



**Australian Government**

**Civil Aviation Safety Authority**

# **Notice of Proposed Rule Making**

## **Multi-crew Pilot Licence**

Proposed amendments to *Civil Aviation  
Regulations 1988 (CAR) Part 5*

### **Who this NPRM applies to**

*It is expected that this proposal will affect the following members of the aviation community:  
Flying Training Organisations, Airlines, Pilots, Passengers.*

Issued as part of the process of public consultation by  
CASA's Regulatory Development Management Branch

Document NPRM 0708FS – July 2008



## Foreword

### Context of this NPRM

The International Civil Aviation Organization (ICAO) has introduced a new flight crew licence in Annex 1 to the Convention on International Civil Aviation. The licence is called the Multi-crew Pilot Licence.

The purpose of this NPRM is to invite members of the aviation community and the public to comment on a proposal to introduce the Multi-crew Pilot Licence (MPL) in Australia. Part 5 of Australia's Civil Aviation Regulations 1988 "Qualification of Flight Crew" sets out the rules for qualifying flight crew to operate aircraft.

Working in accordance with a process approved by the Civil Aviation Safety Authority's (CASA's) Standards Consultative Committee (SCC), a joint CASA / Industry Project Team was formed to undertake consultation on the development of new regulations and guidance material to support the MPL. The team comprises technical experts in airline operations, multi-crew training, ab initio flight training, simulation and training organisations.

This Notice of Proposed Rule Making (NPRM) has been written to describe policy outcomes rather than detailing specific regulations. When the final policy has been established after input from the aviation community and the public, final drafting instructions will be sent to the federal Attorney-General's Department, to draft the proposed new regulations. The drafted regulations will then also be made available to the aviation community and the public for comment prior to finalisation of the regulations.

### Proposed Changes In A Page

The time-conscious reader can obtain a quick appreciation of the proposed changes in Section 2 of this NPRM.

A more detailed explanation of the proposed regulation changes is provided in Section 4 (NPRM Section 4).

### How you can help us

**CASA is responsible under the Civil Aviation Act 1988, amongst other functions, for developing and promulgating appropriate, clear and concise aviation safety standards. In the performance of this function and the exercise of its powers, CASA must, where appropriate, consult with government, commercial, industrial, consumer and other relevant bodies and organisations.**

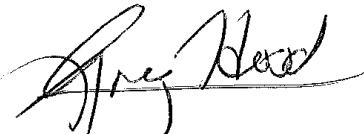
*Civil Aviation Act 1988 Subsection 9(1)(c) and Section 16*

**“CASA is committed to cooperating with the aviation community to maintain and enhance aviation safety. This is reflected in CASA regulatory development activities that are transparent, inclusive and consistently applied.”**

*CASA Regulatory Development Management Manual, 1.2*

To ensure clear and relevant safety standards, we need the benefit of your knowledge as a maintainer, aviator, aviation consumer and/or provider of related products and services **by completing the Response Form (in this NPRM) and returning it to CASA by 5 September 2008.**

I would like to thank you for expressing interest in this proposal and emphasise that no rule changes will be undertaken until all NPRM responses and submissions received by the closing date of **5 September 2008** have been considered.



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Group General Manager  
Personnel Licensing, Education and Training Group

25 July 2008

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<b>* <u>YOU CAN RESPOND ONLINE OR BY FAX, POST OR EMAIL</u> *</b>	
A web-based online response form is offered as an alternative to the printed form in this NPRM. Online submission is the preferred method of sending your comments to CASA. If you are connected to the Internet, type <a href="http://casa.gov.au/newrules/ors">casa.gov.au/newrules/ors</a> into your web browser and follow the links for this NPRM.	
<b>Annex A – International Civil Aviation Organization (ICAO) Licensing Standards .....</b>	<b>A1</b>
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<b>Annex D – Civil Aviation Advisory Publication – CAAP 5.XX-1(0) – Multi-crew Pilot Licence .....</b>	<b>D1</b>



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## Abbreviations

<b>AAPA</b>	Association of Asia-Pacific Airlines
<b>AC</b>	Advisory Circular
<b>AMOC</b>	Alternative Means of Compliance
<b>ANC</b>	Air Navigation Commission (of ICAO)
<b>ARN</b>	Aviation Reference Number
<b>ATC</b>	Air Traffic Control
<b>ATO</b>	Approved Testing Officer
<b>ATP</b>	Airline Transport Pilot
<b>ATPL</b>	Air Transport Pilot Licence
<b>ATP(A)L</b>	Air Transport Pilot Licence – Aeroplane Category
<b>CAAP</b>	Civil Aviation Advisory Publication
<b>CAR</b>	Civil Aviation Regulations 1988
<b>CASA</b>	Civil Aviation Safety Authority
<b>CASR</b>	Civil Aviation Safety Regulations 1998
<b>CPL</b>	Commercial Pilot Licence
<b>CP(A)L</b>	Commercial Pilot Licence – Aeroplane Category
<b>CRM</b>	Crew Resource Management
<b>DOC</b>	Document (ICAO)
<b>DP</b>	Discussion Paper
<b>EFIS</b>	Electronic Flight Information System
<b>FAA</b>	Federal Aviation Administration (of the USA)
<b>FMS</b>	Flight Management Systems
<b>FCL</b>	Flight Crew Licensing
<b>FCLTP/2</b>	Flight Crew Licensing and Training Panel (of ICAO)
<b>FSTD</b>	Flight Simulation Training Device
<b>FTD</b>	Flight Training Device
<b>GA</b>	General Aviation
<b>IATA</b>	International Air Transport Association
<b>ICAO</b>	International Civil Aviation Organization
<b>IERW</b>	Initial Entry Rotary Wing
<b>IFR</b>	Instrument Flight Rules
<b>IGMI</b>	IATA Global MPL Initiative
<b>IOE</b>	Initial Operational Experience
<b>IREX</b>	Instrument Rating Examination
<b>JAA</b>	Joint Aviation Authorities
<b>JAR</b>	Joint Aviation Regulations

## Abbreviations (Continued)

<b>JAR-FCL</b>	Joint Aviation Regulations – Flight Crew Licensing
<b>km</b>	kilometres
<b>LOFT</b>	Line-oriented Flight Training
<b>MPL</b>	Multi-crew Pilot Licence
<b>NAA</b>	National Aviation Authority
<b>NFRM</b>	Notice of Final Rule Making
<b>nm</b>	nautical miles
<b>NPRM</b>	Notice of Proposed Rule Making
<b>OLDP</b>	Attorney-General’s Office of Legislative Drafting and Publishing
<b>PANS-TRG</b>	Procedures for Air Navigation Services – Training (ICAO)
<b>PC</b>	Personal Computer
<b>PCATD</b>	Personal Computer Aviation Training Device
<b>PF</b>	Pilot flying
<b>PNF</b>	Pilot not flying
<b>PPL</b>	Private Pilot Licence
<b>PP(A)L</b>	Private Pilot Licence – Aeroplane Category
<b>SARP</b>	ICAO-promulgated Standards and Recommended Practices
<b>SCC</b>	Standards Consultative Committee
<b>SOP</b>	Standard Operating Procedures
<b>STD</b>	Synthetic Training Device
<b>TCAS</b>	Traffic Collision Avoidance System
<b>TEM</b>	Threat and Error Management
<b>TER</b>	Transfer Effectiveness Ratio
<b>VFR</b>	Visual Flight Rules
<b>ZFT</b>	Zero Flight Time

## References

<b>Document</b>	<b>Reference</b>	<b>Content</b>
Annex 1 of International Convention on Civil Aviation	Section 2.5	SARPs for MPL
	Appendix 3	Requirements for the issue of an MPL
	Attachment B	MPL Competency standards
PANS-TRG, ICAO DOC 9868		Details on implementing the MPL including detailed description of competency standards.



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## 1. The Consultation Process

1.1 CASA is committed to working cooperatively with the aviation community to maintain and enhance aviation safety. The CASA Standards Consultative Committee (SCC) is a joint Industry/CASA forum that brings together CASA staff and representatives from a diverse range of aviation industry organisations, to jointly develop regulatory change material. The SCC examines proposed regulatory changes to determine if they are worth pursuing and assists CASA in establishing and servicing regulatory change projects. CASA and industry experts work together in SCC Subcommittees and project teams, to develop regulatory material (both new regulations and amendments).

1.2 The subcommittee responsible for flight crew licensing regulatory changes is the Flight Crew Licensing Subcommittee.

1.3 The Multi-crew Pilot Licence Project Team is the responsible group developing the regulatory material to support the implementation of the MPL. The Project Team reports to the FCL Subcommittee.

### **What does CASA do with your comments?**

1.4 At the end of the response period for public comments to this NPRM, all submissions will be analysed, evaluated and considered. CASA is required to register each comment and submission received, but will not individually acknowledge a response unless specifically requested.

