TRENDS IN PILOTS TRAINING

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Abstract: *This paper presents the trends for distance learning used for pilots training nowadays. It provides a briefing regarding the distance learning in aviation training according to the international/national rules and regulations. The study has revealed the fact that this method offers an efficient Learning Management System used to monitor the progress of the student, for administer the records and also for communication.*

The distance learning needs to be completed with a traditional face-to-face training. According to the legal framework the face-to-face training should be at least 10% from the total number of theoretical knowledge hours.

The distance learning system is accepted by EASA only for modular courses and ATOs have lately introduced this type of training due the high demand of the market. This new training method was implemented in the last years by ATOs as an aviation market requirement.

The study has concluded that the high demand of the airlines for pilots in the last years has determined the increase of number of trainees.

Keywords: *distance learning, pilots training, theoretical knowledge*

1. INTRODUCTION

The internet and new technologies have significantly influenced peoples' live, the vision of companies for presenting, communicating and disseminating their massage. One of the key competitive advantages in an information society could be achievement of the high level of acquisition and management of knowledge.

Many Approved Training Organizations have introduced in the last years the distance learning system[1,3] with respect to PART-ORA:AMC 1 ORA.ATO.300.

In order to achieve the necessary SKAs required by EU No.1178/2011 the trainee should complete the distance learning module, the face-to-face module and he has to obtain at the end of the course at least 75% for each exam.

The training material and systems should include the following:

- A complete set of books covering the entire syllabus EASA compliant; optionally the electronic version of the books could be included;
- Computer Based Training and/or Web Based Training;
- An online question bank;
- Access to a Learning Management System (LMS) for all communication, administration and for monitoring the progress of the students;
- Study guides for all subjects;
- Self-assessment tests, progress tests & retests and school exams;
- Exam reference material available online;
- Jeppesen Student Chart Manual, optionally.

The distance learning system represents nowadays an alternative to the traditional training. This type of training has a set of advantages the main one being that it gives the trainee the freedom to choose when and where to study, it cost often less than a face-to-face course. Also this system is a modality of training better suited for a certain type of learners, it offers a great flexibility and it encourages a great virtual interaction between the trainee and instructor or classmates. The e-learning system ensures equal access to education and allows the internationalization of learning opportunities.

The main disadvantage of this type of training is the fact that it is suitable only for self-motivated, disciplined learners and for flexible instructors. It may create a lug between student input and feedback. It also demands technological infrastructure.

2. BUSSINESS ANALYSIS AND ENVIRONMENT

In order to introduce the distance learning each Approved Training Organization should conduct a detailed analysis. For the traditional pilot training schools it is usually easy to introduce e-learning courses, because they already have the standardized programs and manuals and they also have the human capital[5]. The study has revealed that the strength of the studied ATO is the human capital. Due the fact that the goal of each ATO is to increase the number of students, almost each school has decided to introduce this type of method for training the future pilots. Around the world are Approved Training Organizations that use only distance learning training. The market offers e-learning platforms and professional book for each mandatory subject according to EASA syllabus. The face to face training represents only 10% of the total course number of hours, meaning at least 65 class hours for ATPL from PPL Modular Course. Those 65 class hours are usually done by experienced Theoretical Knowledge Instructors, who may teach in other Approved Training Organizations too.

In the last years most of the traditional Approved Training Organizations have decided to introduce the distance learning for pilots training due the high demand[3,6] on the market. Most of the traditional schools are overloaded and in this light they have introduced the distance learning in order to succeed in training a higher number of students in order to increase the revenue. Lately there is a high demand on the aviation market not only for trained pilots, but for theoretical knowledge instructors and flight instructors too.

The fiscal value of the aviation training schools has increased and therefore the activity of training has become a profitable business. The trends shows a continuous increasing of the students number and implicit for the fiscal values of the aviation training schools. The Fig. 1 illustrates the evolution of the students number between the year 2000 and the year 2017. It has revealed the fact that the number of trainees had a gradually increase between 2000 and 2008. The graph also shows that between 2008 and 2014 the number of trainees has significantly decreased, but starting with 2014 the number of trainees has increased.

