System of AFIS Officer for Air Navigation Service providers

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Abstract
This paper focuses on the provision of the Aerodrome Flight Information Service (AFIS) in the Czech Republic. It examines the functioning and the requirements on the AFIS from the view of the national audit office. Specially, it examines current requirements for the training system of new AFIS officers. Based on these findings, and by comparing the AFIS with Air traffic control service (ATC), the author of the article attempts to assess whether the current training system and the requirements for the applicants are sufficient by comparing the AFIS with the Air traffic control service. The result of the analysis is the presentation of hypotheses concerning new proposals and recommendations that could be adopted to the training and regulatory framework in accordance to the fact, that AFIS belongs to Air traffic services ATS.

Keywords
AFIS; AFIS officer; Air traffic control service

1. Introduction

Conditions for the provision of AFIS in the Czech Republic has changed over the past eight years under the new European requirements. Therefore, majority of the providers had to degrade the level of their services and they needed to be satisfied with the possibility of providing the information to known traffic according to Appendix S of Czech version of Annex 11 [1, 2]. By 2019, AFIS providers in the Czech Republic were four. The main reason of the changes was the inclusion of AFIS into the category of ATS, which resulted in a large number of providers who were unable to comply with the new stringent requirements for AFIS that a large number of providers cannot meet [3]. However, with respect to the performance of the AFIS officer, the service has not become so different. To the best of our knowledge, the requirements for the AFIS Officer training system have not been specified or discussed in more detail. The only documents, which could be used by the organizations providing the AFIS Officer training, are the Manual for AFIS [4], and the CAA - 211 Directive [5], Due to the fact that AFIS is now the part of the ATS category, there is a need to further elaborate AFIS officers training and consider possible new requirements for candidates for AFIS officer.

2. Current system of the AFIS Officer training

Currently the AFIS Officer training is divided into two parts according to CAA - 211 Directive [5]. The first theoretical part focuses on obtaining theoretical knowledge and can be done only by an organization which is certificated for providing theoretical training for AFIS officers. By 2019, there have been two certificated organizations in the Czech Republic, Tower - VL s. R. O. and Aeroclub CZ [6]. The scope of the theoretical training is generally described in the above-mentioned CAA - 211 Directive [5]. Furthermore, it distinguishes the scope of the training requirements to reflect whether or not the candi-

date is a holder of one of the pilot licenses. The CAA - 211 Directive sets a minimum of 32 h of the theoretical training for those who are not the holders of one the pilot licenses and an 8 h of the theoretical training for those who have them, etc. pilots or air traffic controllers (ATCO). Second part of the training takes place in the form of a training course at a local airport under the supervision of the head of the AFIS department. Again, it proceeds differently based on whether the officer in training is the holder of a pilot's license or not. Owners of pilot or ATCO licenses are recognized for their work experience. Others need to train at least 24 hours on-site under the supervision.

2.1 Provider's experiences with current system of the AFIS Officer training

As part of the review at Prague's Letňany Airport regarding the current state of the AFIS Officer training system, it was found that candidates with pilot license can better adapt to the required role. They form situational awareness more quickly and also demonstrate the experience with radio communication and the use of standard air traffic phraseology. In contrast, the education of students who have no experience in the aircraft or air traffic control takes longer and it is more difficult for the AFIS provider. However, in the theoretical training, an opposite trend is observed by the instructors who teach compulsory subjects. The surveyed instructors believe that it is due to the fact that pilots tend to overestimate their knowledge and devote less attention and time to learning than other students.

2.2 Requirements on candidates

The requirements on the candidates themselves do not correspond to the fact that AFIS is in the ATS category. This is evidenced by the fact that the CAA - 211 Directive, for instance, sets the minimum age of the applicant for 15 years, which is in contradiction with the Czech version of Annex 1 and contrary to the requirements for the air station operator [7]. In addition, the requirements do not specify any special medical examination for the AFIS officers providing this service, even though the AFIS provider is required by the European regulation on ATS to monitor the physical and mental health of its employees [8]. Among other requirements contain a general radio license and, in the case of an international airport, the appropriate language skills according to the Czech version of Annex 1, 1.2.9 [9].

2.3 Final tests and examination

Based on consultations with representatives of the organization Tower - VL, Ltd. - it was found that the current training system does not include specification for a final test and examination. Nowadays the tests are conducted at the same training organization, that is, on a commercial basis. Therefore, it can be assumed that a greater failure percentage in the exams could entice new candidates and the organization could potentially lose profit. In addition, a universal procedure for dismissing unsuccessful candidates for the exam is missing. The organizations currently follow their own procedures.

