



Multi crew Airline Training Systems



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Committee Secretary
Senate Standing Committee on Rural Affairs and Transport
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Dear Sir/Madam,

We congratulate you on the decision to hold an inquiry into the safety and other issues of Pilot Training in Australia. This is also a global issue and of no less importance to other ICAO states.

As Chairman & Director of Multi crew Airline Training Systems Pty. Ltd. (MATS), we have been firmly dedicated to the training of 'multi crew instructors' and ab initio students over many years. Our combined experience is very extensive, in both General Aviation and Airline training of pilots and crews.

Collectively, the three directors of MATS have in excess of 120 years of instructional experience in aircraft and flight simulators with various training organisations and airlines.

Over the past 10 years, we (as individuals) have been directly involved in multi crew training, particularly 'Jet Transition'. Thus, we are well qualified in responding to the senate Standing Committee Inquiry.

We all firmly believe in the ICAO philosophy, that good quality training (with modern didactics & properly designed syllabus), is the only solution to prevent airline incidents and accidents in the future. To this end, MATS was formed in response to the ICAO Multi crew Training initiatives.

Please find below, our responses in regards to the 'Terms of Reference' for your inquiry.

(a) pilot experience requirements and the consequence of any reduction in flight hour requirements on safety;

We assume this 'term of reference', relates to the legislated MP(A)L or Cadet Training Schemes (single pilot), for multi crew operations.

This proposed reduction from current legislation requirements of 'flight hours', without putting in place a robust and proven Multi crew Training System, using Flight Simulators or Flight Training Devices, should not be accepted. Any reduction in current flight hour requirements, 'in isolation', will compromise safety.

The current legislation (for non-MPL training) applicable to pilot experience is totally focussed on 'Single Pilot' training, to satisfy the minimum requirements applicable to the licence type i.e. PPL CPL ATPL. Accumulated flight hours, does not automatically guarantee experience.

For 'single pilot' operations, the current 'non MPL legislation' is adequate, provided more experience is gained after graduation, but should also address mandatory re-current training in appropriate flight training devices or aircraft.

For any multi crew training concept, the Pilot Monitoring (as part of a crew PF/PM), has a very onerous position and responsibility in ensuring the safe conduct and supporting the flight management aspects of the entire flight.

- Current Flight Training Syllabus (Day VFR Syllabus) originated just after World War II. This syllabus has been tweaked a number of times; however the basic single pilot training progression and flight manoeuvres, has remained the same.
 - The amount and spread of hours (Dual/Solo), adjusted a number of times over the last four decades.
 - Courses adjusted – part time – full time and/or Integrated (Commercially trained).
 - The current legislation for the new Multi crew Pilot Licence (MPL), unfortunately, does not fully comply with the ICAO recommendations in many areas, particularly with regard to teaching the role of the Pilot Monitoring (PM). The MPL syllabus is just a copy of the 'Single pilot' syllabus, re-typed (cut & paste) for the 'Multi crew' Pilot training phases.

When CASA was challenged on this MPL syllabus, the response was condemnation and dismissal, simply because their perception was flawed by the fact - 'they don't know what they don't know'.

CASA prepared this syllabus in collaboration with an industry consultative committee, with none of its members having ever been involved in multi crew instruction and very few having ever operated in a multi crew role.

Multi crew is **NOT** simply 'two pilots and a Checklist', as many people think that is how 'multi crew' differs from the 'single pilot' operation.

The current policy of maintaining the status quo, (purported by many) is perpetuated by emotional investments in that "it has always been done this way, it has worked for many decades, so there is no need to change the system", even though aircraft technology has advanced (exponentially). Better training methods have been developed and disregarding the obvious, the current system no longer works as well as it did.

Modern day training and instructional techniques require a fundamental paradigm shift to address the needs of a rapidly developing aviation industry, using a more sophisticated training interface between 'man and machine'. This is particularly so with instructors.

