AIR TRAFFIC SERVICES AT KABUL AIRPORT – POLISH EXPERIENCE

Bogdan Grenda

In accordance with the long-term plan of Military Committee of NATO to support the functioning of Kabul International Airport (KAIA) in Afghanistan and the political decision of Polish Ministry of National Defense, Air Forces (POLAF) carried out the leading role in KAIA management during the period April – October 2009. It was significant event in the POLAF history, until then we had never performed such demanding function. Therefore, the article presents the lessons, which we learned during our tour as a lead nation.

K e y w o r d s: NATO, airport, air traffic service

1 INTRODUCTION

The tragic event of September 11, 2001¹, was a turning point of starting terrorist war against Taliban guerilla in Afghanistan. The main objective of military operation - to defeat the Taliban, was achieved in 2002. Since 2003 international military forces - ISAF (about 35 thousand soldiers from 37 countries) the stability mission has been conducted. The main task of ISAF² is to create a secure environment in and around Kabul and support the reconstruction of Afghanistan by setting up a new government structure, namely the Afghan Transitional Authority. ISAF is also contributing to improve economic situation, increase social acceptance of the democratically elected government and to enhance international cooperation. An equally important part of the ISAF activities is to strengthen the Afghan society belief that in the long term, it is possible to develop their country peacefully. The development should be understood, not only as a rebuilding of social infrastructure and humanitarian aid, but also as a reconstruction of state organizational structures. One of the most significant priorities is to restore the functioning of all forms of public transport, especially air transport sector. Therefore, in October 2003, the first initiative of development and normalisation of the aviation sector in Afghanistan was appeared. Created the Road Map, pointed to a number of priority areas for action such as: aviation security, safety oversight and incident management, civil aviation capacity building, airports and airspace organisation and management. As a consequence of this action the KAIA (Kabul Afghan International Airport) has been recognized as the most important investment for the development of international aviation in Afghanistan. Another important step was to develop in 2006 the "Strategic Plan for the normalisation of the aviation sector in Afghanistan" aimed at providing an overarching concept of operations detailing objectives, timelines and financial impact of all aviation related projects. This document identified five main areas of aviation development, which focused on: aviation regulation, provision of ANS, airports, education and training and air space users. In recent

years numerous initiatives such as: the civil aviation authority was formed, began intensive training of air traffic controllers and flight crew, airport infrastructure development etc. However, in poor and backward country, the construction process of the aviation sector is complex and long - term. Furthermore this process required large amounts of money and support from qualified international staff. Poland as a country, which actively participating in all activities of the international community, also joined to the process of development of Afghan aviation. In 2009, the Polish Air Force (POLAF) for the first time in our history carried out the management of the airport in Kabul. It was very difficult and demanding mission, conducted in the unpredictable environment, requires the involvement of professional military personnel. Therefore, the aim of this article is to present experiences of the Polish military contingent during the KAIA mission.

2 KABUL INTERNATIONAL AIRPORT

Kabul International Airport is the biggest civilian airport in Afghanistan. It is situated about half mile (1 Km) north northeast of Kabul City and just west of Khwaja Rawash village, 25 miles (40 Km) south of Bagram airfield, and 68 miles (110 Km) west of Jalalabad. Hills and mountains reaching above 10500 feet (3200 mt) within 15 miles (24 km) of airport³. Kabul airport belongs to the MoTCA (Ministry of Transportation), which operates KAIA. It is the main terminal for host nation civil air transport, the site facility for Afghanistan's high and low air control center (ACC), as well as for ISAF's air logistics and combat support operations. The airport is open 24 hours for Military flights only. Airport infrastructure (aerodrome) is split into two operational zones: the southern occupied by civilian aviation and northern used by the military. Central point of the aerodrome is the runway with a length of 3500 m and a width of 45 m. Kabul International Airport is equipped with:

- a) ILS RWY 29 (CAT. I) –MOTCA property and is maintained by civilian site. All IFR procedures are made by US Air Force and are published in Afghanistan AIP every month.
- b) VOR/DME MOTCA property and is maintained by civilian site;

¹ A series of four suicide attacks that were committed in the United States, coordinated to strike the areas of New York City and Washington, D.C.

