PROVIDING OF AIR RESCUE SERVICE IN THE SLOVAK REPUBLIC AND CZECH REPUBLIC

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Air ambulance service is an integral part of the Integrated Rescue System. This article analyzes the situation in Slovakia and the Czech Republic and provides design solutions for sustainable and financially viable system of functioning of air rescue services in the Slovak Republic through the establishment of helicopter flight school in Banská Bystrica.
Keywords: Rescue, speed, helicopter procedures, coordination, simulation, training

1 INTRODUCTION

We live in an age when time is money. All this and much more are the factors for which we behave dangerously for themselves and to their surroundings. Often times, then we must solve problems fast technical support. Time in such cases often means life. At the beginning of the third millennium we are witnessing an extremely rapid development of aviation. No other technical field experienced such turbulent development, just as the aviation. The Air Force not only helps us to fulfil the above mentioned the phrase "time is money" but it "time is life." I would argue that the provision of medical ambulance or medical assistance is one of the most merited aviation activities. Air rescue service used to operate many types of aircraft. In addition to classic airplanes that are used for fast and gentle transport of patients who are no longer a direct threat to life, the air rescue service in the majority of limited use helicopters. Its unique capabilities are designed for quick assistance in all types of terrain.

2 AIR RESCUE IN THE CZECH REPUBLIC

At 1st of January 1993, when Czechoslovakia was split into two independent states, it was necessary to deal with the distribution of air ambulance service for two units, and Slovak. Therefore, there was an assumption of centres operated by the Slovak Bel-AIR and Czech operators ALFA - Helicopter Ltd. and DELTA SYSTEM-AIR s.r.o.. ALFA – Helicopter from Olomouc took centre in Jihlava, while DSA took centre Usti nad Labem, Liberec and Ostrava. At the turn of the year 1993-94 there was a fundamental change in concept and philosophy of the air rescue service. Army air rescue services should provide training of troops in the peaceful life would then act as a humanitarian. In Plzen, the selection procedure for the operation of the centre of air ambulance service for the army won at 24th of March 1997 firm AEROCENTRUM spol. s r.o. The operation was launched to 17th of April leased to the German helicopter Bell 222UT. From 20th December 1997 centre Christopher 7 air ambulance service operated Plzen police. At Aeronautical Rescue Service station in Prague is from the 1st of January 1998 introduced a continuous service.

Figure 1. EC-135 Alpha Helicopter

A very important achievement in the history of Czech aviation rescue service undoubtedly was the establishment of the Association of non-state operators, helicopter air rescue services (HEMS Helicopter Emergency Medical Service), which was launched in November 2000 and where joined DSA and ALFA - Helicopter in non-state battle for the air ambulance (Fig. 1, Fig. 2). The schedule should be an aviation activities in the development of integrated rescue system as follows: Interior

Ministry would hold a 24-hour emergency room in Prague, Hradec Kralove and within their capabilities, start operating Bell 412 helicopter operations in Brno since 2001. It ensures the 2003 budget funds to purchase new light helicopter for their needs with regard to the tasks in the Integrated Rescue System.

Figure 2. EC-135 in action, DSA Helicopter

Next, choose the appropriate helicopters (total 8) for the Ministry of Interior and air rescue service to be delivered in the period 2003-2008. Since 2004, it will keep a permanent emergency helicopter to the needs of the police and the integrated rescue system in place in Brno and introduced into the second traffic light helicopter category in Hradec Kralove. Ministry of Defence will ensure continuous operation of air ambulance service in London. Ministry of Health of the commercial contract with private operators will provide the basic operation of air ambulance service in Brno, Ceske Budejovice, Usti nad Labem, Ostrava, Jihlava, Liberec and Kosice. At the same time, the Ministry of Health call for tenders for the operation of helicopter technology for air ambulance unit in Brno limited to the period from 1 First 2002 to 31 12th 2003 without upgrading the stations and helicopter air ambulance service in Ceske Budejovice, Usti nad Labem, Ostrava, Jihlava, Liberec and Kosice from 1 First The 2002nd Furthermore, until 2008, will provide commercial contract aircraft financing emergency services in Ceske Budejovice, Usti nad Labem, Ostrava, Jihlava, Liberec and Kosice. Moreover, in 2004, will work the same way ensure the air ambulance service in Brno.