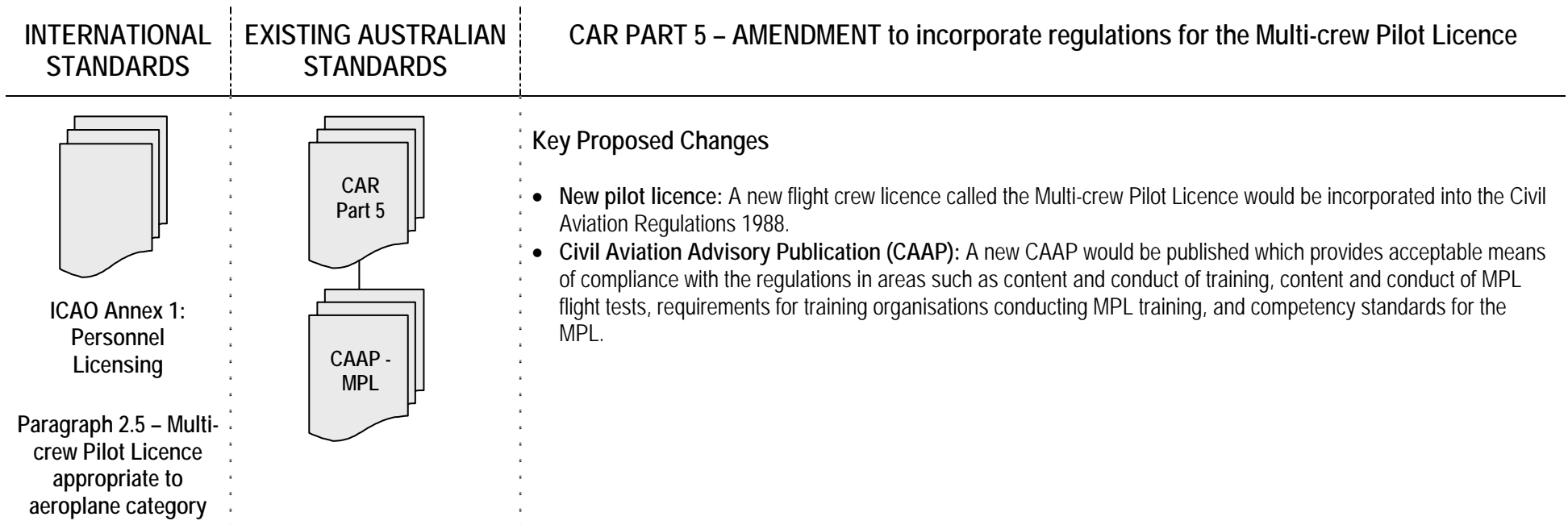
1.5 Subsequent to the closing date for comments, a Notice of Final Rule Making (NFRM) will be prepared, and made publicly available in conjunction with the making of the Final Rule. The names of respondents will be published in the NFRM, except where CASA is specifically requested not to do so.

### **Persons and groups affected**

1.6 Together with CASA, the key stakeholders affected by this proposal are:

- Flying Training Organisations;
- Airlines;
- Pilots; and
- Passengers.

## 2. Proposed Changes in a Page



### 3. Explanation of the Change Proposal

#### Background and overview of this proposal

##### 3.1 Background

3.1.1 A new pilot qualification for airline co-pilots, the Multi-crew Pilot Licence (MPL), has been established by the International Civil Aviation Organization (ICAO). The MPL was incorporated into Annex 1 “Personnel Licensing” of the Convention on International Civil Aviation (ICAO Annex 1) on 23 November 2006.

3.1.2 The MPL was developed by ICAO's Flight Crew Licensing and Training Panel (FCLTP/2) during 2004 and 2005.

3.1.3 The new MPL licence is focussed on the competencies of co-pilots flying in a multi-crew airline environment. This environment involves:

- large, high performance, complex aeroplanes;
- operating in all weather conditions according to instrument flight procedures; and
- working as a member of a crew of at least two pilots.

3.1.4 The rationale for establishing the MPL is best summarised by the following statement from ICAO's website.

*“The MPL was established to respond to the growing demand in the aviation training community that felt that the current regulatory regime that dictated a large number of flying hours in solo and on smaller aircraft was not the most efficient and safe way to train pilots for co-pilot duties on jet transport aircraft.*

*“Further, there was some perceived negative training in the apprenticeship model that was first developed for flight training in the post second world war era. A number of training organisations and airlines were adamant that modern training techniques and research into the use of modern training devices such as flight simulation training devices needed to be recognised within the ICAO licensing structure.*

*“The ICAO Air Navigation Commission formed a Flight Crew Licensing and Training Panel to explore the options and opportunities to address the shortcomings of some current licensing requirements. The competency-based concept and the MPL licence were the outcome of that panel's deliberations.”<sup>1</sup>*

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<sup>1</sup> ICAO Air Navigation Bureau Flight Safety Section, Personnel Licensing Frequently Asked Questions page of the ICAO Website.

3.1.5 The MPL provides an alternative pathway to becoming qualified as an airline co-pilot.

*“This licence complements, but does not replace, the existing ways of qualifying as co-pilot on aeroplanes operated with more than one pilot.”<sup>2</sup>*

## 3.2 Key change proposals

3.2.1 Listed below are the main points of this proposal to implement the MPL in Australia:

- the minimum age for the MPL should be 18;
- MPL training must be approved by CASA and may only be conducted by approved training organisations;
- the minimum aeronautical knowledge requirements for an MPL should be the same as the requirements for obtaining an ATP(A)L and the Instrument Rating;
- the minimum flying experience for the MPL should be the hours specified by ICAO in Annex 1 as long as the training course, course assessments and flight tests are based on the competency standards specified by ICAO;
- the validity period for the MPL should be perpetual unless the licence is suspended or cancelled;
- an MPL candidate will have demonstrated competency performing co-pilot duties acting as pilot flying and as pilot monitoring operating a multi-crew multi-engine turbine powered aeroplane, under the instrument flight rules to the command (multi-engine aeroplane) instrument rating and type rating standards;
- a pilot qualifying for an MPL would be issued a co-pilot type endorsement and a co-pilot aeroplane instrument rating;
- a newly qualified MPL pilot should be limited initially to flying aircraft of the same type that was used in the final phase of the MPL course and with the airline that was associated with the MPL course;
- induction training and continuity experience requirements should apply to airlines using MPL pilots;
- the recent experience requirements for the MPL should be the same as the requirements for the ATP(A)L;
- before exercising the privileges of a PP(A)L, an MPL holder should have completed a PP(A)L flight test and met the flight review requirements of the PP(A)L; and
- to qualify for a CP(A)L, an MPL holder should be required to meet the aeronautical experience requirements specified in this NPRM and pass a CP(A)L flight test.

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<sup>2</sup> ICAO State Letter Ref: AN 12/1.1.11-06/31.

### 3.3 International situation

3.3.1 The MPL was incorporated into the European pilot licensing regulations on 1 December 2006.

3.3.2 **Denmark.** An MPL beta trial course commenced in Denmark in January 2007. The six cadets from Center Air Pilot Academy transferred from their conventional Air Transport Pilot (ATP) course which commenced in August 2005. Four of the cadets graduated from Center Air on 11 September 2007 and have since completed the final skills test in the B737, which was conducted by the Danish Civil Aviation Authority. The pilots are now flying with Sterling Airlines and have completed their initial operational experience training of 40 sectors. Center Air has another 30 cadets under MPL training.

3.3.3 **Germany.** Lufthansa Flight Training commenced MPL training in February 2008 with 24 students. They plan to run 12 courses per year.<sup>3</sup>

3.3.4 **China.** The Civil Aviation Authority of the Peoples' Republic of China has developed regulations to support the MPL. A program of 5 trial courses, each containing 45 cadets, was due to start in 2008. The courses are planned to start 45 days apart and last for 20 months.

3.3.5 The Hong Kong Department of Civil Aviation and Transport Canada are developing MPL programs.

3.3.6 **The Philippines.** The Civil Aviation Authority has given conditional approval to Clark Aviation, a subsidiary of the United Kingdom based Alpha Aviation Group, to conduct MPL training. A presentation given by Global Training Solutions to the ICAO Regional Symposium on the Implementation of the MPL in September 2007 reported on the Clark MPL program. According to the presentation, the first course started in January 2007 with approximately 15 students and further courses had started each month with a total of approximately 100 students under training.

### 3.4 IATA Global Initiative

3.4.1 The International Air Transport Association (IATA) is the peak global representative body for the major airline carriers. It launched the IATA Global MPL Initiative (IGMI) in 2007 to assist with the implementation of the MPL. The initiative is closely coordinated with ICAO and has broad support from its members and industry stakeholders. IATA has developed a roadmap for its MPL Task Force consisting of seven main initiatives. One of those initiatives is to put forward suggestions for global MPL instructor qualification standards to ICAO for the amendment of PANS-TRG.

