AVIATION MAINTENANCE REPAIR & OVERHAUL BUSINESS ASSOCIATION, INC

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ADVOCATE OF THE AVIATION MRO INDUSTRY

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NZ MRO Growing

New Zealand's aviation regulatory reform in the last decade is now enabling global recognition and growth in their aviation industry since they created regulations based on the FARs for non airline sectors and JAA/EASA Part 145 for the airline sector.

The following in an excerpt from a NZ report of their aviation industry.

"***Aviation will continue to be strongly linked with New Zealand's economic development.***

In 2009, there were 25 businesses involved in the design and manufacture of aircraft; 85 in aircraft parts; 105 in airport aviation services; 15 in aviation fuel; 61 in aviation logistics; and 93 in aircraft maintenance repair and overhaul. Today the New Zealand aviation sector has grown into a considerable physical and economic presence. More than 1000 businesses operate within the New Zealand aviation sector, these businesses employ more than 23,000 people and boast an average revenue per employee of greater than $400,000.

The New Zealand aviation sector in 2009 was estimated at $9.7 billion in revenue, with 40% derived from export earnings. This is expected to grow by between 5-9% per annum to 2015, meaning revenue from the aviation sector could amount to $15 billion in 2015.

Increased safety does not mean high compliance costs.

Industry participants in New Zealand also express positive views on the work of the CAA. In 2004, an industry survey found that stakeholders regard regulation of the New Zealand aviation sector as striking the right balance between robust oversight and minimising compliance costs (source: CAA (NZ) 2004).

The general and sector-specific regulatory environment in New Zealand supports future growth in aviation. Safety and maintenance requirements ensure that New Zealand maintains its exceptional reputation, but compliance costs are kept as low as possible."

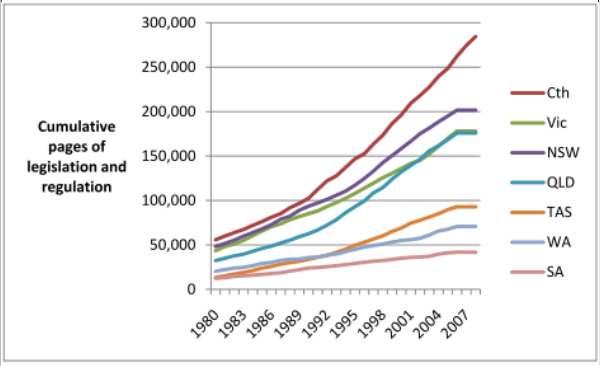
Their aviation MRO industry foreign earnings are now more than $3.1 billion per annum. New Zealand have 4784 aircraft on their register. This is about one third of the aircraft listed on the Australia register (see page 2).

If only the Australian government would realise that our aviation MRO industry, if it had the same regulatory system as New Zealand, could also prosper and be linked with Australia's economic growth.

Their increasing foreign earnings are partially at the expense of Australian aviation MRO businesses that has:

- Higher wage structures
- Higher costs workplace conditions
- Higher administrative costs
- Higher regulatory imposed costs.

The Business Council of Australia's Scorecard report identified that jurisdictions (e.g. CASA) are in fact creating more regulatory complexity through developing differing regulation-making processes as well as continuing to develop inconsistent regulations over time.



It is this continual growth in legislation and regulation that is seriously affecting the aviation industry to remain effective in providing an environment for a viable aviation industry.

New Zealand got it right, Australia has a lot to learn from them.

Aircraft Types on CASA Register

According to CASA's civil aircraft register as of this month, there is 14,797 entries including 930 awaiting CoA (reserved) and 56 cancelled / suspended aircraft whereas there was approximately 11,000 aircraft on the register in 1998.

We now have 1016 experimental aircraft, 228 limited aircraft and 35 light sport aircraft since these categories were introduced.

GFA administers 1181 gliders and there is also 294 amateur built aircraft associated with SAAA.

There is also 320 balloons on the register.

In 15 years since initial adoption of the FAR aircraft type certification/categories of aircraft, the number of aircraft have grown by roughly 25%.

Even the most recent addition of the LSA has seen 35 aircraft being placed on the register.

