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**Agenda Item 3: Member State / Industry Presentations**

**IMPLEMENTATION OF MULTI-CREW PILOT LICENCE (MPL)  
TRAINING IN HONG KONG**

(Presented by Hong Kong, China)

**SUMMARY**

The Multi-crew Pilot Licence (MPL) is a relatively new flight crew licence developed by the Flight Crew Licensing and Training Panel of ICAO specifically for co-pilot operating in multi-crew aircraft commercial environment. The provisions for the MPL have been incorporated in ICAO Annex 1 (Personnel Licensing).

This paper highlights the background and current status of the implementation of MPL training in Hong Kong, China. Being the regulator, the Hong Kong Civil Aviation Department (CAD) has been actively involving in the assessment and approval process since the beginning of the MPL trial course co-organized by Hong Kong Dragon Airlines Limited (HDA) and CAE Oxford Aviation Academy (CAE OAA). The paper also shares the experiences gained so far and the challenges encountered.

**1. INTRODUCTION**

1.1 ICAO introduced the MPL, in Amendment 167 to Annex 1. The provisions became applicable on 23 November 2006. The MPL is designed to develop and trained up pilots with competency to operate multi-crew aeroplanes in commercial airlines environment as compared to traditional training pathways. The MPL training regime emphasizes on competency-based-training methods and makes best use of flight simulators in addition to aircraft. Threat and error management (TEM) training is also embedded and applied in all phases of training.

1.2 Based on the relevant provisions of the ICAO Annex 1 and the ICAO Doc 9868 PANS – TRG, as well as making references to other prevailing MPL training syllabi in other aviation counterparts, the CAD has developed a MPL licensing requirements document – CAD 509 (MPL(A)). This CAD document formulates the basic requirements for our industry partners to consider and develop a MPL trial course. In addition, appropriate provisions have also been introduced in the Air Navigation (Hong Kong) Order as the legal basis for issuing MPL(A) in Hong Kong, China.

1.3 In early 2010, HDA together with CAE OAA approached and discussed with CAD of their intent of training up the former's cadets under the MPL regime. Subsequently, in June 2010, they submitted an application for the approval to conduct a MPL trial course which is subject to phase-by-phase one-off approval by CAD.

## 2. DISCUSSION

### 2.1 The Hong Kong MPL Requirements

#### 2.1.1 The structure of MPL Course shall consist of:

a) Theoretical Knowledge Training:

The purpose is to provide the pilot with the necessary knowledge in all aspects of aviation, including aviation laws, meteorology, navigation and flight planning, human performance and other technical subjects, such as aerodynamic and aircraft systems.

b) Flying Training:

The purpose is to provide competency training for the candidates through different phases.

Phase 1 – Core Phase: Single or multi engine aircraft is used for training the candidate with single piloting skills including, cross-country navigation, first solo and basic instrument flying.

Phase 2 – Basic Phase: The candidate is trained on aeroplane for upset recovery and instrument flight operations. Moreover, starting with this phase of training, multi-crew operations concept and procedures are introduced. The use of flight simulation training devices (FSTDs) also permits the introduction of interactive air traffic control environments.

Phase 3 – Intermediate Phase: The trainee will progress to a high performance simulator of a multi- engine turbine aircraft and trained for the application of multi-crew operations in a high-performance, multi-engined turbine aeroplane. Furthermore, Crew Resources Management (CRM), Line-Oriented Flight Training (LOFT), abnormal situational handling emergencies, hazard and risk management will also be introduced in the phase.

Phase 4 – Advanced Phase: Type rating training within an airline-oriented environment will be given. The trainee advances to a Level D simulator of the aircraft type that he/she will eventually conduct initial line operations with the sponsored airlines. Following a satisfactory completion of the simulator training, the trainee will perform 12 takeoffs and landings as pilot flying (PF) on the actual aircraft type to be flown on line.

2.1.2 Throughout the training, the candidates will be subject to competency assessments based on ICAO Doc 9868 PANS-TRG. Only after satisfactory completion of the necessary assessments, the trainee can then proceed to the next phase. Upon satisfactory completion of all the training, the candidate will be granted a Hong Kong MPL(A). The licence holder will be restricted to the sponsored airlines operator until he or she has successfully completed the Initial Operating Experience (IOE) phase. In addition, the FTO is required to implement a Safety Management System (SMS) in accordance with the guidelines stipulated in ICAO Annex 6, Attachment H.

2.1.3 The MPL is aimed to train up candidates for airlines operations, the airlines and the flying training organization (FTO) must be fully involved from day one until the training complete. In this connection, no self-sponsored student is allowed. In order that the quality of the training are properly monitored and controlled, the maximum number of FTO co-organizing the MPL course is restricted to two. In any case, the FTO that provides aircraft training in phase 4 shall be the lead FTO.

