HADMÉRNÖK

III. Évfolyam 4. szám - 2008. december

Magyar Sándor
ZMNE Hadtudományi Doktori Iskola
smagyar@freemail.hu

THE SPECIFIC CHARACTERISTICS OF PEACEKEEPING OPERATIONS FROM THE ASPECTS OF TELECOMMUNICATIONS

Abstract/Absztrakt

The specific characteristics of peace support operations, their geographical and climate conditions put a great overload on the soldiers. The most significant feature of the missions is that the soldiers have to carry out their tasks outsides their county in many cases on another continent, mostly without telecommunications infrastructure, on devastated areas; that is why they can rely on the local public service providers in their communications only to a small degree or not at all. I analyze the above mentioned from the point of view of general military operations, but I also mention their effects on signals and signals personnel.

A békefenntartó műveletek sajátosságai, eltérő földrajzi, égövi területe miatt különös megterhelést ró a katonákra. A missziók legfontosabb sajátossága, hogy a katonák a feladatot országon kívül, sok esetben más földrészen, legnagyobb részben távközlési infrastruktúra nélküli, lerombolt területeken hajtják végre, ezért távközlés szempontjából a helyi közcélú szolgáltatókra csak kis mértékben, vagy egyáltalán nem lehet támaszkodni. A fent említetteket cikkemben az általános hadműveleti szempontból elemzem, azonban kitérek a híradásra, híradó állományra gyakorolt hatásukra.

Keywords/Kulcsszavak: *peacekeeping, telecommunications, distance diagnosis, spare parts, environmental factors ~ békefenntartás, híradás, távdiagnosztika, tartalék alkatrészek, környezeti faktor*

Introduction

The success of peacekeeping operations is influenced by several inside and outside factors. In my article I analyze these factors from the point of view of general military operations, but I also mention their effects on signals and signals personnel.

The intervening military forces have a specific role in peace support operations. This specific role does not only determine the contingent, structure and technical equipment of the mission but also requires new capabilities of the soldiers. [1]

According to the Field Manual 100-5 Operations, the war theatre environment has human and physical dimensions. Regarding the human dimension, the manual highlights the soldier, and regarding the physical dimension it highlights the environment. [2]

The human and environmental factors influencing telecommunications

Participation in peacekeeping operations represents a special task and it greatly differs from operations in the homeland. The level of physical and mental overload is considerable - higher than the level that the soldiers who are to be deployed have to face in their tasks in their national positions, that is why the applicants also have to fulfil special conditions in order to carry out successful peacekeeping tasks. For this reason the aptitude of serving on peacekeeping missions has to be checked both physically and mentally.

Besides the mental and professional training, the suitable physical condition and standing power is very important for achieving successful work. Good physical standing power correlates with good psychological standing power [3], which is especially important for soldiers on peacekeeping missions. On mission areas signal troops have to wear their personal equipment (helmet, bullet proof vest, personal weapons, etc) and the significant differences in the weather conditions are a great burden. The signals and informatics containers have to be air conditioned because the instruments require a special maintenance temperature. When the soldiers leave the container, they often sense a 20-30 degrees difference in temperature and this means an increased overload for the heart and the circulatory system. It is easier to bear this overload if soldiers have a good physical condition, just like in the convoy communications where they must wear protection gear and support the higher temperature.

In the war theatre the peacekeepers can experience life threatening situations, catastrophes; they can see seriously wounded people, encounter death and atrocities, and they can get in touch with people who are suffering because of the consequences of the conflict.

The high level of stress which is caused due to these traumatic experiences and partly due to other reasons like the hard and tiring work of peacekeepers the great distance from their home and separation from their families as well as the foreign culture can only be handled in a good psychological condition. [4]

The command and control system greatly influences the execution of peacekeeping missions. Without the necessary communications the units and subunits are not able to carry out their tasks. On every command level there is greater and greater need to have a high amount of information so that the decisions can be taken with precaution and great care. Besides voice connection, the signal and informatics troops have to safely transmit high quality data including video information. Ensuring the connection is a special task, which is usually carried out by subunits of a small number using technical equipment. If the information flow is broken, signal troops suffer psychologically, that is why psychological training is also important besides physical training.