If you combine the acrobat, normal, utility and agricultural aircraft, then you will find around 90% of these aircraft hold an FAA type approval.

However, when you look at transport and commuter aircraft only around 43% are manufactured and type certificated in the USA.

Some are EASA and FAA Type Certificated.

If we add the rest of the Americas (Brazil/Canada) then 60% of transport aircraft come from this region of the world. The rest come from Japan and Europe.

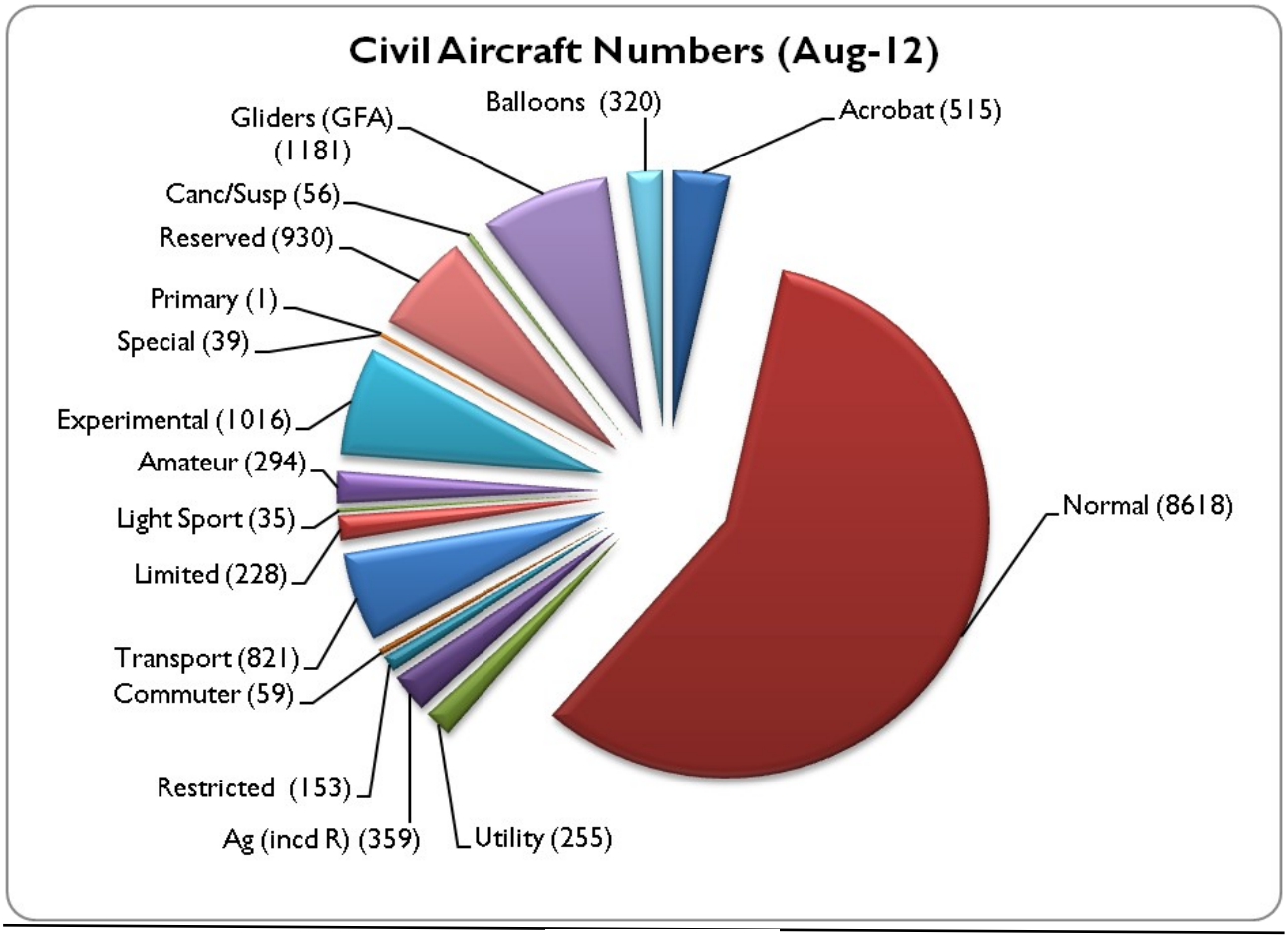
So the new maintenance rules were written to address 880 aircraft on the register that are involved in passenger carriage.

