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The vulnerability of fuel stockpiles

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In every country fuel is of strategic importance, therefore it requires special methods of stockpiling, storage, protection and transportation to the users, which are different from those of other materials. The petroleum products used by the Hungarian Defence Forces are indispensible means of defence in all areas of the activities of the services. That is why we are of the opinion that both from the point of view of defence and as a source of energy in the national economy, fuel requires special attention and protection since it is vital for the normal functioning of security and defence installations in peace, in a state of emergency or in war alike.

Introduction

Most of the Hungarian Defence Forces' war materials and military technical equipment are playing critical role in the military supply chain, because their procurement can be realized only from special import. However in our article we are describing the supply difficulties with fuel, though as a material it can't be considered special in terms of military supply. Despite of that fuel is considered as high priority material also by NATO because its lack can lead to frustration of important defence tasks.

The vulnerability of fuel stockpiles

In every country fuel is of strategic importance, therefore it requires special methods of stockpiling, storage, protection and transportation to the users, which are different from those of other materials. According to Allied Joint Logistic Doctrine the provision of POL[i] (Class 3), like all other classes of supply is essentially a national responsibility. However, POL lends itself most easily to multinational initiatives.[1]

From the point of view of the military and the defence sphere in general, fuels are such dangerous materials which are necessary for defence activity in every branch of service and a disruption of the fuel supplies would harm the ability of the army to accomplish its missions. This is true in the case of both a single piece of equipment and

[i] Petroleum, Oils and Lubricants.

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the whole of military operations. Logistic support regarding its aim of overriding importance. The goal of logistic support is to form and maintain stockpiles, regulate consumption in normative way, substitute the employed supplies, get the military equipment ready for application, recover the damaged (faulty) equipment, carry out transportation tasks during crisis response operations and in peace as well.[2]

At the same time it is also true that the needs of the army and the defence sphere in general, are not at all, or only to a very small extent, special compared with the needs of the national economy.

Having defined the area we are discussing, let us have a look at Table 1.

Table 1. Fuels in the national economy and in the Hungarian Defence Forces
(Table created by the authors)

Fuels	In the national economy	In the Hungarian Defence Forces
Propellants		
Gasoline	x	x
Diesel	x	x (with lower CFPP)
Aviation Gasoline	x	x
JET A-1	x	x
Lubricants		
Oils	x	x Some Aviation Oils (replaceable)
Greases	x	x
Maintenance Materials	x	x

Table 2. The changes in the stockpiles of the Hungarian Defence Forces and their locations
(Table created by the authors)

	Tactical Stockpiles (tons)	Operational Stockpiles (tons)	Strategic Stockpiles (tons)
1990 (60 days of normal combat)	38.000	5.000	161.000/145.000[x]
2010 (30 days of normal combat)	5.410	2.320/2140[x]	15.460/15.460[x]

Note[x]: stored at the national economy base
The locations of the above mentioned stockpiles:
Tactical stockpile (enough for 7 average days of fighting): stored according to unit locations.

The stockpiles of the defence forces are traditionally divided into tactical, operational and strategic stockpiles corresponding to the three levels of war. Their amount is determined by the number of vehicles and other equipment needing fuel and

also by the amount of stockpiles to be kept for each level and jointly for all three levels. The latter varies as a function of our membership in the Alliance and the security and procurement risks. As regards the Hungarian Defence Forces, both areas have undergone dramatic changes.

Operational stockpile: stored in the national economy; NRF[ii] stockpile: stored in the Central Fuel Storage Depot (KÜZAR).

Strategic stockpile: all of it is stored in the national economy at various locations.

It makes sense to examine vulnerability from two different aspects; from the points of view of Sector I and Sector X of the Green Paper on the National Program for Critical Infrastructure Protection.

Critical infrastructure include those physical facilities, supply chains, information technologies and communication networks which, if destroyed, degraded or rendered unavailable for an extended period , would significantly impact ont he health, safety or economic wellbeing of the citizens, the effective functioning of the government and would affect nation's ability to conduct national defence and ensure national security.

The most serious threats to the infrastructure in Sector I and Sector X are as follows:

1. Wars and armed conflicts
2. Natural disasters
3. Nuclear accidents
4. Terror attacks
5. Industrial accidents

The petroleum products used by the Hungarian Defence Forces are indispensible means of defence in all areas of the activities of the services.

