Australia's Aviation Design, Maintenance & Manufacturing plus Training

Government Restricts Global Aviation Trade

- Lack of Government to Government Free Trade Aviation Agreements

  Lack of Government International Technical/Regulatory Expertise

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This paper was written to identify why Australian aviation design, maintenance and manufacturing businesses have major problems participating in world aviation markets.

Two options are available but only one provides real benefits.

First option is reliance on government to attain free trade aviation agreements commonly known as Bilateral (Multilateral) Aviation Safety Agreements or CASA Technical Agreements with the regulator of the country enabling trade. This is the preferred option.

The second option is for individual businesses to negotiate directly with the foreign country and obtain an approval from the foreign regulator. A very costly option as each business has to obtain approval and subsequent auditing from the foreign NAA.

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Government must provide the support that foreign governments give to their aviation design, maintenance and manufacturing businesses by providing government to government free trade (aviation) agreements.

ICAO Council Member States – 2016 to 2019

Part 1 - ***States of chief importance in air transport***

Australia, Brazil, Canada, China, France, Germany, Italy, Japan, Russian Federation, United Kingdom and the United States of America.

This prestigious position places a responsibility on government, its departments and agencies, to maintain high levels of compliance with ICAO requirements and harmonised with the larger trading members in Part 1 of the ICAO Council such as the United States of America.

Executive Summary

Australia has had an Australia – United States of America aviation bilateral agreement for many decades that originally came into being as an aircraft parts manufacturing agreement to offset the costs of buying US manufactured transport category aircraft.

This manufacturing-only agreement changed when Europe and America introduced Bilateral Aviation Safety Agreements that not only require harmonisation of aviation safety requirements but also limits access to either nation's aviation market unless harmonised procedures and processes of the two aviation regulators are similar.

Underpinning any government to government aviation safety agreement (actually a trade agreement) is the need for government to have technical and regulatory expertise comparable to the foreign country's government technical/regulatory experts.

Australian businesses do have designers, maintenance companies and personnel, and aircraft and parts manufacturers with the technical skills equivalent to their counterparts in foreign aviation countries.

To enable these businesses to trade globally requires the Australian government to negotiate aviation "free trade" agreements. Industry needs to expand the current Bilateral Aviation Safety Agreement with the US government to include maintenance. And other nation bilateral agreements, including technical agreements between NAAs[1].

However, what also restricts this industry from competing in world aviation markets is the skills of the regulatory & technical experts employed by the Civil Aviation Safety Authority (CASA). These experts must be globally accepted by their peers in other NAAs and be fully conversant with ICAO[2], FAA[3] and/or EASA[4] specific requirements.

The lack of international government to government agreements and/or technical & international regulatory expertise is a restriction on Australian aviation design, maintenance, manufacture and technical training businesses accessing global aviation markets.

Until government attains agreements with individual countries, or multiple countries, and the aviation regulator, CASA, attains the internationally recognised regulatory and technical expertise, industry is restricted from entering global aviation markets under their Australian aviation business approvals.

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Safety All Around.

[1] NAA (National Aviation Authority)
[2] ICAO (International Civil Aviation Organisation)
[3] FAA (Federal Aviation Administration)
[4] EASA (European Aviation Safety Authority)

Government Policy needs Government Action in Aviation.

"*Malcolm Turnbull has turned up the heat on increasingly protectionist US legislators, pleading with them to ratify the Obama-led Trans-Pacific Partnership trade liberalisation agreement and to do it before the looming presidential change-over.*"

Australia's aviation design, maintenance and manufacturing industry calls on Prime Minister Turnbull to broaden the Australia/United States of America BASA[5] to include 'maintenance' and then to develop either bilateral or multilateral aviation agreements with the rest of the Asia Pacific Rim countries.

The current amendment to the BASA's Implementation Procedures, agreed to by the FAA and CASA, improves design and manufacturing processes but industry still cannot access the full benefits of this amendment because government has not maintained the aviation technical and regulatory expertise, in aviation design, maintenance and manufacture, necessary to support international agreements.

Until government, government departments and agencies fulfil their obligations and responsibilities, the aviation industry has restricted access to international aviation markets. This industry is totally reliant on government to trade globally.

It is time the following responsibilities are clearly legislated in the appropriate governing Act applicable to the responsible government department or agency.