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<sup>3</sup> Lufthansa has been training direct entry co-pilots since the 1950s. In more recent years, cadet pilots have completed a training course which has minimal solo flying hours and has adopted multi-crew competencies throughout the course.

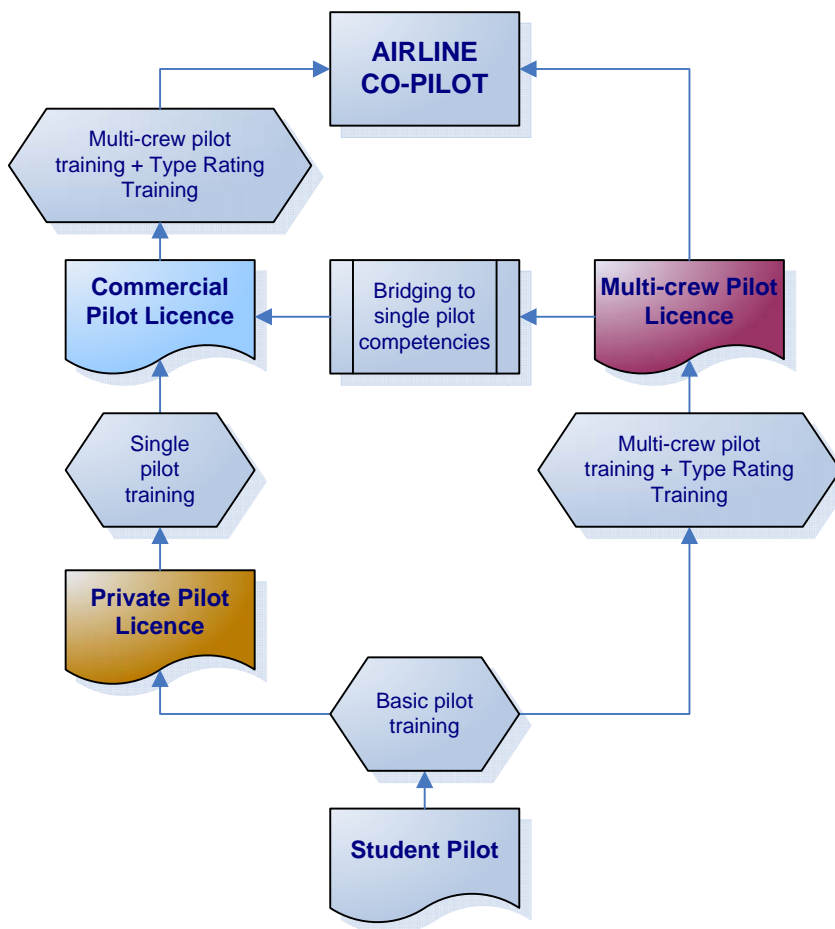
3.4.2 The Task Force met at the Association of Asia-Pacific Airlines (AAPA) meeting in Kuala Lumpur in May 2007 to discuss the subject of instructor qualifications. A sub-working group was formed to work on MPL instructor qualifications.

3.4.3 The Task Force met again following the ICAO Regional Symposium on MPL Implementation in Hong Kong in September 2007 with MPL instructor standards as the main topic. The sub-working group presented a proposal for MPL instructor qualification. Following that meeting, and further work by the sub-working group, updated draft standards were circulated for comment. The proposed standards are based on competency rather than prescriptive experience criteria. The Task Force has recognised the different requirements of instructors at the various stages of MPL training. For example, instructors teaching in the final type rating phase of the course need a different skill set and knowledge base compared to instructors teaching in the core (ab initio) phase. However, due to the focus on multi-crew competencies throughout the MPL, all instructors need to have at least undergone training in this area before conducting MPL training.

3.4.4 The Task Force will continue to promote the MPL and provide support and encouragement to participating airlines to ensure they participate in the global proof of concept program.

### 3.5 Pathways to becoming an airline co-pilot.

3.5.1 The following diagram shows the two pathways to becoming an airline co-pilot. The diagram is a simplification of the traditional CPL pathway, which is on the left side of the diagram, and shows the training and licensing components that are required to become an airline co-pilot. Note, the multi-crew and type rating training could be done prior to or after the pilot joins the airline. The MPL pathway is on the right hand side. This is discussed in more detail below.



3.5.2 Currently, to be a co-pilot of a multi-crew airliner, a pilot must:

- hold either a CPL or an ATPL;
- hold an Instrument Rating and an Aircraft Type Endorsement for the type of aircraft being flown; and
- hold a current Class 1 Medical Certificate and comply with recent experience and recurrent training requirements.

3.5.3 The traditional training pathway for pilots involves initially obtaining a CPL. The privileges of the CPL include the ability to operate passenger and freight operations in aircraft that only require one pilot. CPL pilots can also act as co-pilot of a multi-crew operation. A great deal of attention in the training is given to the competencies to operate these aircraft as a single-pilot. The minimum standards to obtain a CPL are focussed on light relatively simple single engine aircraft that are operated under the visual flight rules. While these are the minimum standards for the CPL, it is relatively common for CPL graduates to have received training for an instrument rating, multi-engine aircraft and multi-crew cooperation training. From this initial graduation stage, the pathway can vary depending on the training program and career advancement opportunities.

3.5.4 Some pilots, upon qualifying as a commercial pilot, immediately pursue employment in the general aviation sector as an instructor or charter pilot and then progress to the airline after completing instrument rating and multi engine training. In some cases, these qualifications are completed prior to starting in general aviation. Pilots enrolled in an airline direct entry program will continue from initial basic training through the instrument rating and multi engine endorsement steps. In many cases, these dedicated airline courses incorporate multi-crew coordination training to prepare the pilot for the airline.

3.5.5 Australian flying training schools have a long tradition of providing dedicated airline training courses for Australian and overseas airlines. Their reputation, along with the ideal training conditions found in Australia and a favourable currency exchange rate, maintains Australia as a preferred location for overseas airlines to send cadets for training.

3.5.6 Depending on the training pathway, at some stage prior to commencing flying duties as a co-pilot with an airline, the pilot will have to undertake multi-crew cooperation training and type rating training to fly the aircraft used by the airline. This can be done once recruited by the airline or prior to joining the airline. The MPL pathway is different in that all the training is orientated to the role of co-pilot in the airline operating jet aircraft. Initial training is given on light simple single engine aircraft. Depending on the course, multi-crew concepts are introduced very early in the program and airline operating procedures concepts are used throughout the training. The aim is to learn and practice multi-crew airline style behaviours throughout the training.

3.5.7 To achieve the aim of the MPL, that is to qualify a new pilot as a competent airline co-pilot as defined by ICAO, it is necessary to utilise contemporary training concepts, increase the use of modern simulation training devices, and the application of airline multi-crew procedures throughout the training program. These will be explained in detail below.

3.5.8 These principles are not exclusive to the MPL. For example, competency-based training methods are used widely in Australia for the Private Pilot Licence (PPL) and the CPL. Also, multi-crew cooperation training is already included in dedicated airline orientated training using the CPL pathway. All of this leads to better training outcomes. The anticipated advantage with the MPL is that training is dedicated to the co-pilot airline role and, apart from the critical training to manage crewmember incapacitation, training for single-pilot duties is avoided.

3.5.9 Traditional, non-airline orientated training methods emphasise independence and individual skills. While appropriate for single-pilot operations, there is a possibility that this might impede the transfer to multi-crew operations. This subject is of interest to ICAO, regulators and airlines and will be closely monitored during the post-implementation review process. Those pilots moving to work in airlines who have not undertaken dedicated multi-crew competencies training have needed bridging training. Examples of this can be found in the US and are prescribed in the JAR-FCL where a specific qualification must be held for a pilot to be a member of a multi-crew operation.

### **3.6 Contemporary training concepts**

3.6.1 There are two key training concepts that underpin the MPL. They are:

- Dependency on competency-based training and assessment methods rather than the more prescriptive flight time requirements which apply to other flight crew licences; and
- Recognition of training done in flight simulation training devices (FSTD).

### **3.7 Competency-based training**

3.7.1 ICAO has issued procedures for flight crew training in a new publication titled PANS-TRG (Procedures for Air Navigation Services – Training). PANS-TRG provides information to States on how to implement competency-based training and assessment systems. PANS-TRG covers training course design, delivery and assessment.

3.7.2 Australia began implementing competency-based training for flight crew in 1992 and has developed competency standards for the MPL. The proposed MPL competency standards can be found in the MPL CAAP (see references).

3.7.3 So far, ICAO has prescribed competency standards only for the MPL. The structure of the standards for the MPL is different to that used for all the other flight crew licences in Annex 1. For reference purposes, the standards for the CPL and the MPL are attached at Annex A. Particular attention should be given to the “Skills” and “Experience” standards.