Thus, the CR Army operates today on the air rescue service centre Plzen-Line. Police operates air rescue service centres in Prague and Hradec Kralove. Other places are operated by DSA and ALFA - HELICOPTER companies.

3 AIR RESCUE IN SLOVAKIA

The situation after the collapse of the common law in Slovakia was similar to that in the country. There have been some changes operators, changes in the financing of air rescue services and cancellation of some positions. Helicopter rescue service is in Slovakia financed by health insurance. Since 2005, Slovakia is a valid JAA full member, which means that it must comply with JAR OPS 3, the obligations of membership in JAA.

Figure 3. Air rescue centres in Slovakia

After the split of Czechoslovakia into two separate units, remained in Slovakia as operators of helicopters for air rescue service needs only ATE company and Bel-air, which collapsed in 1996 and created the company Renair and Flight Service Ltd.. In the years 1997 - 1999 of the air into the ambulance company also participated in Slovakia Emergency Services, which operated the helicopter center of Banská Bystrica and carried out by air ambulance flight L-410. In October 1999, operating in Banská Bystrica assume Flight Service Company Ltd. With long-term insolvency of the local hospital was forced to suspend operations. Therefore, from 15th of August 2000, the helicopter centre operated by ATE. ATE Company is currently the largest operator of helicopters for air rescue service in Slovakia. Since 1991, when it started its activities gradually took over 4 centres of air ambulance service and some of them became a health care provider. They were centres of Poprad (1991), Košice (1992), Banská

Bystrica, Bratislava (both 1997) (Table 1). It is currently implementing ATE air rescue and medical care by non-state private health facilities under the authorization of the Ministry of Health. The company gradually modernizes its helicopter fleet. In 2003, the new wave of modernization, which was taken a strategic decision on the purchase of Agusta helicopters A109K2. There were also some changes in how to finance the air ambulance service.

Table 1. The list of centers of the Air rescue in Slovakia

Center	City	Operator
Christopher 01	Bratislava	ATE
Christopher 02	Banská Bystrica	ATE
Christopher 03	Poprad	ATE
Christopher 04	Košice	ZS Košice
Christopher 05	Nitra	ATE
Christopher 06	Žilina	ATE
Christopher 07	Trenčín	ATE

4 HELICOPTERS EQUIPMENT

The A109K2 helicopter, with medical buildings cost approximately 6 million Euros. Fixed health area includes for example medical floor with lock system, two seats for the medical crew, suction machine, oxygen supply, handles instrumentation, and the like. The total mass of the building is 139 kg, 41 kg of which are mentioned floor and 12 kg stretcher. The building is located, and on the ground mounted medical equipment. The aggregate value of approximately 70 000 Euros, which is already included in the helicopter more or less lost. The most expensive device is ECG monitor with defibrillator Life Pack 12, worth 25 000 Euros. The second most expensive item is "artificial lung" or a transport ventilator Oxylog 2000, at 10 000 Euros. On-board radio station Motorola GM 360 working at 160 MHz is complemented by two hand-held radios the same manufacturer, each of 450 grams. The most difficult item is medically removable backpack, including its content which weighs 18 kilograms. Equipment meets the highest requirements for special activities the IRS, also included a helicopter and training of personnel and commission agents for purchase. While private businesses have the same type of helicopter analogy devices. In both cases, the EC-135 helicopter, but due to different avionics, the two pieces can not be compared. The life of the helicopter is about 30 years.

