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DEFENCE APPLICATION OF THE VEHICLE SELECTION SYSTEM FOR OFFICIAL USE

A HATÓSÁGI JÁRMŰ KIVÁLASZTÁS RENDSZERÉNEK VÉDELMI ALKALMAZÁSA

LAIN Tamás

(ORCID:0000-0003-1666-7048)

lain.tamas@gmail.com

Abstract

Parallel with the development of the transport system, it is a fundamental expectation to lower the numbers of road accidents in our everyday lives.One of the tools of this is the nature of the ever stricter and more safety oriented legislation that comes into effect. In his paper, the author describes a new risk assessment system that will be introduced to the national legislation which will help the traffic control inspections, in order to draw attention to its usage in defence management as well.

Keywords: *roadside inspection, defence management, vehicle's technical condition, risk assessment.*

Absztrakt

A közlekedési rendszer fejlődésével párhuzamosan alapvető elvárásként jelentkezik a mindennapjainkban a közúti baleseti számok csökkentése. Ennek egyik eszköze a hatályba lépő jogszabályok egyre szigorúbb és a biztonság irányába ható jellege. A szerző a cikkében a hazai szabályzásban bevezetésre kerülő közlekedési hatósági ellenőrzéseket segítő kockázatértékelő rendszert mutatja be annak érdekében, hogy annak védelmi igazgatási felhasználhatóságára is fel tudja hívni a figyelmet.

Kulcsszavak: *közúti ellenőrzés, védelmi igazgatás, jármű műszaki állapot, kockázat értékelés.*

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INTRODUCTION

The national management system is undergoing continuous change, one of its reasons is the mandatory nature of regulations and guidelines that come into effect in the European Union. The creation of these laws may in many cases be traced back to a bad practice or to a condition which had an unfavourable effect on society. This is the case as well with the regulation of the transport system, where this state is due to the current state of road safety. According to my opinion, research carried out in this field is useful, and because of their innovative nature, their scientific value is outstanding.

It is therefore worth examining the new rules will that be introduced on safety to the transport sector. At the same time, a thorough examination would not be complete, if it would not look for interfaces with different sectors. For example, some parts of defence management can clearly and closely be linked to road safety.

Following this train of thought, let's examine the international regulation that is built into the national legal system after presenting the current structure of defence management, which may also have relevance in the defence sector.

RELATIONSHIP BETWEEN THE DOMESTIC TRAFFIC AND DEFENSE SECTOR

The domestic system of defence management can be divided into two distinct levels. This is the central and the territorial level.At the central level is the Parliament, which decides, among other things, to participate in military operations, and to make laws regarding special legal order.Its executive power is the Government, which is the supreme general body of public administration.Its scope of authority and duty extend to all areas of public administration.It is exercised by the relevant minister or by the state administration bodies. The Government is responsible to the Parliament.

In this defence management structure, the Hungarian Defence Forces have a special place, its fundamental task is the military defence of Hungary's independence, its territorial integrity and its borders, the joint defence and peacekeeping tasks deriving from international treaties, assistance in the prevention of disasters, eliminating the consequences of catastrophes.

This describes a highly regulated management system into which other important elements may be linked.

For example defence preparation in which the following organizations may participate: [1] [2]

- judicial and prosecutorial organizations;
- the national news agency;
- electronic communications and IT organizations;
- the Central Bank of Hungary;
- public service and public utility services;
- transport organizations.

Part of the defence preparations are also the fulfillment of financial and economic services, in which not only the mentioned organizations may be involved, but - in the interests of defence tasks - everyone.

In this case we shall not only consider the various business companies, but every other person staying in Hungary. The legal basis of it is determined by national defence laws.

Rules are basically applied at the time of special legal order, but the following may be ordered for the obligated during period of peace as well: [1]

- to notify in terms with changes in the data of properties, services and technical assets designated for military use, and to keep them in a fit state;
- to maintain the economy's ability to function, making reserves and stocks necessary for the basic provision of the population;
- preparatory activities for service, including planning tasks and the establishment of organizations as well;
- contribution in the authenticity of the notifications and in the on-the-spot checks to be carried out for the achievability of the services, and the elimination of shortcomings found during the check;
- temporary use of property and movable property to law enforcement agencies (Hungarian Defence Forces) and to defence management, which are necessary to be added for their operations and drills.

The above list shows the extent of the legislation which specifies the civilian assets and facilities that may be involved in the planning processes.

In order to involve adequate civilian capacities, the resources in the given sector shall be measured.However, the choice of tools and their evaluation system may differ significantly from one another. A very specific area is e.g. systems of transport, handling and transport processes.