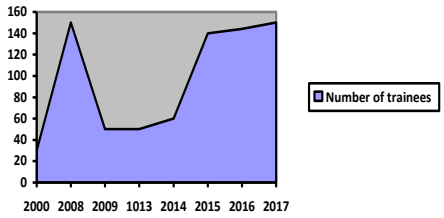

FIG. 1. The evolution of students number between 2000-2017

All these variations are strongly related with the economic, political and aviation industry events.

The global crisis which started in 2008 was the root cause of the students number decreasing. In the last two – three years all airlines started to hire pilots and this can be the reason for the increasing showed in the right part of the graph.

The trends for the next years indicated a continuous growth of number of future trainees.

The trends for aviation industry are hardly predictable, but overall there are four scenarios (Fig. 2) in the next 20 years, highly influenced by the increasing number of passengers, new technologies and markets. Other factors that may be considered are the environment, economy, geopolitics, security and borders, privacy and trust.

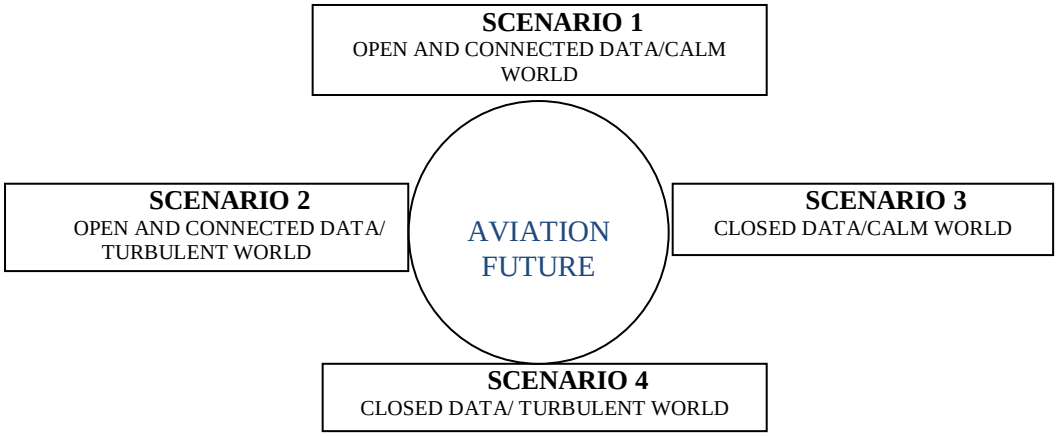

FIG. 2. Scenarios for aviation industry

3. LEGAL CONTEXT OF DISTANCE LEARNING

The legal context[3] of distance learning for pilots training is set up by EASA through EU No. 1178/2011, PART-FCL, PART-ORA.

In order to complete an Modular ATPL form PPL Course a trainee shall study at least 15 hours per week. The course documentation[5] should include a study guide in order to give the student a clear indication about what it means 15 study hours and a flexible course structure. In order to verify the students' progress it is recommended a test after each 15 study hours. The tests should be kept by the ATO for 5 years. I order to obtain very good results for the theoretical training the students should have access to self-assessment test after 5-10 study hours. The ATO has to ensure communications channels via telephone, mail, internet or fax between the students and the theoretical ground instructors. When an ATO provides the distance learning[5,6] by help of IT solutions (e.g. internet), the theoretical knowledge instructors has to monitor students' progress by appropriate means. The theoretical knowledge instructor may add on the platform additional materials and questions for each subject.

The following pre-requisites[3,4,5] should be fulfil before acceptance at a modular ATPL distance learning course:

- Hold a PPL(A) issued by a state ICAO member.
- Hold a class 1 medical certificate obtained before starting the course.
- ICAO Level 4 Language Proficiency or a knowledge of English language proficiency, in accordance with EASA Regulation (Part-FCL 055) .
- Sufficient knowledge of mathematics and science.

After completing the on-line part of the course the student shall attend at least 10% (at least 65 hours) face-to-face hours from the total number of the course hours (at least 650 hours).

ATO shall decide if the final exams for each subject exist on-line or not.

4. DISTANCE LEARNING PACKAGE CONTENT

Nowadays are used distinct platforms for pilots training. This type of platforms should include a complete set of books and/or e-books covering the entire EASA syllabus for each subject[1,2,5], CBTs, Web Based Training, animations, links to relevant web sites and study guides. Each platform should include a Learning Management System which will enable the ATO through the theoretical ground instructors to keep track on student progress and to generate information[4,6] to the ATO management[1,2,5].