Process	Government or Industry	Responsibility	Department Agency	Legislated
1	Government (Agencies)	*Bilateral/Multilateral Aviation Safety Agreements* *Implementation Procedures*	*DFAT** or *DIRD*# or both *CASA & Foreign NAAs*	Who? No
2		*Aviation Technical Agreements*	*CASA & Foreign NAAs*	No
3		*Aviation Technical Expertise – equivalent to foreign NAA expertise*	*CASA Technical Experts*	No
4		*Technical Experts with international regulatory expertise i.e. ICAO, FAA, EASA, TCA***, *etc.*	*CASA Technical Regulatory Experts*	No
5	Industry	*Technical expertise equivalent to importing country.*	*Aviation design, maintenance & manufacturing businesses*	Yes
6	Government Industry	*Aviation Trade Agreements implemented benefitting these Australian businesses*	*CASA/Industry*	No

5 BASA (Bilateral Aviation Safety Agreement)

* DFAT (Department of Foreign Affairs and Trade

\# DIRD (Department of Infrastructure and Regional Development)

** TCA (Transport Canada Aviation)

Government Responsibilities

Until government fulfils their above responsibilities, including improving the technical experts' foreign regulatory knowledge by completing technical/regulatory courses conducted by the FAA, and other foreign NAAs, CASA approved businesses are restricted from full global trade.

The previous chart demonstrates what government, government departments and agencies must perform before Australian aviation design, maintenance & manufacture businesses can export their capabilities. Without these government actions, these Australian aviation businesses are restricted to domestic markets.

1. BASA – this is either DFAT or DIRD, or both, responsibility – businesses rely totally on government departments to negotiate these agreements so Australian businesses have access to foreign aviation markets. These agreements can be bilateral or multilateral.
    a. BASA's normally need *Implementation Procedures* agreed between CASA and the foreign NAA that identifies the level of recognition that each NAA will accept.
2. Technical Agreements – this is usually CASA's responsibility though there is some involvement with DIRD. These are usually agreements between CASA and a NAA and enables recognition of each other's processes and documentation. ICAO harmonisation is crucial in these negotiations.
    a. *TAs may also include Implementation Procedures.*
    b. *Regulatory/Standards/Procedures harmonisation reduces differences.*
3. Technical Expertise Recognition – the most critical element of a BASA, Technical Agreements or Implementation Procedures, is the technical and/or regulatory expertise demonstrated by CASA to the other NAA.
    a. For example, if the FAA accesses that CASA does not have the expertise in a discipline, then they may add processes to validate any Australian product prior to entering the USA aviation market.
    b. Like the FAA, CASA can approve industry experts to fill this void. Copying the FAR system will enhance acceptance.
4. CASA Expertise Required – For Australia to be part of the global aviation industry, CASA technical staff need to become fully conversant and competent in understanding global standards that have to be applied.
    a. Aviation standards are a result of an international treaty the government ratified many years ago. This treaty requires harmonisation to the highest practical level.
    b. All CASA technical staff, especially those developing regulatory requirements, should obtain ICAO regulatory training.
    c. These same staff should complete FAA and EASA regulatory training in their disciplines – this will assist in above negotiations.
5. Industry Expertise – Industry has the technical expertise and skills to compete in the global aviation markets if the above is achieved.
    a. Government is holding back industry by not maintaining experts that are as qualified and experienced as their peers employed by the foreign NAA that is a partner to any form of agreement.
    b. Industry has had to obtain foreign approvals to compete globally.
6. International Agreements – industry is waiting and has been waiting for the last decade or two for government & CASA to harmonise and obtain multiple BASA/Technical Agreements.

In summary, the declining levels of internationally recognised technical and regulatory skills within CASA, is now restricting the expansion of many aviation businesses in Australia.

Asia Pacific region nations are obtaining approvals wherever possible from foreign NAAs so that they may compete in the global aviation market.

Government has failed to negotiate umbrella aviation trade safety agreements with major trading countries such as North America, Europe, South America and Asia Pacific Regions.

Two decades back, government was supporting single aviation markets. This should really happen with NZ & the Pacific Region initially.

Removing Trade Barriers

Current business (organisation) approvals granted by CASA are not worth the paper they are written on when an approved business decides to gain access to a foreign aviation market. Australia's aviation business approval certificates and government release certificates are not acceptable to the majority of foreign NAAs.

Due to the lack of any sort of Recognition Trade Agreement that accepts CASA's personnel standards and processes, the only option for an Australian business is to apply to the NAA regulating the other market for an approval under their system.

