



Taylor & Francis
Taylor & Francis Group



TRANSPORT

ISSN 1648-4142 print / ISSN 1648-3480 online

2011 Volume 26(2): 224–231

doi:10.3846/16484142.2011.592216

THE IMPROVEMENT CONCEPTION OF DRIVERS TRAINING AND EXAMINATION SYSTEM IN LITHUANIA

Valdas Valiūnas¹, Robertas Pečeliūnas², Saulius Nagurnas³, Vidas Žuraulis⁴,
Kristina Kemzūraitė⁵, Rimantas Subačius⁶, Jonas Lazauskas⁷

^{1, 2, 3, 4, 5}Dept of Automotive Transport, Vilnius Gediminas Technical University,
J. Basanavičiaus g. 28, LT-03224 Vilnius, Lithuania

⁶Dept of Railway Transport, Vilnius Gediminas Technical University,
J. Basanavičiaus g. 28, LT-03224 Vilnius, Lithuania

⁷Dept of Transport Management, Vilnius Gediminas Technical University,
Plytinės g. 27, LT-10105 Vilnius, Lithuania

E-mails: ¹valdas.valiunas@vgtu.lt; ²robertas.peceliunas@vgtu.lt (corresponding author);

³saulius.nagurnas@vgtu.lt; ⁴vidas.zuraulis@vgtu.lt; ⁵kristina.kemzuraite@vgtu.lt;

⁶rimantas.subacius@vgtu.lt; ⁷jonas.lazauskas@vgtu.lt

Received 22 February 2011; accepted 23 March 2011

Abstract. The current paper presents the structure of the drivers training and examination system existing in Lithuania and describes the interrelations between the institutions involved in the said process. In course of analysis of models of drivers training and examination systems of various countries, their advantages and imperfections are highlighted. The experience of Germany, Holland, Sweden and Great Britain in the sphere of training and examination of motor vehicles drivers is described. In the end of the paper, conclusions and recommendations for improving the quality of drivers training and examination system as well as traffic safety in Lithuania are provided.

Keywords: traffic safety; drivers training; drivers examination; driver's license; vehicle.

1. Introduction

Transport is of vital importance for the society because it contributes to economic development (Sivilevičius 2011; Mačiulis *et al.* 2009; Ginevičius, Podvezko 2009; Žvirblis, Zinkevičiūtė 2008; Li *et al.* 2009; Vega, Penne 2008; Prentkovskis *et al.* 2009b; Vasilis Vasiliauskas *et al.* 2010; Jakimavičius, Burinskienė 2009; Jauneikaitė, Carreno 2009; Jović, Depolo 2011); however, in addition to its positive impact on the economy, transport causes an adverse effect on the society and environment. A considerable harm is caused by traffic accidents when humans perish and are injured, vehicles and road constructions are damaged, the environment is polluted by spilled fuels, oils and transported materials (Baltrėnas, Kazlauskienė 2009; Baltrėnas *et al.* 2008; Baltrėnas, Puzinas 2009; Pečeliūnas, Prentkovskis 2006; Vaišis, Januševičius 2009; Prentkovskis *et al.* 2009a, 2010a, 2010b; Sapragnas, Dargužis 2011; Rukuiža, Eidukynas 2009; Čygas *et al.* 2009; Leipus *et al.* 2010; Pellegrino 2009; Antov *et al.* 2009; Černiauskas *et al.* 2010; Vitkūnas, Meidutė 2011; Jagniatinskis *et al.* 2011).

In the majority opinion, a traffic event is only a collision of one or more vehicles when people suffer to a certain extent. However, going deep to the problem, a traffic event is easily perceived to be much more complicated phenomenon that impacts not only some individuals but the whole state as well. In the year 2010, 300 persons perished and 4328 persons were injured in roads and streets of Lithuania, thus the total loss caused to the state treasury amounted to about 1.5 billion Litas (Lithuanian Road Administration under the Ministry of Transport and Communications – <http://www.lra.lt>).

One of the key problems of road transport is to ensure traffic safety in roads and streets of the country. In various scientific studies, it was found that a majority of traffic events occurs through a fault of drivers and in particular – young drivers (Aufrère *et al.* 2003; Malik, Rakotonirainy 2008; Sadauskas 2003; Miškinis, Valuntaitė 2010).

The object of this study is to ensure road traffic safety and improve versions for the drivers training and examination system.

2. Models of Drivers Training and Examination

In order to reduce the number of traffic events caused by the human factor, a great attention should be paid to improve drivers training and examination as well as their qualification.