The distance learning package should consists for the evaluation part self-assessment test, progress tests, reference material, school exams.

In order to complain[3] with PART-ORA: AMC 1 ORA.ATO.300 the platforms shall fulfill the following requirements contained in table 1:

Table 1. Requirement-compliance of platforms

Requirement	Compliance
A student will study for at least 15 hours per week	According to the training plan a student should study at least 15 hours a week
An indication throughout the course material of what constitutes a week's study	The training manual will indicate what constitutes a week's study
A recommended course structure and order of teaching	This is up to the ATO to decide, but once the course structure and order of teaching is established, this will be presented via the LMS
One progress test for each subject for every 15 hours of study, which should be submitted to the ATO for assessment	It is mandatory for the students to take an online progress test for every 15 hours of study in each subject.
Additional self-assessed progress tests should be completed at intervals of five to 10 study hours	Self-assessed progress tests is scheduled at intervals of 3-4 hours of study in each subject
Appropriate contact times throughout the course when a student can have access to an instructor by telephone, fax, email or the internet	This is up to the ATO to decide, but the LMS allows for a student to contact an instructor by email
Measurement criteria to determine whether a student has satisfactorily completed the appropriate elements of the course to a standard that, in the judgment of the HT, or CTKI, will enable them to be entered for the PART-FCL theoretical examinations with a good prospect of success	The LMS will tell the status of all assignments in a course, i.e. If a student has failed a progress test – a retest will be required. Upon completion of a subject, the student has to pass a school exam which is a timed test with the same number of questions as in the official exam.
If the ATO provides the distance learning by help of it solutions, for example the internet, instructors should monitor students' progress by appropriate means	Instructors will have access to numerous reports that contain information about student progress

5. DISTANCE LEARNING MARKET TRACK EVOLUTION

In the last years the number of student of distance learning had a significantly increasing as it is revealed in fig.3.

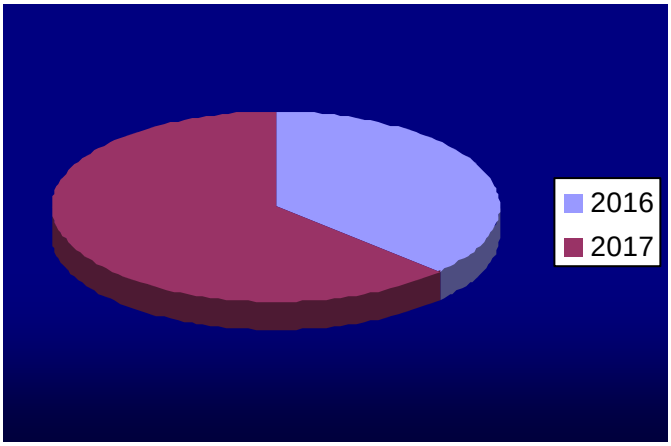

FIG. 3. Market evolution for distance learning training

The fig.3. indicates the fact that in 2017 the number of students had a significant increasing. The students number that have decided to study[4,6] on-line for a modular ATPL course was almost double in 2017 (62.96%) comparing with 2016 (37.03%).

The number of students who manage to finish this on-line training has not the same trend as the one mentioned above.

Only 10% of the students manage to complete the theoretical training for a modular ATPL course within the minimum specified period, minimum 6 months.

70% of the students need a period between 6-18 months to complete this type of course. 1% of them decide to withdraw after 1-2 study months. For this category becomes clearly that they cannot complete the course using this method which is mainly based on self-study. Part of them decide to continue the training in order to become a pilot using traditional type of courses.

The study has revealed the fact that the students who succeed in completing on time the distance learning training have an extensive flight experience or they have a technical background.

CONCLUSIONS

Distance learning represents a new method for pilots training used by ATOs. The trends are favorable for this type of training. It seems to be preferred by students because it offers them a flexible program, it gives them the opportunity to be employed in the same time. The main disadvantage of this type of training is the one that it is inappropriate for all learners. Due this disadvantage the training period in this case is much higher comparing with the period of traditional training. Only 10% of the students manage to complete the course in 6 month. The rest of them need 6-8 months to complete the course.

During 2017 the number of the students who started distance learning training is almost double comparing with 2016 for the studied ATO.

Distance learning is an alternative method and it has a favorable trend at least for the next years.

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