efficiency	• Reduced demand for land infrastructure • Sustainability compared with fixed towers or satellite launches	• Community safety

General Aviation Activity	Other Economic Sectors and Industries Served and Supported	Economic Benefits	Environmental Benefits	Social Benefits
Aerial Application Firefighting Plague/insect control Agricultural Oil Spill Response	• Emergency services including firefighting • Support of ground firefighters • Public health disease vector control • Agriculture including crops and pastures • Forestry • Grain storage sector • Exporters • Food processors • Grocery supply chain • Food and fibre consumers • Oil industry • Offshore industry	• Financial loss aversion – houses, towns, crops, parkland • Public health cost reduction • Productivity, multiple industries • Crop yield increase • Loss avoidance • Emergency response cost and efficiency	• Superior application of crop protection chemicals by highly trained, accountable and licensed personnel • Environmentally sensitive location protection • Environmental protection through land clearing reduction	• Public amenity • Industrial safety • Community safety

General Aviation Activity	Other Economic Sectors and Industries Served and Supported	Economic Benefits	Environmental Benefits	Social Benefits
Helicopter Aerial Work Aerial Mustering Spotting Dropping Animal Control Frost Protection, Powerline Stringing Powerline Cleaning Helicopter Sling Loads Rappelling Winching Hoist Work	• Agriculture – cattle, goats etc • Agriculture - Flood relief • Aquaculture • Food • Exporters • Fishing • National Parks • Crop protection • Emergency response • Community • Lifesaving • Energy supply and consumers • Emergency services and police • Construction • Telecommunications	• Productivity gains for multiple industries • Productivity • Agricultural crop yield • Grazing and fishing yields and operational cost reduction • Stock saved • Energy and communications network expansion	• Environmentally sensitive location protection • Reduced usage of land vehicles and maritime vessels	• Public amenity • Industrial safety • Community safety • Powerline safety and continuity of supply
Aerial Survey	• Mapping • Information services • Mining • Land planning	• Productivity	• Bushfire mitigation • Land management • Mining lease management	• Public amenity • Industrial safety • Community location services and safety
Training Pilots Aircraft maintainers	• Aviation and consequently all other sectors listed here • Agriculture • Communities and rural homes • Food consumers	• Operational quality and productivity • Aircraft reliability	• Aviation industry viability, reducing road and other surface transport environmental demands	• Safety outcomes for industry and wider community

General Aviation Activity	Other Economic Sectors and Industries Served and Supported	Economic Benefits	Environmental Benefits	Social Benefits
Recreational and Sport Aviation	• National and international competitions • Tourism and adventure	• Aviation workforce growth	• Public environmental awareness, especially of remote locations • Reduced impact of ground-based tourism transport	• Social inclusion • Physical and mental health outcomes • Entertainment
Private and Business Travel	• Multiple industries with particular transport needs (e.g., veterinary, engineering, other technical)	• Business support and facilitation • Productivity • Individuals	• Public environmental awareness, especially of remote locations	• Rural and remote community interests • Rural and remote access to services

Table 1: Economic benefits arising from General Aviation activity

4 Economic Characteristics of the Australian GA Sector

The General Aviation (GA) sector in Australia has an unusual combination of characteristics, which arise from being highly specialised, widely diverse and heavily regulated. These are tabulated below:

Characteristic	Effect	Examples
Varying risk profiles among different operational types	Safety exposures differ, even within same sector	Safety record differences between commercial and non-commercial flying
Highly regulated	High fixed costs, barriers to entry, constraints to flexibility	CASA regulations govern entire operational spectrum and supply chain
Dependent on specialist markets	Exposure to economic variation	Agriculture, firefighting, recreational, tourism and scenic flying
Community and local orientation	Typically, small enterprises suited to local market needs	Aeromedical, regional charter, flying clubs, fire fighting
Dependence on limited set of suppliers and providers	High costs due limited competitive sourcing	Airports, maintenance providers, air traffic services
Workforce training requirements and skills shortages	Cost and availability of staff	Pilots, maintenance personnel and operational management
Agility, flexibility and adaptability	Intrinsically capable of adjusting to demand	New services, such as COVID-safe charter flights to new destinations
Undercapitalised small enterprises	Inability to pursue innovation, business diversification and to adapt to changing conditions	Average fleet age, high maintenance costs, susceptible to disruption
Lack of government and community awareness	Not prioritised, inadequately considered and represented	Aviation infrastructure, particularly airports, not oriented to General Aviation needs

Table 2: Characteristics of the GA Sector

In combination, these characteristics correspond to threats and opportunities for the sector and highlight areas in which government can facilitate industry recovery, economic contribution and community value. The GA sector is fragile, yet it serves the community in many ways, including essential services such as fire-fighting, aeromedical and regional freight and the loss of this capability to Australia cannot be contemplated.

No single industry or government body sets strategic goals for the General Aviation sector in Australia. The sector's high level of specialist diversities constrains the adoption of common and unified strategies and goal setting, when compared to other industry sectors, such as airlines.

5 Strategic Goals for the GA Sector

At the highest level, the GAAN's strategic goals for the sector may be summarised as follows:

Strategic Goals	Solutions
Deliver increasing economic, environmental and social benefits to citizens of Australia	• Serve the Australian community by supplying flexible, economically efficient and competitive aviation services for a wide range of purposes, including rural and regional freight and transport, aerial application, survey and remote sensing, community safety, medical transport and evacuation, tourism, recreation, training and education, executive and specialist mobility for many primary and secondary industries.
Achieve and maintain world standard levels of safety commensurate with sector risk	• Be regulated under a just and competitive legal framework that is clear and concise, based on a risk-based Classification of Operations, administered transparently and efficiently, by a regulator committed to just culture, industry engagement, collaboration and administrative efficiency.
Achieve and maintain economic growth within the General Aviation sector	• Deliver benefits to the nation at costs that are competitive with other forms of transport and utilities and comparable to those of other economies, where the costs to government are balanced by the national benefit delivered by the sector to the community and other industries.
Build and develop resilience in the sector to ensure its future sustainability	• Attract domestic and foreign investment. • Increase the capacity of the Australian General Aviation fleet; and reduce fleet age averages. • Partner with governments to support Australian providers of services essential to community safety, such as aerial firefighting. • Increase the number of persons, beyond employment, able to benefit from a viable General Aviation sector as participant and direct and indirect beneficiaries.
Be innovative and support innovation by others in technology, practices and operating models that support complementary strategic goals	• Leverage new technology and deliver operational safety and capability enhancements to be a world leader, creating export opportunities for Australian products, people and expertise.