### **3.8 Skill Standard**

3.8.1 The main difference between the skill standard for the MPL and the other licences is found in the two paragraphs below. Note particularly the underlined text. The first is the standard for the CPL and the second is the standard for the MPL. In the MPL case, the standard is prescribed in an appendix to Annex 1 whereas for the CPL, it is left to each State to define the competency standard. For the CPL, there is no definition of what is appropriate to the privileges of the CPL.

3.8.2 The CPL skill standard in Annex 1 states:

*“The applicant shall have demonstrated the ability to perform as pilot-in-command of an aircraft within the appropriate category of aircraft, the procedures and manoeuvres described {for flight instruction for the applicable aircraft category} with a degree of competency appropriate to the privileges granted to the holder of a commercial pilot licence.”*  
(Annex 1, paragraph 2.4.1.3)

3.8.3 The MPL skill standard in Annex 1 states:

*The applicant shall have demonstrated the skills required for fulfilling all the competency units specified in Appendix 3 as pilot flying and pilot not flying, to the level required to perform as a co-pilot of turbine-powered aeroplanes certificated for operation with a minimum crew of at least two pilots under the VFR and IFR.*  
(Annex 1, paragraph 2.5.1.3)

### 3.9 Experience Standard

3.9.1 The detail in the experience standard for the MPL differs from the standards for the other licences. The difference reflects the compensating level of detail in the competency standards ICAO prescribes. Whereas the detail in the experience standards for the MPL is limited, the detail in the experience standards for other licences is more extensive. The opposite is true of the skills standards; the MPL skills standards are detailed while the skills standards for other licences are limited.

3.9.2 The following example is typical of the experience standards for licences other than the MPL. Note the standard applies to a detailed list of flight instruction topics (this is an extract from the standards which are contained in Annex A).

*An applicant who completes an approved course for the CPL must have at least the following flight time in aeroplanes: 150 hours total time, not less than 70 hours as pilot-in-command, 20 hours of cross-country flight time and 10 hours of instrument instruction time.*  
(Summary extract from paragraph 2.4.3.1 of Annex 1)

3.9.3 In the case of the MPL, the standard is much simpler and does not refer to specific elements of experience apart from the experience standard that applies to the PPL.

*“An applicant shall have completed in an approved training course not less than 240 hours as pilot flying and pilot not flying of actual or simulated flight.*

*Flight experience in actual flight shall include at least the experience requirements {for the PPL}, upset recovery training, night flying and flight by reference solely to instruments.”*  
(Annex 1, paragraph 2.5.3)

3.9.4 Further details of the MPL requirements are listed in the PANS-TRG document. These include the requirement that training in the underpinning knowledge requirements for the MPL must be fully integrated with the training of the skill requirements. Also, the training course shall include continuous evaluation of the training program and of the students. The evaluation needs to ensure that the competencies and related assessment are relevant to the task of a co-pilot of an aircraft certificated for more than one pilot, and the students acquire the necessary competencies in a progressive and satisfactory manner. The document goes on to require corrective action be taken if in-training or post-training evaluation indicates a need to do so. This attention to detail in training system standards is unprecedented in Annex 1. However, it is a fundamental and necessary requirement if competency-based training is to be relied upon.

### **3.10 Flight Simulation Training Devices**

3.10.1 The MPL pathway permits significantly more of the training flown in FSTDs to be credited towards the experience requirements for the MPL compared to other licences. As a result, more training is likely to be done in simulators and less training done in aircraft. Even though the MPL is based on the pilot achieving competency, ICAO has set minimum standards.

3.10.2 Greater recognition of FSTD training time has been made possible by advances in technology and a greater awareness and acceptance of the value of simulator-based training in advanced phases of training.

3.10.3 Advanced simulators have been used by airlines and approved by National Aviation Authorities (NAAs) for type rating training. In several countries including Australia, licensed pilots can complete all their type rating training in simulators and the first time they fly the real aeroplane is on a commercial flight.

3.10.4 The effectiveness of training carried out in simulators is widely recognised in such diverse domains as flight crew training, medicine, air traffic control, power generation and transport systems.

3.10.5 Studies into the transfer of learning from FSTDs to aircraft have shown that positive benefits can be realised in the appropriate use of simulation. Abstracts from six academic papers on this subject are presented in Annex C.

3.10.6 The benefits of carrying out training in a simulated environment are:

- Simulators are not affected operationally by weather – this reduces course delays and increases training efficiency.
- Simulators can be used to enhance the training outcomes. For example, by using the freeze and replay capability of the simulator, instructors can review training episodes and repeat sequences immediately, which is usually not possible in the airborne environment.

- Many critical technical and environmental factors are inherently unsafe to practice in the real environment. Training and practising for these factors can be conducted safely in a simulator. For example, while full incapacitation scenarios and major system failures can be completed in a simulator providing the pilots with valuable learning and practice opportunities, it would be unwise and unsafe to perform them in a real aircraft.
- Threat and error management training is more effective in a simulator because the threats and/or errors can be fully played out in a simulator whereas they cannot be played out in an aircraft. The full range of weather conditions can be experienced in a simulator whereas an aircraft is totally dependent on the weather on the day.
- Large turbine aircraft are very expensive to operate and are unavailable for revenue operations when being used for training. Using simulators relieves an aircraft to be used for revenue operations.

3.10.7 Other benefits can be achieved through the use of simulation including less congestion at airports and in high usage airspace, and from an environmental perspective less noise and less fuel burn resulting in lower emissions.

3.10.8 Using simulation in training is not without its constraints. Simulators need to be used appropriately and with a full appreciation of their limitations. Some of these limitations, if not managed properly, can result in negative training outcomes.

- **Real time environment.** The level of fidelity in the systems, performance, handling characteristics, and visual representations in modern FSTDs is very high. This cannot be said for the operational environment, such as the vagaries of other traffic, air traffic control and operational considerations. Although scenario training can provide a degree of reality to the training session, it is very difficult to accurately represent the real time operational environment. Experienced pilots are quite familiar with these factors. Inexperienced cadet pilots on the other hand are not. This can impact adversely on the development of the cadet's situational awareness, which is a vital piloting skill.
- **Realistic Air Traffic Control (ATC).** Complex airspace operations are difficult to simulate and comprehensive ATC simulation in flight crew training devices is rare. Until this capability is built into FSTDs, alternative strategies (such as flying and/or observing in actual aircraft) need to be used to ensure cadets acquire the right level of awareness and confidence in coping with realistic ATC situations.

- **Near ground operations.** Concerns have been expressed about the fidelity of FSTDs in the take-off, approach and landing phases of flight and that FSTDs do not simulate ground effect well enough. While experienced pilots are likely to accommodate this possible deficiency, there is uncertainty as to the impact this might have on MPL students. To mitigate the associated risk, the FCLTP/2 decided to require students complete base training of 12 take-offs and landings in the actual aircraft prior to commencing line operations. While this is not a Standard, it is being recommended by ICAO with States having the option of requiring the training. CASA proposes to adopt this requirement for MPL licensing. Careful monitoring, particularly during initial line training, is needed to ensure the pilots have acquired the necessary skills in operating the aircraft in these critical phases of flight.
- **Risk, responsibilities and consequences.** FSTDs by their very nature are safe and adverse consequences of errors and poor performance never result in risks to life or damage to the aircraft. On the one hand, this is advantageous because risky scenarios can be explored fully for training purposes. However, caution is needed to ensure trainees do not inappropriately use that experience to push risk envelopes.

3.10.9 In summary, all training resources whether simulation or real need to be used appropriately, cognisant of their advantages and limitations in order to maximise their use. Otherwise, adverse training outcomes are likely.

### 3.11 Risk and Safety Benefit Analysis

3.11.1 The FCLTP/2 undertook a risk and safety benefit analysis during its deliberations on the MPL. The analysis was included in the Panel's submission to the Air Navigation Commission in support of the proposal to establish the MPL. A copy of the analysis is attached as Annex B.

3.11.2 The report identifies a range of controls which are relevant in terms of mitigating the possible risks associated with the reduction in aircraft training time.

- **Sophisticated FSTDs** are currently in widespread use in all phases of training, including Zero Flight Time (ZFT) programs. The advantages, capabilities and limitations of FSTDs are well understood. NAAs routinely issue aircraft endorsements, ATPLs and instrument ratings following training conducted in FSTDs.
- **Assured Transfer of Learning.** It is reasonable to expect that the transfer of learning from an FSTD to real flying environment will be similar to that which has been demonstrated in other types of flight crew training. This belief is not only based on the collective experience of the panel members but is also supported by several research studies on the learning transfer between synthetic devices and aeroplanes.