5 CREW REQUIREMENTS

Pilot must be according to JAR OPS 3 flown 1,000 hours, of which 500 hours as a commander, age of the crew is a pilot in 60 years. A doctor can apply for a position where at least six months included in the specialized training in the field of emergency medicine, or in the specialized field of anaesthesiology and intensive care, or has proven experience in the workplace anaesthesiology and intensive care at least six months, which is prepared to consult their practice physician specializing in emergency medicine specialization, or specialization in the specialized field of anaesthesiology and intensive care (Fig. 4). The are 16 captains and the 12 flight engineers. Twelve more pilots still undergoing training. It flies with helicopter EC-135, AG-109, BO-105 and Bell 412th Rescuers must not fly commercially. At the time, when not on duty, they can fly only for their own amusement. But the service is, given the number of 40 people in all rescue helicopters, very often. tour length, during which they reside (literally) at one base, is 4 or 3 days long. Most of them have a family residence in Bratislava or Prague, around half months away from home. Change begins with ARS 15 minutes before sunrise and ends after quarter of an hour west. The bases in Poprad, Trencin and work twelve hours changes from 7 to 19 and 19 to 7 pm. Helicopters A109K2 bear similar signs, and also sometimes in the Republic of turns. In Bystrica currently serves OM-ATE, but there were flying all have, for example OM-ATB. Pilots sometimes distinguish them by the last letters in these two cases, "Bravo" or "Echo".

Figure 4. Crew of EC-135 during action

6 ANALYSES OF HEMS IN SLOVAKIA AND CZECH REPUBLIC

6.1 Assessment of situation

The overall situation in the Slovak and Czech Republic, in terms of technical support and speed of response to request intervention is very good. This means that, as it is standard in western countries, air rescue service is in the hands of private operators, who have first-class technical products. Whether we refer to Eurocopter EC-135, which is used in the Czech Republic, or A109K2 Agusta model, which operates the Slovak company ATE and has been developed in collaboration with the Swiss air rescue service. Time is counted from the receipt of dispatching after arrival at destination is twenty-five minutes, which is within the limits of law which ordered arrive anywhere within thirty minutes of receiving the request. However, as in Switzerland response time is normally within fifteen minutes and Austria to twenty minutes. Another problem, not only in Slovakia is the number of qualified pilots. In the near future if the current situation begins to resolve, will sail on the surface a serious problem and that the vast majority of pilots flying the helicopters are trained prior to 1989.

6.2 Weaknesses of the current status

Previous findings revealed that the radius of 70 km and time of arrival to 25 minutes there is a problem more complex interventions, which can happen that the helicopter will not be available in one hour. If the second hit were on the opposite end of the adjacent area, adding the refuelling, so there is a serious risk that the helicopter fails to arrive as set regulations, i.e. in 30 minutes, in the second destination. In the event that a given machine was handled by a helicopter from another area, such as for the crew from Poprad, the crew of Zilina, there would be even larger and more particularly unacceptable risk to the crew where to jump in. Here higher intervention is required by whom to respond to.

6.3 Proposal for a comprehensive solution

Pilots trained for state money are reaching the age, which is fast approaching retirement age and there are no new adepts with the required air **raid** available. The assumption is that in ten to fifteen years in Central Europe will be a critical shortage of qualified helicopter pilots with a CPL (H) or ATPL (H). Training to the level of a CPL (H), the lowest level of training required for the implementation of a pilot in HEMS, worth 200 thousand Euros. What is more than triple the amount compared with the training of transport pilots to the level of CPL (A). Therefore, individuals in today's global crisis marked time, and have the capital and interest to fly, prefer the path of transport pilots, airplanes, and helicopters. Hence the problem of how to guarantee the supply of qualified young drivers. Since ATE Company currently operates nine helicopters A109K2 Agusta, Eurocopter AS355N one type and one Mi-8, will have to solve this problem completely. Taking into account previous findings, it seems that the best solution to the builder of machinery is to buy another one. The most used type is namely the A109K2. This machine would be placed at the base in Banska Bystrica, which is situated in the middle of the Slovak Republic and especially in the vicinity of the busiest area the Low and High Tatras, which they are able to reach within of 15 minutes. Another step to increase efficiency and economy, society is taking shape, taking into account the fact that in our country there is no flight school that would operate on the level of training the ATPL (H). It follows that to ensure a sustainable operation of HEMS in Slovakia, it would be most ideal to create a flight school,