This means individual Australian aviation businesses now operate under multiple foreign NAA approvals because government/CASA has not negotiated enough agreements. If businesses can appease multiple NAAs, then harmonisation can be achieved if government and CASA really understood the meaning of harmonisation as related to design, maintenance and manufacture.

Those that have obtained foreign approvals understand the uniqueness and additional red tape that is applied by CASA.

Aviation is an international industry with global standards and requirements that should make recognition of each trading country's capability as meeting or exceeding those international standards and requirements. This responsibility remains with the NAA of each trading country. There is no automatic recognition for meeting the ICAO standards because there is a variable standard of compliance across all members of the international treaty.

Aviation's design, maintenance, and manufacturing businesses should be the easiest industry sectors for government to attain bilateral and/or multilateral aviation trading agreements. They have the most specific international standards.

ICAO promulgates global design, maintenance, manufacturing and personnel standards (pilots and other operational crew, maintenance personnel, air traffic controllers, etc. etc.). If they were correctly adopted in Australia, recognition should be possible without major effort.

These global ICAO standards are assisted by more specific aircraft design standards that are either those promulgated by the FAA or EASA. These design standards are very similar with minor differences and are used by other NAAs including CASA and New Zealand's CAA. The far majority of the aircraft on the Australian civil aircraft register hold FAA Type Certificates.

Every manufacturing country that makes aircraft and/or aircraft parts utilise these design standards so they can access the two largest aviation markets North America and Europe. The USA has the biggest general aviation market.

The administrative processes and systems used by both major NAAs are very similar with FAA & EASA now able to simultaneously issue aircraft type certificates for all large transport category aircraft either market produce.

Harmonisation Fortunes Fluctuate.

Australia was close to adding aircraft/aircraft component maintenance to the USA BASA back in 2002 but government and CASA management changes since then have ignored the need for harmonisation, especially with our largest Pacific Region partner, the USA and their FAA.

However, the decision to ditch harmonisation with the USA/FAA and adopt the new EASA regulatory system has been disastrous for Australian aviation businesses participating in global aviation in their own right.

EASA is lagging the review and modernisation of regulatory requirements that the FAA concluded resulted in considerable regulatory changes to update the regulatory processes in the engineering fields of design, maintenance and manufacture. This has seen improved productivity enabling the FAA to provide enhanced regulatory oversight. These FAA requirements introduced during the last decade are the new global benchmark.

The Pacific region basically operates on the New Zealand aviation regulatory system that should be the basis for a multilateral Pacific aviation trade agreement. Government and CASA should look beyond the Pacific region for aviation markets where our designers, maintenance services and manufacturers can gain access to ply their trade. E.g. USA.

For any bilateral agreement to be successful, governments must ensure the technical expertise and experience is maintained within CASA and they should also obtain FAA training specific to their disciplines.

> OECD: "*Much recognition is based on the principle of equivalence – generally understood to mean that, where the host country's regulatory goal is addressed by home country regulation, the host country should accept the home country's regulation as equivalent. Where aspects of the host country's regulatory goals are not met (e.g. with regard to required local knowledge, or where there are differences in the scope of the licensed activities between jurisdictions), the host country is permitted to set additional requirements for recognition ("compensatory measures"). In practice, recognition is rarely "pure" recognition. Most recognition agreements require a considerable degree of cooperation, including in terms of analysis of the respective parties' regulatory regimes and, often, some regulatory adaptation. In general, recognition agreements: leave considerable residual powers to the host country; involve mutual monitoring between the regulatory authorities; involve some pre-conditions before recognition is granted; and include the possibility to reverse or remove recognition in view of changes to the other party's regulatory system. Additionally, many recognition agreements include a general safeguard, in addition to the specific rules of recognition, enabling the authorities to reassert regulatory jurisdiction in order to "protect the public good" or the like.*"

In other words – CASA must maintain its "technical expertise" to enable our businesses to totally benefit from Bilateral Aviation Agreements. i.e. The host country (FAA) needs CASA at the same technical and regulatory expertise level.

Harmonisation

Australia ratified the International Convention of Civil Aviation, also known as the Chicago Convention. Article 37 of the Convention places an obligation on Australia to **adopt** the international standards promulgated by ICAO.