Strategic Goals	Solutions
Work closely and collegiately with government, community and sector stakeholders to foster shared and collaborative safety regulation to support complementary strategic goals	• Operate collaboratively between government and industry to graduated levels of safety within a risk-based Classification of Operations that places maximum emphasis on protections for persons on the ground and non-participant consumers of aviation services, particularly passengers, who are not well-informed of the attendant risks.

Table 3: Strategic goals and solutions for General Aviation

Giving effect to these strategic goals requires strategic initiatives[4] that can effect meaningful change from the current economic and regulatory situation and arrangements.

[4] In its initial response to the Department of Infrastructure's *Future of Australia's Aviation Sector*[2], dated 11 November 2020, the GAAN identified ten strategic initiatives. Following further work, these have been condensed to the eight strategic initiatives given in this document. The coverage and aggregate content of the initiatives is equivalent.

6 Strategic Initiatives for a Successful General Aviation Sector

In its remaining sections, this document is focused on specific strategic initiatives that would deliver on the GAAN's vision for General Aviation in Australia, derived from the strategic goals of section 5.

1. Conduct a detailed, wide-ranging economic review of the sector, focusing on outputs as well as inputs.
2. Create a world-class regulatory environment for the GA sector.
3. Review the over-arching Civil Aviation Act and adjust to be fit for purpose for the GA sector.
4. Create consistent and effective training pathways to fulfilling, worthwhile jobs in an expanding GA sector for pilots, maintenance and other GA personnel.
5. Provide airport infrastructure and access to airport facilities that are suited to the diverse needs of an emerging and growing GA sector.
6. Provide access to airspace that support the range of current and future GA flight operations and technology.
7. Provide economic and other incentives for the design, manufacturing and export of Australia aircraft and aeronautical components.
8. Facilitate early adoption of technology and support processes that encourage innovation and technology development.

For practicality, each strategic initiative is identified by related current issues, and recommended solutions and actions for their implementation.

6.1 Wide-Ranging Economic Review of the Australian General Aviation Sector

The GAAN believes that it is time to assess the true economic value of General Aviation to the Australian economy, which is often underestimated. Whilst direct demand for GA services does not feature across all industries and most Australian consumers, the indirect impacts of aviation extend well beyond the sector, with benefits being reaching almost every member of the Australian public.

Unless the economic benefits of the sector are understood, it cannot be expected that government policy will reflect the sector's national importance.

Even in a COVID-affected world where business and personal travel has been limited, the role of the aviation industry in transporting goods, delivering emergency services and supporting regional Australia has been pivotal to ensuring that the Australian economy has not suffered more than was necessary.

Professor Geoffrey Blainey[5] has highlighted the historical challenges that Australia faces due to its geographic isolation. Historically, many Australians were unsure of the country's economic viability, due to the long distances between Australia and its European origins. Whilst these challenges are less relevant now, distance continues to pose a significant challenge to Australia's economic prosperity.

As detailed in Table 1, General Aviation offers a solution to many economic, environmental and social problems that arise from geographic distance and isolation, as well as specialist solutions for many industries.

General Aviation also brings social and environmental benefits. Bushfire mitigation, eco-friendly tourism, cultural environment protection, safer agricultural practices and better land and resources management are examples of environmental benefits that flow from the GA sector. Additionally, a person who engages in aviation for sport, recreation or enjoyment gains direct social benefits from the sector's existence. Pilots maintain a certain physical medical standard to gain and retain their qualifications. Whilst various standards and means of verification apply, participants are motivated to remain healthy. Aviation studies teach people to use frameworks to assess information, make informed decisions and act rationally. In common with team sports, aviation teaches decision making skills and fosters valuable skills that participants bring to the workplace. It is important that these non-quantifiable benefits are also recognised.

6.1.1 Issues

General Aviation is not well understood, and its contribution to the wider economy, either in terms of its economic importance to the nation, or its contribution to the community through jobs, services and other industry facilitation effects, is frequently overlooked.

[5] Blainey, GN: *The Tyranny of Distance: How Distance Shaped Australia's History*, Sun Books, Melbourne, 1966

6.1.2 Solutions

Government should fund a detailed independent review that considers all aspects of the economic, social and facilitative value of General Aviation in Australia. The review must engage deeply with industry peak bodies to ensure the comprehensive scope of economic, social and environmental benefits associated with GA are captured.

A proven model[6] for analysing the associated economic impact, structured around four categories, is as follows:

6.1.2.1 Direct Impact

Direct impact is economic activity within the General Aviation sector. In economic terms, direct economic impact arises from all GA flight operations, maintenance, aircraft and component manufacturing and other activities.

6.1.2.2 Indirect Impact

Indirect impact is economic activity occurring throughout the supply chain associated with General Aviation. The initial round of output, income, and employment generated by General Aviation leads to successive rounds of re-spending throughout its supply chain. The "multiplier" impact of General Aviation activity may be measured using input-output models.

6.1.2.3 Induced Impact

Induced impact is economic activity resulting from household spending of wages, salary and proprietors' income earned directly or indirectly from General Aviation-related activities.

People employed in services ranging from the operation and maintenance of aircraft, airports, air traffic control, ground handling and other services generate induced impacts. It is estimated that some 90,000 jobs[2] exist in the sector.

