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# CREATING INDUSTRY READY PILOTS IN EUROPE

## Foreword

This paper, prepared by Captain Andy O'Shea FRAeS, has been produced as a result of an action item arising out of the May 2015 meeting of the EASA Pilot Training Advisory Group. The elements discussed below are not new but are presented as a concept that could address the perceived problem. At least three ATOs in Europe currently offer, or have offered, training products such as are detailed below. These are SKY4U in Berlin, EPST in the Netherlands and CTC in the UK.

For ease of production the pronoun "he" has been used. Throughout the paper this is meant to mean both female and male student and qualified pilots.

## Introduction

As it is widely held that action needs to be taken to improve the pilot training system, a number of bodies are working in that space. These include the Advisory Group, the IPTC, IATA's ITQI and EASA itself with the imminent RMT on Evidence and Competence Based Training.

EASA and the European professional pilot training industry, through the Training Advisory Group, are concerned that the product of current regulation and training practice leaves many young pilots legally qualified as professional pilots but deficient in the competencies required for them to advance to the standard required to be employed by an EU operator.

The "Gap" in standards was raised by Captain Andy O'Shea (HT Ryanair) in the 2014 EATS Conference during his keynote speech. He described the Ryanair initial pilot assessment process which is discussed in detail below. He revealed pass rates that consistently hover around the 50% rate and he posed the question, "Why are 50% of EU pilots not capable of passing a very straightforward assessment of their piloting skills?"

## Legacy Pilot Training

Current professional pilot training programmes are based on legacy training concepts. The arguments for changing from these to training concepts that reflect modern statistics, technology and requirements have been widely aired and will not be rehashed here. It is sufficient to say that change is required.

## MPL

The creation of the MPL training program was a brave step by ICAO, IATA, Operators and the training industry. It introduced new concepts such as Competency Based Training, Operator specific procedures at an early stage of a pilot's training and enhanced use of FSTDs to expose young pilots to Airline related scenarios. MPL seeks to create an industry ready pilot and if we could reverse the ratio of MPL to CPL students graduating from the training system, we would not have a problem. (Currently MPL courses contributes only 10% of new pilot training on Europe).

However, MPL is encumbered with some disadvantages that have led to this low uptake by Operators and ATOs. It is very complex, heavily regulated and cumbersome. Its structures and

processes require very significant long term management and resource investment by the Operator. It is a rigid path that, once set out upon, provides little flexibility for the student or the Operators.

## Current Post Graduate Pilot Training

Having been issued with a CPL ME/IR, today's newly qualified pilot is required to conduct one further element of training prior to being fully qualified to act as an MPA pilot in an Airline. That is the Multi Crew Course (MCC).

In addition, the great majority of graduates opt to enhance their skills and knowledge by volunteering to undergo a Jet Orientation Course (JOC) provided by an ATO or by other persons.

Finally, prior to an assessment, a pilot will invest in further FSTD training when he will prepare in detail for the simulator element of the upcoming interview process.

Of these elements the only item that has a regulated structure is the MCC. No minimum standard has been set for successful graduates. Despite MCC's regulated structure, Ryanair's experience of observing the product of currently available MCCs suggests that the standard of course and instructor varies greatly. There are many young pilots who have invested in an MCC that are no better off having completed it.

The JOC has no recommended structure, content or standard of instructor. This course has merit but, based on the statistics, it is hard not to conclude that the training provided to graduates is only partially effective.

Pre-simulator assessment training is inevitable and another cost centre for a young pilot. Given that it is geared towards a very short assessment window in the interview process, its effectiveness is dependent on the applicant's ability to perform during that short examination. Human frailties can detract from performance during a condensed assessment.

## Ryanair Assessment

Ryanair assesses over one thousand different CPL ME/IR MCC qualified pilots every year. This is a reasonable sample of the young pilot population in Europe.

The philosophy behind the assessment is to provide the applicant with every opportunity to perform to the best of his abilities. To that end, the following are key features of the assessment process:

1. A pre-assessment pack is sent to each candidate at least thirty days prior to the planned assessment day.
2. Joining instructions are clear and helpful, giving details of transport and accommodation that a candidate would find useful.
3. The pack contains detailed explanations of what the candidate is required to bring with him.
4. The pack contains very detailed explanations of how the assessment will be conducted.
5. It contains very specific guidance as to what the correct take-off, climb, cruise, descent and approach aircraft attitudes and thrust settings are.
6. It gives simple block speeds for a clean configuration and required flap settings.
7. It is entirely designed to give the applicant as much advance notice as to what will confront him on the day. Its purpose is to prepare the individual so that the best performance can be delivered on the day.