2.4 Requirements on instructors and assessors

Another unsatisfactory aspect of the AFIS Officer training, noted during the consultations, is that the CAA - 211 Directive [5].does not include any general requirements for the instructors and assessors. Nor are these requirements set out in the European legal framework. Therefore, the requirements for trainers and examiners are set by the organization itself and subsequently evaluated by the CAA.

3. Discussions and results

A comparison of AFIS with the Air Traffic Control Service (ATC), especially with ADV/ADI rating (Aerodrome Control Visual / Instrument), was made. In particular, the complexity of both services and their resulting responsibilities were compared. The result of this comparison was that although both services have some similarities, but it can be clearly stated that the air traffic control service is much more demanding and the ATCO have more responsibilities. Nevertheless, we propose new requirements and recommendations could be proposed, which could lead to improved training of the AFIS officers and the service itself.

3.1 Determination of input assumptions

The initial output of our research is to determine the entry requirements for new applicants. These are based on available regulations. For example, it is assumed that a candidate for an AFIS officer should be at least 18 years old, based on the aforementioned Czech version of Annex 1, 4.7.1.2. [7], which sets the same age limit for the airline operator. Other assumptions are related to the language skills of the candidates, who are required to have each candidate having a perfect knowledge of the Czech language, proven by maturity exam or other language test, and a proven knowledge of the English language as well.

3.2 Medical and other specific requirements

Based on the comparison of AFIS performance to the ATC service, and consultations with medical experts, we suggested that applicants should have to undergo a medical examination in order to qualify for AFIS. If AFIS is belong to ATC services, the provider of the said service is required to monitor the physical and mental health of the employees. We also suggest the candidates undergo compulsory psychological examinations, similarly to candidates for driving license holders in categories C1E, C, CE, D1E, D, DE [10]. It is also highly recommended to consider three factors that adversely affect employee performance, namely the use of psychoactive substances, stress and fatigue. Although, not in practice so far, the recommendation for monitoring these three negative factors follows the materials for ATC providers in accordance with Commission Implementing Regulation (EU) 2017/373 [11].

3.3 Determination of qualification requirements

Based on the comparison, we strongly believe the qualification requirements for the theoretical knowledge of the AFIS officers should be expanded. The original subjects which are set in the CAA - 211 Directive [5], should be expanded to include following subjects: Air traffic management, Human factor, Equipment and systems, Work environment, Emergencies, and Airports. These subjects would then be further divided into individual specialized areas and to them are added the justification why this subject area should be included in the training. The suggested areas are selected based on the EUROCONTROL ATCO Common Core Content specification for initial training. 2.0. [12].

3.4 Final tests and examination

In order to create a more objective system of final examination and to create the same conditions for all applicants for all organizations, it is proposed to amend the legal framework which, if adopted, would require the statutory audit under the supervision of the CAA. Two types of monitoring are proposed: firstly, the tests would take place directly at the CAA or secondly the CAA staff would commute to the test site. This proposal was discussed with inspector of the CAA, who has confirmed the feasibility of both proposals, as both of the above mentioned methods are also used for apron and signal officers in relation to the Czech version of Annex 2 [13].

3.5 Determination of qualification requirements for instructors and assessors

To ensure high-quality training for AFIS officers, we propose that the CAA should require AFIS officer training organizations to maintain records of instructors including the information and evidence professional qualifications, knowledge and experience. In addition, organizations should be required to pay attention to the skills and abilities of their instructors. As mentioned above, this shortcoming in the current legal framework was mentioned during the consultation with representatives of the AFIS Officer Training Organization. The same can be applied in the case of the assessors.

3.6 Determination of types of the training

After defining the qualification requirements for theoretical knowledge and practical skills, it is necessary to adapt the type of training and its scope. The following training sessions are suggested: initial training, local training, IFR extension training and refresher training. The initial training is divided into two parts: the compulsory theoretical part and the voluntary practical part of the training. For the theoretical training, it is proposed, on the basis of the experience mentioned in subsection 2.1, to extend the training to the subject areas and to standardize the scope of training for all applicants. However, holders of pilot licenses may be recognized as having already passed some of the subject areas while studying for the pilot license training. It would only be up to them whether they would pass these areas again or not, but at the end of the training they would have to pass the same final exam as the other candidates. In addition, it is recommended that the minimum number of hours should be extended to 64 lessons to allow enough time to discuss all topics. Another suggestion is to provide practical training to acquire practical skills that are also provided by the AFIS Officer training organizations. This training would be voluntary and would last for three days. After initial training, students would need to be trained at a future location on-site to familiarize themselves with local airport conditions and local procedures. The minimum hours required for training at the local unit is 16 hours, but it is up to the AFIS provider to ensure that the length of the local training is sufficient enough for the student as the provider has the biggest interest on the performance of the AFIS officer.