In some research works (Sadauskas 2006; Šliupas 2009; Miškinis, Valuntaitė 2010) found that drivers lack of knowledge related to safe driving of a vehicle and practical skills; they are not capable to assess a specific traffic situation and the road conditions properly. At driving schools, future drivers are usually trained to the extent sufficient only for passing the examination instead of training for safe driving and safe participation in traffic.

In Sweden and some other states of the world, no requirement on compulsory training of drivers before examination to gain a driver's license exists. In their study, Wolming and Wiberg (2004) explored an opportunity of introducing a two-phase training before examination for issuing a driver's license in Sweden. Striving to explore the dependence between examination of theoretical knowledge and practical driving on a road, the said authors carried out descriptive and logistic regression analysis. The results of the study showed that practical driving of future drivers on a road depends on the level of their knowledge in the theoretical test. In Wolming and Wiberg's (2004) opinion, a two-phase examination for issuing a driver's license should be suitable for Sweden.

In Sweden, there are two licensing institutions – Swedish Road Traffic Registry and Swedish National Road Administration Department. In the drivers training sector, the activities of the said institutions are bound with development of documents, registration of driver's licenses, training and examination of drivers (Swedish National Road and Transport Research Institute – <http://www.vti.se>).

The Road Traffic Registry is an extended part of Swedish National Road Administration. It is an agency involved in all matters related to vehicles and roads, including road building. Swedish National Road Administration Department is subordinated to the Ministry of Industry, Employment and Communications.

Swedish National Road Administration Department consists of the Vehicle Department and the department engaged in coordination of issuing driver's licenses. Both departments are responsible for formation of the policy and development of rights and regulations bound with vehicles and driver's licenses. In addition, the Vehicle Department controls tests of vehicles.

In this country, a person seeking to obtain a driver's license applies, first of all, to the nearest branch. Then he (she) can start frequenting a driving course at a driving school or taking private driving lessons. To begin with, a theoretical examination takes place; after its successful passing, the date of an examination in practical driving is specified within the subsequent 8 weeks. When the examinations are passed, the documents of the candidate are sent to the Road Traffic Registry and the latter

later sends the issued driver's license to the nearest post office. In the procedure of issuing a driver's license, the following institutions are involved:

- 91 branches involved in accepting applications for issuing driver's licenses;
- 29 testing centers of Swedish National Road Administration Department where examinations are arranged;
- the Road Traffic Registry involved in registration, production and issue of learner driver's licenses and usual driver's licenses;
- Swedish National Road Administration Department involved in control of training and examination of future drivers.

The Road Traffic Registry is responsible for issuing the driver's licenses of all types. Information on issued driver's licenses is accumulated in the database; it is not a subject of selling. In Sweden, 5.3 million of driver's licenses have been issued.

Mynttinen *et al.* (2010) examined the models of drivers training in Finland and Austria striving to find the existing and new evidences for supporting the idea of the second compulsory phase of drivers training. Earlier studies showed that a benefit of the second phase of drivers training in respect of traffic safety is questionable. The authors state that the interval between the first and second phases of training should not be too long. The empirical part of the said study consists of two individual questionnaires for novice drivers. The candidates who had completed the second phase of training in Austria caused less traffic rules violations and traffic events in comparison to those who did not complete it. The used models showed that participants of traffic from Finland rapidly completed the second phase of training which acquired the economic driving skill only.

In Australia, as in a majority of states of the world, programmes of compulsory training for young drivers at driving schools are separated from issuing driver's licenses. Senserrick (2007) discusses the pre-learner and provisional phases of training for issuing driver's licenses and reviews the national system of issuing driver's licenses. In Australia, possibilities of starting to teach driving younger persons, to involve parents more actively in this kind of process and availability of a larger number of programmes at school were discussed with. Various measures, such as prolonged supervised practice and issuing a driver's license after a longer period, which caused positive results, are reviewed. All said initiatives provide a hope that the number of persons perished and injured in traffic events caused by young drivers will be reduced in the nearest future (Senserrick 2007).

The goal of drivers training set in North America is to train safer drivers, those who usually are interpreted as drivers less prone to cause traffic events. Mayhew (2007) discusses upon the level achieved by the drivers training up to now. The author analyzes the past experience, recent achievements and the trends of drivers training in the future and discusses to the extent of the concern of the said with licensing of the drivers trained at the schools. It is not proven yet that such programmes

of instructional licensing increase the efficiency of safety – actually, some practices of drivers training, such as ‘time discounts’, reduced the safety of youth. The current and future attempts to improve drivers training and to integrate it better in the training programmes for licensing should be assessed precisely to establish what does reduce and what does increase the frequency of traffic accidents caused by young drivers and to identify the causes of them.

