

# AMROBA®inc

## ADVOCATE OF THE AVIATION MRO INDUSTRY

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### New Industry Approach

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If there was ever a time in aviation for an urgent and contemporary approach to re-directing the government's policy for the future of civil aviation, it is NOW. In 1988, CASA's predecessor was created with expectations that have never eventuated. Unlike NZ, who had the Swedavia—McGregor Report in 1988 to guide them, CASA misguided and ever changing regulatory development has seen a decline in aviation. Access the NZ [Swedavia-Report](#) and see what we expect. A new approach to aviation.

The Minister Truss's ASRR Report must rival the recommendations of the NZ Swedavia-McGregor Report that brought about major changes in NZ for the betterment of aviation.

Since the regulatory re-write started back in 1991, the number of individuals, AOCs and AMOs participating have drastically declined as continual changes are made to the environmental and regulatory requirements. Business bankruptcies swelled by more than half in the depths of the recession, a statistic that masks a world of heartache for the owners of the many businesses that didn't make it. The whole regulatory system being developed does not overlay a sustainable small business environment.

Aircraft are a mode of transport (people or freight) whether they are used privately or commercially. Air transport is also a safe form of transport and the reasons why there is a decline in the use of air transport in rural Australia need to be identified and reversed.

Obviously the growth of regulations, not just aviation regulations, has affected businesses. To rebuild this industry it is not recommended that the current system be re-written, a new system is required.

What basic regulations should apply to a private operator of an aircraft?

- The 'rules of the air' controlling airspace must have clarity like road rules.
- Pilot licensing standards — harmonised with NZ & USA.
- Aircraft airworthiness standards — harmonised with NZ and USA.
- Maintenance personnel licensing standards — harmonised with NZ and USA.

Adoption of the FAA/NZ approach for private and small specified commercial operations should be implemented, within 12 months, including adoption of the US Fixed Based Operator (FBO) for private and specified commercial operations.

Commercial operators, such as charter and small airline operations need a complete new approach to encourage a complete revival in the use of aircraft, especially as a rural air transport system.

Australia has always had entrepreneurs that are willing to invest in aviation if the pilots, LAMEs and engineering support can be found to support the venture. Irrespective of how you look at the current environment, regulatory imposts are turning many entrepreneurs away from aviation.

**At what stage of a declining industry do you reach a position where recovery is not possible or is extremely hard to accomplish? Are we at that stage with private aviation?**

**Why isn't the same standards applied to all aircraft irrespective who registers the aircraft?**

All aircraft, pilots and maintenance personnel should meet the same standards in private as well as the various commercial sectors of aviation. The USA and Canada can do it, why not Australia.

Most private owners and aviation participants would welcome is a complete new system—the current & proposed changes have not seen a safe growth in the non airline sectors.

The current aviation Acts, regulations and other requirements are from the past. New regulations are from another region of the world that has no similarities with Australia.

We need NEW aviation Acts and regulations suitable to Australia, especially our rural and remote areas. Many of these rural and remote areas should be tourist locations serviced by appropriately sized aircraft and aircraft should be more commonly used by more rural and remote locations.

It will only happen if a complete new approach is taken to regulatory development, not only in aviation, but also small business requirements.

*MOTTO: SAFETY ALL AROUND*

## 'Civil Liability Costs'

Recently a couple of our members have been through the civil courts under threats of civil liability based more on 'duty of care' and the customer's expected responsibilities of a LAME. What is challenging is the courts believe the LAME is more responsible than what aviation legislation states.

Australia's liability laws are similar to those of the USA so we will probably see a growing number of cases being lodged in courts. In past Newsletters, we have recommended setting up your business to protect your assets, including your home. This is now almost compulsory.

Aerodrome owners now demand you have insurance for at least \$20,000,000 against all claims which may involve the aerodrome owner. Hangar liability insurance is available to owners, AMOs and individual LAMEs working in a hangar.

Australia is not the only country experiencing this problem, the following is from the USA.

In the USA, there have been a number of cases and many A&P mechanics are bailing out of the industry as they cannot afford personal liability insurance. A&P mechanic wages range between \$12-20/hour.

