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NEWSLETTER

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1. General Aviation – Regulatory Operating in the Past.

Regulatory changes, since the days of ANRs and ANOs, has not applied safe practical requirements that apply in the main country of aircraft manufacture.

Since the late 1980s, Australian GA has regressed, not progressed by modernising the regulatory system. Only the USA has general aviation sectors similar to ours. The FARs are a total GA system that the Pacific Region has adopted. Time is now crucial to stabilise, harmonise and reverse the current decline.

It makes no difference if you look at flight operations or the engineering fields of design, manufacturing and maintenance; general aviation is being regulated with outmoded philosophies when compared with the mature safe and proven USA system. Even the basic ICAO/FAA requirement to maintain aircraft as "airworthy" is not an Australian requirement. The most proven "performance-based" set of regulations that supports the safest and viable general aviation, is the FARs. Adoption must happen ASAP.

GA private operations, up to the FAR "Air Taxi" operations; GA manufacturing and even the adoption of a modified FAA FBO AMO system should also be implemented. Previous regulatory changes have not improved safety or created jobs; they have created an environment where jobs and participation are continually decreasing. It must be reversed so aviation can grow again.

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2. Maintaining an Aircraft's Type Certificate.

Registering a type certificated aircraft from a foreign country places obligations & responsibilities on Australia and CASA. Changes are needed to clarify obligations & responsibilities.

The Chicago Convention places certain obligations and responsibilities on the State of Registry when it is not the State of Design or Manufacture. Australia, in the past, met these obligations and responsibilities by being Annex 8 compliant. Most mature manufacturing NAAs (FAA, etc.) had no reason to be concerned that Australia met their obligations and responsibilities with regards to aircraft continuing airworthiness and maintenance meeting the same in-service standards as applied by the State of Design/Manufacture.

ICAO: 1.2.3. *"Through the proper process of registering aircraft and the issuance of the certificates and approvals, the State ensures public safety and interest are addressed. Furthermore, the State will be able to exercise appropriate influence and control of airworthiness activities without encroaching upon its air operators, design organizations, manufacturers and maintenance organizations* ***responsibilities for safety****."*

Safety All Around

CASA's Aircraft Registration Manual states: "*CASA is responsible, under the provisions of Civil Aviation Act 1988, for registering Australian Aircraft and for issuing their certificates and permits in accordance with the relevant provisions of the Civil Aviation Safety Regulations. CASA is, therefore, responsible for ensuring compliance with the relevant certification standards and continuing airworthiness requirements, as applicable to each aircraft registered in Australia."*

Read more

3. Making older generation aircraft reliable.

Older aircraft can be reliable as long as responsibilities are clear and concise.

Issues relating to continuing airworthiness and maintenance of general aviation aircraft continue to surface but CASA does not respond even after their own ageing aircraft project. The first thing that CASA should review is the regulatory provisions and CASA own promulgated standards and practices. A lower regulatory standard than the FARs and substandard advisory material that should have been replaced post CASA's ageing aircraft project still exists. We don't (regulatory) maintain to the same standards as the FARs.

So that we all understand what an A&P mechanic with an Inspection Authority does at each annual, check the *Sample FAR Annual Inspection Checklist* which makes references to the design standards applicable to each inspection item because they inspect that aircraft are "airworthy", very different to inspect iaw a maintenance manual. In addition, the *FAA endorsed Aging Aircraft Maintenance Practices* provides additional practices endorsed by the FAA. The 'condition' of the aircraft is the vital link regarding the aircraft's airworthy status.

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If the GA aspects of the FARs were adopted, then representatives from other "operational" sectors would continue to lobby against FAR Part 91 as it would remove many regulatory imposts that have been implemented during the last decade or two by high profile lobbyists. It is time for government/CASA to start adopting the FARs for the benefit of general aviation that includes design, maintenance and manufacturing aspects. Adoption would also harmonise us in the Asia/Pacific Region.

Manufacturing: The Australian General Aviation Manufacturing Alliance (AGAMA) of businesses are being badly treated because the adoption of CASR Part 21 in 1998 imposed a fabrication inspection system that Australia had replaced with quality systems decades before. The FAA made major changes to Part 21 in 2009 to implement quality systems and CASR equivalent has not kept harmonised with the FAR.