The programme of drivers training in Norway is intensive, systematic and comprehensive. Rismark and Sølvsberg (2007) studied the situation in all spheres of the programmes of drivers training in Norway for over 5 years. In their study, the authors provide their findings based on communication between instructors and trainees on practical driving and discuss how instructors would be able to use such a dialogue as an effective training instrument. On teaching the trainees to be responsible drivers, the instructors use both ‘clarifying’ and ‘elaborative’ processes. Reciprocal understanding is a process of permanent dialogue where concepts turn into mediatory instruments. When the said conceptual worlds of the instructor and the trainee merge together, the basis for further processes in practical driving on a road appears.

In Germany, institutions of federal states care about licensing of vehicles. The scope of the activities of the vehicle licensing institution KBA (*Kraftfahrt-Bundesamt* – Federal Motor Transport Authority – <http://www.kba.de>) established by them is much narrower as compared to analogous organizations of other countries. KBA is an institution for recognition of motor vehicles; in addition, it supervises and controls three federal registers. One of them covers registration of vehicles, and two others – the procedure of obtaining driver’s license. KBA obtains the data for the registers from branches of federal states. In the first register, information from 450 vehicles registering branches is collected and in two other registers – from 650 branches engaged in issuing driver’s licenses. Actions of KBA are coordinated by the Ministry of Transport and Construction that is responsible for formation of the policy of the activities of this institution.

In Germany, the following procedure of obtaining a driver’s license is valid. A candidate submits an application for issuing a driver’s license at the nearest branch of KBA. Then he (she) provides a medical certificate. The data are verified in KBA central register (VZR and ZFER). In absence of any obstacles, the candidate is provided a series number to be fixed in the local and the central registers. To obtain a driver’s license, the theoretical and practical examinations should be passed. The procedure of drivers training and examination is set and their quality is supervised by the relevant institutions of federal states. Both private and federal companies are involved in training and examination (Kraftfahrt-Bundesamt 2011).

In Holland, the administering institution RDW (*Vehicle Approval and Information*) is engaged in this sphere. In the sector of drivers licensing, the said insti-

tution is engaged in issue and registration of driver’s licenses as well as replacement of foreign licenses. Drivers are trained at accredited schools. Drivers’ examination is carried out by CBR (Driving Test Organization) – organization for examination in driving (Federal Highway Administration – <http://international.fhwa.dot.gov>).

In respect of issuing driver’s licenses, partners of RDW are municipal bureaus where such licenses are issued. RDW is an independent administrative institution (a kind of a governmental agency) subordinated to the Ministry of Transport, Public Works and Water Management.

For obtaining a driver’s license, a candidate should frequent a driving course at an accredited driving school. At school, the candidate submits the application for passing examinations in driving theory and practice. CBR supervises driving schools and coordinates their activities; it arranges the examinations as well. The driving right remains in force until the person becomes 70 years old; however, the driver’s license should be replaced once in 10 years in order to replace the photo and update the personal data. Driver’s licenses are issued by municipal bureaus (municipalities). About 900000 licenses are issued annually.

What is more, in Holland, the Central Register of Driver’s Licenses managed by RDW exists. In the Register, the data of a driver’s license and its bearer are collected. The data come to the Register from municipalities, courts and supervising agencies via computer networks. Information stored in the Register is usable by various public institutions, such as police, municipalities, the Ministry of Justice. Such information is not accessible to an ordinary citizen. Total about 9 million of driver’s licenses are registered.

In Great Britain, Driver and Vehicle Licensing Agency (DVLA – <http://www.dft.gov.uk/dvla>) is involved in drivers and vehicles licensing. The key tasks in the sphere of vehicle licensing include registration, taxation, search and maintenance of vehicles. A majority of the said activities are coordinated and carried out by the central office of DVLA.

DVLA is one of four agencies of the Transport Department. Each agency is subordinated to the public sector. DVO (Driver, vehicle and operator) group of agencies includes the following agencies:

- Driving Standart Agency (DSA) involved in development of driving tests and supervision of driving schools and about 31800 driving instructors;
- Vehicle Certification Agency (VCA) involved in technical examination for substantiation of certification;
- Traffic Area Network (TAN) involved in issuing licenses for vehicles and bus companies;
- Vehicle Inspectorate (VI) involved in regulation of technical examination.

In April 2003, TAN and VI merged together.

In Great Britain, a driver’s license may be issued to a person being at least 17 years old. However, until a driver is under 18 years old, the vehicle he (she) drives

should be marked with the letter 'L' (*learner*) and the person is issued with a license of a learner driver.