² ISAF was created in accordance with the Bonn Conference in December 2001.

³ <u>https://www.motca.gov.af/?id=11</u> (access: 12.09.2012).

- c) PAR RMS property, maintained by RMS personnel;
- d) TACAN RMS property, maintained by RMS personnel;
- e) Airfield Lighting System maintained by ATCO Frontec – company hired by ISAF.

ATC Tower is equipped with:

- a) DARIS Radar provided and maintained by Danish Team. Due to its high reliability and specifications DARIS radar allows Kabul Tower to observe all the low level traffic and all the other traffic coming higher from every directions within a range of 25NM, giving immediately a clear picture of imminent traffic situation to be controlled.
- b) Rhode Schwarz Radios maintained by ATCO Frontec.
- c) ICN Communication System maintained by ATCO Frontec – basic equipment for internal communication at KAIA. Used by ATC TWR especially for ground movements and crash alert.
- ALDIS lamp for coordination movements of planes and vehicles by light signals in case of radio failure or special procedures.
- e) DIRECTION FINDER;
- f) TACMET metrological system showing all needed METEO data. [1]

3. KAIA ORGANIZATION

The organizational structure of the International Airport in Kabul consists of four functional divisions, assigned to carry out the fallowing tasks⁴:

- 1) Operations Group responsible for control, air traffic management and coordination support elements of the movement areas. In addition, this group is responsible for APOD.
- Support and logistics Groups provides accommodation facilities services, repair and maintenance of equipment, transportation, storage and warehousing and MPS products.
- 3) Force Protection Group is responsible for ensuring the safety of personnel and property of airport. In addition, make demining areas and facilities.
- Staff supports KAIA Commander in decision making process. It is also responsible for management, intelligence and command and communication system.

To support airport activity there are also: the Greek field hospital, the French battle group and the Belgian company security forces. The Afghan authorities retain responsibility for their respective Areas of Responsibilities (AOR). Inside ISAF AOR access for non-ISAF personnel is denied. However, access for ISAF-employees or guests on official business including



⁴ ATC Job description, KAIA Kabul AFG, Afghanistan 2005.

personnel working at the airport for the Afghan Armed Forces or other Governmental Institutions will be permitted. Furthermore ISAF Rules of Engagement (ROE) are to apply, including authorization to use firearms. The same rules shall apply on KAIA outside the ISAF AOR, where ISAF or ISAF-chartered aircraft are operated and/or parked⁵. By authority of the MoTCA of the GIRoA, the CFACC (Combined Forces Air Component Commander) has designated the ACA (Airspace Coordination Authority) as the responsible agency for Kabul FIR until further notice.

Total number of staff personnel is about 400 civil and military personnel from nearly 20 countries.

KAIA mission is performed in the six months cycle, under the command of lead nation country. The Polish Military Contingent overtook control at the International Airport in Kabul between 5 March to 30 September 2009. Polish group consisted of air traffic controllers, engineering units, and drug and bomb detecting dogs trainers. Poles served at major posts including: commander, chief of staff, and chief of logistics. During mission, the POLAF detachment was perform missions concerning airport command, daily air operations coordination, take-offs and landings control, air traffic monitoring in the area, weather conditions analysis and prognosis, communication apparatus maintaining in functional parameters, as well as logistic support of airport operations. Polish sappers dealt with detection and clearing mines and unexploded ordnance that could put at risk security at the airport and KAIA staff.

4. AIR TRAFFIC SERVICES RESPONSIBILITIES

Air Traffic Control at KAIA is provided:

- a) Kabul CTR within Kabul CTR, ACA lies with ISAF, while ATC service is provided by Kabul ATC Tower. COM KAIA is responsible for the management of adequate ATC services at KAIA.
- b) Kabul TMA RMS personnel, under the authority of CFACC's designated ACA, provide radar Approach Control Service.



Figure 2. Airport Kabul TMA.