4. Conclusion

The article gives a brief explanation of the current state of provision of AFIS in the Czech Republic. In particular, it examines the extent to which the quality of the AFIS and the quality of the system of' training correspond to the fact that AFIS falls into the ATS category. During the investigation of the problem, some deficiencies have been identified, mainly due to the lack of their specification by the national and European regulatory framework. Therefore, new requirements, suggestions and recommendations are made to remedy or reduce these deficiencies. The result would be an improvement in the provision of AFIS in the Czech Republic and a possible preparation for the introduction of AFIS for IFR operations.

In the future, it can be expected that IFR traffic will be deployed at some uncontrolled airports and the introduction of more stringent requirements will be a must for AFIS and AFIS officers. It will be necessary to focus more on training to expand the IFR rating, as this option was not up to date given the current state of AFIS in the Czech Republic, with AFIS not being provided anywhere for IFR. Therefore, it would be difficult to impose new requirements and proposals in relation to this traffic. However, we believe that the proposed recommendations can provide a good basis for handling this kind of traffic in the future.

References

[1] Adam Zuska. Quo vadis, AFIS? *Aeroweb*, 2013. URL https://www.aeroweb.cz/clanky/3754-quo-vadis-afis.

[2] DODATEK S – Poskytování informací známému provozu na letištích, kde nejsou poskytovány ATS, 2019. URL https://aim.rlp.cz/predpisy/predpisy/dokumenty/L/L-11/index.htm.

[3] Commission Implementing Regulation (EU) No 1035/2011, of 17 October 2011, laying down common requirements for the provision of air navigation services and amending Regulations (EC) No 482/2008 and (EU) No 691/201, 2011.

URL `https://eur-lex.europa.eu/legal-content/CS/TXT/?qid=1396861720321&uri=CELEX:32011R1035`.

[4] Cay BOQUIST. AFIS Manual: Eurocontrol Manual for Aerodrome Flight Information Service (AFIS). *EUROPEAN AIR TRAFFIC MANAGEMENT*, 2010. URL `https://www.skybrary.aero/bookshelf/books/1446.pdf`.

[5] Směrnice ÚCL – 211, oprava č. 1 – Pravidla k udělování průkazů způsobilosti a některých osvědčení řídících letového provozu a dispečerů AFIS, 2018. URL `http://www.caa.cz/file/6107`.

[6] ÚŘAD PRO CIVILNÍ LETECTVÍ. Dispečer AFIS, 2011. URL `http://www.caa.cz/personal/dispecer-afis`.

[7] Předpis L-1, HLAVA 4 – Průkazy způsobilosti a kvalifikace leteckého pozemního personálu, 2013. URL `https://aim.rlp.cz/predpisy/predpisy/dokumenty/L/L-1/index.htm`.

[8] Commission Regulation (EU) 2015/340 of 20 February 2015, laying down technical requirements and administrative procedures relating to air traffic controllers' licences and certificates pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 923/2012 and repealing Commission Regulation (EU) No 805/2011., 2015. URL `https://eur-lex.europa.eu/legal-content/CS/ALL/?uri=CELEX:32015R0340`.

[9] Předpis L-1, Doplněk 1 – Požadavky na jazykové znalosti pro radiotelefonní komunikaci, 2006. URL `https://aim.rlp.cz/predpisy/predpisy/dokumenty/L/L-1/index.htm`.

[10] Vyhláška Ministerstva dopravy a spojů č. 31 ze dne 31. ledna 2001 o řidičských průkazech a o registru řidičů, § 18c, 2005. URL `https://www.zakonyprolidi.cz/cs/2001-31`.

[11] EASA. Easy Access Rules for ATM-ANS (Regulation (EU) 2017/373, 2018. URL `https://www.easa.europa.eu/sites/default/files/dfu/Easy%20Access%20Rules%20for%20ATM-ANS%20%28June%202018%29.pdf`.

[12] EUROCONTROL. EUROCONTROL Specification for the ATCO Common Core Content Initial Training – Edition 2.0, 2015. URL `https://www.eurocontrol.int/publications/atco-common-core-content-initial-training-specification`.

[13] Předpis L-2, HLAVA 3 – Všeobecná pravidla, 2017. URL `https://aim.rlp.cz/predpisy/predpisy/dokumenty/L/L-2/index.htm`.