On arrival at the assessment centre candidates are met by one of the assessment team and given a mass briefing as to what the content and conduct of the assessment will be. Once again, speeds, attitudes, thrust settings, profiles are all explained, using power point, by one of the assessors.

The assessment is conducted at a slow pace with basic manoeuvres, situational awareness, IF flying and IF procedure scenarios presented to the applicant. Applicants are assessed in their performance as PF and PM where CRM and pilot monitoring are a key focus. The assessment is graded on the nine ICAO/Airbus Core Competencies.

The flying assessment concludes with a raw data ILS and landing.

The purpose of providing this level of detail in this paper is to demonstrate that the Ryanair assessment is not tricky or unduly difficult. It is, we believe, a fair assessment of piloting skills.

## Assessment Statistics

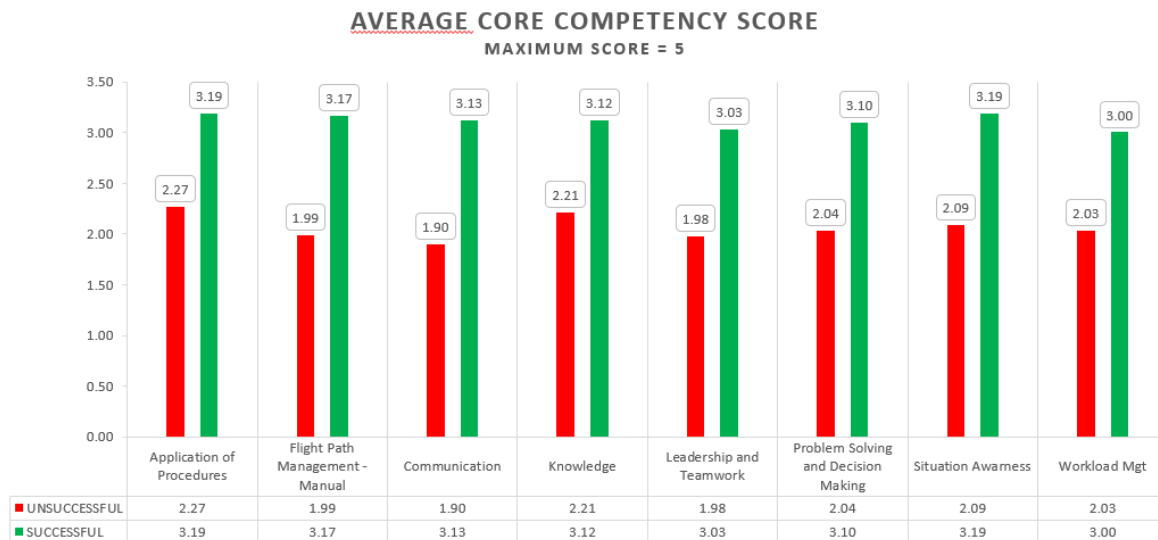
The most recent analysis of applicants took place between February and June 2015.

The sample consisted of 385 candidates, all of whom had been assessed following the recent change to the nine core competencies as the assessment parameters. The pass rate of the overall sample had increased to 55% and this is within normal variance seen over many years.

**Table 1: Core Competency Scoring Among Assessment Applicants**

### Cadet Assessment Analysis – July 2015

Average Score for All Candidates 



- Strongest Core Competencies for successful candidates – Application of Procedures & Situation Awareness
- Strongest Core Competency for unsuccessful candidates – Application of Procedures
- Weakest Core Competency for successful candidates – Workload Management
- Weakest Core Competency for unsuccessful candidates – Communication
- Average ELP for successful candidates - 5.2
- Average ELP for unsuccessful candidates - 4.7

Based on the above, it can be said that 450 out of 1000 EU CPL ME/IR MCC qualified pilots score on, average, less than 50% in the industry accepted Competencies required to be a safe professional pilot.