(b) the United States of America's Federal Aviation Administration Extension Act of 2010 which requires a minimum of 1500 flight hours before a pilot is able to operate on regular public transport services and whether a similar mandatory requirement should be applied in Australia;

→ Young Instructors (very little real time operational flight experience) teach younger instructors, with the inevitable decline in operational standards, then move on to a 'Flying Job'. An 'Instructor Rating' is the prevailing convention for getting a job to 'build up' the recruitment requirements for command hours, to get a better job. CASA is well aware of these declining safety standards.

- There is often an annual turnover of instructors (50% - 80%) in large Flight Training Organisations.
- Some 'part time' Instructors have to sit at the airport all day, to instruct a 1-hour training flight for as little as \$20 / hour.
- A number of Instructors stay a little longer in instructing, just to build up hours to gain the experience (hours) to be accepted to a commuter airline or charter company.
- 1500 hours of this type of traditional 'single pilot' experience is of very little use to airlines. If 1500 hrs were required by legislation, it is not the relevant experience needed or required, to operate a jet transport category aircraft, as a crewmember.
- The FAA Extension Act requirement is a band-aid response, without addressing the fundamental issues of multi crew training.
- There is no evidence to support that 1500 hours (Flight Hours) has any relevance except as an experience number or basic recruitment yardstick.

1500 hours does not automatically imply experience. This is purely subjective.

Further, 1500 flight hours, flying around a training airport, can be seen as counter productive in recruiting pilots into a multi crew RPT environment.

The MATS **Evidence Based** benchmark, is to append low time pilots (180-200 hours, with Commercial Pilot Licence and Instrument Rating) with specifically designed multi crew syllabi in appropriate 'Flight Training Devices', representative of a Jet Transport Category aircraft, using generic or specific airline 'Flight Crew Operating Manuals'. This is also applicable to experienced 'Single Pilot' recruits.

(c) current industry practices to recruit pilots, including pay-for-training schemes and the impact such schemes may have on safety;

- A number of International Airlines send cadets to Australia for pilot training. A number of the leading airlines insist their cadets carry out a 'Multi crew Jet Transition or Advanced Jet training Course, after graduating as a CPL with Instrument rating.
- These airlines benefit by, not only ending up with a better product but also have reduced type endorsement & line training times (lower costs – better training – increased safety).
 - The airlines that do not have this addition to the basic pilot course claim the cost as the major reason. The purchase price and operating costs of Level D Simulators is the major reason. (\$15M)
 - If the State Aviation Authorities could only recognise and accept the potential for the use of highly cost effective (\$1M) modern 'Category' type simulators (Flight Training Devices) and allow 'recognised' training (able to log hours) by using them, producing a much safer and more efficient pilot.
 - One major Australian airline insists that some of their 'pay-for-training' cadets undergo a short multi crew course on a 'category' simulator and believe it is of immense benefit.
 - The MATS Multi crew Training syllabi and Model validates a highly cost effective result and a quantum leap in safety outcomes.

(d) retention of experienced pilots;

- This is a complex demographic and industry based global phenomena. The shift to low cost carriers and various aircraft types, work place conditions, domicile, short/long haul etc. etc contribute in part to the phenomena.
- This is particularly so with professional Simulator Instructors (who train the crews)
- This is also a major problem for valued CASA staff pilots and in a number of cases, inexperienced FOI's on Type.

(e) type rating and recurrent training for pilots;

- Most pilots will confirm, that having carried out a 'Type Rating' and then start 'Line Training' with an airline, feel that they are a long way 'behind the aircraft'. This is because the type Rating may teach pilots how to fly that type, but definitely not how to manage it, particularly if it is their first Transport Category Aircraft or Commuter Category aircraft.

Many pilots consider 'recurrent training' as a 'check flight' as distinct from 'non-jeopardy' training and therefore not a great help in understanding how crews manage the aircraft safely and efficiently.

At present, 'synthetic training device' is the term used in the Civil Aviation Safety Regulations 1998 (CASRs) to describe devices which can be used to train pilots.