### 3.12 Proof of Concept

3.12.1 For many, the MPL is a new concept and needs to be proven, which is why ICAO has chosen to conduct a proof of concept program. This is not to say the MPL concept is new to everyone. Examples of traditional pilot training programs, using the main elements of the MPL, include the Lufthansa Pilot Training Program. The proof of concept program will facilitate the gathering of information from States about their experience implementing the MPL and forwarding it to ICAO. The proof of concept initiative is designed to evaluate the MPL in its early years with data being gathered during course implementation and following graduation during the pilot's initial operating experience.

3.12.2 The plan is to check the performance of MPL pilots in their normal operating environment to see if those pilots are performing to the expected standards or are displaying performance deficiencies. Analysis of the data will provide feedback to NAAs and training providers on the suitability of the MPL concept, identify what areas need to be addressed, and what changes need to be made to the MPL requirements. Australia expects to participate fully in this ICAO initiative.

### 3.13 Airline growth forecasts – future demand for new pilots

3.13.1 Soon after the FCLTP/2 completed its work, it was already apparent that there was a growing demand for suitably qualified pilots worldwide. According to ICAO:

*“World scheduled aircraft movements, in terms of aircraft departures and aircraft kilometres flown, will double (or grow even more) over the 2005 – 2025 period, and are expected to increase at average annual rates of 3.6 to 4.1 percent respectively.*

*“From a regional perspective, the airlines of the Middle East and the Asia/Pacific regions are expected to experience the highest growth in passenger traffic, at 5.8 percent per annum through to 2025..”*  
*(ICAO Journal Number 2, 2007).*

3.13.2 This growth will need to be matched by a commensurate increase in the number of suitably qualified pilots. According to the Civil Aviation Administration of China, the demand for air transportation pilots will increase from approximately 10,000 in 2005 to 18,000 in 2010.

3.13.3 Information obtained from IATA shows that a significant number of new co-pilots are hired following basic pilot training. In the European system, approximately 95% of Lufthansa's new co-pilots are ab-initio cadet pilots, for British Airways the figure is 60%; 50% for Alitalia; 70% for KLM; and 65% for Air France. For Asian airlines, the figure is approximately 65% while in the Middle East and Northern Africa the figures are lower, probably due to the greater number of expatriate experienced pilots. It should be noted that this is not consistent with the Australian situation.

3.13.4 Regardless of the training pathway used to train these new pilots, the consequences of the rising demand for pilots will be felt in the training sector in particular. More instructors and training devices will be required.

3.13.5 One of the advantages of the MPL is that cadets can be trained using FSTD instructors who are not medically qualified to fly aircraft (this training is restricted to training conducted in the FSTD). Also, the demand for training aircraft is not as great if FSTDs can be used for training. Without these options, the impact of the growth in airlines will be more difficult to satisfy without the MPL.

## 4. Consultation

4.1 To commence industry consultation, CASA invited a panel of industry representatives to a meeting in Canberra on 16 and 17 November 2006.

4.2 The panel included the following members of the aviation community:

Phil Betts, representing General Flying Services  
David Booth, representing Australian Federation of Airline Pilots  
Graeme Cleary, representing Australian and International Pilots' Association  
John Douglas, representing Royal Aero Club of Western Australia  
Peter Fleming, representing New Zealand Airline Pilots' Association  
Bill Hamilton  
Neil Hess, representing Ansett Flight Simulator Centre  
Stu Julian, representing International Federation of Airline Pilots' Associations  
Rob Loretan, representing Multi-crew Training  
Keith Morgan, representing Flight Training Adelaide  
Bryan Murray, representing Australian Federation of Airline Pilots  
Craig Oliver, representing New Zealand Airline Pilots' Association  
Tom Pryde, representing Alteon Training  
Tim Reynolds, representing Regional Airlines Association of Australia  
Keith Wallace, representing Orion Simulation & Training Services  
Angela Williams, representing Australian and International Pilots' Association  
Mark Wolny, representing Qantas

4.3 Prior to the meeting, CASA published a draft Civil Aviation Advisory Publication (CAAP) based on PANS-TRG and draft changes to CAR Part 5 in September 2006 based on Annex 1 Standards. The documents were made available to the industry panel to facilitate discussions on the MPL concept and the proposed regulatory change.

4.4 The panel endorsed the proposal to implement the MPL in Australia. The outcomes of the meeting were presented to a meeting of the Flight Crew Licensing Subcommittee of the SCC on 20 November 2006 and to the SCC at its 21 November 2007 meeting.

4.5 The SCC endorsed the following FCL Subcommittee recommendation:

*The FCL Subcommittee recommends to the SCC that the legislative change proposal for implementation of the MPL proceed subject to the full 15 step SCC process other than the need for a discussion paper and the associated DP process steps.*

4.6 Following the SCC meeting, a project team was formed to carry forward the consultation on the MPL proposal. The project team was given terms of reference covering not only the regulatory development work but ongoing consideration of the implementation of the MPL in Australia.

4.7 The team comprises subject matter experts, drawn from the aviation community and CASA, covering the areas of ab-initio pilot training, airline multi-crew operations, use of simulators and competency-based training. The team included the following members of the aviation community:

Phil Betts – ab-initio pilot training

Graeme Cleary – airline multi-crew operations

Stuart Julian – airline pilot (observer)

Robert Loretan – ab-initio pilot training, simulation, competency-based training

Keith Morgan – ab-initio airline cadet training, training organisation

Bryan Murray – airline pilot

Keith Wallace – simulation, airline pilot

Mark Wolny – airline pilot, airline training, competency-based training, airline organisation

4.8 The Project Team met on the following dates:

- 19 February 2007;
- 2 May 2007;
- 29 August 2007;
- 27 September 2007;
- 21 November 2007; and
- 14 July 2008.

4.9 The team will also be considering feedback on MPL training courses and information gathered from other countries introducing the MPL.

4.10 A proof of concept beta test trial started in Brisbane in March 2007 with six students from China studying for the MPL. CASA is closely monitoring the course and will be using the information gathered during the trial to contribute to a global information sharing arrangement sponsored by ICAO. The intention is for training providers, airlines and civil aviation regulators to share information on the experiences gained in implementing the MPL as part of a continuous improvement strategy.

4.11 CASA is committed to the concepts underpinning the MPL and the need to find ways to evolve pilot training through the use of modern simulation technologies, better training practices and the further adoption of human factors (CRM) and threat and error management.

4.12 CASA is working closely with industry on the implementation of the MPL in Australia and is maintaining a close liaison with aviation regulators in the Asia-Pacific Region where the interest in the MPL is strong.

## 5. Reasons for change

5.1 ICAO has established the MPL in Annex 1 of the International Convention on Civil Aviation. The reason for the proposed change to Australia's CAR Part 5 is to provide a simple set of rules that establish the MPL in Australian legislation.

5.2 Once the MPL is established in legislation, training organisations will be able to conduct training for the MPL and airlines will be able to employ MPL pilots<sup>4</sup>.

### Objectives

5.3 The objectives of this regulatory change proposal are to:

- implement the MPL in Australia in line with the ICAO Standards and Recommended Practices that were introduced by Amendment 167 of Annex 1 to the International Convention on Civil Aviation;
- provide an alternative pathway for prospective pilots to become co-pilots of multi-crew airliners;
- provide a licensing system which provides regulatory support for training providers conducting training for airlines that want to employ pilots through the MPL pathway<sup>5</sup>;
- monitor and review the implementation of MPL training courses on a six monthly basis for the first two years of the regulatory change; and
- conduct a post-implementation review within two years of the regulatory change being made.

## 6. Multi-crew Pilot Licence

### 6.1 Overview

6.1.1 The proposal in this NPRM is to provide safety regulations for CASA to issue MPLs and to regulate the use of MPLs.

### 6.2 The proposed policy

6.2.1 The proposed policy description outlined below is intended to give the reader an understanding of the main policy outcomes which this proposal aims to achieve.

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<sup>4</sup> An MPL beta trial training program is being conducted with CASA's approval in Brisbane.

<sup>5</sup> Section 9(3)(e) of the Civil Aviation Act 1988 states CASA also has the safety-related function of promoting the development of Australia's civil aviation safety capabilities, skills and services, for the benefit of the Australian community and for export.

## 6.3 Scope

6.3.1 The proposed safety regulations will cover the requirements for issuing and using the MPL. Requirements extend to eligibility criteria such as age, examinations, experience, competency standards, MPL instructor requirements, MPL training requirements, and the recognition of the MPL for the purposes of issuing other licences. The regulations will also cover what an MPL holder is required to comply with when using the MPL such as a current medical certificate (Class 1) and satisfying recent experience and recurrent training criteria.

## 6.4 Application

6.4.1 The MPL will be administered by CASA.

## 6.5 Eligibility

### Age

6.5.1 An MPL will only be granted to a person who is at least 18 years of age. This is consistent with the age for obtaining a CPL and the ICAO SARP.