GA Charter: Pre regulatory changes in the 1990s, the industry had a large number of small airlines (supplemental), GA small charter and individuals approved to provide pilot training that kept these sectors active and viable. When the FAR system was adopted, the FAA "Air Taxi" system was favoured by many. Irrespective, larger regional airlines will not support small GA Charter and/or Air Taxi but that should not prevent a cost effective safe system being implemented. The sad reality will be an over regulated system with airline type controls that will require high overheads that prevent small aircraft commercial operations.

Controlled FBO System: Pre regulatory economic reform/development, small AMOs existed without airline administrative requirements. In the US, the standards that are applied to FBO maintenance organisations are specified in an AC on condition the FBO employs FAA approved personnel who must comply with the applicable FAR Parts. Why not enable such operations in Australia as long as the FBO electronically registers on a CASA database and complies with CASA promulgated "standards" adopted from the FAA AC.

CASR Part 91 addresses the core of general aviation and CASA has failed to adopt FAR Part 91 as originally proposed to the aviation industry in the late 1990s. 20 years later and CASA has not finalised this most important regulatory operations Part that affects:

- *private and professional pilots*
- *private and professional aircraft operators*
- *aircraft owners*
- *those who maintain, fuel and handle aircraft*
- *cabin crew*
- *loading personnel*
- *air display organisers*
- *air traffic services*.

FAR Part 91 *Applicability* states:

(a) Except as provided in paragraphs (b), (c), (e), and (f) of this section and §§91.701 and 91.703, this part prescribes rules governing the operation of aircraft within the United States, including the waters within 3 nautical miles of the U.S. coast.

(b) Each person operating an aircraft in the airspace overlying the waters between 3 and 12 nautical miles from the coast of the United States must comply with §§91.1 through 91.21; §§91.101 through 91.143; §§91.151 through 91.159; §§91.167 through 91.193; §91.203; §91.205; §§91.209 through 91.217; §91.221, §91.225; §§91.303 through 91.319; §§91.323 through 91.327; §91.605; §91.609; §§91.703 through 91.715; and §91.903.

(c) This part applies to each person on board an aircraft being operated under this part, unless otherwise specified.

(d) This part also establishes requirements for operators to take actions to support the continued airworthiness of each airplane.

(e) This part does not apply to any aircraft or vehicle governed by part 103 of this chapter, or subparts B, C, or D of part 101 of this chapter.

(f) Except as provided in §§107.13, 107.27, 107.47, 107.57, and 107.59 of this chapter, this part does not apply to any aircraft governed by part 107 of this chapter.

Until the Government & CASA makes it policy to ADOPT FAR Part 91, GA will continue to suffer. Of course, adoption would mean that many other Parts that have been made would need amending.

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2. Maintaining an Aircraft's Type Certificate.

Internationally, NAAs implement licences and approvals so foreign aircraft are maintained "airworthy".

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CASA's Aircraft Registration Manual states: "*CASA is responsible, under the provisions of Civil Aviation Act 1988, for registering Australian Aircraft and for issuing their certificates and permits in accordance with the relevant provisions of the Civil Aviation Safety Regulations. CASA is, therefore, responsible for ensuring compliance with the relevant certification standards and continuing airworthiness requirements, as applicable to each aircraft registered in Australia."*

These obligations and responsibilities do not apply to all type certificated aircraft flying in Australia.

Australia/CASA must ensure that the State of Design continuing airworthiness, including equivalent AME and AMO licencing approvals are equivalent to that applied by the State of Design and ICAO compliant.

ICAO Regulatory Oversight Manual states (**Note**: "**It**" means Australia/CASA):

2.3.4 State of Registry and State of Operator/Service Provider obligations

2.3.4.1 *The act of registering an aircraft may not, by itself, be a safety issue. This action, however, imposes on the State of Registry several Convention obligations that directly relate to the safety of the aviation system as a whole. Thus, on registering an aircraft, a State of Registry's obligations include:*

a) It notifies the State of Design that it has entered such an aircraft on its register.

b) It determines whether the airworthiness of the aircraft ***meets minimum established Standards****.*

d) It ensures the ***continuing airworthiness of the aircraft*** *regardless of where it is operated in the world.*

e) It determines that the ***personnel performing maintenance*** *work on the aircraft meet [ICAO] minimum experience, knowledge and skill requirements.* [AME qualifications]

f) It issues or validates ***maintenance personnel certificates****.* [AME Licencing]

g) It determines that the flight crew operating the aircraft meet [ICAO] minimum experience, knowledge and skill requirements to safely operate the aircraft.