6.1.2.4 Enabled Impact

Many industries choose to use aviation as an input to production because doing so brings valuable commercial advantages. Some industries would not exist in Australia in the absence of a healthy aviation sector.

By way of example, South Australia has a flourishing seafood export sector that relies on the timely delivery of freshly caught produce to markets in Asia and beyond. Traditional surface transport methods would result in delays and as such, aviation is a critical component to their success.

Similarly, other industries could use surface transport to achieve similar outcomes, although the ability to send goods and services in a timeframe sensitive to the needs of the recipient would render some of these industries unviable. At best these local industries would face significant additional hurdles to overcome compared to their international counterparts whose geographic

[6] *Contribution of General Aviation to the US Economy in 2018,* study by PriceWaterhouseCoopers LLC, February 2020:
https://gama.aero/wp-content/uploads/General_Aviation_s_Contribution_to_the_US_Economy_FINAL_20200219.pdf

location offers a natural competitive advantage. More locally, the transport of goods and people to enable industries such as firefighting and medicine clearly delivers benefits in terms of the avoidance or minimisation of catastrophic loss and a reduction in injury and loss of life.

In the 2019-20 bushfire season caused agricultural losses of up to $4.1b[7]. More than 46 million acres of land were destroyed through fire. Aerial assets allowed elements of the firefighting to be tackled in places where ground based assets were not feasible and importantly, more quickly than land based efforts. Without the contribution of those assets, the losses would have been much higher.

When the broader economy and other sectors such as tourism, business travel, transport of goods, and others are considered, it becomes clear that GA enables much more in terms of benefits to the Australian taxpayer. The estimate of $20b[2] arising from the aviation industry may fall short of the true figure[8] when enabled impact is taken into account.

Enabled impact also results from destination expenditures associated with GA flights for business and personal transport.

Economic policy discussions should also include the regulatory funding model. Despite extensive cross-community benefits that flow to almost all Australian citizens from GA operations, as highlighted above and listed in Table 1, less than a quarter[9] of the regulator's funding comes from appropriations by government, whilst the aviation industry directly funds the vast majority of CASA's costs through fuel excise and service fees[9].

6.1.3 Actions

6.1.3.1 Identify and quantify the size of the General Aviation sector in Australia including support services.

Section 3 of this document has outlined the extensive economic, environmental and social benefits that the GA sector brings to the Australian economy. Assessing these benefits would mean understanding:

- The economic size of the sector and its contribution to Gross Domestic Product (GDP);
- The inclusions of jobs related to flying and maintaining, as well as other aspects of the sector, such as aircraft and component manufacturing, airports, freight, security and support services such as catering and fuel supplies; and
- A holistic estimate of jobs and value created by the sector.

6.1.3.2 Identify and quantify those areas of the economy that are heavily dependent on aviation.

This would include, but not necessarily be limited to those areas listed below. The obvious directly co-dependent sectors include tourism, transport and agriculture. A key

[7] *2019-20 Australian Bushfire Crisis: The Economic Impact* Ibis World Special Report, https://www.ibisworld.com/industry-insider/media/4641/bushfire-report-final.pdf

[8] The agricultural sector's gross value of output was $60b (Australian Bureau of Statistics item *75030DO001_201819 Value of Agricultural Commodities Produced, Australia, 2018-19)*. GA's role in the application of fertiliser, pesticides, mustering, asset inspections and many other services is widespread in this sector. If the agriculture sector's use of GA accounted for only a 1% productivity boost to agriculture in Australia, in just this one sector alone, GA would have generated $600m in national economic benefits.

[9] Civil Aviation Safety Authority *Annual Report 2018-19,* p.21

consideration in preparing a brief would be to exclude biases that may limit values. An estimate of jobs and value should be a key output.

6.1.3.3 **Identify and quantify additional benefits arising from General Aviation**, including a regional breakdown to identify and quantify its positive value, particularly to regional communities and its links to enabling education, healthcare, and other business activity**.**

6.1.3.4 **Identify different labour market roles in GA** and produce a breakdown of employment demographics, for example, by city, regional and rural, states and territories; and the type of people and qualification levels in those jobs; for example, university graduates, technical college qualification holders, high school leavers and related analysis**.**

6.1.3.5 **Develop scenarios and sensitivity analysis modelling to understand outcomes tied to the decline or growth of General Aviation** by 5% or 10%[10], to the level of its ultimate demise, to provide an overarching understanding of aviation value**.**

6.1.3.6 **Model the impact of Australian regulatory inefficiency** leading to loss of Australian-developed IP to overseas companies, jobs and skills going offshore, or being sourced from offshore. Anecdotally, it is understood this is occurring with maintenance training being outsourced to New Zealand and pilot training in the United States, where Australia's role reduces to one of recognition. A quantified estimate should be made of this issue and the value of knock-on effects on Australian training organisations, including lost capacity and export opportunity**.**

6.1.3.7 **Develop and deliver modelling and assessment tools** for use by Commonwealth, state and local governments. This information would directly assist planners and policy makers assess the impacts of policy on aviation. It would include data such as export income, taxation, depreciation, land-use, access, opportunity costs, regulatory service charges and fuel excise for a better understanding of the national, regional and local value of a viable General Aviation sector**.**

[10] 5% and 10% are arbitrary values, suggested as starting points for analysis.

6.2 A World-Class Regulatory Environment for General Aviation

6.2.1 Issues

Over a period of decades, multiple reviews of aviation safety and CASA, the aviation safety regulator, have failed to resolve the concerns of many industry stakeholders as to:

- Regulatory standards and administration, including suitability, comprehensibility and contribution to safety;
- Lack of regard to the effect of the cost implications of new and changed regulations and the burden they bring to the sector; and
- Activity of the regulator, particularly its internal culture, management consistency, governance and relationship with industry.

In the same timeframe, the Regulatory Reform Program has introduced significant costs, complexity and duplication without commensurate safety gains, with deleterious impacts on the General Aviation sector.