⁵Local Operating Procedures Kabul International Airport (LOP KAIA), HQ ISAF, Afghanistan 2005, p.7. Kabul TWR is responsible for maintaining and expediting a safe flown of Air Traffic into associated controller airspace (CTR) which is KABUL CTR – Class D, 6 NM radius from ARP, GND – 9500 ft AMSL. Kabul TWR provides Air Traffic Control in accordance to ICAO and internal ISAF regulations. Air Traffic Control is provided to all operators arriving/departing from Kabul Intl Airport including military and civilian flights (Fixed and Rotary wings). Kabul TWR strictly cooperates with:

- a) US KABUL Radar Approach Control;
- b) US BAGRAM Radar Approach Control;
- c) Area Control Centre;
- d) Air Ops room;
- e) Aprons managers.

Kabul TWR is placed at civilian site of the airport and includes 4 working positions:

- a) Local Control is responsible for providing safe, orderly and expeditious control to all aircraft operating in the Kabul CTR.
- b) Ground Control is responsible for providing safe, orderly and expeditious control to all aircraft and vehicles on the aerodrome.
- c) Coordinator is responsible for ensuring that all external phone-based communication, which facilitates the operation at KAIA, is accomplished.
- TWR Watch Supervisor is responsible for overall situation at Kabul TWR including personal management, emergencies, status of all airport Navaids, technical issues at Tower facility.

There are placed also additional positions for:

- Afghani Liaison responsible for parking management for all civilian operators – manned by Afghani employees;
- b) KRAPCON Liaison as a coordinator between TWR and APP. Kabul APP duties are performed by RMS personnel hired by US NAVY. Approach control service is delivered to all operators in accordance with FAA/US Air Force regulations.
- ANA Liaison member of Afghani National Army (ANA) is responsible for coordination all of ANA's flights.

5. AIR TRAFFIC AT KAIA

KAIA is a very busy airport – especially at spring and summer time. Every year, total traffic is continuously increasing (Figure 1). During Polish mission, daily average was around 338 operations, but it's really important to point out, that most of those operations were during daytime what makes peak with around 30 - 50 operations by hour. It means that during rush hours at the Airport, almost every minute there was departing or arriving aircraft. In addition, most of ANA forces which were based at KAIA perform regular training flights.



Figure 3. Air traffic movements statistics

Usually, 45% of total traffic was made by civilian operators – the rest were military flights including ANA flights, US&UK Embassy flights and US Aid flights. Since Poland was Lead Nation at KAIA, traffic has increased from **7647** operations at March up to almost **10000** operations at end of June.

6. PROBLEM IN ATC MATTER AT KAIA

An air traffic controllers cope with a highly demanding job that involves a complex series of tasks, requiring high levels of knowledge and expertise, combined with high levels of responsibility. Different types of aircraft, tactical arrivals with unpredicted flight path, difficulty environment, a lot of in - flight airspace emergency situations, restrictions and limitations of equipment makes every day very challenging and demanding. Main sources of stress reported by air traffic controllers are related both to the operative aspects of their job and to organizational structures.