ICAO states in its regulatory oversight manual: **3.3.3.2**. *"It should be noted, however, that the filing of differences with respect to international standards does not mean that a State (Australia) can then do business as usual. Several articles of the Convention make it clear that if Standards adopted by a State are lower than those required by ICAO, aerodromes, aircraft, service providers or personnel with licences or certificates endorsed by that State cannot participate in international air navigation, except with the permission of the State or States whose territory is entered.*

ICAO also states: *The term "**regulations**" is used in a generic sense to include but is limited to what may be variously considered by States as instructions, rules, edicts, directives, sets of law, policies, requirements and orders."*

> ***Standard:*** *Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the **uniform application of which is recognized as necessary for the safety or regularity** of international air navigation and to which **Contracting States will conform in accordance with the Convention**; in the event of impossibility of compliance, notification to the Council is compulsory under Article 38.*
>
> ***Article 37** – **Adoption of international standards and procedures***
> *Each contracting State undertakes to collaborate **in securing the highest practicable degree of uniformity** in **regulations, standards, procedures**, and **organization** in relation to aircraft, **personnel**, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation.*
>
> *To this end the **International Civil Aviation Organization shall adopt and amend from time to time, as may be necessary, international standards and recommended practices and procedures** dealing with:*
>
> ***a) Communications systems and air navigation aids, including ground marking;***
> ***b) Characteristics of airports and landing areas;***
> ***C) Rules of the air and air traffic control practices;***
> ***d) Licensing of operating and mechanical personnel;***
> ***e) Airworthiness of aircraft;***
> ***f) Registration and identification of aircraft;***
> ***g)** Collection and exchange of meteorological information;*
> ***h) Log books;***
> ***i)** Aeronautical maps and charts;*
> ***j)** Customs and immigration procedures;*
> ***k)** Aircraft in distress and investigation of accidents;*
>
> *and such other matters concerned with the safety, regularity, and efficiency of air navigation as may from time to time appear appropriate.*

However, since 1988, when the Civil Aviation Authority was formed, the commitment to "harmonisation" has become blurred as public servants create a life time career of regulatory development without commitment to harmonisation.

Harmonisation as intended by ICAO and the international treaty (Chicago Convention) ratified by Australia is the foundations of a global aviation industry that many Australian businesses want to participate in.

Harmonisation means harmonisation with ICAO Standards first and NAA systems and processes that government/CASA agreements have been made next.

Summary and Recommendations

ICAO identified the declining levels of (international) technical/regulatory expertise in CASA during their audits in 1999 and 2008. Restructuring of CASA continues to deskill this agency. CASA technical staff need to be up-skilled in technical and regulatory international standards so aviation design, maintenance and manufacturing businesses can gain access to other countries aviation markets.

These Australian aviation businesses currently have limited foreign markets to access based on the international technical and regulatory skills of CASA technical staff when negotiating agreements with NAAs like the FAA or EASA.

To reduce differences, the regulations and standards should be based on the FAR system for design, maintenance and manufacturing considering the far majority of aircraft on the register hold a FAA aircraft type certificate.

Harmonisation without differences is now a priority to enable access to global aviation markets, especially in these disciplines.

Recommendation 1. That the functions and responsibilities of government (DIRD, DFAT & CASA) to negotiate international aviation safety (free-trade) agreements, to the benefit of Australian aviation design, maintenance and manufacturing businesses, be clarified in appropriate Acts.

Recommendation 2. Upskill CASA technical airworthiness and engineering personnel involved with regulatory reform and/or aircraft/parts certification for aircraft design standards, maintenance and manufacturing standards by undertaking international training.

- ICAO Standards & Recommended Practices course associated with their discipline;
- FAA regulatory training applicable to their technical discipline; and
- Individual technical certification engineers to also attend similar EASA and other NAA (Canada/New Zealand) training courses in the interest of harmonisation and technical agreements.

Recommendation 3. Harmonise current regulations, standards, procedures, etc. with ICAO general aviation standards (Annexes 8, 6, 1) as promulgated by the USA Department of Transport and the FAA.

- Comply with the intent of Article 37 of the treaty (Convention on International Aviation – known as the Chicago Convention).
- The FAA general aviation system is acceptable worldwide, with FAA supplements, and would promote growth in Australia.

Recommendation 4. Negotiate a multilateral agreement with Pacific nations, including NZ & PNG. The majority of these nations' aviation regulatory are based on the NZ aviation regulatory requirements.

Recommendation 5. Adopt the FAA engineering design approval process including the use of representatives in the form of delegated individuals and delegated organisations.

- Australia's past engineering and processes have been based on the FAA system for many decades.
- Harmonisation with the FAA system underpins the current BASA, the largest aviation safety agreement that government has been able to sign.
- Both FAA and EASA rely on industry "representatives" to certify data as being compliant with airworthiness engineering design standards.