Excerpt from recent USA article:

*Old timer in Round Rock, Texas said: "For all you A&P mechanics and those who think you want to get into the trade, there is new and significant danger to your financial health. Following passage of the 1999 General Aviation Revitalization Act AND changes to federal bankruptcy laws, General Aviation Mechanics in particular are now at extreme risk of losing everything in a lawsuit. NO longer are the manufacturers the deep pocket in any litigation, YOU are! And if you are not currently carrying a personal liability policy with at least 2 million in smooth coverage, you can lose your home, savings and any liquid assets in a jury trial, in addition to having your wages attached to satisfy a very large jury award.*

*Liability insurance starts at about 5k a year and goes above 30K if you are a self employed mechanic, hard to pay for when wages for A&P's start at 12 dollars per hour and rarely go above 20. And don't forget to purchase tail end insurance to protect you for those years after you get out. Most small aircraft businesses don't even begin to carry enough insurance to cover your assets, and even fewer carry tail end insurance.*

*I cannot afford to buy enough coverage to protect my assets at my wages so I've decided to get out for good. I will not risk my retirement savings to some careless pilot and bleeding heart jury. With 30+ years in the trade, it's now just not worth the risk.*

**Very good point. A mechanic can also be held criminally liable for his actions. Remember the Value Jet aircraft that crashed into the everglades. After the investigation a number of mechanics at an RMO were given prison sentences for their negligence.**"

## Diesel Engines

With a declining general aviation pilot population flying an aging piston engined aircraft fleet, aircraft and engine manufacturers will not be looking for many new customers in Australia. Most single-engine airplanes in Australia fly around 20 hours each year.

However, flight instructors who are operating an ageing fleet of post-1986 172s flying more than 500 hours a year may seriously consider converting the fleet to diesel.

Brands such as AUSTRO Diamond, Deltahawk, Centurion, SMA should become as well known as Continental or Lycoming if diesel powered aircraft requirements take off in Australia.

Continental and Lycoming diesels will have an advantage if they STC their new diesel engines to replace their Avgas/Mogas engines fitted to the older Beech, Cessna and Piper aircraft.

Whereas the car engine has become more reliable and fuel efficient over the last decade, with great advances in computer technology to improve efficiency, aviation has yet to experience such advances in mass.

Continental is now a serious manufacturer of diesel engines and their ability to retro-fit engines may not be taken up by many private owners of older aircraft, but those using them for flying training may see the cost savings over a longer period.

It would be sensible if the government gave some tax incentive to encourage the take-up of engine retro-fit to more environmentally and fuel efficient diesel engines.

Or, are the costs of conversion so high that the advent of a fuel efficient diesel engine just another aviation 'flash in the pan' hallucination?

# Maintenance Practices — Cables

CASA is raising an AD to address failures of flight control cable ends. Why is CASA raising an AD to address failures that the maintenance schedules or system should identify prior to failure or is it just bad maintenance practices? If a flight control cable fails then the only reason can be undetected defects that existed and should be found during maintenance inspection.

Have our basic inspection techniques deteriorated or is there a lack of understanding of the inspection techniques associated with cable inspections? AMROBA believes that the aviation regulatory standards do not provide minimum requirements, such as describing the difference between a routine and detailed inspection, as it is in most other aviation regulatory system.

When the '3 year major' inspection was repealed in 1991 and the 'annual' inspection was introduced based on the FAR annual inspection, the regulations never defined that the "annual" was a 'detailed' inspection. A detailed inspection means the aircraft has to be disassembled to the depth necessary to determine that the aircraft, components and systems are 'airworthy'.

So what inspection techniques should be applied to cable inspection? The basic techniques are contained in FAA AC 43-13-1 — this 'standard' explains what should be done.

**7-152. CABLE MAINTENANCE.** *Frequent inspections and preservation measures such as rust-prevention treatments for bare carbon steel cable areas, will help to extend cable service life. Where cables pass through fair-leads, pressure seals, or over pulleys, remove accumulated heavy coatings of corrosion-prevention compound. Provide corrosion protection for these cable sections by lubricating with a light coat of grease or general purpose, low-temperature oil.*

*"If the surface of the cable is corroded, relieve cable tension and carefully force the cable open by reverse twisting and visually inspect the interior. Corrosion on the **interior strands** of the cable constitutes failure, and the cable must be replaced.*

**h. As wear is taking place on the exterior surface of a cable, the same condition is taking place internally, particularly in the sections of the cable which pass over pulleys and quadrants.** [see figure 7-166 — inspection technique]

*This condition (shown in figure 7-19) is not easily detected **unless the strands of the cable are separated**. This type of wear is a result of the relative motion between inner wire surfaces. Under certain conditions, the rate of this type of wear **can be greater than that occurring on the surface.**"*