If we exclude experimental, limited, LSA, gliders and balloons associated with Self Administration Organisations as well as the 880 transport aircraft, then we have over 11,000 aircraft that are involved in commercial and private functions outside the airline sector.

CASA has a challenge to promulgate the training standards to cover this wide spectrum of aircraft.

Pilot training is based on skills for individual types of aircraft but AME training has been more general and only specific for large aircraft.

Like the basic skills of flying, the basic hand skills for maintaining aircraft are the same for all types of aircraft. It is the application of those skills and higher knowledge that has to be obtained as additional aircraft types and categories are added to the capability of the individual.



Automation & Skilling

Excerpt: "In the last three decades automation in aeroplane cockpits has increased hugely whilst training of pilots has in general retained a more traditional emphasis on stick-and-rudder skills. Some recent incidents have highlighted that increased cockpit automation without appropriate training may in fact be increasing the risk of accidents, and airlines are starting to incorporate this factor into training programmes.

Air France Flight 447

The mystery was why the crew were unable to recover from the stall. Recovery of the flight data and cockpit voice recorders revealed what happened, in chilling detail. It was clear from the pilots' dialogue that they had no idea what was happening until it was too late. Worse, one of the pilots was responding entirely inappropriately to the stalled condition by pulling back on the stick rather than pushing forward, despite stall warning indications in the cockpit. As with almost all aviation accidents the cause was multifactorial with contributions from the weather, the design of the pitot probes, and inappropriate pilot response to loss of automation.

The Air France investigation discovered that the airline did not include any high-altitude stall recovery procedures in its training programme, and indeed no manual handling high-altitude training at all. This is likely to have resulted in the confusion shown by the pilots, their failure to follow appropriate checklists and their inappropriate responses.

In 2011 a report was presented at the Royal Aeronautical Society flight training conference suggesting that flight crew able to respond to unfamiliar situations often involving loss of automation were either military-trained or employed by an airline with more than the legal minimum recurrent training programme, suggesting that standard training is not providing modern pilots with the resilience required to manage modern cockpit challenges. It has been suggested that newly-trained pilots are relying too much on automation, unlike older pilots trained on less sophisticated systems who tend to question sources of information and be better prepared for malfunctions of any system.

It is unfortunate that sometimes accidents have to happen before problems are identified, but awareness of the different challenges to pilots operating highly automated aircraft is now at an all-time high, hopefully resulting in increased safety for all who fly."

The Qantas A380 and the Hudson River accidents both had experienced older flight crews.

Maintenance Training

The purpose of psychometric testing of pilots is to find out what sort of person you are. This is then compared to the results for the type of person who has the right attributes to be a pilot. Airlines use this for aircrew but it may be time for such an approach to be applied to maintenance employees.

Higher reliability requires higher simulated training and refresher training to obtain and maintain the skills and knowledge needed to maintain safety at an acceptable level. Operating modern highly automated aircraft should result in maintenance training programs that recognise high automation needs increased simulated & refresher training for AMEs.

Beyond the potential loss of your AME license and possible prison time, understand that a careless AME's slipshod work can forever change the destinies of pilots, passengers, and families. Decide if you're willing to take that risk.

Pipistrel ALPHA Trainer

Slovenian aeroplane manufacturer has introduced yet another small plane - a LSA flight trainer. One of the most attractive aspects: It's sells for just about 69,000 Euros - fully equipped!

You may encounter the Alpha Trainer being used by air forces around the world under different names, such as Garud, Proteus and others. Interestingly, the original idea was to offer one training aircraft which was suitable for markets all over the world – this would enable Pipistrel to mass-produce the aircraft which would drastically lower the production costs of the aircraft and consequentially the final market price. But after discussing this option with our distributors, the company realized this was not possible, because the rules and standards in some markets were very different from the legislation in other countries.