Foss (2007) states that the training phase of graduated driver licensing (GDL) system should be long enough for providing the comprehensive introduction to the peculiarities of driving for novice drivers. On the second or interim phase, the known risk conditions are required for making the novice drivers to feel responsible for the vehicle. For improving GDL functioning, it is necessary to perceive better driving by teenagers, so further results will depend on the attempts to become more aware of the real causes of accidents made by teenagers as well as the nature and the types of non-safety of juvenile drivers.

The driving examination consists of the theoretical and practical parts. After their passing, the person is provided a certificate that remains in force for two years. If the person does not collect too many penalty points within the said period, the above mentioned document is replaced for a usual driver's license. Otherwise, the whole procedure is repeated from the start. The documents and applications for issuing driver's licenses are sent to DVLA by mail. The driver's license remains in force until the person becomes 70 years old. However, the photo in it is replaced once in 10 years. At present, DVLA issues 930000 new driver's licenses annually. Information on 38 million driver's licenses is collected in DVLA database.

Hedlund and Compton (2005) carried out studies on the risk factors of young drivers, assessments of GDL programme, the role of the parents in training young drivers and education of drivers. The obtained results confirmed the importance of the said licensing and a necessity of limitation of night-time driving and the number of passengers; in addition, they supported a necessity to prolong a supervised driving practice.

3. The Structure and the Functional Links of Lithuanian System of Drivers Training and Examination

The today structure of Lithuanian system of drivers training and examination is provided in Figure (*Lietuvos Respublikos saugaus eismo automobilių keliais įstatymas 2000 – The Law of Republic of Lithuania on Safe Traffic on Roads*).

The Ministry of Transport and Communications of the Republic of Lithuania sets the qualifying requirements for drivers of motor vehicles and motorcycles, the conditions and the procedure of drivers training to obtain a driver's license for certain categories of vehicles, the standards for enterprises engaged in drivers training or instruction in driving.

The Ministry of Interior of Republic of Lithuania sets the conditions and the procedure of examination to obtain a driver's license for certain categories of vehicles, formulates the standards for enterprises engaged in drivers' examination, organizes initial training and improvement of qualification of examiners.

The Ministry of Health of the Republic of Lithuania sets the requirements and the procedure of medical ex-

amination for drivers as well as the procedure of teaching participants of traffic to provide the first medical aid.

Medical and health care institutions examine the health status of candidates for drivers and of drivers, assess their ability to control vehicles, set restrictions for driving certain categories of vehicles and a periodicity of medical examination of drivers.

The State Road Transport Inspectorate under the Ministry of Transport and Communications of the Republic of Lithuania controls an observance of the provisions of the quality standards of training at driving schools and of their training facilities as well as satisfaction of the conditions for training drivers of motor vehicles.

State-Owned Enterprise 'Regitra' (<http://www.regitra.lt>) is involved in theoretical and practical examination of future drivers. Candidates for drivers pass the compulsory examinations (one examination in the theory and two phases of examination in practical driving; the phase one – examination of the maneuvering skills in a closed ground or an autodrome; and the phase two – driving in test itinerary upon the real traffic conditions). Those candidates who passed the compulsory examinations, the State-Owned Enterprise 'Regitra' issues driver's licenses for a period of 10 years.

A driving school provides services in theoretical and practical driving to candidates for drivers and prepares them for the examinations. A driving school is an economic subject registered according to the procedure established in laws; in the documents of its incorporation, the activities of training in driving courses should be legitimated and it should obtain a certificate for such activities (from the State Road Transport Inspectorate under the Ministry of Transport and Communications) confirming the adequacy of the conditions for training drivers of road vehicles and organizing special courses for drivers involved in transportation of dangerous cargoes according to the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

Training the drivers of motor vehicles should be arranged only after expert's examination of the training facilities and only in the case of positive conclusions of such an examination. An examination is carried out after a submission of all duly executed documents.