which would be able to train pilots from zero up to the level ATPL (H). For this purpose, I suggest again base in Banská Bystrica. Backup A109K2 helicopter, would serve well as a machine for training pilots in the later stages of training, which runs a huge advantage and that is that pilots are trained to type, which will also most likely to work after their machine. Training would be based on a contract that will provide all training free of charge adept. Pilot student is bound by a contract, then the company ATE work on helicopters Mi-8, and his salary would be withheld a constant amount. This model serves as the firm of conveying timber, mobile deployment of gap and the like, which are the type and the type of work for less hours of flight time requirements. Mentioned part of the salary would be diverting company ATE, and serve as an instalment loan for training. Thus, the pilots received habits, led by instructors from the ATE, which would have a full range of their training. There will not be a risk that the pilot will later adopted **LZS i**nexperienced, unreliable, or poorly trained pilot.

Figure 5. Simulator A109K2

The second dimension of work for ATE, on machines Mi-8 is required to obtain an air raid meet the requirements necessary for recruiting to the position of pilot LZS. These pilots would therefore be in the company after payment of prior training and employment law firm ATE to return first-class trained pilots from the ground, their instructors. Finally, the flight school operation and profitable business. Backup-training machine would always be fully equipped and ready for action required would only arrive for health professionals in case that during the receipt of the hit machine located in the air for the purpose of flight training, which lasts longer than ten minutes. Helicopter A109K2 as all helicopters need regular maintenance and the overhaul. Due to overhaul the machine can be unavailable for several weeks, so the third dimension of the backup machine and replace indisposed helicopters. Last, but certainly not insignificant advantage of this system is that the term of ten years the entire investment back in instalments, the training, which would be increased by the amount of the machine. After market research, I found that in Central and Eastern Europe there is neither a simulator type A109K2. Establishment of a comprehensive pilot training centre, the level of ATPL (H) and the simulator FNPT A109K2 for the Agusta model, would provide additional funding (Fig. 5). This simulator should perform an annual check on A109K2 type and level of training to CPL (H), practice flying in IFR conditions, which again will save the company up to two thirds of costs compared with training of a real machine, if compared with sending pilots in Italy and half the cost. Not to mention the safety of rehearsal manoeuvres on a simulator compared with the training of a real machine. For example the retraining of night vision. Such training complex in the heart of Slovakia would be unique in Central and Eastern Europe, should also undisputed financial, but also practical benefits for the whole country, which would become a helicopter shock power. Assuming that the Slovak Republic accedes to the helicopter fleet modernization, which is already on the edge of life and was planned in the past, but its implementation defeated the global financial crisis, the importance of such a centre would only be compounded. Model Agusta A109K2 has proved in the Italian Navy, as well as the police. It is ideal for the needs of the Ministry of Interior. Flight school of this nature, would become indispensable, both for private and for the state sector. Thus to this, see here a reflection on the complex co-training centre states, or even sources of Euro funds.

7 CONCLUSIONS

As I mentioned above, the situation HEMS in Slovakia and the Czech Republic is very acceptable. Technique and speed and availability of air ambulance services are at a high level. Perhaps as everywhere, there is but something to improve. Specifically, I suggest buying another machine in the form of backup unavailability LZS possible due to a number of requirements for HEMS at the same time and in the busiest area of the Slovak Republic. Flight simulator with flight school and a new machine is very ambitious and challenging project. It requires a big initial investment, but its subsequent contribution is invaluable. For that reason, had to combine both private and public sector and jointly implement this comprehensive way of dealing with the status quo. It is important to anticipate events and to flexibly respond to them. This project would no doubt respond to a situation that is not only timely, but also a situation that is yet to come.

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