## Why Are Pilots Unsuccessful?

1. **Assessment Nerves**
2. **Knowledge**
3. **Flight Path Management**
4. **CRM**
5. **Maturity & Attitude**

## Bridging the Gap

The gap in question is the evidence based deficiency in the soft and technical skills with which our young pilot population graduate from the current pilot training process. On one side is the newly graduated pilot, on the other an airline career where the same pilot can contribute safely and effectively to our European Airline Industry.

There is an opportunity to produce a flexible, efficient and effective “third way” to educate our young pilots. This can be achieved by utilising and enhancing the currently available training elements of MCC and JOC. To these core elements we would add

- Theoretical training
- Airline Career Orientation Training
- LOFT

Accordingly, the resulting Airline Pilot Certificate Course (APCC) would consist of

- Aircraft Systems Technical Training (B737 or A320 standard)
- Operator Standard Initial CRM
- MCC
- JOC
- Airline Oriented Theoretical Training
- Operator Standard LOFT

When presented in an Airline context, actual or generic, these training elements can expose a young pilot to a focussed and practical training experience. This outline syllabus (see below) immerses a young pilot in

- Operator standard theoretical training
- Core Competency Training and Assessment
- Early and extended use of good quality FSTDs
- Generic or actual Airline specific procedures
- Exposure to operator standard LOFT.

The training would be focussed on the Core Competencies and the instructor would be trained in Core Competency Assessment. Threat and Error Management theory and practical application through Anticipation, Recognition and Recovery to Safe Flight will be emphasised throughout. The need for an understanding and implementation of good Airmanship would be fundamental.

Having attended a well-resourced ATO that offers a quality course, a pilot with the resulting Airline Pilot Certificate (APC) qualification would be a safer pilot, ready for industry and have an extremely powerful addition to his CV when he applies for an airline position. At a higher level, the training industry would be producing better trained and safer pilots at very little extra cost.

Operators may choose to run an APCC in which case many benefits will arise that are discussed below.

Table 2:

## Draft Syllabus – Airline Pilot Certificate Course

Entry Requirement: CPL ME I/R							
<b>AIRLINE PILOT CERTIFICATE COURSE</b>							
ITEM	PF HOURS PER STUDENT	HOURS AS CREW	FSTD SESSIONS	Minimum FSTD	INSTR Qualification	ACADEMIC TRAINING	INSTR
<b>AIRCRAFT SYSTEMS TECHNICAL TRAINING</b>	Type Rating standard content and examination. Sets an early high standard of training and required student application Enables maximum benefit to the student from subsequent FSTD training					56hrs e Learning 20hrs lecturer	E LEARNING/ ATO INSTRUCTOR (ATOI)
<b>Crew Resource Management (CRM)</b>	Initial CRM training – Airline Specific or Generic Operator CRM					16hrs Lecturer	CRMI
<b>Multi Crew Course (MCC) Airline SOPs</b>	10	20	5	FNPT2/MCC FTD	SFI	24rhs Lecturer 5hrs Pre Session Briefing	SFI
<b>Jet Orientation Course (JOC) Airline SOPs</b>	10	20	5	FNPT2/MCC FTD	ATOI	5 hrs Pre Session Briefings	ATOI
<b>Operator Regulations Airline Structures, Relationships and Processes</b>	Module designed to educate student pilots in the realities of commencing a career in a commercial airline focusing on regulations, processes, relationships, personal responsibilities and commitment.					16hrs	Management Pilot Department Reps 3 <sup>rd</sup> Level Partner Onsite Visit
<b>Line Oriented Flight Training (LOFT) Airline SOPs</b>	6	12	3	FNPT2/MCC FTD	ATOI	3hrs Pre Session Briefings	ATOI
<b>TOTALS</b>	<b>26hr</b>	<b>52hrs</b>	<b>13</b>			<b>145 HOURS</b>	

## Syllabus Explanation

### 1. Aircraft Systems Technical Training

The pilot is about to undergo 52 hours of FSTD training. To maximise the benefit to him during this time, it would be essential that he understands the aircraft systems.

This training and associated examination will be set to Type Rating Issue standards. Distance learning would enable low cost to student. The distance learning will be confirmed and embellished by three days of intense instructor led revision prior to sitting a formal exam.

Operators running an APCC may be able to benefit from reduced theoretical knowledge training requirements in a subsequent type rating course.

### 2. Operator Standard Crew Resource Management

Having learnt how the aircraft works the student next learns the theory of how a Multi Pilot Airplane (MPA) crew works. To impart maximum learning to the student, the standard of CRM content and instructor should be at Operator level. Airlines will use their own material and CRMIs while well-resourced ATOs will establish relationships with Airlines to provide the necessary content and expertise.

