DRAFT OF PROCEDURAL EXERCISES FOR THE KUCHYNA AIRPORT

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This article discusses the development of procedural exercises for the purpose of air traffic controller training. It contains information which air traffic controller need to doing his job and information about actual and proposed situation on the Kuchyna airport.

K e y w o r d s: Procedural air traffic control, procedural exercises, airport Kuchyna

1 INTRODUCTION

Work is processed into chapters that include information required for procedural air traffic control at this airport. The first chapter deals with the information that are required for each air traffic controller, such as decoding FPL messages, vertical and horizontal separation used for procedural control, and many others. Second chapter include information about airport and my edits and suggestions. Third part include procedural exercises with, I create for purpose of air traffic controller training.

2 GENERAL INFORMATION FOR PROCEDURAL AIR TRAFFIC CONTROL

The flight plan is a basic indication of the planned traffic for the air traffic controller. Flight plans come on workstation ATS in reports FPL- filed flight plan. Each air traffic controller should be able to decode these messages and then create an image of planned air traffic in his sector. Decoding is performed in accordance with ICAO Doc. 4444. Another important thing for air traffic controller is filling flight strips, because the data that needs to air traffic controllers to keep track of the traffic situation must be recorded on flight strips. When we talk about filling flight strips we must distinguish between strips for arrival, departure and overflight. Their visual appearance still remains the same, the difference is in what mean each field. This means operational information that provides us information about the intended traffic. If we want to safely control the flow of air traffic we must follow spacing. In procedural air traffic control we use non-radar spacing. Non-radar separation can be found in ICAO Doc 4444. Now we know intended traffic, we are able to fill information into flight strips, and choose the right separation. Another role of air traffic controller is communication with pilots. To communicate with pilot we use aviation phraseology. English phraseology is the most widely used worldwide, but there is also national phraseology that can be used to communicate with domestic pilots. Slovak and English phraseology we can find in Doc. L9432. Another fact is that the aviation is influenced by weather. In aviation we observe elements such as wind, visibility, temperature, dew point, clouds and precipitations. This information's comes to ATC workstations in form of METAR report. Air traffic controller should be able to decode this message and tell pilot important information's.

3 ACTUAL AND PROPOSAL SITUATION ON KUCHYNA AIRPORT

Airport Malacky-Kuchyna has assigned ICAO designation LZMC and name of the airport Malacky. The airport has one runway in the direction of 01 and 19 Coordinates airport are 48 ° 24 '07 ″ N, 017 ° 07' 06 ″ E. The airport is located at an altitude of 207.2 meters. Reference temperature for this airport is 28.0°C measured in the month of July. The operation of the airport 24 hours a day all year round. The main part of the airport area is flat. Eastern of the airport Malacky stretches of the Little Carpathians mountain range with peaks up hills 2520ft/767m MSL.

The aim of this thesis was to create procedural exercises for the purpose of air traffic controller training. The exercises are located in the controlled airspace of airport Malacky-Kuchyna. Because, this airport is used by military forces of the Slovak Republic, it was necessary to modify the maps of standard arrival routes (STAR), a standard departure routes (SID) to be suitable for the purpose of exercises, these maps are only suggestion how it could work if the airport Malacky-Kuchyna was used for civilian traffic.
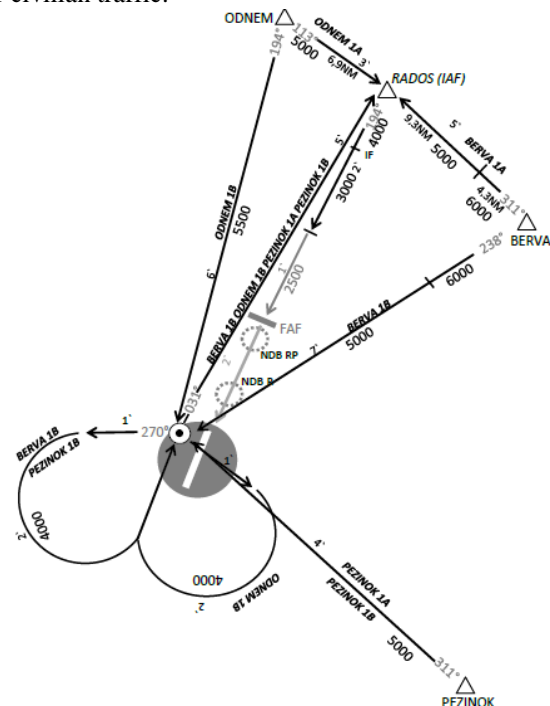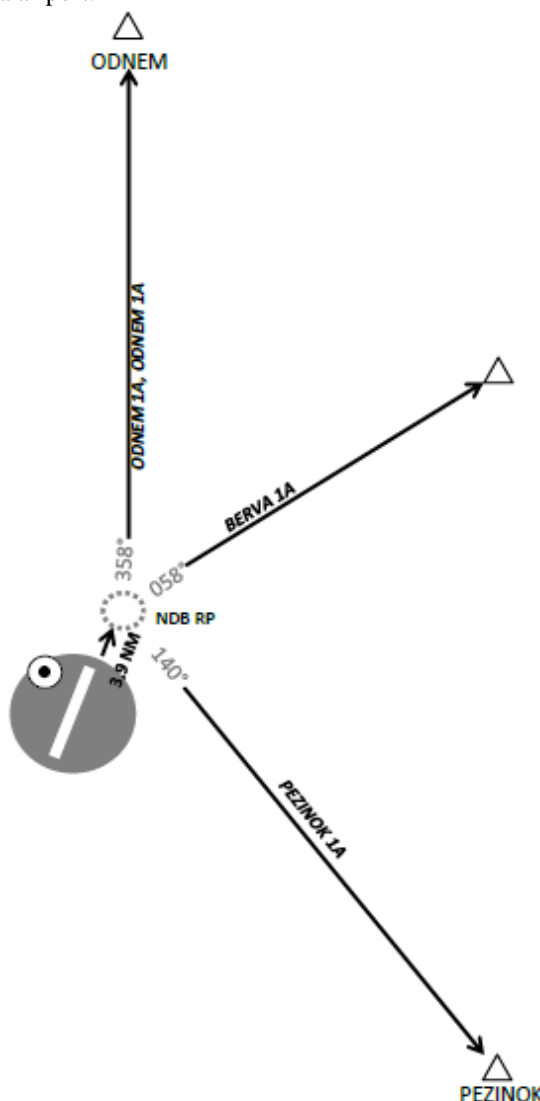