A driving school is involved in training drivers of motor vehicles and should:

- conform to the provisions of the Regulations for Training and Improvement of Qualification of Drivers of Motor Vehicles approved by the Ministry of Transport and Communications of the Republic of Lithuania;
- submit the following documents and information to the regional branch of the State Road Transport Inspectorate under the Ministry of Transport and Communications of the Republic of Lithuania:
 - ♦ an application for carrying out an expert's examination of its training facilities;
 - ♦ the certificate of registration of the driving school and its bylaws or another document where the activities in drivers training is legitimated;

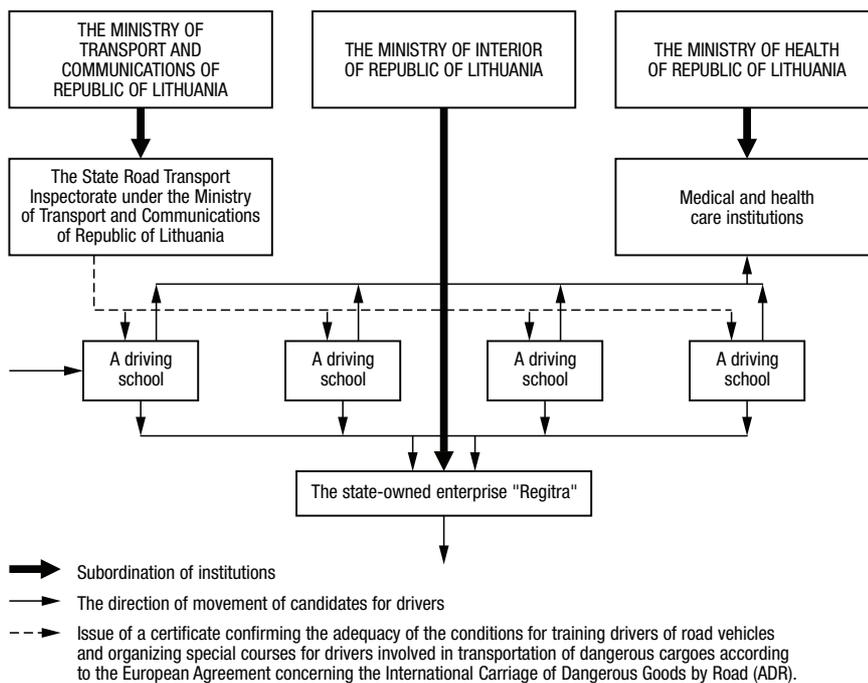


Fig. The scheme of the drivers training and examination system in Lithuania

- ♦ the documents certifying the right of ownership for the premises for drivers training, the autodrome or the driving ground or copies of contracts on lease or gratuitous use;
- ♦ a copy of the permit – hygienic passport issued by a public health center to certify that the training premises conform to the requirements of sanitary and hygiene. If the premises are granted on lease or for a gratuitous use, a copy of the permit – hygienic passport issued to the owner of the premises should be submitted.

An observance of the conditions for training drivers of motor vehicles is controlled by the competent institutions (*a competent institution* is an institution authorized to arrange qualifying examinations for issuing a driver's license according to laws or other legal norms – on the base of the concepts identified in the order No. 18 of the Minister of Transport and Communications of Republic of Lithuania, as of 21 January 2000) – the State Road Transport Inspectorate under the Ministry of Transport and Communications of the Republic of Lithuania (<http://www.vkti.gov.lt>) as well as other institutions provided powers of control. The State Road Transport Inspectorate manages the data, accumulates information on driving schools and provides it according to the previously agreed form to the Department of Registers of the Ministry of Education and Science on a regular basis. Interested persons may obtain such information from the Inspectorate. A driving school can lodge a protest against negative conclusions of the expert's commission to the Head of the Inspectorate or in a legal way according to the procedure established in laws. The Inspectorate shall publish a notice of issue or reregistration of the certificate, its suspension or an-

nulment in Government News (*Valstybės žinios* – <http://www.valstybes-zinios.lt>).

According to the data of the year 2011, there are about 325 driving schools existing in Lithuania, including approximately 50 entitled which train drivers of all vehicles categories (State Road Transport Inspectorate under the Ministry of Transport and Communications of the Republic of Lithuania – <http://www.vkti.gov.lt>).

The task of a driving school is to prepare a driver that would cause no danger for him (her) self and other drivers while driving the vehicle, would not impede the traffic stream, would cause no damage to the environment and help to ensure safety of all traffic participants upon an observance of the driver's ethics and culture of driving, avoiding any violations of the traffic rules and following the instructions of traffic policemen.

The key criterion for assessing the quality of the activities of driving schools is the results of examinations of future drivers. Because of this, driving schools often emphasize the theoretical knowledge of the graduates (not the practical skills in driving) striving to the maximum possible results of the examination, i.e. the maximum possible number of graduates having passed the examination on the first try. Later the data on the results of schools are systematized and schools gain their ratings.