If the soldier is aware that he can contact his superior any time, indifferently from the conditions or he can call for help if needed, his feeling of personal safety is highly increased. This makes the high availability of signals also in special conditions extremely important. In such conditions the soldiers can execute their tasks with more stability and on a high level. But private or moral calls give the soldiers the possibility to talk with the members of their family about their everyday problems and successes, to hear about the situation at home. All this promotes their balanced mental condition.

The transmission of information in due time is extremely important for all the participants, that is why every soldier must know the signals equipment. The performance of the personnel decreases in stressful situation. If working with radios or satellite telephones is not well enough practised, the continuous connection in real situations is endangered.

The outer environmental factors (the physical dimensions) have a great influence on the mission and endurance of personnel on duty.

The geographical environment can be varied and there are often extremes. In peacekeeping missions the personnel often has to carry out their tasks in extreme terrain conditions, covering great distances. From the point of view of signals there are significant differences between mountainous, desert and arctic terrains or areas covered with forests. In case of radio communications there are differences in the distance of communication in desert, mountainous or forest environments. If the winter is cold or in arctic conditions VSAT[1] antennas must be heated but this is not necessary in the desert.

The geographical settings of the operational area, the terrain, the season, the time of day, and the weather have all a great influence on the signals and informatics support of the military operation. This makes it necessary to investigate and study communications systems which are capable of providing appropriate service in the above mentioned conditions as well as in accordance with the different needs and also the execution of local intervention and network management. These systems must meet the new requirements, which include mobility, flexibility, reaction capability, safety and standardization.

Up to the past five years the needs for the complex mission communication support had to be provided according to the special terrain, field and weather conditions greatly similar to our country's conditions. However, as a consequence of the increasing participation in NATO[2] operations, we must get ready for any extreme condition influencing telecommunications in deployment to any area of the world. This is shown by a good example: because of the desert conditions, the signals of the Iraqi Transport Battalion caused special unknown problems for the troops of both signals and informatics and of almost all the other branches. The general concepts of mission communication have to be continuously modernised and altered necessarily, with regard to the new technical and other challenges.

As I have already mentioned, the changes in the main system of tasks of the Hungarian Defence Forces brought along the transformation of requirements of the telecommunications support for the mission personnel. The number of the possible deployment countries has considerably increased. This means that any weather and terrain variant can appear. Taking into consideration the cost effective organisation principles of the Hungarian Defence Forces, we must form a unified concept.

The extreme weather does not only influence the personnel but also the telecommunications equipment (for example monsoon or heavy rainfalls, sandstorm, etc). In some areas there are other factors that influence the execution possibilities of the tasks: the change of the seasons (long, rainy and dry seasons change), and there is a significant difference in temperature between winter and summer. The great changes of temperatures between day and night influence not only communications system but also the soldiers. In some areas (more intensely near the Equator) 15 minutes at noon is enough for serious skin damage.

The climate characteristics of the Iraqi mission set new conditions for ensuring telecommunications services; for example the protection against the sand of the desert is a completely new need. The outer protection of the devices and the criteria of insulating the containers had to be raised. It is advisable to keep criteria of temperature differences concerning the built-in installations and the requirements of humidity and sand resistance on a

[1] VSAT - Very Small Aperture Terminal
[2] NATO - North Atlantic Treaty Organisation

normal level and to make these conditions stricter for containers and built-in transport vehicles. This solution is more economical both from the point of view of investment and the fact that it is not recommended to give up the further maintenance of the already well-proven devices.

We must pay more attention to suitability requirements of the outdoor units, installations and elements of the telecommunications systems, because we have to get ready for the installation and maintenance of this equipment also in extreme condition.

We must take into consideration the typical colour of the elements of the environment in a given country in the case of communication vehicles, containers and equipment. The camouflage colours of the equipment of the other nations in a peacekeeping mission can help to choose the suitable colour but it is sometimes much better to choose a different colour for camouflage so that the Hungarian contingent can be easily distinguished.

In peacekeeping operations besides the professional knowledge, moral and ethical questions are also very important as the inner moral values and norms guiding the soldier can lead to some generalizations about the given nation. To avoid this, the soldiers must be well informed about the geopolitical and social aspects of the given area. They must know the political, historical and religious situation and the minorities of the given country. In the second-generation peacekeeping missions one particular characteristic is that the conflict breaks out not only between countries but more and more often inside the country, mainly as a result of ethnic cleansing or religious conflict.

