**AMROBA®inc**
AVIATION MAINTENANCE REPAIR & OVERHAUL BUSINESS ASSOCIATION, INC
ADVOCATE OF THE AVIATION MRO INDUSTRY

| Date Published 30/06/2019 | NEWSLETTER | Volume 16 – Issue 6 June — 2019 |
|---|---|---|

# What has changed?

The following excerpts from *Attitude or Latitude*, written by Professor Graham R. Braithwaite, Cranfield University, England, makes one wonder what has changed in the last decade. This publication used Australia's aviation safety record as a case study.

**"Unable to Regulate?**

*Two accidents in the 1990s demonstrate how the emphasis of the now defunct CAA has been found to be displaced. Whilst both accidents had a number of contributing factors behind them, they also demonstrated similar problems with the ability of the CAA to carry out its function as regulator.*

**The CAA Crisis of Confidence**

*The House of Representatives' Inquiry into Aviation Safety in the Commuter and General Aviation Sectors (HORSCOTCI, 1995) was the consequence of a severe crisis of confidence with, and within, the civil aviation authority. The two major accidents documented above (Monarch & Seaview) had raised public awareness of aviation safety to a very high level. In his response to the publication of BASI's report into the Monarch disaster (BASI 1994), Minister for Transport, the Hon. Laurie Brereton '…announced a broad strategy to improve air safety regulation in Australia'. (HORSCOTCI, 1995) This consisted of two major features; namely the creation of CASA and the House of Representatives Inquiry."*

## Contents



*Ken. R. Cannane*
Executive Director
amroba@amroba.org.au

# Have we Learnt from Past Mistakes?

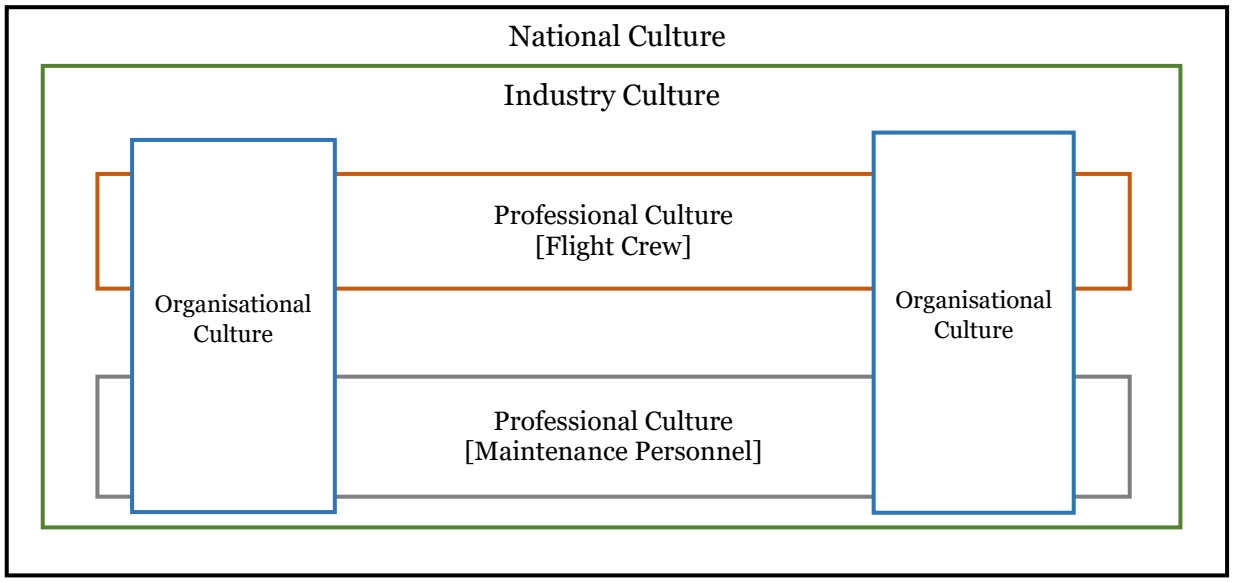
*When Professor Braithwaite wrote **Attitude or Latitude, Australia's Aviation Safety**, he was unaware that it would become a universal standard in academic education for aviation professionals. In reviewing this book, one has to wonder what we have learnt and addressed since this was written in 2001, republished in 2014 & 2016.*

> "Australia has an enviable record for airline safety - No one has ever died in an accident involving a commercial jet aircraft in Australia. The reasons behind this have been the source of much speculation and theories tend to focus on issues related to the natural environment and even luck. However, with human error being present in arguably 100% of aircraft accidents, **it seems reasonable that a good safety record is at least partly the consequence of human intervention**. This text uses Australian aviation as a case study of a safe system to explore the interactions between the natural, operational and human environments. Based on doctoral research including a major survey of pilot and air traffic controller perceptions, the book is unusual in that it looks at positive examples in safety rather than taking the traditional reactive approach to safety deficiencies."