A key challenge moving forward must be to improve CASA's ability to develop regulatory content and methods that are effective for aviation safety, whilst supporting industry opportunities for growth in the GA sector.

Although sector risk profiles have been developed for specific aviation industry sectors, any process by which they have been applied to regulatory reform is opaque. The GAAN considers sector risk profiles to be essential to objective and risk-based regulation consistent with global contemporary regulatory best practice.

Proactive engagement between industry and CASA is limited, resulting in significant missed opportunities for industry involvement and collaboration towards the advancement of safety outcomes for the sector. This is particularly important during periods of rapid innovation while expert regulatory resources are limited.

To many in the sector, CASA's culture is directed to asserting power and control, at the expense of engagement and cooperation, even during consultative processes, and in contexts unrelated to enforcement or inspection activity.

CASA has established flexible and simpler pathways for operations conducted under the auspices of self-administering bodies[11].

[11] *Civil Aviation Safety Regulations 1998*; *Civil Aviation Legislation Amendment (Part 149) Regulations 2018;* and *Part 149 Manual of Standards*.

6.2.2 Solutions

The key to advancing safety outcomes for the sector is rebuilding trust and developing a collaborative relationship, without favour or "regulatory capture"[12].

The GAAN recognises that aviation safety is not only good for consumers, the public and government, but that it is also fundamentally good for business. In any industry, nothing destroys customer confidence faster than unsafe outcomes.

The achievement of safe outcomes in the General Aviation sector cannot logically involve disregard for the interests of industry, since doing so detracts from industry's ability to invest in safety: it constrains the ability of operators to buy new aircraft, to overhaul and not simply repair existing equipment and to build internal training and standards that surpass the regulatory minima.

A regulatory organisation culture and structure that sets regulatory requirements consistent with sector risk, consistently and objectively enforces clear and comprehensible regulations that are intrinsically linked to addressing known risks is essential to safe General Aviation outcomes. The GAAN recognises that these structures and culture will not mirror those appropriate to large aircraft air transport regulation and policy.

CASA should be required to implement an engagement strategy with General Aviation based on a classification of operations concept that embeds the key principles of this policy including sector risk understanding and risk-based regulation, driven by data and industry expertise and the use of innovative approaches to securing safety outcomes through continuous improvement.

CASA cost recovery from industry must be specific to efficient services, accountable in a commercial sense, and include transparency in billing and timely issue resolution.

6.2.3 Actions

6.2.3.1 Review Enabling Legislation

Establish an independent review of the *Civil Aviation Act 1988*, as noted in section 6.3, to embed a classification of operations model that recognises a more modern co-regulatory approach is required in CASA's dealings with General Aviation.

6.2.3.2 Classification of Operations and Sector Risk Profiles

CASA, in cooperation with industry, should develop a clear policy to operationalise a classification of operations so that simple operations have simple regulations. GAAN has previously developed a Policy Note on Classification of Operations, included at Appendix 1.

Operationalise the concept of classification of operations throughout CASA by the development of Sector Risk Profiles to ensure regulations are developed in consultation with industry and are based on risk management principles, are driven by data and strengthened by industry participation in risk mitigation.

[12] "Regulatory capture" has been cited in several contributions to aviation regulatory discussion as the undesirable product of regulators being so intertwined with industry that these relationships supplant the regulators' responsibilities to the public and broader community.

CASA must be required to further develop the SRP process by the addition of implementation plans that are binding on CASA and industry. Additional work should establish key sector safety performance indicators to enable measurement of success and provide evidence of continuous improvement.

6.2.3.3 Cooperative Approach

Utilise industry expertise to develop cooperative approaches - including but not limited to Sector Risk Profiles – where CASA cooperatively:

- Identifies and works closely with an industry safety partner (e.g., peak body) for different sectors;
- Identifies and gathers sound data for improved safety;
- Identifies key risks and safety issues in each relevant sector;
- Identifies risk controls and safety initiatives;
- Develops a sector risk profile implementation strategy, including funding; and
- Develops safety performance indicators to monitor ongoing safety trends.

Key principles for cooperative regulation should include:

- Positive engagement between regulators and industry peak bodies;
- Risk based and in the context of the operations through the development of Sector Risk Profiles;
- Data driven;
- Transparent;
- Based on the expertise of industry, best practice and continuous improvement;
- Focussed on building the capacity of the industry; and
- The use of education and recognition of industry programs wherever possible to attain safety outcomes, rather than regulation.

6.2.3.4 Continuous Improvement and Quality Management

The CASA Board should urgently establish key management systems within CASA that embed continuous improvement and quality management across all aspects of CASA's interactions with General Aviation and include an enhanced complaint handling and appeals mechanism.

6.2.3.5 Organisation and Culture

A root-and-branch organisation-wide review of CASA should be undertaken to examine the organisation's culture, suitability of personnel, engagement with industry, relationships between staff internally and with industry, consistency in decision making, direction and focus on strategic outcomes and the roles of the Board and senior leadership.

6.2.3.6 Efficient Regulatory Management

Establish General Aviation management systems within CASA that are more efficient, minimise duplication and deliver better service to General Aviation. These systems must be based on a strong engagement with industry users to identify areas for improvement, including the establishment of a GA Efficiency Taskforce.

6.2.3.7 Repair and Reform Ineffective Regulation

Work urgently with industry to identify and complete repairs and reforms required to key elements of GA regulations, including:

- CASR[13] Part 61 – Pilot Licencing – including immediate correction to:
    - 'Specialised Training' changes proposed by industry and already underway through the ASAP[14] TWG[15] Part 61 reform;
    - Unworkable Flight Examiner requirements[16];
    - Inefficient and bureaucratic administrative practices with little or no safety benefit;
    - Unjustified divergences from FAA practices for Part 91 (non-commercial) operations.
- CASR Part 66 – Maintenance Licencing disincentives for new personnel;
- CASR Part 135 - Smaller aeroplanes air transport operations – limits on number of seats;
- CASR Parts 137 and 138 – Aerial Work (including Aerial Application) concerns, repeatedly raised by industry, that have not been resolved; and
- CASR Part 141 / 142 – Training organisations – unwieldly and bureaucratic requirements.