The degree of danger of peacekeeping operations, the new asymmetric threats such as terrorism, illegal weapons trading, drug smuggling, etc can cause further conflicts of interest in the operational area. The sphere of interest of the local warlords and leaders can often be hampered by peacekeeping activities and as a result, the peacekeepers can become the target of these forces. The death of peacekeeping soldiers or the wounded peacekeepers can have an effect on the citizens of the sending country and these repeated attempts against the contingent can enhance their withdrawal from the operational area. It may happen that the political organisations get under the control of the warlords if the state fails and in such a case their sphere of interest is different from that of the mission.

Besides the above mentioned elements, critical infrastructure also plays a defining role. Lajos MUHA defines this concept as follows: if these installations, devices or services stopped functioning or were destroyed, it would decrease the efficiency of the activity of the government, it would endanger the safety of the nation, of the national economy of public safety and of public healthcare. All this could significantly decrease the trust put into the national morale, the safety of the nation, the national economy, or public safety. [5] The concept of the critical infrastructure can be used for the infrastructure of peacekeeping forces as well. These refer to the local water supply, road network, railway network, communications system, healthcare system, fuel supply system, etc, which are elements of infrastructure influencing the safety of the peacekeeping operation. Besides ensuring the normal course of daily life, joining the local infrastructure has many other important aspects in connection with telecommunications. Public administration connections, CIMIC[3], the media all need to join the local communications system.

Taking into consideration the above mentioned elements the physical and mental training and readiness of the signal troops in peacekeeping missions is vital but we must also define the general purposes and expectations about the professional level of the signals and informatics troops. [6]

[3] CIMIC - Civilian Military Cooperation

The problems of stockpiles, spare parts and transport due to great distances

It is indispensable to have sufficient stockpiles and spare parts to provide highly available telecommunications services. However, it is a constant dilemma what the quantity of the stockpile available in the mission area as well as in the stores back at home should be. We need a suitable site for storing the spare parts and equipment belonging to the peace operations contingent. This site must meet some special requirements because only some devices and elements can be kept in their own place, for example in a mobile container.

The lack of space often influences the quantity of the spare parts to be transported to the mission area. Furthermore, we must pay attention to the fact the procurement price of these devices, elements and spare parts can be high, and this also is a good reason for keeping the minimum stockpile. In spite of this, there is a serious counter argument, namely that if a device breaks down and it is important to restore its operation as soon as possible to maintain the telecommunications services, the supply from the homeland to the mission area of a spare part, which is not available on the spot, can take even several days or a week. Another aggravating factor is when these spare parts are not available in the homeland stores, and as a result, there is further delay because it must be provided from civilian companies according to the transport between several countries (for example the item is transported from the country of the company to the required place).

Due to the above mentioned factors, the composition of the homeland stock piles must be carefully considered. The following guidelines can help to quickly and efficiently avert the breakdown or the failure:

- The redundancy operation of strategically important devices is necessary to avoid failure of devices that cause the failure of the communications system.
- The storing possibilities on the mission site must be assessed so that the quantity of the material to be transported and safely stored must be calculated.
- In the home county it s recommended to establish a central mission spare stock pile from the spare parts which often and more frequently get out of order. This stockpile must be put together based on the failure risk assessment. This is important because the devices transported to the mission area can be planned and mostly are the same devices. This would ensure a stock pile that can be relatively quickly transported to the mission area cost effectively.
- In the case of those devices from which establishing a stock pile would mean extremely high costs, it would be necessary to stipulate in the acquisition and service contracts the deadline until which the company is obliged to provide the supply material and replacement device.

Taking these principals into consideration, we can establish stock piles which ensure realistic maintenance safety in order to provide a high level voice and data communication.

The necessity of distance diagnosis

It is a recurrent difficulty that the experts sent on location are not experienced enough to discover cabling and installing problems. The signal troops ensuring the telecommunications of the missions has the possibility to ask the Network Operation Centre for help if the problems and tasks exceed their knowledge. If the problem can be investigated by the Network Operation Centre, it is usually quickly solved.