It is interesting to note in this publication that the regulatory standards that are applied in Australia ensures adherence to safety and operating procedures yet do not account for the level of safety. However, the structure and mandate of any regulatory body is also part of the market mechanism because ultimately it is responsible to the Government it represents. In Australia, in the case of CASA, Board members are political appointees and senior management positions are decided by Board and the Minister.

While there was general consensus of the review of resources in the early 1990s to remove red tape, '…. the overwhelming reaction to the changes from within the CAA/CASA was one of uncertainty, fear, resentment and antagonism towards senior management and between CAA staff. (HORSCOCI, 1995)'. CASA has not yet recovered from that period.

The author found that in Australia, culture played an important role in maintaining safety and each culture influences other cultures. Whether it be national culture, industry culture, organisational culture or professional culture, each can influence the other. This was expressed in the following chart:




A high percent (81%) of Australians believe they have significant control of their own destiny. It is why aviation safety and safety record is not a function of luck.

Back to the Top

# Australian Parts Manufacturing Industry

*The types of aircraft on the CASA aircraft register means Australia needs a vibrant Parts Manufacturing Industry to provide spares that become hard to obtain to keep the fleet flying. Many aircraft no longer have manufacturers support like they did in the past. In addition, these APMA parts meet the same standards applied to the OEM aircraft/component and can save as much as* ***20-30% of OEM parts****.*

The use of APMA parts came about under CASR Part 21 to enable the Australian industry to take up some of the market previously provided by FAA PMA parts. Previous to that we had industry "Authorised Design Persons" providing EO's that enabled manufacture of replacement parts. The issue was, these EO's were not readily recognised/accepted when an Australian registered aircraft was sold off-shore.

**So why haven't we seen an explosion in Australian Parts Manufacturers?**
**Non-Harmonised Regulatory Red Tape?**

Basically, an APMA is a replacement of an OEM article with one that meets or exceeds the standard of the original OEM products. Many APMA parts exceed the quality of the OEM Part. There are virtually four (4) methods of producing an APMA part.

1. **Australian Supplemental Type Certificate**
   a. Typically, approval of major changes in type design of an aircraft is obtained in the form of an STC. To then gain an APMA for an APMA holders own STC is the path of least resistance. Since parts are already designed and approved, the APMA holder just verify their manufacturing capabilities to produce these parts to the CASA-approved design certificate (STC). Note: small variations may be approved.
2. **Licencing Agreement**
   a. On occasion, an APMA holder may obtain an APMA using the design data from another company who owns a TC or STC for the part they want to manufacture. They enter into a license agreement to manufacture the parts with their own APMA capabilities in accordance to their design data.
3. **Identicality**
   a. When the original design data is not available to produce the part, the APMA holder can design a replacement part and show that their design and manufacturing capabilities will produce the part identical to the original approved part to obtain an APMA based on Identicality. It is the APMA holders' efforts through Identicality that must prove their design and produced parts are identical in all aspects, including function, dimensions, materials, etc. The advantage to APMA by Identicality is that the certification and approval process is much less involved than by Test and Computation, but in most instances, it is difficult to prove identicality.
4. **Test and Computation**
   a. If the APMA holder cannot demonstrate Identicality, they can still obtain an APMA by Test and Computation. In this case the APMA holder is creating and presenting new design data similar to, but not exact or identical to the original design. We must substantiate our design through test and / or computation methods, similar to an STC. To test parts, they are put through the paces under different conditions to show the new design data is airworthy and in compliance to the regulations. Computation is accomplished through examination of the design through research and statistical analysis.