h) It issues or validates flight crew licences and/or ratings as appropriate.

i) It verifies that the aircraft and personnel related to its operation continue to meet the conditions that were required for initial issue of licences and certificates.

j) It takes timely appropriate actions to correct all deficiencies that are found with respect to the maintenance of the aircraft and its operation by flight crews.

k) It ensures that in respect of aeroplanes over 5700 kg and helicopters over 3180 kg maximum certified take-off mass, there exists a system whereby information on faults, malfunctions, defects and other occurrences that cause or might cause adverse effects on the continuing airworthiness of the aircraft is transmitted to the organisation responsible for the type design.

l) Upon receipt of mandatory continuing airworthiness information (MCAI) from the State of Design, it adopts the mandatory information directly or assesses the information received and takes appropriate action.

These are not all the obligations and responsibilities that a mature aviation regulator appointed by the State must comply with; there are others specified in ICAO documents that should also be complied with. Failure to comply with these obligations and responsibilities could see Australia's regulatory reputation being questioned. It is imperative the engineering design, maintenance and manufacturing have no differences in the interest of trade and future technical agreements so we can obtain agreements like the recent maintenance agreement between the USA/FAA and Singapore/CAAS.

Regulatory reform must enable such agreements for the benefit of Australian businesses.

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Note: Only the IA holder can do the detailed annual inspection, the inspection cannot be supervised.

The difference between Australia and the USA is that aircraft are inspected in the USA to ensure compliance with the applicable airworthiness standards (ICAO/FAA Airworthiness Standards) and not just serviceability.

Most experienced Australian LAMEs inspect to ensure aircraft are airworthy but the training system no longer includes the design standards applicable to each licence category and aircraft, or aircraft system.

The ICAO LAME minimum training standards cover:

3.3.2 Airworthiness requirements
(Chief Engineer/LAME)

- ***Design requirements****: performance, structural strength, handling, aerodynamics, reliability, system or component performance and reliability, engine types and tests.*
- ***Construction requirements****: material quality, construction methods, approved manufacturing organizations (AMOs), systems of traceability to source of origin, and quality control/assurance.*
- ***Test requirements****: structural test programmes, including "safe life", "fail safe" and "damage tolerant" testing.*
- ***Component testing*** *and systems testing.*
- ***Flight test schedules*** *and engine test schedules*
- ***Test programmes*** *for special cases (aircraft, systems and components).*
- ***Procedures*** *for the maintenance of continuing airworthiness.*
- ***Airworthiness directives*** *(AD): indigenous, foreign, issue dissemination, and action.*
- ***Operational requirements****: performance scheduling, flight and operations manuals.*
- ***Maintenance requirements****: use of aircraft maintenance manuals, maintenance schedules, overhaul periods/ lives, "on-condition" maintenance programmes and "condition monitoring" programmes.*
- ***Responsibilities*** *of licensed aircraft maintenance personnel working in an operator or an AMO.*

In 2007, the ATSB published a report "How Old Is Too Old" that should be read by all GA LAMEs. It states: *"Economics plays a large part in the life extension of an aircraft. With the relatively high cost of aircraft replacement, it may be more economical to maintain ageing aircraft rather than to acquire new ones. This has led to many aircraft in Australia's fleet, particularly in general aviation, being flown past their original design life, which is typically 20 years*."

Aircraft Condition:

Like second hand motor vehicles, there are some that have been kept in good condition and others that have not had the TLC that they should have. These are usually those that have been parked in the weather for long periods and with very low utilisation. Older aircraft that have been hangered and serviced correctly can be as safe as newer aircraft. High utilisation also has a bearing on fatigue caused by flight loads.

Refurbishing older aircraft requires the FAA annual inspection standards to be applied as referenced above. The difference between a detailed inspection and routine inspection needs to be a regulatory requirement.

Though it may be costly to refurbish an older aircraft not in good condition, it is still cheaper than the price of a new aircraft. If our own manufacturing businesses were given more support, maybe we would have a viable general aviation industry providing aircraft for our industry as well as exports.

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Safety Alliance