On areas where there is no management possibility, the homeland network managers can only rely on what they hear and this makes the troubleshooting and averting of the problem more difficult. As in a case like this, it is very expensive to transport an expert to the scene and as all the possibilities of broadband application are available, I suggest that signal troops should be provided with an authorised device with a camera (for example a digital camera). With this devise they can take photos and send them to the homeland experts, who are able to analyze the viable solutions in the photos.

This method can lead to good results when, for example some installation rule, cable laying mistake or physical connection must be checked or examined. The information interventions and the technical feedback sent online are seen on the monitor by the expert or expert group in the homeland side and they can effectively take part in the solution of the problem.

The necessity for Uninterruptible Power Supply (UPS) and air conditioning

Many times the quality and availability of the services provided by the electricity supply companies in the mission area unreliable, that is why when we plan a communications system, we must plan devices capable of UPS for a long time. Besides this, we must provide the energy supply for air conditioning. In the absence of air conditioning some vital devices can fail.

It is indispensable to examine and categorise the electricity supply and air-conditioning devices necessary for mission telecommunications and operations. This must be done on the basis of the expected depreciation data, their use and breakdown curve. The spare parts which fall into the category of quickly breaking down items we must establish stock piles on the mission site. In case of the rarely or quite frequently breaking down items we must consider their acquisition price and on that basis their procurement for the homeland stockpile or we must request the supplier company to keep these available.

Summary

The specific characteristics of peace support operations, their geographical and climate conditions put a great overload on the soldiers. Highlighting the above mentioned human, physical, and geopolitical factors, I can state that proper preparation and training play an outstanding role in the effective execution of the tasks. Besides acquiring the necessary skills, the soldiers must be strictly trained in the physical, language, general military, healthcare, and nuclear-biological and chemical protection, etc areas in details.

The most significant feature of the missions is that the soldiers have to carry out their tasks outsides their county in many cases on another continent, mostly without telecommunications infrastructure, on devastated areas; that is why they can rely on the local public service providers in their communications only to a small degree or not at all. The local telecommunications infrastructure is almost always damaged or is completely destroyed. The troops serving abroad and their devices and instalments are faced with extreme weather conditions, which can have a negative effect on the telecommunications system. These factors are mainly the great temperature differences between days and night, the great heat during the day and the dust sand storms. The failures caused by these factors can be decreased by technology suitable for extreme conditions.

With future acquisitions, we must take into consideration the special geographical and climate conditions and phenomena (temperature changes, dust, humidity, the difference in the dominant terrain colours) and when compiling the tenders, these must be basic requirements

to fulfil the above mentioned special needs. The equipment and spare parts designed for normal use can quickly break down because of these extreme conditions. The service contracts and the spare parts supply is connected to the home country, from where their transport, together with experts if necessary, is expensive, time-consuming and difficult. Although the acquisition price of devices which are suitable for these special conditions is higher, they provide faultless and reliable operation and due to this, concerning maintenance and service costs also, they are more economical and provide more reliable service than the devices designed for normal operational conditions. Based on the method of providing stock piles, a more cost effective and more mobile service background can be established, to achieve continuous high-level communications.

References

[1]. Molnár István: A béketámogatók magatartásformái, Új Honvédségi Szemle (2006. 9. sz. p. 36.-42.)

[2]. FM 100-5 Hadműveletek Tábori Kézikönyv, Magyar Honvédség Vezérkara, 1997, p. 243.

[3]. Juhász Zsolt: A katonák fizikai alkalmasságvizsgálatának tapasztalatai, Kard és Toll 2006/1

[4]. Nagyné Bereczki Szilvia: Missziókban szolgálatot teljesítő katonák pszichikai alkalmasságvizsgálatának tapasztalatai, Új Honvédségi Szemle (2003. 3. sz. p. 62.)

[5]. Muha Lajos: A Magyar Köztársaság kritikus információs infrastruktúrájának védelme, doktori értekezés, 2007, p. 40.

[6]. Révész Gyula: A szárazföldi csapatok híradó kiképzésének jövője, különös tekintettel a híradó tiszthelyettes képzésre, doktori értekezés, 2007, p. 78.