Therefore, Pipistrel decided to offer the same aircraft in **two different versions,** with different MTOW and different avionics packs.

In countries which have the FAA-LSA (or adaptation of ASTM rules) categories we offer the 550 kg / 1212 lbs. MTOW version; and in countries which adhere to the UL LTF standards or similar we will make available the European Ultralight/Microlight version with the MTOW of 472.5 kg.

LSA aircraft as an entry and training aircraft?

http://www.mcp.com.au/sinus/models/alpha-trainer.html

Ozone Depleting Gases Maintenance/ Handling Licences

How many aircraft are operating where systems using ozone depleting substances or synthetic greenhouse gases have been maintained without the AME/LAME holding an Extinguishing Agent Handling Licence?

How many organisations stock spare fire extinguishers or refrigerants without an Agents Licence?

Under existing Federal Government regulations, fire systems and extinguishers using ozone depleting substances or synthetic greenhouse gases (ODS & SGG) are permitted; however they must be serviced and maintained by technicians who hold an Extinguishing Agent Handling Licence (EAHL).

There has been an exemption issued by the Fire Protection Industry Board so that training for AME/LAMEs can be organised. (*copy attached to this Newsletter*)

CASA & MSA must review AME training to ensure we have competencies equivalent & acceptable that meet the EAHL requirements.

Technicians working with controlled agents (fire systems and refrigerants) in such a manner that their duties involve the potential to cause an emission of the agent must be licensed. Certain responsibilities in regard to 'non technicians' who have access to the fire protection system (in such a manner as may have a potential for discharge) rest with the owner of the system.

Pilots and transport drivers don't need a licence but the AME/LAME that maintains fire systems and air conditioning refrigerant systems must hold an EAHL.

This includes, but is not limited to fire bottle removal and installation, squib removal and installation, test switch re-lamps, electrical maintenance of the system, inspections of portable extinguishers that involve any disassembly, and engine shut-off valve testing that involves the fire handles.

The *Department of Sustainability, Environment, Water, Population and Communities' Fire Protection Industry (ODS & SGG) Board Fact Sheet explains licensing requirements.* ***(Ctrl + Click Fact Sheets)***

In addition, a small number of organisations that may handle fire extinguishers, an ozone depleting gas, may need an agent's licence that the Fire Protection Industry Board Fact Sheet explains.

Basically, the regulation states:

(2) For subregulation (1), handle an extinguishing agent means to do anything with the extinguishing agent (other than use it to prevent, control or extinguish a fire, or suppress an explosion) that carries the risk of its emission, including:

(a) decanting the extinguishing agent; or

(b) ***installing or maintaining fire protection equipment****; or*

(c) decommissioning or disposing of fire protection equipment.

(3) *An offence against subregulation (1) is an offence of strict liability.*

MSA competencies need to include the 'awareness' environmental issues raised under this legislation. Maintenance practices have met the safety and environmental issues for years.

Flourocarbon refrigerants such as HCFCs, HFCs and CFCs also have national controls.

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The Aircraft Maintenance Engineers/Technician Creed

Worth Remembering

"UPON MY *HONOR* *I swear that I shall hold in sacred trust the rights and privileges conferred upon me as a qualified aircraft maintenance engineer/technician. Knowing full well that the safety and lives of others are dependent upon my skill and judgment, I shall never knowingly subject others to risks which I would not be willing to assume for myself, or for those dear to me.*

IN DISCHARGING *this trust, I pledge myself never to undertake work or approve work which I feel to be beyond the limits of my knowledge nor shall I allow any non qualified superior to persuade me to approve aircraft or equipment as airworthy against my better judgment, nor shall I permit my judgment to be influenced by money or other personal gain, nor shall I pass as airworthy aircraft or equipment about which I am in doubt either as a result of direct inspection or uncertainty regarding the ability of others who have worked on it to accomplish their work satisfactorily.*

I REALIZE *the grave responsibility which is mine as a qualified aircraft maintenance engineer/technician, to exercise my judgment on the airworthiness of aircraft and equipment. I, therefore, pledge unyielding adherence to these precepts for the advancement of aviation and for the dignity of my vocation."*