Picture 1 Standard arrival routes

At first I create abbreviation between Kuchyna airport and airport Bratislava. This abbreviation passes
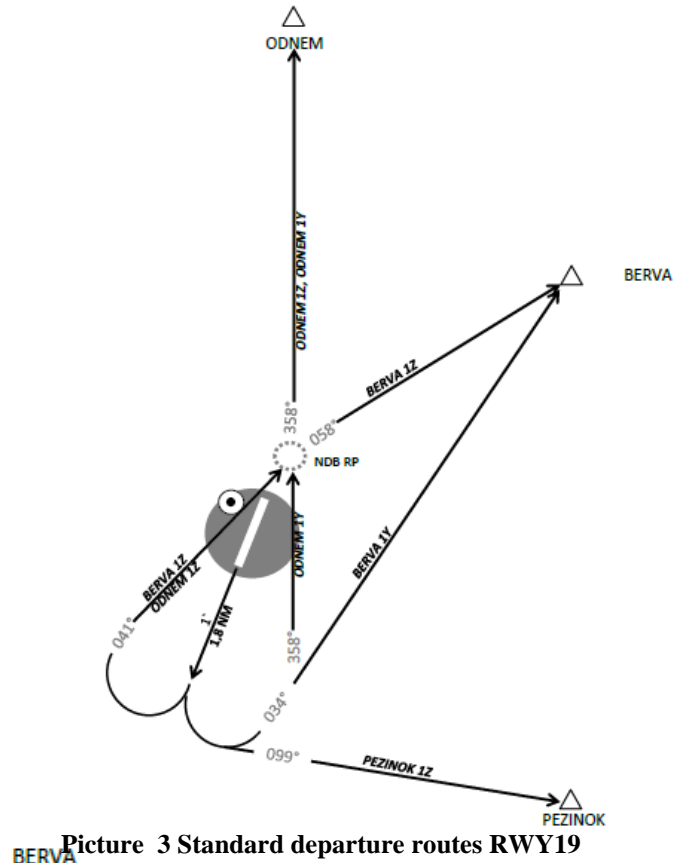
through Pezinok. The proposal of standard arrival routes (Picture 1) includes the real arrival routes. BERVA 1A and ODNEM 1A are real but they are renamed for better orientations. Other routes are only proposal. BERVA 1B and ODNEM 1B is longest variant of real routes, and PEZINOK 1A and 1B are arrival routes from abbreviation then I create. On the airport is situated ILS- Instrument landing system which is used for arrivals, but in procedural exercises that I create in my thesis I use 2xNDB procedure too.

Standard departure routes are divided into the standard departure for runway 01 and standard departure routes for runway 19. The main direction of departure is departure from runway 01 except flights heading to Bratislava airport.

Picture 3 Standard departure routes RWY19

4 PROCEDURAL EXERCISES

Totally I create six exercises. The exercises are sorted from the easiest one to harder one. First exercise is based on vertical spacing, without SID and STAR maps. Second exercise is based on DME spacing. Both of these exercises using 2xNDB approach, and other exercises using ILS approach. Third exercises works with SID and STAR maps. Fourth exercise is designed for optimal use of maps, and including departure from RWY 19. Fifth exercise including DIVERT and six exercise is combination of all situations expect 2xNDB approach. Each exercise is increasing the number of aircraft. All necessary materials for controllers and pseudo-pilots like maps, and time schedules are in attachments.

5 CONCLUSION

The result of this work is to develop scenarios for the purpose of procedural training of air traffic controllers in a controlled airspace of the Malacky-Kuchyna airport. In the procedural exercises I tried to use all the available spacing in a controlled area of an airport Malacky-Kuchyna. In this exercises can be increased difficulty etc. changing English and Slovak phraseology, adding VFR flights, using heliports, making miss approach or working with NOTAM's and SNOWTAM's.

Picture 2 Standard departure routes RWY01

Standard departure routes for RWY 19 have two variants. Differences is between which circle after airborne we use (Picture 3).

The thesis provides information necessary for mastering procedural exercise but a real air traffic controller must have much more knowledge of the regulations to be able to safely, effectively and continuously manage the flow of air traffic in real life. Although nowadays are almost all over the world governing air traffic control by radar, procedural training shall have each air traffic controller.

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