4. The Trends to Improve the System of Training and Examination for Drivers of Motor Vehicles

The preconditions for improving the system of training and examination for drivers of motor vehicles:

- it is necessary to develop a system of training for persons employed at motor transport enterprises to improve their qualification to the level of the initial qualification of drivers and transport spe-

cialists and the regular training of them according to the provisions of EU Directives 2003/39/EC, 96/26/EC, and 2003/59/EC. According to the EU Directive 2003/59/EC, since the year 2008, persons engaged in truck and bus driving should have documents certifying their professional qualification (in addition to the driver's license in respect of the relevant categories of vehicles);

- in course of growing the transport stocks and traffic intensity, a greater attention should be paid to the competence of drivers and development of their skills in safe driving.

The tasks of the safe traffic training system are:

- to develop practical driving skills;
- to improve qualification of professional truck and bus drivers in order to award them the professional qualification and provide certificates of such qualification according to EU Directive 2003/59/EC (in addition to the driver's license in respect of the relevant categories of vehicles);
- to develop the competence and practical safe traffic skills of amateur drivers (in stress-related situations, upon unfavorable weather conditions and so on), ensuring of certification/examination of the knowledge and skills of amateur drivers on a regular basis.

The functions carried out by the safe traffic training system and the services provided by it. It is proposed to improve the safe traffic training system as follows:

- the system should involve all age groups of traffic participants;
- it should implement in practice a requalification of professional drivers according to the requirements to the level of the initial qualification of drivers and transport specialists and the regular training of them set in EU Directives 2003/39/EC, 96/26/EC, and 2003/59/EC, i.e. a system of regular training and examination of professional drivers should be introduced and used;
- it should improve the competence of amateur drivers and develop their practical driving skills upon complicated traffic conditions:
 - ♦ voluntary safe traffic courses for amateur drivers;
 - ♦ after enactment of the relevant legal norms – introduction and application of a systems of training and certification/examination of certain amateur drivers on a regular basis;
- it should form motivation for permanent safe traffic learning and developing practical safe driving skills in the community (participants of traffic in all age groups):
 - ♦ dissemination of information on the status of safe traffic in the state;
 - ♦ demonstrative events (such as contests, safe traffic competitions) that form the community's motivation for deepening the knowledge and improving practical skills in safe traffic;
 - ♦ out-of-class activities (safe traffic circles, safe traffic courses) and events (safe traffic competitions) for children of pre-school and school age.

Candidates to safe traffic schools:

- Amateur drivers voluntarily striving to develop their practical skills in safe traffic/safe driving. At present, the number of M1 class vehicles registered in Lithuania exceeds 1.7 million. According to the pessimistic presumption, no more than 1.5% of amateur drivers, i.e. about 25 thousand drivers a year will frequent training arranged by safe traffic training centers.
- Requalification of drivers of trucks and buses of all types once in 5 years for implementation of the provisions of EU Directives 2003/39/EC, 96/26/EC and 2003/59/EC on the initial qualification of drivers and transport specialists as well as their regular training. At present, there are over 1500 carriers, i.e. transport enterprises, in Lithuania, and they have total over 15000 cargo-carrying vehicles and over 3000 buses. If we assume that one vehicle is used by 2 drivers on the average, there are total no less than 36÷40 thousand drivers of cargo-carrying vehicles and buses in Lithuania. It was estimated that events organized by safe traffic training centers would be visited by 7000 employees of the transport sector per year on the average, including 5000 drivers engaged on international itineraries.
- Drivers from special services (such as police, emergency medical aid, fire-extinguishing service and so on); for them, development of practical driving skills should be compulsory. It was estimated that this target segment of safe traffic training centers would provide 500 drivers a year.
- Causers of traffic events (compulsory frequenting a safe traffic course plus examination). Because about 74% of all registered traffic events occur through a fault of vehicle drivers (drink-driving, exceeding the safe velocity, violation of the maneuvering rules and ignorance of traffic signs), it is estimated that this target segment of safe traffic training centers would provide 5000 participants of safe traffic course annually. Total the target market of safe traffic training centers would involve 37000 visitors annually.
- Other potential segments of participants of training courses arranged by safe traffic training centers: children of preschool age and of school age up to the 8th form (weekend safe traffic schools, safe traffic competitions), pupils from the 8th form (safe traffic courses and practical seminars as a supplement to the initial driving and traffic lessons at school), pupils of the 9÷12th forms voluntarily involved in development of practical driving skills. It is estimated that such clients of safe traffic training centers from the above-listed supplemental segments of the market can form about 15% of the target participants or 13000 persons annually.

The total market of safe traffic centers would involve about 50 thousand visitors annually.