That is why we are of the opinion that both from the point of view of defence and as a source of energy in the national economy, fuel requires special attention and protection since it is vital for the normal functioning of security and defence installations in peace, in a state of emergency or in war alike. Zoltán Lovász in his study makes the following statement: "On the basis of the new defence concept the whole territory of Hungary can be considered as theatre of operation. We have to aware of the fact, that beyond the national forces, coalition forces will also carry out operations in our country."[3]

The study analyzing the realization of Host Nation Support (HNS) also emphasizes the possibilities of material means of the national economy speaking about the assistance the US forces were provided with in Hungary in period of Southern Slav

[ii] NATO Response Force.

conflict. From this point of view the role of national economy as a base for strategic stockpiles of fuel has become more important.[4]

Since the overwhelming majority of our stockpiles are stored in the national economy, this situation should be described in detail.

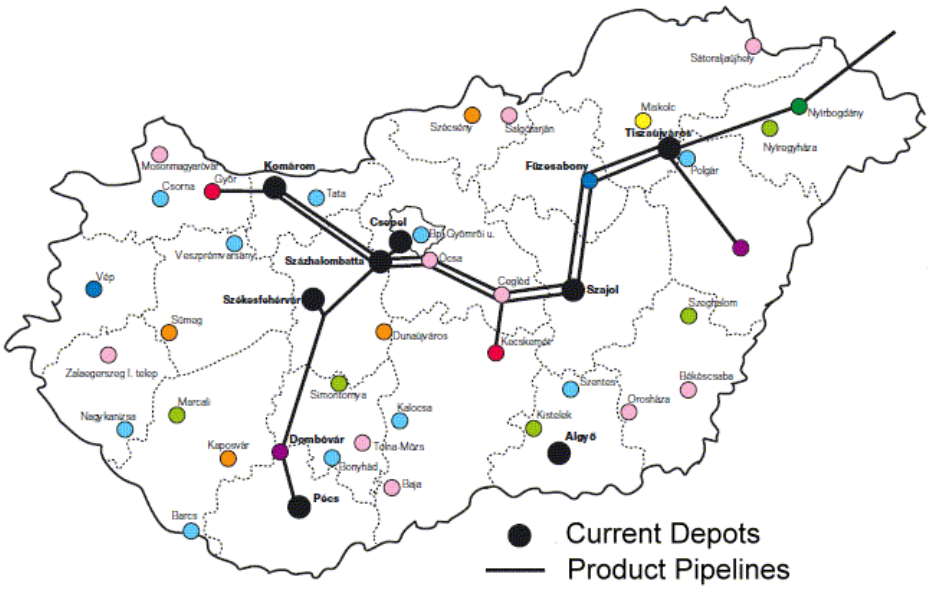

Figure 1. The current wholesale depots and product pipelines of MOL
(MOL Logisztika.pdf, 2011.)

Transportation, storage and the strategic role of MOL[5]

Act No. IL of 1993 contains provisions about the stockpiling of petroleum and petroleum products for strategic purposes and also about the establishment of KKKSz (Crude Oil and Crude Oil Product Stockpiling Association). By the end of 1998 the KKKSz created a reserve of more than 1.2 million tons of crude oil and petroleum products, which ensures trouble-free consumption for the country for 90 days. In doing so Hungary both satisfied the obligations set as a precondition to full membership both in the EU and the IEA,[iii] and the provisions of the Act. At the proposal of the Association, five storage companies were established, which are by now partly or fully

[iii] International Energy Agency.

owned by KKKSz. Over the past ten years these companies constructed new modern storage capacities. From the point of view of existing reserves, the crude oil and petroleum products held in storage in pipelines are also very important, since at the moment there are 850 km of fuel pipelines in the territory of Hungary and calculating with an average pipeline diameter, it amounts to approximately 700,000 cubic meters of these materials.

MOL regularly took part in the public tenders for storage and procurement opened by KKKSz. Approximately one third of the Association's inventories are stored at the storage facilities of MOL, on the basis of long term availability contracts. Kőolajtároló Rt. (Petroleum Product Storage Co.), which was established with a majority shareholding of MOL in 1996, built six 80,000 cubic meter storage facilities, four in the area of Duna Oil Refinery and two in the area of Tisza Oil Refinery, for strategic stockpiling. In 2001 MOL sold its majority stake in Kőolajtároló Rt. to KKKSz). MOL also stores petroleum products for KKKSz in the area of the two refineries and in its storage facilities in the towns of Komárom and Szajol.