The laws of military science, the experiences of strategic, operational and tactical actions demonstrate that there was always a need for cooperation with the allied and national governmental bodies, military organizations, civilian authorities, transport system network and control systems, vehicles, businesses, vehicle owners, official and other civilian bodies in order to move the military force besides its own mobility and control systems. [3]

The transport system greatly influences the military’s dependence on external capabilities outside of its own organization and its own equipment. We should not consider only the size and organizational features of the military, but the following aspects as well:

- the state of development of the used transport infrastructure;
- the density of the used transport infrastructure;
- the share of the transport subsectors from the division of traffic sharing;
- performance present on transport networks;
- the composition, quantitative and qualitative characteristics of the vehicle fleet;
- bypassing possibilities of destroyed, or under reconstruction network sections, parts (short-term and long-term as well);
- the country’s (theater of war’s) natural geography (seas, sea exits, terrain and hydrography);
- the opportunities for deployment, and the opportunities for allocation and replenishment of strategic and operational supplies;
- the expected allied military cooperation’s size and content;
- the topic and the content of the military force’s preparation;
- the location and transport needs of defence industrial centers;
- the country’s (theater of war’s) settlement network;
- institutional background for defence preparations regarding the transport system;
- regulation for defence preparations regarding the transport system.

We must agree with Attila Horváth's idea that the experiences of world wars and armed conflicts prove that significant corrections regarding the transport system are not possible in the immediate period before the war, therefore the defence preparation for the transport

system must be carried out during peacetime.Examination of transport systems may be of complete value if we reveal as many aspects as possible.As it was mentioned earlier, the complex management system does not only contain the departments of Hungarian Defence Forces, but the other central, regional and local administrative units as well.

The above points out the close link between transport and defence management.Let us take a look at the international transport regulatory framework that was already mentioned in the introduction, in order to highlight military usability.

THE ROAD TRANSPORT SYSTEM IN THE LIGHT OF THE TRANSPORT AUTHORITY AND INTERNATIONAL LAW

"Transport needs can always and everywhere be seen as a spatial-temporal projection of human and economic relationships that appear on the transport network as vehicle, goods, passenger or pedestrian flows." [4]

The basic expectation about these currents is to reduce the number of injuries during motion.

From the statistical data it can be seen that more than 35,000 people died in the European Union in 2009 on the roads, and the injured was about one and a half million. [5]

The seriousness of this situation has been recognized by the decision-makers of the European Union as well and it was proposed as a target to halve the number of fatal road accidents between 2010 and 2020 in order to reach a common road safety area.In the White Paper entitled "Roadmap to a Single European Transport Area" these intentions were also recorded.

Among other things, the publication sets out clear requirements about road safety.For example, reducing the number of road fatalities to zero by the end of 2050. [6]

I think that there is still a long way to go to achieve these favorable numbers, but research directions can be well defined in this matter.The goal is to reduce the number of accidents.

Since traffic can be interpreted as a complex system, so naturally the path to achieve the desired goal may only be reached after careful consideration of the components.

Vehicle – Track – Human – Goods.

This model of transport is frequently said in the research of experts.Road safety statistics also rate the causes of accidents in this matter as well.Let us take a look at one of the elements of this system, the vehicles, and their safety checks.

Although the statistical data show no major cause for traffic accidents in terms of the technical condition of the vehicle, but in my opinion it is not a negligible factor if the already mentioned drastic reduction of accidents is the goal.The technical condition of the vehicles may be satisfactory at a given moment, but this is not a guarantee for a fault-free operation further on.The goal is that the vehicles shall only be allowed to participate in traffic while complying with the legislation.For this purpose, the European Union has established the DIRECTIVE 2014/47/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, which specifically seeks to unify roadside checks and aims to increase efficiency.It’s subject is about improving the overall safety of transport by defining the minimum requirements regarding vehicles’ roadworthiness that are on the road.Hereinafter, let us review the details of the checking process through the content of this directive.

During its work the authorized inspection authority – after the selection – examines the vehicle, the process works as follows:

- If any roadworthiness certificate is available in any form about the last roadworthiness test, or an earlier inspection report, the controller will make his / her inspection based on the mentioned documents.If there were deficiencies found earlier according to the mentioned documents, the inspector will check whether they have been repaired, or he / she may make any further examinations.This option is also available if previous documents did not reveal any shortcomings.
- The inspector examines the vehicle's technical condition by visual inspection. The contents of this test include, inter alia, whether the inspector who is authorized to do so should continue with a detailed or instrumental examination, or if it is not justified by any factor, finish the inspection as soon as possible.
- The inspector may assess the adequacy of the securing of the vehicle's cargo based on the available standards. These are very wide-ranging and detailed, including the standards of calculation of lashing forces, the lashing points, the structural strength of the vehicle, the web lashings made from man-made fibres, the lashing chains, the lashing steel wire ropes, the ISO containers, the swap bodies, the tarpaulins, the poles and stanchions and the transport packaging.