6.2.3.8 GA Sector Roadmaps

CASA should recognise the need for GA sector regulatory roadmaps, informed by sector risk profiles and with input from industry to provide the industry the certainty required to invest in fleet renewal, upskilling, capability building and to support growth.

[13] *Civil Aviation Safety Regulations 1998* (CASR) Parts 61, 66, 137, 138, 141 and 142
[14] CASA Aviation Safety Advisory Panel
[15] CASA Technical Working Group(s)
[16] Provisions governing Flight Examiners would be improved by reducing requirements for their services in situations where their engagement is not justified by a quantified, objective, sector-specific risk assessment.

6.3 Review of the Civil Aviation Act

6.3.1 Issues

The *Civil Aviation Act 1988* is now over 30 years old. Piecemeal changes over that time and the changing demands on modern regulatory bodies means that the Act is not as fit for purpose as it should be.

An amendment to the Act made in 2019 requires CASA to take into consideration the economic and cost impact on individuals, businesses and the community and the differing risks associated with different industry sectors when developing and promulgating aviation safety standards. The public hearing of the Senate *Rural and Regional Affairs and Transport Legislation Committee Inquiry into Australia's General Aviation Industry* held on 20 November 2020, heard that several witnesses[17] did not consider that CASA has made any change to the way it operates, despite the amendment. CASA leadership maintained that it had already been doing so[18]. On face value, and in the most positive interpretation, the relevance of the enabling legislation should be reviewed if changes made by Parliament make no difference to the Authority's modus operandi; and in the least favourable case, the ability of the Authority not to respond to the legislation should be addressed.

6.3.2 Solutions

The Act should be subject to independent review and amendment to ensure it is fit for purpose.

6.3.3 Actions

Establish an independent review of the *Civil Aviation Act 1988* to consider:

6.3.3.1 **The current responsibilities, powers and composition of the CASA Board** and if they are appropriate, including how the Act can strengthen the role and structure of the Board to direct the promulgation of minimum performance-based safety standards for GA**.**

6.3.3.2 **How the Act should provide a head of power for a reformed regulatory approach for General Aviation**, including implementation of a classification of operations structure, sector risk profiles and a co-regulatory approach**.**

6.3.3.3 **If Section 9a of the Act is still fit for purpose** given recent amendments to require CASA to also consider cost implications of regulation**.**

6.3.3.4 **How the Act can ensure that General Aviation regulations are internationally harmonised** with key complementary aviation states such as the United States, New Zealand and Canada**.**

6.3.3.5 **Avoiding economic harm and impediments to technological and other innovation** where there is no safety issue**.**

6.3.3.6 **Unjustified punitive measures** introduced through regulation under strict liability offences and their removal for General Aviation**.**

6.3.3.7 **Sections of the Act that are no longer relevant** and can be deleted, or that should be moved to subordinate regulation**.**

[17] Senate Rural and Regional Affairs and Transport Legislation Committee inquiry into Australia's General Aviation Industry, 20 November 2020, *Proof Committee Hansard* pp 5, 9, 16 and 18
[18] Ibid., p 47

6.4 Training Pathways

6.4.1 Issues

6.4.1.1 General

Over the last thirty years of the CASA regulatory reform program and other CASA policy decisions, many adverse outcomes for training pathways have resulted - including significantly increased cost, complexity and duplication for no safety outcomes.

These have not resulted in any change to safety outcomes for industry or improved service delivery for trainees. By comparison, similar countries have equivalent or even superior safety outcomes without the burden imposed on the Australian industry.

Related issues include access to available student loans program, CASA/ASQA duplication/ competition between competencies and licence outcomes, and significant impacts for both pilot licencing and maintenance licencing regulations.

This represents a major reform issue for CASA to secure the future of the Australian aviation industry.

6.4.1.2 Pilot Training

There are a number of separate, but related issues that negatively impact pilot training, both as an economically important aspect of the sector in its own right, and as the upstream supplier of pilots of all descriptions for GA and air transport.

Particular examples of misdirected regulation and administration are as follows:

- Commercial pilot training for specialist roles, such as aerial application, is hampered by a severe shortage of qualified trainers and examiners. As a result, the sector's needs for pilots are not consistently met. The shortage of qualified specialist pilots is further compromised by CASA regulations that do not recognise the demands and requirements of very low throughput training, which requires an appropriate approach for the profile and numbers of trainees and training organisations.

- Regulatory inconsistencies[19] between CASA-regulated and training organisations that operate under self-administration, as well as within the CASA-regulated system, which have the potential to undermine the standards of aviation training and the sector's long term viability.

    - Qualifications from training organisations that operate under self-administration (ASAO[20]) provide credits for some CASA qualifications, but not others. For example, an integrated 150 hour Commercial Pilot Licence course excludes all hours in ASAO

[19] Another inconsistency exists in the rules for operator proficiency checks (OPCs) for aerial application pilots. Fixed wing OPCs can be conducted by chief pilots pursuant to CASR 137.240, whilst an OPC for rotary wing aircraft must be conducted by one of very few flight examiners who hold an aerial application rating.
[20] Aviation Self Administering Organisation

registered aircraft, yet some of those aircraft can be registered with CASA and then used for the same training. No credit is given for experience gained in instructing in ASAO aircraft for CASA flight instructor qualifications.

- Recreational Pilot Licences issued to a student of a CASA-regulated training organisation require a test by a Flight Examiner, but a student can alternatively obtain ASAO training, complete a navigation endorsement, apply on paper for a CASA Recreational Pilot Licence on the basis of the ASAO pilot certificate, and then undergo a flight review with a CASA Grade 2 instructor in a CASA-registered aeroplane and bypass the use of a Flight Examiner at all, for exactly the same outcome. The CASA-regulated flight school is subject to extensive, onerous documentation and ongoing surveillance requirements, but not allowed to issue the entry-level pilot qualification, whilst the regulations facilitate an alternative pathway to the contrary, for exactly the same outcome.