The two main types include

1. **flight simulator**, for a specific type (or a specific make, model and series) aircraft (known as Level D, zero time and very expensive)
 2. **flight training device**, for a specific type (or a specific make, model and series) of aircraft (least expensive – not yet widely recognised for the multi crew training role)
- Flight Training Devices recently released into the market, perform very closely to Level D Flight Simulators and in some cases have been approved to CASR Part 60 Category C, which are eminently suitable for multi crew training or single pilot training (if appropriate). Unlike the CASA definition of FTDs, some of these devices include a visual system, providing an out of the flight deck view and a force cueing motion system, which is well beyond the definition minimums.
 - CASA has now promulgated a Notice of Proposed Rule Making (NPRM 1007OS), that proposes certain types of initial & recurrent training (non-normal), using FTD's rather than the unsafe practices now carried out in some aircraft.
 - This is a step in the right direction, but must have conformity with other ICAO contracting states.

(f) the capacity of the Civil Aviation Safety Authority to appropriately oversee and update safety regulations given the ongoing and rapid development of new technologies and skills shortages in the aviation sector;

- CASA does not have the capacity for oversight of the industry as it is totally under resourced in the operational area.
- There are two solutions to this challenge:
 1. Increase resources with appropriately qualified officers.
 2. Outsource the auditing functions to properly qualified organisations, with experienced staff pilots and instructors, to ensure compliance in specific areas. e.g. recurrent training and instructor competency.

(g) the need to provide legislative immunity to pilots and other flight crew who report on safety matters and whether the United States and European approaches would be appropriate in the Australian aviation environment;

This issue would need to be taken up by a consultative process between IFALPA on organisations representing flight and legislative law makers based on the suspect is innocent until proven guilty. The Adam Air crash in Indonesia and subsequent reinstatement of the Captain is an exception to the rule. All relevant parties involved, need much more discussion.

(h) reporting of incidents to aviation authorities by pilots, crew and operators and the handling of those reports by the authorities, including the following incidents:

- (i) the Jetstar incident at Melbourne airport on 21 June 2007, and
- (ii) the Tiger Airways incident, en route from Mackay to Melbourne, on 18 May 2009;

- These reports must be based on the capacity for anonymity and non-jeopardy until all investigative facts are obtained.
- ***Nowadays, most incidents and accidents are due to lack of adherence to, including, lack of knowledge and/or understanding of, correct procedures.***

(i) how reporting processes can be strengthened to improve safety and related training, including consideration of the Transport Safety Investigation Amendment (Incident Reports) Bill 2010; and

- There are a number of different views on the reporting process and the relevant parties require further discussion.

(j) any other related matters.

This country has many Airline Training Captains and Flight Instructors, all teaching 'Single Pilot' operations. This also applies to most Simulator Instructors, even though there may be two pilots under training in the Simulator. The current practice is to teach one at a time, with most of the instruction towards the Pilot Flying (PF). As with line training in an airline or corporate aircraft, it is 'one on one' (the Training Captain teaching the First Officer).

Very few Instructors have the experience and expertise to teach 'multi crew' operations, particularly regarding the initial training of inexperienced pilots i.e. instructing two crew members simultaneously (PF & PM). The MPL (instigated by ICAO) was intended to address this issue, however, ICAO and CASA did not consider the scarcity and retention of suitable instructors and/or who trains the trainer.

We addressed this discrepancy very early on (before the ICAO initiatives were delivered on multi crew training) and compiled syllabi and structures to implement the very important aspect of successional instructor training.

Multi Crew Cooperation (MCC), Crew Resource Management (CRM) and Threat & Error management (TEM) are all acronyms used in training Human Factors (HF) for pilots is an essential part of the Flight Management process, as required by ICAO and Australian regulations. Most training organisations (including airlines and corporate operators) are required to deliver classroom certification, but this has very little relevance, if these processes are not delivered in the actual aircraft or during the simulator training phases. This training should be accomplished before line training (with passenger on board) commences.

Regards,

Graham Day
Chairman, MATS