**k. Check swaged terminal** reference marks for an indication of cable slippage within the fitting. *Inspect the fitting assembly for distortion and/or broken strands at the terminal. Ensure that all bearings and swivel fittings (bolted or pinned) pivot freely to prevent binding and subsequent failure. Check turnbuckles for proper thread exposure and broken or missing safety wires/clips.*

*Carefully examine any cable [includes cable ends] for corrosion, when it has a broken wire in a section that is not in contact with a wear producing airframe component, such as a pulley, air-lead, etc. If the surface of the cable is corroded, relieve cable tension and carefully force the cable open by reverse twisting and visually inspect the interior.*

Compared to CASA's promulgated very low standard applied for [cable] inspection.

**CAAP 43B-1** states that "**General Condition**" means **there is freedom from excessive:**

- leakage;*
- corrosion, deterioration of protective treatments;*
- cracking and disbonds;*
- deformation, wear, scoring, chafing, flat spots and fraying;***
- obstruction or other obvious damage; or*
- burning, arcing or heat damage;*

With such a low standard, aircraft can be returned to service with cables that are corroded, damaged, deteriorated, deformed, worn, scored, chafed, flat spots and frayed **as long as not excessive**.

It is time for CASA to lift their promulgated "standards" so the industry must comply with international airworthiness standards and stop blaming an industry that attempts to maintain aircraft at a much higher safety standard than promulgated by its regulator.

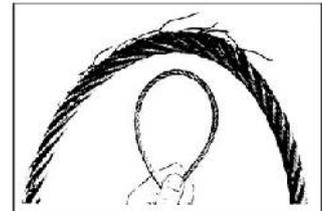


FIGURE 7-16. Cable inspection technique.

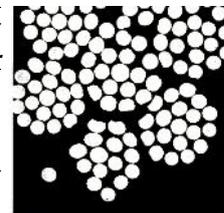


FIGURE 7-19. Internal end view of cable wear.

## \* Become a Member \*

The adage "there is strength in numbers" is absolutely true when it comes to influencing government regulations and policy. No one company, no matter how big or successful, can keep up on all the regulatory issues directly impacting businesses.

AMROBA is dedicated to serving the businesses that are responsible for the in-service continuing airworthiness of aircraft and aeronautical products, including the manufacture of replacement parts for in-service aircraft. This segment of the industry has never had a dedicated advocate until now.

AMROBA membership form is available from the AMROBA website: <http://amroba.org.au/become-a-member/>

print the membership form <http://amroba.org.au/index.php/download/file/view/15/>



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## Aircraft Materials

Over the years, aircraft materials have improved so much that many older aircraft and component maintenance personnel still have some concern with accepting the reliability of new materials.

Older LAMEs have a natural suspicion of material serviceability and are on the alert for impending failures. Younger LAMEs have grown up with more reliable and longer lasting materials and did not experience the regular failures with 'natural' materials. We now have a workforce that is more acceptable of the longer lives and reliability of newer materials based more and more on synthetic products.

Oils, greases, 'O' rings, gaskets, seals, bladder tanks, carburettor floats, analogue replaced by digital, and the list goes on.

These materials are becoming so reliable many simply fit and forget. Most non commercial aircraft operators have little understanding of the derogation of materials whilst not being used.

Engine manufacturers produce comprehensive information with regards to **low utilisation** effects on lubricants, seals and cylinder lives. However, many older aircraft and vendor manufacturers' manuals devote little to the effects of ageing and low utilisation on their aircraft and/or its components.

Too many aircraft that are not being used for extended periods are not being preserved by inhibiting and/or having short/long term storage maintenance performed to protect the aircraft condition.

Due to the low utilisation of many aircraft, materials are in a danger of drying out, becoming permanently "set" or deteriorating due to virtually no storage provisions.

Ageing materials with low utilisation are more prone to failure due to the lack of operation than those in constant use.

With an ageing aircraft fleet, many parts and materials are becoming harder to find and less suppliers are maintaining stock. The costs of obtaining PMA approvals deters businesses from being involved so sourcing materials can be time consuming.

The second hand market for aerospace parts, components and materials can be highly lucrative and there is an incentive for unscrupulous businesses & individuals to sell unserviceable, damaged and time-expired parts.

Consequently, it is imperative that the flow of used parts are controlled and documented, and that unserviceable and time-expired parts are properly removed from the supply chain. Some items can only be sourced from suppliers parting out aircraft.

### 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."