Operators running an APCC may be able to benefit from reduced theoretical knowledge training requirements in a subsequent Operators Conversion Course

### 3. Multi Crew Course

Having learnt the theory of working in a multi-crew environment, the student next learns how to operate as a crew member. The student, having been exposed to operator standard systems and CRM training will be in an excellent position to maximise the learning experience during the MCC.

It is essential that the minimum standard of APCC Flight Simulation Training Device (FSTD) is met and that the MCC instructor is of a high standard. Well-resourced ATOs will provide these elements as a matter of course.

Operators running an APCC may choose to run an integrated MCC/Type Rating course and so may be able to benefit from reduced FSTD training during the type rating course.

### 4. Jet Orientation Course

Having learnt to operate as a multi crew member, the student next learns how to improve his Flight Path Management skills as PF and his monitoring skills as PM. An introduction to UPRT will build confidence and skill. Aircraft and Operator procedures used during this training will develop the student's understanding of the aircraft flight envelope and an Airline's reporting systems and culture, Flight Data Monitoring and SMS.

### 5. Operator Regulations, Airline Structures, Relationships and Processes

Having built confidence in Airline-standard Skills and Knowledge, the student next learns about the context and environment that these shall be deployed in as an employee of an Airline.

This module should provide an insight into and understanding of the regulatory background that the Airline must operate in. Subjects such as:



- Regulation Operations and Regulation Aircrew
- HR issues, typical employment contracts and resulting obligations
- Safety Management Systems (SMS), with emphasis on pilot reporting obligations and Just Culture
- Fatigue Risk Management System (FRMS) with emphasis on the Operator and pilot obligations
- Flight Time Limitations (FTLs), including rostering and crew control functions
- Flight Operations Planning and Flight Watch. Reporting systems.
- Airline Maintenance Department and relations with Flight Operations
- Ground Operations and relations with Flight Operations
- Inflight Department and relations with Flight Operations

An operator running an APCC will organise a visit to the relevant departments. A well-resourced ATO running an APCC will have a relationship with an Airline and will provide its APC students with the visit.

Operators running an APCC will benefit from a more mature and educated new-entry pilot who may be better equipped to enjoy his experience as a young professional pilot and avoid some of the social and work pitfalls that can cause problems at the early stages of a career.

#### 6. LOFT

Having been introduced to the various elements that must work together to produce a safe and efficient operation the student next learns what it is like to operate as a crew member in several realistic simulated line operations. These scenarios will include normal and non-normal situations. Operations will run in real time with turnarounds required to maintain a schedule. The scenarios will be constructed to maximise:

- TEM
- CRM
- Flight Path Management
- Interaction with internal and external parties in the resolution of scenarios.

#### 7. Minimum FSTD Standard

Ensuring the use of a minimum standard of FNPT2/MCC or FTD 1 will benefit well-resourced ATOs. Students will benefit from the higher standard of FSTD and the overall product of the APCC concept will be kept at a high standard.

#### 8. ATO Instructor (ATOI)

This phrase in the context of JOC and LOFT recognises the opportunity to create a new category of instructor. The minimum standard would be qualification in the Teaching and Learning requirements of Regulation Aircrew FCL.920 Instructor competencies and assessment and FCL.930.FI FI — Training course (b) (1) 25 hours of teaching and learning;

In addition to this minimum requirement, the Operator or well-resourced ATO will select and train its ATOIs to a standard that meets their requirements. An ATOI could be a young F/O who has not yet reached the necessary hours to be an SFI or, more likely, it will be an experienced airline pilot who may or may not have an Instructor qualification but who is someone who the Airline or ATO believe can impart knowledge and skill to the required standard.

9. 3<sup>rd</sup> Level Education Reference

Mr. Kay Watchelborn of the Sky4u ATO in Berlin is holding talks with Bremen University with a view to having an APC-like course accepted as a creditable module in a broader aviation related Level 8 degree.

If the APCC provided by a particular ATO is accepted by such 3<sup>rd</sup> level education institutions, the ATOs providing the associated courses would have to meet standards that the University would require. Only well-resourced ATOs would enjoy such a relationship. This could serve to ensure that high standards are available to students.