The main problem involved the language barrier. Some pilots spoke very little English and rely on a standardized phraseology checklists, causing problems for the tower and approach controllers when the need for non-standard, "plain English", communication was required⁶. Lack of personnel impact was identify as serious problem.Critical shortfalls regarding manning in tower were occurred many times. This situation has forced COM KAIA to reduce operations at KAIA in the past, and for some times Airport remained closed during night. Very often, rotation of personnel from different nations is at the same time, so in fact, it really decreases total number of rated controllers. Additionally, assigned personnel do not have adequate previous qualifications as ATC - some nations sends personnel qualified as fighter controllers or fighter allocator or even they are qualified IAW national regulations, but do not meet the standards required to work in KAIA Tower. It's obvious, that training period for those personnel instead of estimated 3 weeks, turns into a 2 months educational program on Tower Control. It cannot be accepted anymore to provide by nations personnel without proper qualification. It's strongly recommended to priorities deployment to KAIA controllers with previous KAIA experience. Also, especially for Lead Nation controllers, it's recommended to come at least 4 weeks before official take over of KAIA. It is to reduce this problem that ISAF decided to hire Civilian personnel. At the moment there are only 4 ICC, one manager (D-SATCO) and 3 controllers working in TWR, they assure continuity and experience to maintain the regular and standard operation and to train the military controllers rotating each time of the year. Next problem involved FOD control. It was difficult due to the relatively uncontrolled nature of the airfield environment and the ongoing construction throughout the property. Safety officers were proactive at holding bi-monthly cross-talk meetings, but the prevailing opinion among aircrews contacted during the assessment was that discussion item follow-on actions were slow at coming or non-existent. There was a lack of ground vehicle/personnel control on Drivers of vehicles were not properly the airfield. trained or briefed on the procedures to be followed while in the vicinity of aircraft. Tenant units had mitigated this risk by placing barriers around their flight lines and access control points to reduce the possibility of incursions. Construction crews working on the airfield were not briefed on safety responsibilities, creating a hazard to themselves and aircraft. Numerous dogs live within the confines of the airfield, were posing a hazard to aircraft. To date, no action had been taken to mitigate the animal-aircraft strike hazard. Due to technical issue, it was observed, that ILS system had not worked properly - system was completely unstable and it was really difficult to find out when was giving correct indication and when not. Tower controller had three info sources about current ILS status: control panel at TWR, civilian technician's and pilot reports. However, it was really difficult to predict if the system was OK or not, because even when technician states that ILS was in service and control panel shows WARNING message, then pilots report that they did not receive glide path or localizer indication. Every time, when ILS was out of service, TWR SV had to issue NOTAM via ISAF AIS Office. However it's was never official confirmation that ILS is calibrated, working properly - besides civilian technicians statements. Practically it means, that every time when TWR SV decided to issue or cancel NOTAM, he was not 100% sure that system is OK or out of service. It could be possible impact for flight safety especially during bad weather conditions (winter time, dust storms) without ILS in service - military crews could still perform PAR procedure (similar weather minima to ILS), but unfortunately civilians were not allowed to do it (only VOR APP). Next problem included radio coverage. There had been a significant increase in the number and tempo of the operations in and around the KAIA APOD area. The success and

⁶ Col Andrew W. Papp, Afghanistan Airfield Assessment Team Report, Air Component Coordination Element, Afghanistan 2005, p. 9.

safety of these operations depended on the sufficient availability of reliable ground to air communication systems. Mountains N NE of the airport were natural obstacles for the radio waves and they were making disable to contact any A/C approaching or departing from or to this direction. Two way radio contact usually was fully established when aircraft was 1.5 - 2 NM North of KAIA going to final RWY 29 for landing. This short time was not enough to ensure safety sequencing for departing/arriving traffic – so from obvious reasons it was a flight safety risk.

Finally the Area control center (ACC) worked at Procedural (non-radar) causing delay for all the departure and arrival sequence.

7. CONCLUSION

Polish troops serving as part of KAIA mission returned home on 1st October 2009 after its over 6 month- long stay in Afghanistan. Over 70 Polish airmen exercised control over the biggest and most important airport in the capital of Afghanistan securing approximately 380 air operations a day. During its mission Polish personnel secured over 56 thousand flights, in an unfavorable geographic environment. Kabul airport lies in an area surrounded by mountains, which makes take-off and landing very difficult. More than this, sand storms render more difficult the pilots and those responsible of flies' coordination and surveillance activity. Last but not least, nobody must forget that there is a war area, with many and unconventional threats. Taking ahead all of this aspect, ATC training for new controllers required control duties and it's scheduled in accordance to Occupational Training Program for KABUL Tower. Every time, SATCO shall interview all personnel at the beginning of the operational training and items to be discussed during this interview shall include:

- a) past employment;
- b) the individual's perspectives and concerns;
- c) the OTP (Occupational Training Plan);
- d) the role of the airport; and
- e) what is expected of the trainee during training.

Despite all these difficulties, the Polish troops' mission in Afghanistan was a proper occasion to prove their professionalism in a place called "the door to the world, where there are no problems, but solutions only".

BIBLIOGRAPHY

 Compa T., Kozuba J., "Procedury operacyjne dla personelu lotniczego" – Dęblin, WSOSP, 2010 – p. 124.