### Training

6.5.2 Training for an MPL must be conducted by CASA-approved training organisations. The general concept for a training program for the MPL includes 4 stages:

- Stage 1      **Core Flying Skills**  
Specific basic single-pilot training. Training items to include: CRM, TEM, VFR cross-country, solo flight, basic instrument flight, principles of flight, cockpit procedures
- Stage 2      **Basic**  
Introduction of multi-crew operations and instrument flight. Training items to include: CRM, TEM, PF/PNF complement, IFR cross-country, upset recovery, night flight, instrument flight
- Stage 3      **Intermediate**  
Application of multi-crew operations in a high performance multi-engine turbine aeroplane. Training items to include CRM, TEM, LOFT, abnormal procedures, normal procedures, multi-crew, instrument flight.
- Stage 4      **Advanced**  
Type rating within an airline orientated environment. Training items to include: CRM, TEM, landing training, all weather scenarios, LOFT, abnormal procedures, normal procedures.

6.5.3 The training must be integrated throughout and incorporate human factors (CRM) and threat and error management in all phases of training. Progressive evaluation of the cadets must be undertaken throughout the course. Where appropriate, a multi-point grading scale should be applied to all evaluations.

6.5.4 Crew coordination competencies are to be introduced early in the training course. Also, for the Intermediate (third) phase of training, the FSTD must permit the progressive introduction of a sophisticated flight environment including ATC, flight guidance systems, EFIS, FMS and TCAS.

6.5.5 FSTDs are used extensively for MPL training. ICAO has prescribed minimum levels of device capability in Appendix 3 of Annex 1. The proposal is to adopt the ICAO standards for training devices. The details for FSTDs used in an MPL program are described in the MPL-CAAP.

## **6.6 Aeronautical Knowledge**

6.6.1 MPL pilots will be flying heavy air transport aeroplanes in scheduled operations as co-pilots, with pilots (captains) who are required to hold an ATP(A)L. The aeronautical knowledge standard for an ATP(A)L covers aerodynamics, performance, aircraft systems, navigation and flight planning, aviation law and human factors relevant to operating these types of aircraft in these kinds of operations.

6.6.2 Due to the nature of the operating environment, the MPL pilot must have the same level of aeronautical knowledge as the captain of the aircraft. It is for this reason that an applicant for an MPL must meet the aeronautical knowledge standards that apply to the ATP(A)L. Cadets will be required to pass the full suite of ATPL examinations to qualify for the MPL.

6.6.3 Currently, MPL pilots need to sit theory examinations for the CP(A)L, Instrument Rating Examination (IREX), as well as the ATP(A)L. In the future, CASA would consider developing a dedicated MPL theory examination, which would cover the entire theory knowledge syllabus and would incorporate the content currently covered by the ATP(A)L examinations. This would negate the need for the MPL holder to do the separate CP(A)L, IREX and ATP(A)L theory.

6.6.4 This requirement is consistent with the ICAO standard.

## **6.7 Flight Training Experience**

6.7.1 Flight training must be conducted using competency-based training methods, in line with ICAO requirements. Concepts such as crew coordination and management, and the more recent adoption of threat and error management into standard pilot practice must be integrated into MPL training. This training is designed to equip pilots with knowledge and skills to be effective crew members.

6.7.2 The proposal is that an applicant for an MPL should meet the minimum flight experience standards published by ICAO. They are:

- 240 hours of flight experience including:
  - 40 hours of flight time as pilot in aeroplanes;

- 10 hours of solo flight time in aeroplanes (including at least 5 hours of cross-country flight time)  
The remaining hours may be completed in appropriate synthetic training devices.
- Up to 5 hours of the 40 hours of flight time in aeroplanes can be flown in synthetic training devices approved for that purpose.
- The 5 hours of cross-country flight time must include at least one flight of at least 150nm in the course of which a full stop landing is made at each of 2 aerodromes other than the one from which the flight originally departed.

6.7.3 ICAO has specified competency standards and minimum standards for synthetic flight training devices. These are found in the PANS-TRG document published by ICAO.

6.7.4 The SARPs also require the applicant for an MPL to have actual flight experience in upset recovery training, night flying and instrument flying. Additionally, the pilot will need to have demonstrated competency at the advanced level (refer to Annex 1 Appendix 3) in a turbine-powered aeroplane certificated for operation with a minimum crew of at least two pilots.

6.7.5 This requirement is consistent with the ICAO standard.

6.7.6 Further elaboration of the requirements for an MPL training course, such as breakdowns in the requirements for each phase of training for the MPL will be promulgated in the MPL CAAP as an acceptable means of compliance.

## 6.8 Flight Test

6.8.1 To become a co-pilot through the traditional pathway, a pilot must complete two CASA flight tests - one for the CPL and one for the Instrument Rating. These flight tests are conducted by Approved Testing Officers (ATOs), who are delegates of CASA. Also, the pilot must complete the type rating training and demonstrate competency operating the type of aircraft they will be assigned to fly. The pilot must complete aircraft type training and a competency check prior to flying any additional type of aircraft.

6.8.2 The intention is to apply the same policy to the MPL.

6.8.3 Applicants for an MPL will be required to pass an MPL flight test. CASA will either monitor or conduct the flight test during the initial period of MPL implementation. Details of the flight test would be set out in the MPL CAAP. The proposed test would comprise an instrument rating, plus aircraft type rating test and conducted in a full-flight simulator for the aircraft type the pilot will initially operate. The candidate would be expected to demonstrate competency to at least the standard required for the grant of a command multi-engine aeroplane instrument rating and co-pilot aeroplane type endorsement. Following the flight test, the MPL candidate would be required to demonstrate competency during a training and checking session including at least 12 take-offs and landings in an aircraft of the same type that was used in the flight test.

Provision should be made in the regulations and CAAP to reduce the minimum number of 12 take-offs and landings to 6 where evidence of experience gained with MPL implementation can demonstrate the effectiveness of a particular training program.

6.8.4 These requirements are consistent with the ICAO standard.

6.8.5 The assessment method to be used for the flight test should, as far as practicable, be a graded scale.

## 6.9 Privileges

6.9.1 The holder of an MPL will be entitled to act as co-pilot of a multi-crew certificated aeroplane for which he or she holds a type rating. All other requirements that apply to flight crew apply to MPL holders such as having an appropriate medical certificate, instrument rating and meeting recent experience and recurrent training requirements.

6.9.2 A newly qualified MPL pilot is expected to consolidate his or her qualifications on the initial type of aircraft<sup>6</sup> before progressing onto a new type. Initial consolidation would be restricted to the airline that was associated with the MPL training course. Thereafter, the MPL pilot would be treated the same way as a conventionally trained pilot. These restrictions would be reviewed at the post implementation review point in light of experience gathered during the worldwide proof of concept process. Pilots seeking an Australian MPL based on an MPL that was obtained overseas would also need to satisfy this requirement.

6.9.3 Extenuating circumstances may arise where a pilot is unable to complete their Initial Consolidation. To avoid unnecessary hardship, CASA will need to be able to approve a training and checking program that would enable the pilot to transfer to another operator or type. In any case, the pilot would be required to undertake detailed conversion training and/or induction training to ensure they are fully competent operating in that new situation. They would also need to complete Initial Consolidation training.

6.9.4 The newly qualified MPL pilot is required to complete Initial Consolidation after completing the airline's Initial Operating Experience (IOE) training, and passing their first line check in the initial type of aircraft. Initial Consolidation should include a minimum of 250 hours of line operations or 150 sectors on the first aircraft type. The options (250 hours or 150 sectors) are aimed at recognising the differences between longer and shorter haul operations.

6.9.5 A pilot who is required to operate a different type of aircraft prior to passing this Initial Consolidation milestone should complete the full course of training for the new aircraft type be checked to line and then the 250 hours or 150 sectors. MPL pilots must satisfy this standard at least once as a first officer. Thereafter, the MPL pilot would complete an airline's normal conversion program. This requirement should be incorporated into an airline's induction training program rather than flight crew licensing rules. The proposal is to write these requirements into Civil Aviation Order 82.

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<sup>6</sup> The initial type of aircraft is the type that was used in the last phase of training and the flight test.

6.9.6 If the pilot meets the eligibility criteria for holding a PP(A)L, the pilot would also be entitled to exercise the privileges of the PP(A)L in aeroplanes following a PP(A)L flight test pass. Prior to exercising the privileges of the PP(A)L, the pilot would be required to have completed a PP(A)L flight review within the previous two years.

6.9.7 A pilot who holds an MPL and then obtains an ATP(A)L would not be authorised to exercise the privileges of the CP(A)L in single-pilot operations unless the pilot meets the aeronautical experience requirements set out in the regulations as they apply to the CP(A)L (see CAR 5.111) and passes a CP(A)L flight test.

6.9.8 The holder of an MPL would also be entitled to fly an aircraft as *pilot acting in command under supervision* as does the holder of a CPL.