5. Conclusions and Recommendations for Improving the System of Training and Examination of Vehicle Drivers

1. For reducing the accident rate, Lithuania should pay a greater attention to propagation of safe traffic, development of safe traffic programmes, introduction of a safe traffic training system, development of practical and safe traffic skills in drivers, training of safe traffic professionals and improvement of their qualification. The system should ensure improving the qualification of drivers, continuous training of drivers and examination of their knowledge as well as development of safe traffic knowledge and skills in traffic participants of all age groups.
2. The experience of foreign countries shows that it is purposeful to issue a final driver's license after supplemental theoretical lectures in safe traffic, group conversations on issues related to traffic psychology, examination of driving skills by high-quality instructors, after 1÷2 years, if too large number of penalty points is not accumulated.
3. On driving practice or an examination, a candidate does not meet into collision with a real danger, so there is no possibility to assess his (her) reaction and the actions carried out in such a situation, therefore it should be purposeful to examine the psychophysical and psychomotor skills of candidates at certified laboratories using the special equipment for this purpose (in respect of drivers of vehicles of C and D categories such examination should be carried out on a regular basis).
4. One more problem is caused by motor vehicles of B1 category. Today in Lithuania, 1763 licenses for driving vehicles of the said category were issued. However, only 8 vehicles allowed for driving by drivers of category B1 were registered. So, it is doubtful that all drivers of category B1 drive vehicles of category B1. According to EU Directive 93/439, the category B1 is not compulsory. If this category is remained, the requirements and control in respect of training of drivers of category B1 should be toughened up.
5. To toughen up the control of complete implementation of programmes by driving schools, it is proposed to inspect the maximum possible number of driving schools by the institutions responsible for controlling the drivers training and to publish the results of such inspections.
6. EU Directives clearly describe the contents of the practical examination and the required inspections. In the European Commission's Directive 2000/56/EC, the obligatory manoeuvres to be carried out by a candidate to drivers are set. However, some inspections are impossible under Lithuanian legal norms related to drivers training and examination. So, such legal norms should be improved taking into account EU Directives.
7. In addition, the examination procedure of vehicle drivers of higher categories should be toughened up as well. The experience of foreign states shows that

the questions of the tests are provided publicly. However, first of all, the set of questions of a theoretical examination should be at least doubled and then supplemented quarterly with new questions. In such a way, the candidates should be provided a motivation for learning.

8. In order to ensure a continuous improvement of qualification of traffic participants, taking into account the integration of EU Directive 2003/59/EC in the national legal norms, establishing safe traffic training centers for improving the qualification of drivers and their practical training as well as their requalification would be purposeful in Lithuania.

References

- Antov, D.; Abel, K.; Sürje, P.; Rõuk, H.; Rõivas, T. 2009. Speed reduction effects of urban roundabouts, *The Baltic Journal of Road and Bridge Engineering* 4(1): 22–26. doi:10.3846/1822-427X.2009.4.22-26
- Aufrère, R.; Gowdy, J.; Mertz, C.; Thorpe, C.; Wang, C.-C.; Yata, T. 2003. Perception for collision avoidance and autonomous driving, *Mechatronics* 13(10): 1149–1161. doi:10.1016/S0957-4158(03)00047-3
- Baltrėnas, P.; Kazlauskienė, A. 2009. Sustainable ecological development reducing negative effects of road maintenance salts, *Technological and Economic Development of Economy* 15(1): 178–188. doi:10.3846/1392-8619.2009.15.178-188
- Baltrėnas, P.; Vaitiekūnas, P.; Vasarevičius, S.; Jordaneh, S. 2008. Automobilių išmetamų dujų sklaidos modeliavimas [Modelling of motor transport exhaust gas influence on the atmosphere], *Journal of Environmental Engineering and Landscape Management* 16(2): 65–75. doi:10.3846/1648-6897.2008.16.65-75 (in Lithuanian)
- Baltrėnas, P.; Puzinas, D. 2009. Jūrų uosto teritorijos ir gyvenamosios zonos triukšmo sklaidos modeliavimas taikant programą Cadna A [Modeling of noise dispersion in the seaport territory and residential zone using Cadna A program], *Journal of Environmental Engineering and Landscape Management* 17(3): 148–153. doi:10.3846/1648-6897.2009.17.148-153 (in Lithuanian)
- Černiauskas, E.; Keršys, A.; Lukoševičius, V.; Sapragnas, J. 2010. Investigation of anti-intrusion beams in vehicle side doors, *Mechanika* (6): 11–16
- Čygas, D.; Jasiūnienė, V.; Bartkevičius, M. 2009. Assessment of special plans and technical designs with regard to traffic safety, *Journal of Civil Engineering and Management* 15(4): 411–418. doi:10.3846/1392-3730.2009.15.411-418
- Foss, R. D. 2007. Improving graduated driver licensing systems: a conceptual approach and its implications, *Journal of Safety Research* 38(2): 185–192. doi:10.1016/j.jsr.2007.02.006
- Ginevičius, R.; Podvezko, V. 2009. Evaluating the changes in economic and social development of Lithuanian counties by multiple criteria methods, *Technological and Economic Development of Economy* 15(3): 418–436. doi:10.3846/1392-8619.2009.15.418-436
- Hedlund, J.; Compton, R. 2005. Graduated driver licensing research in 2004 and 2005, *Journal of Safety Research* 36(2): 109–119. doi:10.1016/j.jsr.2005.02.001
- Jagniatinskis, A.; Fiks, B.; Mickaitis, M. 2011. Statistical assessment of environmental noise generated by road traffic, *Transport* 26(1): 96–105. doi:10.3846/16484142.2011.568084