These issues result in confusion and added costs for people seeking to participate in or enter the industry.

A more pragmatic approach would assist attracting new pilot entrants.

6.4.1.3 Maintenance

Qualifications for maintainers, more specifically LAMEs[21], are very restrictive.

The rapid advancement in technology has left traditional training methods behind, particularly the current system's inability to recognise prior learning and leverage the opportunity for specialisation in fields such as avionics.

The tertiary education sector, particularly TAFE, has been unable to sustain LAME courses that cover piston and turbine engines, as well as airframe, electrical, instrument and avionics subjects to the standards required by the regulations. As a consequence, it is not unusual to hear of young LAMEs whose training has extended years longer than necessary.

Creating pathways that make LAME qualifications more transferable to the outside world and vice versa would attract candidates with the ability to develop both general trades and specialised skills. It is increasingly difficult to get people to take on a qualification without future options.

6.4.2 Solutions

CASA should engage with GAAN to establish a holistic training review that would remedy the significant negative impacts currently being experienced in GA through the relevant CASA Parts.

6.4.2.1 Goal

The goal should be to attract and maintain a qualified and professional workforce to support GA and broader aviation industry needs. Recognition that this is the entry point for commercial aviation personnel.

[21] License Aircraft Maintenance Engineer

6.4.2.2 Objectives

- Create and promote careers, not just licence issue;
- Develop a resilient workforce by ensuring transferability of skills and recognition of qualifications;
- Support, with corresponding regulatory measures, cost effective entry, ab initio training and ongoing skills and knowledge requirements;
- Ensure requirements are consistent between skill sets and licensing; and
- Provide for internationally recognised and transferrable qualifications.

6.4.3 Actions

- **Provide funding and recognition** for CASA-authorised technical training schools;
- **Resolve the competition in the ASQA[22]-CASA relationship;**
- **Holistically review Parts 61, 141 and 142 competencies**, along with the requirements for general GA training and 'specialised' GA training; and
- **Holistically review CASR Parts 42, 66 and the future 43 for opportunities** to streamline LAME training and licensing and support timely and efficient course completion.

[22] Australian Skills Quality Authority

6.5 Airports

6.5.1 Issues

6.5.1.1 Capital City Secondary Airports

No industry can survive, let alone prosper, without adequate land security being given to the fixed building assets needed to house, support and grow their operations. The small to medium enterprises (SME) business that characterise the GA sector are critical to the sector's viability, growth and job creation have been negatively affected at the capital city secondary airports, particularly Moorabbin, Bankstown, Jandakot, Archerfield and Parafield since the airports were privatised.

The General Aviation sector has been negatively impacted as a result of the activities of some airport owners that seek to discourage aviation usage at the airports they lease or own to favour non-aviation development and other markets, which may be more lucrative.

SMEs do not have the commercial corporate resources to negotiate the long-term leases that large non-aviation companies, have been able to achieve.

It is generally not possible to finance business assets on land that has short lease terms of ten years or less, which is currently all that is on offer for GA SMEs, because improvements on the land become the property of the lessor at the end of the lease period.

This is a major disincentive for GA businesses, which have no alternative other than to operate at an airport, since they need a runway. The economic ramifications of this situation mean fewer jobs, and lack of investment in fleet renewal, upskilling and capability-building, which are essential for the sector's viability.

Whilst airport owners are operating within the law, it does not mean that government should not act to address these critical issues confronting many GA sector SME operators.

6.5.1.2 Regional Airports Under Local Government Control

Many regional airports face an uncertain future and precarious financial position.

The GAAN considers that the Commonwealth's divestment of regional airports was a major policy mistake. In many cases, local government lacks the financial capacity to cover the recurrent costs of maintaining the airports, and the ability to grow and promote aviation industries at the airports. As a result, the Commonwealth has provided grants through the Regional Airports Program, Regional Aviation Access Program and the Building Better Regions Fund, which while helpful and well-intentioned, are ad-hoc and not tied to a central plan or industry strategy. A new approach is needed to support and expand regional airports and the GA and businesses that operate there.

Before any meaningful reform can be achieved, it should be accepted that smaller regional airports are critical national infrastructure, just like rail, roads and shipping ports. They are needed for air transport and GA activities, particularly aeromedical, emergency and agricultural services. Local government can, and should, be used to provide support services, but over time it has become clear that most lack the capital and expertise to operate airports, evidenced by the state of some facilities.

6.5.2 Solutions

6.5.2.1 Capital City Secondary Airports

The ACCC[23] should be asked to investigate the conduct of owners of large secondary airports and consider whether these leased airports require the protection of additional regulation. Government should revise its policy towards the approval of leased secondary airport master plans to ensure that the interests of the GA sector are adequately protected.

6.5.2.2 Regional Airports Under Local Government Control

Australia needs a network of regional airports that are safe and economically sustainable. This requires both a national regional airport provision and access plan; and a standardised understanding of the costs required to provide airport infrastructure. With these matters identified and documented, funding can then be directed in a strategic manner and over a period of asset sustainment that is not possible with an ad-hoc or laissez-faire approach.

It is noteworthy that almost all regional airports were developed through Commonwealth funding, many years ago. A national approach to improve regional airport outcomes would better utilise funding already being provided, whilst arresting the decline in regional airport infrastructure.

6.5.3 Actions

6.5.3.1 Capital City Secondary Airports

The ACCC should consider whether the following aspects of airport planning and development are being adequately provided by major secondary airport lessees:

- Security of tenure and access to suitable property leases for aviation businesses;
- Parity or otherwise of behaviour with normal commercial lease arrangements; and
- Impact on General Aviation businesses.