Back to the Top

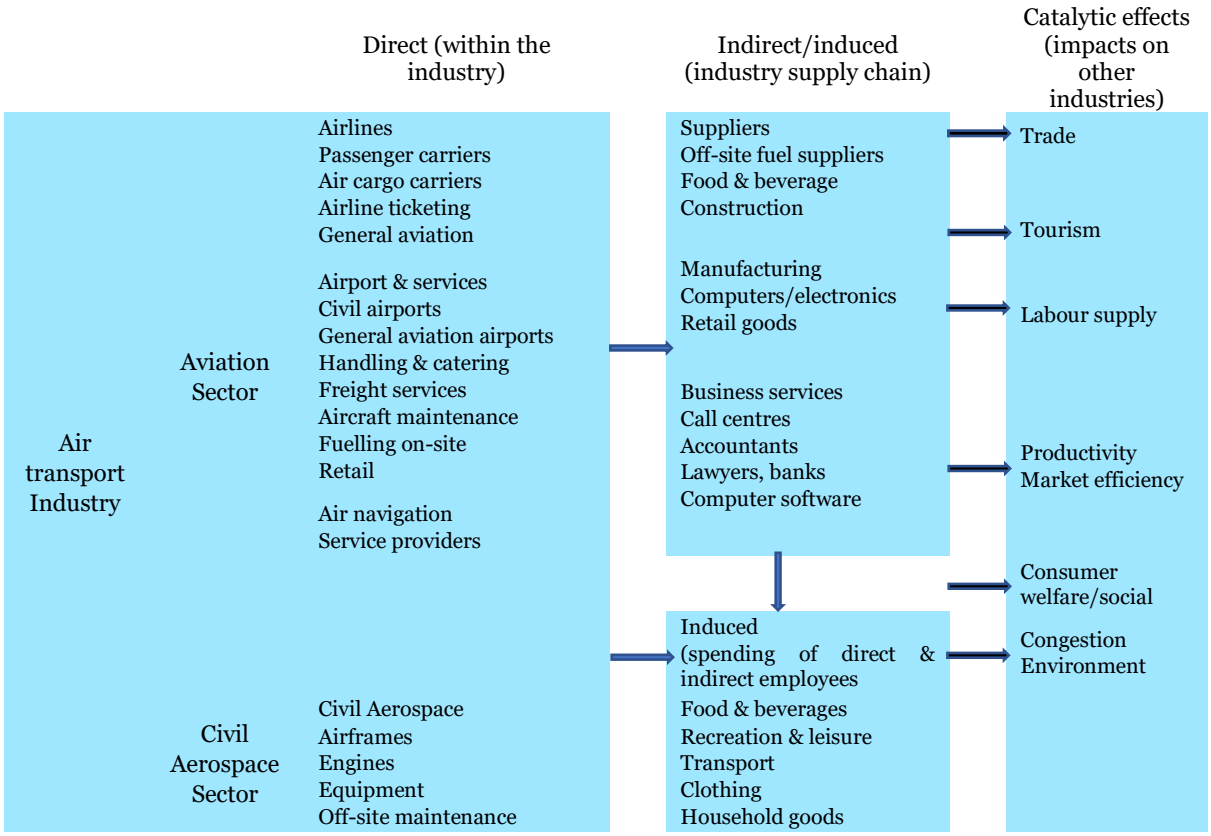
# Encouraging the Use of Aircraft

*The MRO industry needs more aircraft hours to be flown in all sectors so it can recreate the skills and capability of the past. This not only includes large aircraft transport but the private use of aircraft to traverse this vast country. Tourism can also increase hours flown.*

Aviation is a complex industry with so many interested industry sectors all pushing their point of view which has discouraged the use of the air transport sectors outside the airline operations sectors. Commercial sectors, especially those involved with rural enterprises, suffer when drought affects our rural economies. We need to concentrate on what is stopping growth.

ICAO: "Air transport is one of the world's most important industries. Its development and its technical and service achievements make it one of the greatest contributors to the advancement of modern society."

The following ICAO chart demonstrates the direct and indirect economic contribution of the private and commercial aviation air transport system.




Basically, according to ICAO, for every direct employee in the aviation/aerospace industry there are 2.7 employees in indirect occupations. In other words, three times those directly employed. Aviation regulations and quasi – requirements must be safe and economical.

- Of the **5 million direct jobs** generated by the air transport industry worldwide, 4.3 million people are employed by the airlines and airports (aviation sector).
- **5.8 million indirect jobs** are supported through purchases of goods and services by companies in the air transport industry.
- **2.7 million induced jobs** are supported through employees in the air transport industry (whether direct or indirect) using their income to purchase goods and services for their own consumption.

We just need regulatory impediments and red tape to be reduced to the same level of the FAA.
Back to the Top