2.1.4 The MPL training programme should contain the use of modern training devices, competency-based training, human factors and TEM, and multi-crew operations. The candidates shall complete no less than 240 hours as PF and Pilot Monitoring (PM) of actual and simulated flight, and shall complete minimum 12 take-offs and landings as PF in multi-engined and multi-crew certified turbine aeroplane.

## 2.2 The CAD, HDA and CAE OAA MPL Trial Course

2.2.1 The three parties concerned, namely CAD (the regulator), HDA (the airlines operator) and CAE OAA (the FTO) all started the dialogue at the very early stage so that all parties concerned know exactly the objectives and the requirements. All parties agreed that for a successful implementation of the MPL, a proper trial course is necessary. While the training programme is important, all parties also agreed that the candidates selected should be with none or very minimum previous flying experiences. The size of the class should also be manageable and pragmatic. As it is a trial programme, CAD also decided to grant the approval phase-by-phase.

2.2.2 HDA is the lead FTO and CAE OAA as the partner FTO. HDA is responsible to ensure that the partner FTO meets all relevant requirements and reaches satisfactory operational standards. HDA shall submit information to CAD in regards to Data Collection and Reporting as required by ICAO at the end of each phase.

2.2.3 Based on their previous experiences in their conventional cadet pilot selection programmes, HDA selected a total of 12 cadets for the MPL trial course. That was presented to and accepted by CAD.

2.2.4 The MPL trial course structure is in compliance with para 2 above, with a total of 68 weeks and 244 hours in aircraft/simulator training. The Theoretical Knowledge Training Phase, approved by CAD on 28 September 2011, was completed in May 2012 at the training facilities of CAE OAA in Hong Kong with good results achieved by the cadets.

2.2.5 The 12 cadets are now undergoing the Core Phase Training, which was approved by CAD on 10 May 2012, at the training facilities of CAE OAA in Melbourne, Australia. The first solo of one of the cadets was achieved on 15 June 2012.

2.2.6 When the Core and Basic Phase are completed in Melbourne, the cadets will then return to Hong Kong to continue with the Intermediate Phase in CAE OAA Hong Kong, and subsequently to complete the Advanced Phase conducted by HDA in Hong Kong.

## 2.3 CAD MPL Training Oversight

2.3.1 CAD conducts thorough inspections on the FTO's management and instructors, documentation, SMS, training aircraft, ground simulators and funding in each phase of the MPL trial course to ensure the FTO's are capable of conducting the course. Only after the satisfactory assessment by CAD, the FTO will be granted with the Approval for the corresponding phase.

## 2.4 Challenges and Experiences

2.4.1 Hong Kong, China would like to share with the Conference the challenges encountered and experiences gained by CAD, as well as HDA and CAE OAA, so far for this joint programme.

- a) To start a programme as complex as the MPL trial course, very close co-operation and liaison are required amongst the regulator, the airlines and the FTO for sharing of ideas and discussion of requirements;

- b) The cadet selection must be robust to ensure all selected students have high probability of successfully completing the course;
- c) Highly experienced instructors, with airline or multi-crew background, are required and essential for the delivery of flying training;
- d) For standardization during the cadets' performance review process, it will be more logical and reasonable to integrate the training reporting format and system of the airlines and FTO;
- e) There could be different legal and regulatory requirements under the jurisdiction of the FTO as well as those under the airlines concerned, the FTO would need to develop Operations Manual and Training Manual to cover all the necessary requirements;
- f) Methods to ensure that the Standard Operating Procedures (SOP) of the airline do not overwhelm the SOP of the smaller partner FTO. Therefore, the multi-crew SOPs should be more of generic enough to cultivate the candidate with such concept and at the same time embrace the general operations policy of the sponsored airline;
- g) Thorough review at the end of the each phase is necessary in order to record the experiences gained while they are fresh; and
- h) In the end of the MPL trial course, all three parties should carry out an overall in-depth review based on the Data Collection Programme, which takes time and effort to maintain. With more information available, CAD will be able to review and refine its MPL requirements.

### 3. ACTION BY THE MEETING

3.1 To conclude, the MPL represents a logical step change in the training philosophy. It will train and develop pilots who are prepared for a modern flight decks with the necessary soft skills to function effectively in a multi-crew environment whilst continue to address the handling skills required. Nevertheless, proper and systematic planning in conjunction with the parties concerned, such as the airlines operator and the FTO, are essential.

3.2 The meeting is invited to note:

- a) Note the experiences of Hong Kong, China in the implementation of the MPL trial course jointly run by HDA and CAE OAA;
- b) Discuss the challenges in implementation of MPL training in other States/Administrations;
- c) Discuss the way forward for ICAO to share the experience from other States/Administrations through the MPL Data Collection Programme.