Government should review the independent review criteria for assessing airport development proposals with a view to ensure GA needs are fairly considered and adequate for the industry's current needs and future growth.

Through its powers and required approvals of airport master plans, government can set conditions on the head lease owners for commercially acceptable terms to GA SMEs, sufficient to support business lending applications. GA aviation business must not be denied conditions that are available to non-aviation businesses simply because GA must necessarily be located at an airport.

6.5.3.2 Regional Airports Under Local Government Control

A bold and innovative approach to revitalize regional airports, based on a sustainable mode, is needed to protect, maintain and grow business and employment opportunities.

The need for Commonwealth recurrent funding to sustain these assets and consistent, controlled standards for facilities appears to be inescapable.

Extensive existing, and underutilised, services including power, water, drainage and roads, coupled with the very flat and easily developed land that generally surrounds airports may provide the ingredients for regional business development opportunities at regional airports.

[23] Australian Consumer and Competition Commission

Recurrent Commonwealth funding could be matched with businesses prepared to commit capital by way of subsidised long-term leases.

It would be important to ensure that commercial investments were made by aviation-related businesses, or for surplus airport land in a way that is fully compatible with the ongoing use of the site as an airport, since allocation of airport land to non-aviation businesses could diminish the viability of the airport.

Annual lease payments could be linked to performance indicators that require businesses to sustainably grow, employ and train staff and support regional communities. Particular emphasis on youth employment for apprentice and traineeships should be targeted.

Annual auditing of performance indicators would provide the basis to reset or adjust lease payments. Financial guarantees should be taken from business principals to ensure compliance.

6.6 Airspace for GA Operations

6.6.1 Issues

General Aviation access to airspace is critical to its operations.

GA operations continue to be limited by airspace restrictions, including through airspace exclusively claimed by Defence that is not shared, as well as the impact of new developments.

The expected increase in the number of new airspace users (including drones, RPAS[24], and advanced air mobility), with diverse operational needs, can be expected to compound this situation.

There is currently no single user group to provide advice on airspace changes. The present arrangement only engages airspace users locally. For example, there is no effective national user consultation in relation to instrument approaches, which are a critical resource that has been affected by significant regulatory change in recent years.

Current airspace change discussions have been limited to the specific changes and not assessed against a national strategic plan for the evolution of airspace and air traffic management accounting for the changing needs of all airspace users.

The GA sector is also particularly apprehensive about the future impact of Western Sydney Airport on Bankstown Airport. This apprehension has resulted in a disincentive for investment in training and other GA facilities at Bankstown Airport.

6.6.2 Solutions

Principles and objectives for the national management of Australian airspace should be established that align with the Minister's airspace policy statement.

A national body should be established to advise government, in the national interest, in relation to airspace management.

A strategic operational concept for Australian airspace, accounting for existing and new airspace users, should be developed, which draws on best global practice, particularly the US National Airspace System (NAS) model, which has demonstrated efficiency and safety, whilst assuring GA aircraft equitable access and flexibility under visual flight rules.

Airspace reform would provide a stimulus to the GA sector, bringing job creation, fleet renewal, improved maintenance facilities and a more supportive environment for flight training.

Western Sydney Airport, Airservices Australia and the CASA Office of Airspace Regulation should engage with stakeholders to identify key concerns for ongoing visual and instrument operations at Bankstown and the Sydney Basin.

[24] Remotely Piloted Aircraft System

6.6.3 Actions

6.6.3.1 Airspace Model

The government should initiate a review of the Australian strategic airspace model, with particular consideration for existing and emerging airspace user needs, drawing on proven international structures, particularly the US NAS, and compliance with ICAO.

6.6.3.2 National Airspace Plan

A national airspace plan consistent with the model above, and the ICAO Global Air Traffic Management Operational Concept and Australia's State Safety Program should be prepared by the new advisory body, described in section 6.6.3.4, with appropriate industry engagement.

6.6.3.3 Leverage Technology

The Government should establish a policy framework to ensure the continued exploitation of ongoing technical innovation that has the potential to enhance the safety and efficiency of airspace operations and air traffic management. Pertinent examples include the widespread national deployment of ADS-B technology and advancements in automated airspace and air traffic management concepts for drones[25].

6.6.3.4 Strategic Airspace Advisory Body

The Government should establish an enduring Airspace Industry Advisory Board (AIAB) to complement the existing Airspace Policy Group. The AIAB should provide advice towards:

- Maintaining the vision and flight plan in line with updates to the Minister's Policy Statements, changing stakeholder needs, and emergence of new opportunities for innovation; and
- Ensuring strategic airspace user input in relation to airspace change proposals.

6.6.3.5 Western Sydney Airport

Airspace architecture design should accommodate the needs of Sydney (Kingsford-Smith) Airport, Western Sydney Airport and the Sydney Basin General Aviation airports, including Bankstown and Camden. The design activity must address the airspace needs of existing and emerging flight operations, and be coordinated with, and accepted by, Airservices Australia and the CASA Office of Airspace Regulation.

[25] Commonly referred to as Unmanned Aircraft System Traffic Management (UTM).

6.7 Aviation Design, Manufacturing and Export

6.7.1 Issues

Australia has an opportunity to become a significant manufacturer of specialised aviation products and associated emerging technologies, but a national aviation manufacturing policy to encourage the development of this area of the industry has not emerged. In particular, Australia has a poor track record in maintaining its aircraft certification and manufacture capabilities.

In many cases, General Aviation aircraft and component manufacturing has faced excessive cost and time delays caused by CASA. In common with the issues presented at section 6.8.1, existing regulatory inflexibility and impediments hamper opportunities for innovators, which could otherwise be creating Australian jobs.

At the same time, new aviation manufacturing industry opportunities are emerging in areas of RPAS and Advanced Air Mobility (AAM) platform manufacturing, as well as communications, navigation and surveillance equipment and software.