MOL and NATO relations

Following several rounds of negotiations an agreement was reached for MOL to make available the total storage capacity of its Dombóvár depot, with the required operational structure, to the U.S. Government.

In 1999 NATO's operations in Bosnia were launched from Ferihegy Airport.

In September 2005 the Hungarian Ministry of Defence concluded a contract with MOL whereby the company agreed to place specified storage capacity, together with transport and loading equipment, all meeting required technical standards, at the disposal of NATO in emergency situations, and, if required, to provide aviation and motor vehicle fuels to meet NATO demand. For the very first time in the history of NATO the need for supply of large amounts of fuel was resolved not from military-operated storage facilities – the construction and maintenance of which would have required significant expenditure – but, in Hungary, through a long-term leasing of MOL storage facilities, necessary in a national economy anyway, and requiring less upgrade measures. The storage facilities at both Liszt Ferenc Airport (Ferihegy) and at the airfield at Kecskemét are connected to pipelines which permit direct access to MOL's distribution system. The revamp of these external storage facilities and pipeline construction were funded from NATO resources.

The critical points of the infrastructure are strategic crude oil and white product stockpiles and aviation fuel. In Hungary, the most significant airport supply operations

take place at Ferihegy International Airport. Here, the aircraft refuelling company Repülőtéri Üzemanyag Kiszolgáló (RÜK) delivers 70% of fuel supplies to aircraft, in addition to meeting Hungarian national carrier MALÉV demand, thus accounting for the refuelling needs of most airlines using the airport. RÜK Ltd purchases JET A-1 fuel from MOL under a delivery and commercial contract.

In recent years, with the participation of major foreign investors, the upgrading of other airports around Hungary (Debrecen, Sármellék, Győr-Pér) has commenced, resulting in a spectacular increase in demand for jet fuel. By maximising its production capacity, MOL has made preparations to meet this demand.[5]

As far as the Hungarian Defence Forces are concerned, special attention has to be paid to four airports/airfields which serve the purpose of receiving the reinforcements and also function as starting points for the application of those forces.

Liszt Ferenc Airport (Ferihegy), which has a JET A-1 storage capacity of two 5 million litre containers, but as we have seen it is also connected to pipelines, which allow resupply.

Pápa Airfield has a storage capacity for 5 million litres of JET A-1, 50,000 litres of gasoline and 150,000 litres of Diesel oil but it can only be resupplied by rail or road.

Kecskemét Airfield has a storage capacity for 5,785,000 litres of JET A-1, 50,000 litres of gasoline and 200,000 litres of Diesel oil.

Szolnok Airfield has a storage capacity for 965,000 litres of JET A-1, 50,000 litres of gasoline and 150,000 litres of Diesel oil.

Table 3. Stockpiles of jet fuel stored at the most important air bases in Hungary
(Table created by the authors)

Airfield, Air Base	JET A-1 (litres)
Liszt Ferenc (Ferihegy)	10.000.000
Pápa	5.000.000
Kecskemét	5.785.000
Szolnok	965.000

As a result of the stored quantities, the resupply conditions and urgency of tasks (missions), in my opinion, the most critical parts of the fuel supply chain in the Hungarian Defence Forces are storage, transportation and distribution.

Conclusion

As a summary for our examination we can state that fuel as a material is not considered special in term of supply, but it is indispensable in military operations. Its absence can be critical in national economy and in the Army as well. That is why we are of the

opinion that both from the point of view of defence and as a source of energy in the national economy, fuel requires special attention and protection since it is vital for the normal functioning of security and defence installations in peace, in a state of emergency or in war alike.

References

1. AJP-4(A) Allied Joint Logistic Doctrine, NATO/EAPC 2003, 0307.
2. Magyar Honvédség Összhaderőnemi Doktrína, Honvédelmi Minisztérium, Honvéd Vezérkar Hadműveleti Csoportfőnökség kiadványa, 2002.
3. Dr. LOVÁSZ Zoltán: *Az ország területe védelmi célú előkészítésének elméleti alapjai*, Tanulmány, ZMNE Vezérkari Tanfolyam, 1999.
4. Dr. BÁTHY Sándor, Dr. JÁVOR Endre: *Befogadó Nemzeti Támogatás*, Tanulmány, ZMNE kiadvány, 2004.
5. http://www.mol.hu/hu/vallalati_ugyfeleknek/finomitas_kereskedelem/logisztika/