## 6.10 Licence Validity

6.10.1 The MPL would be valid perpetually.

## 6.11 Recent experience

6.11.1 It is common practice to set standards to ensure pilots are competent whenever they fly. There are various methods of satisfying this including:

- Recurrent training programs coupled with recent experience requirements; and
- Proficiency checks and recent experience requirements.

6.11.2 There are no special requirements published by ICAO for the MPL.

6.11.3 The same recent experience requirements will apply as to those pilots holding a CPL or ATPL operating in the same environment.

## 6.12 Qualifying for other licences

6.12.1 ICAO makes provision for the MPL to be recognised for the issue of a CPL and ATPL.

*Note: According to Annex 1 and the present licensing regulations, a pilot who holds an MPL and meets the aeronautical experience for the issue of a PPL and completes a PPL flight review within the preceding 24 months, is entitled to exercise the privileges of the PPL. The proposal is to add the PPL flight test to the requirements for exercising PPL privileges.*

6.12.2 A CPL pilot is qualified to operate in single-pilot operations. Some of the operating competencies for this type of operation, specifically operating as a single-pilot, are different to those of the MPL. To offset this, ICAO requires the MPL pilot to have met, with some exceptions (refer to Annex 1) the requirements for the issue of a CP(A)L including a pass in a CP(A)L flight test. This requirement is consistent with the ICAO standard.

6.12.3 To obtain an ATP(A)L, the holder of an MPL needs to meet the requirements for the issue of the ATP(A)L. If the pilot only holds an MPL, the ATP(A)L licence will be restricted to multi-crew operations. This requirement is consistent with the ICAO standard.

### **6.13 Proof of Concept – post qualification oversight**

6.13.1 The implementation of the MPL is in the proof of concept phase. ICAO has asked States to participate in its proof of concept global data gathering program so that the new licensing system is monitored closely, particularly in the early implementation period. This proactive strategy is unusual in terms of implementing new licences as it has not been carried out before. However, it will provide important and useful feedback to ICAO and States so that continuous improvements can be made to the MPL and alert States to issues found by those carrying out MPL training and airlines using MPL pilots.

6.13.2 A considered approach to the implementation of the MPL is required. One of the fundamental principles of the MPL is that an MPL-qualified pilot and a CPL-qualified pilot are at least equally capable of performing the role of co-pilot of a multi-crew airliner. This being the case, the MPL pilot should be subject to the same set of operational controls as the CPL pilot. For example, a CPL pilot can join an airline operating a particular type of aircraft and then move to another airline to fly the same type of aircraft and only be subject to the rules that apply to the second airline's operation. Also, there are no mandatory regulatory requirements to be indentured to an airline during training and there are no additional post qualification training or experience requirements that apply to a newly qualified CPL pilot.

6.13.3 The above principle of equivalency still needs to be proved. Newly qualified MPL pilots need to be closely monitored following graduation. Information about the pilot's line training, Initial Operational Experience (IOE), check to line, line operations and recurrent training needs to be gathered and reviewed. This monitoring is part of the proof of concept program and airlines will be required to provide data to CASA. The data components required for the program have been promulgated by ICAO and will be used by CASA for its participation in the global proof of concept program.

6.13.4 To give effect to the data collection requirements for the global proof of concept program, CASA proposes to amend Civil Aviation Order 82 - Air Operators' Certificates. The amendment would incorporate conditions on operators that engage MPL pilots and require the operator to monitor and report on the performance of these MPL pilots. These requirements would comply with those promulgated by ICAO.

6.13.5 Another fundamental principle of the MPL is the application of airline standard operating concepts and procedures throughout the training course, especially in the Intermediate (third) and Advanced (fourth) phases of the training. The stage at which the end-user airline becomes actively involved in the training course will determine the efficiency of the training course. Another factor to be considered is the extent to which the airline uses generic aircraft manufacturer operating procedures, and therefore the need to apply its own procedures during training.

6.13.6 To ensure this principle is embraced, for the purposes of the proof of concept program, the proposal is to include in the MPL CAAP a requirement for MPL course approval that the end-user airline be engaged in a relationship with the training providers delivering the course. The airline will be required to be a partner in the training program, particularly in phases three and four. Requirements for approving MPL courses will be included in the MPL CAAP. The regulations would require CASA to approve a training course before it is used.

6.13.7 Consideration has been given to including an indenture provision in the regulations which would commit the end-user airline to hire the cadet following graduation and to guarantee a quantum of consolidation experience. This is feasible only if a safety case can be made to justify it. Imposing contractual requirements such as this in the Civil Aviation Regulations would otherwise be impossible as no provision is made for such regulations in the Civil Aviation Act 1988. An adequate safety case has so far not been identified. However, the proposal is to add a condition on the initial use of an MPL which limits the newly qualified MPL pilot to operating the same type of aircraft that was used in the MPL training in the airline which was involved in the training course. The European requirements for the MPL incorporate a similar concept whereby the newly qualified pilot is limited to operations with the airline that was associated with the training course. An MPL pilot who gained their licence overseas and had not acquired consolidation experience with an appropriate operator would be restricted in the same way as a pilot gaining their MPL in Australia.

This proposal, along with the management of the newly qualified MPL pilot under the CAO, supports the need for consolidation and the obligation to provide information on the pilot about post-qualification performance.

## **6.14 Administration and enforcement provisions**

6.14.1 This proposal does not introduce any new administration or enforcement provisions to those already in place for flight crew other than those needed to implement the MPL.

# **7. Benefits and impacts**

## **7.1 Overview**

7.1.1 The new MPL is an additional flight crew licence to the existing suite of licences issued by CASA. It provides an alternative pathway to becoming a co-pilot of a multi-crew airliner. The proposal does not impose any new mandatory requirements on industry. It provides an opportunity for airlines in Australia to use the MPL as an alternative means of training pilots for the co-pilot role in the airline. It also provides training organisations with the opportunity to deliver MPL training to Australian and foreign airlines seeking training of cadet pilots in Australia.

7.1.2 The MPL does not replace the existing licensing pathway to become a co-pilot of an airliner.

7.13 The introduction of the MPL is driven by safety and not efficiency gains. Notwithstanding that, there are potential efficiency benefits to be gained by following the MPL pathway simply by using training devices to a much greater extent and relying less on light aircraft. Weather in particular, and maintenance to a lesser extent can lead to significant interruptions to the training schedule.

## 7.2 Benefits

7.2.1 The MPL is being introduced to improve co-pilot training.

7.2.2 The demand for ab-initio to airline training in the Asia-Pacific Region, including Australia, is growing rapidly according to the major aircraft manufacturers, the airlines, IATA and ICAO.

7.2.3 Australia is a favoured location for the training of airline cadet pilots. This is evidenced by the large number of airline cadet pilots from airlines in Asia, the Middle East and Africa being sent to Australia for ab-initio to airline training. Many independent cadet pilots from countries in the Asia-Pacific Region also come to Australia for pilot training.

7.2.4 The MPL is now established and available in other countries. If Australia does not have an MPL, some of the potential training opportunities will be lost.

7.2.5 **Productivity.** The proposed changes to CAR Part 5 provide an alternative pathway to becoming an airline co-pilot. The change imposes no new mandatory requirements. The changes would also facilitate Australian flying schools offering their services to domestic and offshore airlines.

7.2.6 Current forecasts indicate the cost to train an MPL pilot will be no less and possibly more than it takes to train a pilot using the traditional pathway. Also, current indications are that the training time to graduate an MPL pilot is unlikely to be shorter than training under the traditional pathway. With experience in MPL training it is conceivable that one or both of these elements could provide an advantage. Conversely, it is possible the need for additional training not presently contemplated will add costs and training time to achieve MPL graduation. Given the nature of MPL training and the greater use of resources that are less affected by environmental factors, better training resource utilisation could be achieved.

7.2.7 For airlines, there is potential for a reduction in training costs, particularly in initial line training, as the MPL pilot will already be fully compliant with the airline's operating policies and procedures. The reduction is only likely to become realised once airlines become familiar and fully confident with the MPL.

7.2.8 **Safety.** It is expected that the proposed change to the regulations will provide at least a neutral safety outcome and potentially a net safety benefit. This is based on the requirement for the MPL to use internationally-established competency standards; that is, the MPL graduate is required to be competent to at least the same standard as the pilot who trains and qualifies under the traditional pathway. Having regard to the attention given to multi-crew competencies from the outset of training, the performance of the MPL pilot in the airline environment should exceed the traditionally trained pilot. This outcome is yet to be proved and continues to be the subject of much debate.

7.2.9 **Environment.** The proposed change, if widely adopted, would lead to a net benefit to the environment through the reduction in aircraft use and the consequential reduction in fuel burn and emissions, reduced traffic related noise and a reduction in aircraft traffic flows.