The effectiveness of the inspection is increased by the use of any method by the inspector in his / her technical examination.If the technical condition of the vehicle gives cause for it or does not make it clear from the initial test whether or not there is a certain technical error, then the vehicle may be subjected to a more detailed technical inspection.In this process, the mentioned directive sets out very precisely what to check and the severity of the deficiencies.

Based on this, the inspected areas may be: [7]

- Identification of the vehicle;
- Braking equipment;
- Steering;
- Visibility;
- The lighting equipment and the parts of the electrical system;
- The axles, wheels, tyres, suspension;
- Chassis and chassis attachments;
- Other equipment;
- Nuisance;
- Supplementary tests for passenger-carrying vehicles of categories M2 and M3.

For each of the listed inspection possibilities, additional subcategories list potential insufficiencies and related evaluations that these may be minor, major or dangerous deficiencies.The precise categorization of the identified deficiencies helps to achieve the stated road safety goals, harmonizing the vehicle test and evaluation methods used in the European Union.It can be stated that the inspection activity alone is not enough to achieve the goals.As technical deficiencies can be traced back to malpractice or to conscious activity in a significant number of cases, it is therefore necessary to collect data in a way that collects and groups the available control data according to the operator or to the owner.The mentioned information may also be used in the selection of vehicles as well in order to selectively target those operators during inspection who pose an increased risk.

This system has been drafted and it is already incorporated into the national regulatory system by the mentioned directive and it is mandatory to apply from May 2018.

In order to define probable military use, let us take a look at the details of it.

Elements of a risk assessment system based on the technical inspection of vehicles

The mentioned risk assessment system does not only include the details of roadside inspections that were carried out, but also evaluates periodic roadworthiness tests.

Periodic roadworthiness tests are required for every vehicle in use.Its time period depends on the type and on the age of the vehicle.

According to the relevant legislation: [8]

- The deadline for the periodic inspection for a new vehicle from the first entry into service, for a used vehicle from the date of the pre-registration roadworthiness test
    - for a bus, for a trolleybus, for a motorcar and a trailer with a GVM over 3500 kg not included under b) is one year,
    - for motorcycles, for a motorcar up to a maximum GVM of 3500 kg,
        - is four years for a new vehicle,
        - for used vehicles, three years until three calendar years after the first year of use, and two years beyond three calendar years,
    - for all other vehicles after the year of first use of the vehicle
        - two years until four calendar years,
        - it shall be one year beyond four calendar years.

The basic purpose of the test is to keep vehicles in good technical condition and also to make them kept in that.Since the test takes place at a specific time, the owner of the vehicle consciously prepares for it.Checking the condition of the vehicle between roadworthiness tests is a very important task, and for its method many solutions are available.

One of them is random sampling the vehicles on public roads, which can be fundamentally executed by the traffic authority and the police according to Hungarian law. [9]

The other method is to check the vehicle fleet onsite. Although in this case the vehicle does not engage in road traffic, but it is possible to test the vehicles much more extensively. The method of the inspection is done in both ways as described above.Due to the large number of vehicles, it is difficult to only choose the problematic vehicles and to inspect their driver.

Among other things, a risk assessment system was created to help this, which helps to map the audited on the basis of experiences of inspections.

The parameters for the examination of the risk assessment system include:

- the number of deficiencies: the legislation clearly defines what a deficiency is.Its cardinality is an important input data of the system,
- severity of deficiencies: not only the cardinality is an important parameter, but also its degree of severity.

The risk assessment system clearly defines the deficiencies forming on the vehicles, and even determines the severity of it.

This severity rating was not made to only distinct between technical contents, the system takes these into consideration with different severity factors while evaluating according to the following table:

Assessment of deficiency	Severity factor
Dangerous deficiency	40
Major deficiency	10
Minor deficiency	1

Table 1 the severity factors regarding the assessment of deficiencies [8]

The results of the previous inspections have an impact on risk ratings as well.The weights in this case are set according to which time interval the inspection happened.The closer the date of the inspection, the higher the multiplier value for the evaluation.

The exact scale of the distribution is shown in the table below.

Time of inspection	Multiplier
1 year (last 12 months)	3
2 years (months 13-24)	2
3 years (months 25-36)	1

Table 2 the multipliers regarding the time of inspection [8]

Therefore, the risk rating can be calculated using these parameters.

For its overall value the following formula is used:

$$RR = \frac{(D_{Y1} \times 3) + (D_{Y2} \times 2) + (D_{Y3} \times 1)}{\#C_{Y1} + \#C_{Y2} + \#C_{Y3}} \quad (1)\ [8]$$

where:

- RR = overall risk rating score,
- DYi = total for the defects in year 1, 2, 3,
- DY1=(#DD×40)+ (#MaD× 10)+ (#MiD×1) in year 1,
- # = the number of different deficiencies
- DD = the number of dangerous deficiencies
- MaD = the number of major deficiencies
- MiD = the number of minor deficiencies
- C = checks in year 1, 2, 3.