10. On-going assessment

A major advantage to the student is that the APCC would be an on-going assessment of his knowledge, skills, learning rate, capacity and aptitude. The effect of assessment nerves would be reduced.

## Why Are Pilots Unsuccessful? (Revisited)

1. Assessment Nerves

Current simulator based assessments are short duration, high stress events in a young pilot's career. It is to be expected that this factor would count towards a less than optimum performance by many applicants.

Such students would find no such short term pressure in the Airline Pilot Certificate Course. As the course is one long assessment, a nervous student will have every opportunity to learn, grow and display his true ability. The learning rate of a student can be assessed and a positive outcome can be achieved even after, perhaps, a weak start. This would be a major benefit to a pilot and could eliminate a cost line by removing the requirement for a subsequent Operator assessment.

2. Knowledge

It is noticeable that Knowledge is a poor metric. The APCC would provide a high standard of Technical Knowledge in both technical and human performance subject matter. More specific technical training can be given during the MCC with subjects such as Aircraft Performance, Flight Planning, Fuel Planning, Loadsheet weight and balance, ATC and more being covered. Students will benefit from learning challenging, well delivered subject matter.

3. Flight Path Management

It is not too surprising that Flight Path Management is a weak factor for unsuccessful applicants. Students on an APCC will have the opportunity to learn proper Flight Path Management theory and practice in good standard FSTDs.

#### 4. CRM

While it is disappointing that CRM topics are weak in this population, it is not too surprising. Even after MCC, young pilots will not have had the opportunity to practice good CRM. For them, CRM is very much a theoretical subject at this stage. Young pilots have not yet had an opportunity to “live” CRM.

Students on an APCC would have ample exposure to FSTD training during which time they would be able to put CRM theory into practice in an instructor led environment.

#### 5. Maturity & Attitude

A surprising number of applicants are deficient in these attributes during the assessment process.

Maturity cannot be processed into a young pilot however an appropriate attitude can be developed over the course of an APCC. Exposure to the Regulatory background in which an Operator has to perform, the various departments in a CAT Operator and how they interact, SMS and the responsibilities of all parties to ensure a safe operation and an insight into how that all comes together during LOFT will provide an opportunity for young pilots to understand their place in the system and to act accordingly.

## The Way Forward

I see two options as to how we can progress this concept:

### 1. No Change to Regulation

Alternative One is not to change any regulation and instead EASA would clearly signal its endorsement of the APC concept. The Agency would state its preferred structure, processes and standards. Operator hiring preference (the market) would sort the quality APCCs from the less effective ones. The market would ensure that ATOs providing a high standard of APCC would prosper and less effective ones would be shunned by student pilots.

#### a. Advantages

- 1- Flexible
- 2- Flexibly regulated instructors
- 3- modular structure possible over a student-preferred timeframe
- 4- No extra regulation
- 5- Easily implemented by ATOs
- 6- Available immediately

#### b. Disadvantages

- 1- No mandated content or standards
- 2- Some ATOs may offer minimal standards
- 3- Modular structure could reduce learning effectiveness
- 4- Uptake by ATOs and Operators is optional
- 5- Students will follow path of least resistance – cheapest course wins.

### 2. Regulation Change

Alternative two is to admit that the MCC is but a stepping stone that has failed to provide the means of crossing the Gap effectively. Accordingly, the MCC would be incorporated into the APC which would be regulated.

#### a. Advantages

- 1- Content can be mandated
- 2- Standards can be mandated

- 3- Qualification can be mandated
  - 4- Integrated structure maximises learning opportunity
  - 5- Can accommodate different instructor qualification levels.
- b. Disadvantages
- 1- Rule change takes years
  - 2- Over-regulation possible
  - 3- Vested interests could weaken the concept
  - 4- ATOs could create upward price pressure

Pending the processing of a Rule Making Change, EASA could opt to put into effect Alternative One above - make the above content and structure available to the training industry and to state that this is recommended to pilots, ATOs and Operators.

This option of EASA deciding to implement regulatory change, preceded by a recommendation to industry to embrace and implement the concept of the APC, is recommended.

## Future EU Pilot Career Path

1. MPL > High F/O Standards > Airline Career > Increased Safety
2. CPL ME/IR > APC > High F/O Standards > Airline Career > Increased Safety
3. CPL ME/IR > Basic MCC/JOC > Lower F/O Standards