### 7.3 Impacts

7.3.1 The proposed changes to CAR Part 5 are expected to have a minimal impact on stakeholders in the short term, particularly in light of the current demand for pilots and the growth in the training of foreign pilots. However, for the longer term, the impact will depend on such factors as the cost differential between FSTDs versus aircraft-based training, the position taken by local airlines on the MPL, and the potential for efficiency gains using the MPL model.

7.3.2 There is potential for some training providers to be adversely affected by the MPL proposal. However, the impact is likely to come about because other States implement the MPL regardless of Australia's position. In the event the MPL becomes popular with airlines, more pilots are likely to be trained under that scheme and less under the traditional model. Those schools delivering traditional training to overseas airlines might suffer a reduction in activity if those clients choose an MPL training venue outside of Australia.

7.3.3 Also, there are likely to be ramifications on local training schools if Australian airlines choose to embrace the MPL. Schools that currently train pilots for the local airlines which do not implement the MPL will lose this customer base. The schools will be faced with the decision of making the significant investment in the training resources needed for the MPL should this eventuate.

7.3.4 Regardless of the MPL, the rapidly growing demand for pilots worldwide is going to impact heavily on training organisations as there is going to be a significant shortage of suitably qualified instructors to conduct the training of these new pilots.

7.3.5 It is possible that the cost of the type rating training will be transferred from the airline to the MPL student. Some airlines do bear the cost of type training for their new pilots.

## 7.4 Persons and organisations affected

7.4.1 The persons and organisations affected by the proposed changes to CAR Part 5 to implement the MPL will be:

- Flying Training Organisations
- Airlines
- Pilots
- Passengers

## 8. Implementation and review

### 8.1 Implementation

8.1.1 There are two aspects to implementing the MPL in Australia: licensing and training operations.

8.1.2 **Licensing.** The first relates to the flight crew licensing system and involves putting in place administrative systems to handle MPL applications and issuing MPL licence documents.

8.1.3 **Training operations.** There are regulatory compliance requirements for training organisations undertaking MPL training. The proposed regulations require each training course to be approved by CASA. The organisation is required to develop its training plan including theory and practical components in line with the MPL CAAP. CASA would consider alternative means of compliance with the guidelines contained in the CAAP. An alternative means of compliance would need to satisfy the requirements specified in Annex 1 and PANS-TRG and the details set out in the CAAP.

8.1.4 Also, flight training operations are subject to regular monitoring by CASA.

### 8.2 Review

8.2.1 An MPL Project Team has been set up to assist CASA with the implementation of the MPL. This team will be involved in monitoring feedback received from training courses conducted in Australia and as far as possible from courses conducted overseas.

8.2.2 **Proof of Concept obligations.** ICAO has called on NAAs that are implementing the MPL to contribute to the global proof of concept data gathering program.



8.2.3 A **Post-Implementation Review** is not planned for the CAR Part 5 regulations as they are expected to be superseded by new regulations in CASR Part 61, which is currently under development. The CASR Part 61 proposal will incorporate the MPL licensing concept. However, there would be a post-implementation review of the implementation of the MPL after two years of the regulations being in place.

### 8.3 Transition

8.3.1 There are no transition provisions for this proposal. The MPL is a new licence.

# NPRM Response Form

## MULTI-CREW PILOT LICENCE – PROPOSED AMENDMENTS TO CAR Part 5

**Please complete your response by 5 September 2008 and return it by one of the following means:**

**Online (Preferred method)** [casa.gov.au/newrules/ors](http://casa.gov.au/newrules/ors)

**Fax** 1800 653 897 (free call)

**Post (no stamp required)**

CASA Regulatory Development Management Branch

Reply Paid 2005

Canberra ACT 2601, Australia

**E-mail** [nprm0708fs@casa.gov.au](mailto:nprm0708fs@casa.gov.au)

\* A web-based online response form is offered as an alternative to this printed response form. Online submission is the preferred method of sending your comments to CASA. If you are connected to the Internet, type [casa.gov.au/newrules/ors](http://casa.gov.au/newrules/ors) into your web browser and follow the links for this NPRM. Otherwise, please use this printed form.

### Your Details

Please provide relevant information below and indicate your acceptance or otherwise of the proposal presented in this Notice of Proposed Rule Making by ticking [✓] the appropriate boxes.

Your name: \_\_\_\_\_ ARN\* (if known): \_\_\_\_\_

Organisation: \_\_\_\_\_ ARN\* (if known): \_\_\_\_\_

Address: \_\_\_\_\_

\*Aviation Reference Number, usually your CASA-issued licence or certificate number

Your telephone number (optional): \_\_\_\_\_ (to enable the Project Leader to contact you as necessary)

Do you consent to have your name published as a respondent to this NPRM? YES [ ] NO [ ]

Signed: ..... Date: .....

### How are you responding to this questionnaire/proposal, i.e. whose views are represented in your response?

Private individual    
  Aviation industry body/association    
  Staff association/ union    
  Government agency/authority/ department/council    
  Aviation business owner/ service provider    
  Other

### Please advise your main involvement in aviation:

Passenger/public consumer of aviation services    
  Air crew for passenger-carrying activities    
  Air crew for non-passenger-carrying activities    
  Ground support for passenger-carrying activities    
  Ground support for non-passenger-carrying activities    
  Other (specify below\*, e.g. parachutist)

\* **Details:** \_\_\_\_\_

### Are you satisfied with CASA's consultation on this issue?

Very satisfied    
  Satisfied    
  No opinion    
  Dissatisfied    
  Very dissatisfied

### Key Change Proposals (refer to NPRM Section 3)

CASA invites you to advise your comments on the subject matter proposed in this NPRM by indicating your preference by ticking [] the appropriate box and commenting below:

***MPL should be added to available options for light crew licences***

- proposal is acceptable without change
- changes would improve it, but it is acceptable (please provide details below)
- changes would make it acceptable (please provide details below)
- not acceptable under any circumstances

Comments (including an estimate of additional costs/impacts if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

***The minimum age for the MPL should be 18***

- proposal is acceptable without change
- changes would improve it, but it is acceptable (please provide details below)
- changes would make it acceptable (please provide details below)
- not acceptable under any circumstances

Comments (including an estimate of additional costs/impacts if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

***MPL training must be approved by CASA and may only be conducted by approved training organisations***

- proposal is acceptable without change
- changes would improve it, but it is acceptable (please provide details below)
- changes would make it acceptable (please provide details below)
- not acceptable under any circumstances

Comments (including an estimate of additional costs/impacts if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

***The minimum aeronautical knowledge requirements for an MPL be the same as the requirements for obtaining an ATP(A)L and the Instrument Rating***

- proposal is acceptable without change
- changes would improve it, but it is acceptable (please provide details below)
- changes would make it acceptable (please provide details below)
- not acceptable under any circumstances

Comments (including an estimate of additional costs/impacts if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

***The minimum flying experience for the MPL should be the hours specified by ICAO in Annex 1 as long as the training course, course assessments and flight tests are based on the competency standards specified by ICAO***

- proposal is acceptable without change
- changes would improve it, but it is acceptable (please provide details below)
- changes would make it acceptable (please provide details below)
- not acceptable under any circumstances

Comments (including an estimate of additional costs/impacts if applicable): \_\_\_\_\_

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***The validity period for the MPL should be perpetual unless the licence is suspended or cancelled***

- proposal is acceptable without change
- changes would improve it, but it is acceptable (please provide details below)
- changes would make it acceptable (please provide details below)
- not acceptable under any circumstances

Comments (including an estimate of additional costs/impacts if applicable): \_\_\_\_\_

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***The recent experience requirements for the MPL should be the same as the requirements for the ATPL***

- proposal is acceptable without change
- changes would improve it, but it is acceptable (please provide details below)
- changes would make it acceptable (please provide details below)
- not acceptable under any circumstances

Comments (including an estimate of additional costs/impacts if applicable): \_\_\_\_\_

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***Before exercising the privileges of a PP(A)L, an MPL holder should have completed a PP(A)L flight test and met the flight review requirements of the PP(A)L***

- proposal is acceptable without change
- changes would improve it, but it is acceptable (please provide details below)
- changes would make it acceptable (please provide details below)
- not acceptable under any circumstances

Comments (including an estimate of additional costs/impacts if applicable): \_\_\_\_\_

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Please forward your response to CASA by  
*5 September 2008*  
by one of the following means:

**Online (preferred method)**

[casa.gov.au/newrules/ors](http://casa.gov.au/newrules/ors)

**Fax**

To: Regulatory Documentation Coordinator  
1800 653 897 (free call) or international +612 6217 1691

**Post (no stamp required in Australia)**

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Regulatory Documentation Coordinator  
CASA Regulatory Development Management Branch  
Canberra ACT 2601, Australia

**E-mail (use the response format in this NPRM)**

[nprm0708fs@casa.gov.au](mailto:nprm0708fs@casa.gov.au)

Additional information is available from:

**Roger Crosthwaite, Project Leader**

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Civil Aviation Safety Authority  
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