Current research and development programs and criteria do not address the needs of aircraft design, certification and manufacturing. As a result, companies that invest in bringing new technologies to certification are usually resource and investment depleted, which can result in commercialisation opportunities disappearing overseas.

Aviation is a global industry. International markets require Australian manufacturing standards to be harmonised with their requirements to facilitate access, compliance and successful exports.

Those that choose to remain in Australia, find it challenging to reach commercialisation under regulatory burden, skills shortages and cost of developing global market opportunities.

The current approach has been a contributing factor in the shortage of significant investment.

6.7.2 Solutions

Leveraging structures with the Department of Infrastructure for economic oversight, and CASA for manufacturing approvals areas, pathways should be identified to improve the process for approvals, for the dual purposes of introducing innovation from overseas and exporting Australian innovations.

Doing so will also involve attention across several government portfolios in relation to skills shortages in manufacturing, production, aeronautical design and certification personnel.

6.7.3 Actions

6.7.3.1 Harmonisation

Regulations and practices for the design, certification, manufacture and export of Australian aeronautical products[26] must be fully harmonised with those of intended markets. As the dominant markets for GA products, acceptance by the United States FAA and European EASA of Australian regulatory approvals with nil, or minimal differences, is an essential concept. Doing so will require extensive consultation with industry and a renewed focus on regulatory support for these activities.

6.7.3.2 Cost Recovery

Charges for regulatory services for the certification of Australian aeronautical products should be abolished, which would assist in a more level playing field for Australian aeronautical design and manufacturing companies that compete with those of the United States.

6.7.3.3 International Agreements

Government should reduce the regulatory burden faced by industry in the export, and overseas recognition, of Australian designed, manufactured and certified aeronautical products. This could be achieved in multiple ways, including through ICAO compliance, expanding the scope of existing bilateral agreements and ensuring they are effective, in recognising Australian aeronautical products and platforms.

Where new bilateral and Free Trade Agreements are negotiated, Australian aeronautical products and related products and services should always be included.

6.7.3.4 Delegations

CASA should delegate additional responsibilities for design, manufacturing approval and oversight to industry, where personnel can demonstrate suitable competence and qualifications.

6.7.3.5 Programs

Government should initiate cross-portfolio activity with the following objectives:

- Research and development grants criteria should be revised, to include further development of established products and transition and further development towards “green” technological solutions;
- Low cost loans availability to fund newly developed products manufacture, including capital equipment;
- Job creation Initiatives and programs to encourage young people to enter manufacturing industries; and
- Renewed focus on Government supported trade missions to identify international market opportunities for Australian aeronautical products and services.

[26] In this context, an “*aeronautical product*” is intended to refer to any type of aircraft (including RPAS); anything intended for installation on or as part of an aircraft; any system or platform used to operate, control or provide services to one or more aircraft; and any related services.

6.8 Early Adoption of Technology and Facilitating Processes

6.8.1 Issues

Australia has a proud heritage of being a leading aviation state, however, regulatory overreach, red tape and bureaucracy have hamstrung the Australian industry and particularly GA businesses from being as innovative as they might otherwise be, in the adoption of new technology.

The Department of Infrastructure has recently released an economic study[27] of drones and air mobility. In its medium uptake scenario, the study found opportunities equating to $14.5b impact over the next 20 years, with the employment of an additional 5,500 people in Australia.

It is clearly in the national interest that these opportunities are not lost, however in the absence of specific planning, the existing industry support and regulatory framework appear incapable of supporting them.

6.8.2 Solutions

New technology and innovation require outcome-based regulations that make use of industry led consensus standards, rather than being historically-based.

Greater industry, research and regulatory authority engagement, such as sandboxes and technology incubators are needed to identify and explore innovation in a safe and efficient operational environment.

Appropriate access to airspace to facilitate technology development without compromising the safety of other users should be facilitated.

6.8.3 Actions

Government should initiate cross-portfolio activity with the following objectives:

6.8.3.1 Ensure a prioritisation of national research and development programs to innovations that have the potential to:

- Deliver safety, efficiency, economic or sustainability benefits across multiple aviation sectors;
- Create new, or enhance existing, commercial, civil or defence applications for GA; and/or
- Create new manufacturing and export opportunities for Australian based industry.

Examples of how this could be achieved include Australian Research Council priorities, targeted government grant programs aligned to priority areas (e.g. enhancing services to regional communities); and issuing “grand challenges” to foster innovation and investment.

[27] *Economic Benefit Analysis of Drones in Australia*, Deloitte Access Economics, October 2020 https://www.infrastructure.gov.au/aviation/drones/files/economic-benefit-analysis-of-drones-to-australia-final-report.pdf

6.8.3.2 Programs and funding to enable relevant government agencies, including CASA, to appropriately support industry-led innovation, research and development programs through expert advice, regulatory improvement and reform:

- Regulatory innovation program – allow industry to access Government advice, streamlined and subsidised application processes to obtain necessary regulatory approvals;
- Regulatory sandboxes – that enable Government to partner with industry to jointly explore solutions to Government-identified technical, operational or regulatory challenges; and
- Ongoing funding to ensure regulatory reform that can keep pace with changing industry needs.

6.8.3.3 Further economic measures to encourage industry co-investment in the development of new aviation products and processes;

6.8.3.4 Programs to aid small businesses in connecting with Australian-based researchers and complementary businesses;

6.8.3.5 Low cost loans to fund newly developed products manufacture, including capital equipment; and

6.8.3.6 Job creation initiatives and programs to encourage young people to enter manufacturing industries.

7 Appendices

7.1 Appendix 1 - GAAN Policy Note – Classification of Operations

This appendix comprises a policy note, originally developed by the GAAN as a free standing document in October 2020. The version attached here as an appendix has been updated, in accordance with the position agreed at the GAAN meeting of 18 November 2020, to clarify the classifications of Airline Operations and Low Capacity Passenger Operations.

Other than the above, and beyond reformatting as an Appendix to this document, no other changes have been made from the original.