The annual risk rating can be defined with the following formula:

$$AR = \frac{(\#DD \times 40) + (MaD \times 10) + (\#MiD \times 1)}{\#C} \quad (2)\ [8]$$

where:

- AR = annual risk score,
- DD = the number of dangerous deficiencies,
- MaD = the number of major deficiencies,

- MiD = the number of minor deficiencies,
- C = the number of inspections. [directive]

The annual risk rating is also capable of tracking changes that took place in the position of the company.The trend-based analysis of the examined operator allows the establishment of long-term prognoses.

Using these, we may reach the numerical value of risk rating, which is distributed by the directive into three additional risk categories according to the risk levels:

- low risk: undertakings (vehicles) with a value below 30%
- medium risk: undertakings (vehicles) with a value between 30% and 80%
- high risk: undertakings (vehicles) with a value over 80%

Based on the risk rating system developed according to this directive, it is possible to classify or categorize transport undertakings.

THE DEFENCE APPLICATION OF THE RISK RATING SYSTEM, SUMMARY

The basis for the defence preparation of the traffic system is the selection system taking into account the composition, the quantitative and the qualitative characteristics of the vehicle fleet.

The ones mentioned so far have shown that there is a link between the transport and the defence area in the Hungarian management system, which makes this criterion possible at a higher level.In the system which relies on traffic control inspections and periodic roadworthiness tests, on a strictly professional basis, the qualified low risk, medium risk, high risk operators and their vehicles are subjected to a not only one-time rating process, but also due to the continuous monitoring, changes in their risk ratings can be traced as well.

Therefore in my point of view, the risk assessment system may not only be used as a helpful database only, but as a determining system that can serve as the professional basis to involve civililian vehicles for defence use.

BIBLIOGRAPHY

[1] BAÁN MIHÁLY - BORS ISTVÁN – CSIFFÁRY TAMÁS – HÁRI LÁSZLÓ – KOCSIS LAJOS – SZENTES LÁSZLÓ: *Magyarország védelmi igazgatása a közigazgatás új környezetében*; Zrínyi Kiadó, Budapest, 2014. pp. 55-71.

[2] HORVÁTH A: *Az ellátási lánc, mint kritikus infrastruktúra (létfontosságú rendszerelem)*; In: Szerk.: Csengeri János, Szerk.: Krajnc Zoltán Humánvédelem - békeműveleti és veszélyhelyzet-kezelési eljárások fejlesztése. Budapest: Nemzeti Közszolgálati Egyetem, Hadtudományi és Honvédtisztképző Kar, 2016. pp. 550-614.

[3] HORVÁTH A: *Szempontok a katonai közlekedési rendszer védelemigazgatási és nemzetgazdasági kapcsolatrendszeréről*, Katonai logisztika 24.évf. Különszám (2016) pp. 245-266. http://epa.oszk.hu/02700/02735/00083/pdf/EPA02735_katonai_logisztika_2016_ksz_245-266.pdf (letöltve: 2018.03.07.)

[4] KÖVESNÉ DR. GILICZE ÉVA et al.: *Közlekedési rendszerek*; http://www.kukg.bme.hu/kukg/oktatas/msc/tantargy/BMEKOKUM204/kozlrendsz.pdf (letöltve: 2018.03.08.)

[5] *A KÖZÚTI KÖZLEKEDÉSBIZTONSÁG EURÓPAI TÉRSÉGE FELÉ – A közlekedésbiztonsággal kapcsolatos politikai iránymutatás a 2011 és 2020 közötti időszakra;* https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/road_safety_citizen/road_safety_citizen_100924_hu.pdf (letöltve: 2017.03.07.)

[6] FEHÉR KÖNYV *Útiterv az egységes európai közlekedési térség megvalósításához – Úton egy versenyképes és erőforrás-hatékony közlekedési rendszer felé;* http://eur-lex.europa.eu/legal-content/HU/TXT/PDF/?uri=CELEX:52011DC0144&from=HU (letöltve: 2018.03.07.)

[7] *AZ EURÓPAI PARLAMENT ÉS A TANÁCS 2014/47/EU IRÁNYELVE* (2018.03.07-i hatályos állapot)

[8] 5/1990. (IV. 12.) *KöHÉM rendelet a közúti járművek műszaki megvizsgálásáról (2018.05.20-i hatályos állapot)*

[9] 1988. *ÉVI I. TÖRVÉNY A KÖZÚTI KÖZLEKEDÉSRŐL* **(**2018.05.20-i hatályos állapot)