- Jakimavičius, M.; Burinskienė, M. 2009. Assessment of Vilnius city development scenarios based on transport system modelling and multicriteria analysis, *Journal of Civil Engineering and Management* 15(4): 361–368. doi:10.3846/1392-3730.2009.15.361-368
- Jauneikaitė, K.; Carreno, M. 2009. Importance of virtual trips for transport infrastructure planning, *The Baltic Journal of Road and Bridge Engineering* 4(2): 61–68. doi:10.3846/1822-427X.2009.4.61-68
- Jović, J.; Depolo, V. 2011. The role of trip generation models in sustainable transportation planning in South-East Europe, *Transport* 26(1): 88–95. doi:10.3846/16484142.2011.568083
- Leipus, L.; Butkus, D.; Januševičius, T. 2010. Research on motor transport produced noise on gravel and asphalt roads, *The Baltic Journal of Road and Bridge Engineering* 5(3): 125–131. doi:10.3846/bjrbe.2010.18
- Li, S.; Deng, W.; Lv, Y. 2009. Combined modal split and assignment model for the multimodal transportation network of the economic circle in China, *Transport* 24(3): 241–248. doi:10.3846/1648-4142.2009.24.241-248
- Lietuvos Respublikos saugaus eismo automobilių keliais įstatymas [The Law of Republic of Lithuania on Safe Traffic on Roads]. 2000. Available from internet: <http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=390088> (in Lithuanian).
- Mačiulis, A.; Vasilis Vasiliauskas, A.; Jakubauskas, G. 2009. The impact of transport on the competitiveness of national economy, *Transport* 24(2): 93–99. doi:10.3846/1648-4142.2009.24.93-99
- Mayhew, D. R. 2007. Driver education and graduated licensing in North America: past, present, and future, *Journal of Safety Research* 38(2): 229–235. doi:10.1016/j.jsr.2007.03.001
- Malik, H.; Rakotonirainy, A. 2008. The need of intelligent driver training systems for road safety, in *Nineteenth International Conference on Systems Engineering (ICSENG 2008)*, 19–21 August 2008, Las Vegas, USA, 183–188. doi:10.1109/ICSEng.2008.87
- Miškinis, P.; Valuntaitė, V. 2010. Mathematical simulation of the correlation between the frequency of road traffic accidents and driving experience, *Transport* 25(3): 237–243. doi:10.3846/transport.2010.29
- Myyntinen, S.; Gatscha, M.; Koivukoski, M.; Hakuli, K.; Keskinen, E. 2010. Two-phase driver education models applied in Finland and in Austria – Do we have evidence to support the two phase models?, *Transportation Research Part F: Traffic Psychology and Behaviour* 13(1): 63–70. doi:10.1016/j.trf.2009.11.002
- Pečeliūnas, R.; Prentkovskis, O. 2006. Influence of shock-absorber parameters on vehicle vibrations during braking, *Solid State Phenomena* 113: 235–240. doi:10.4028/www.scientific.net/SSP.113.235
- Pellegrino, O. 2009. An analysis of the effect of roadway design on driver's workload, *The Baltic Journal of Road and Bridge Engineering* 4(2): 45–53. doi:10.3846/1822-427X.2009.4.45-53
- Prentkovskis, O.; Beljatynskij, A.; Prentkovskienė, R.; Dyakov, I.; Dabulevičienė, L. 2009a. A study of the deflections of metal road guardrail elements, *Transport* 24(3): 225–233. doi:10.3846/1648-4142.2009.24.225-233
- Prentkovskis, O.; Kliukas, R.; Vasilis Vasiliauskas, A.; Daniūnas, A.; Marina, V.; Ledauskaitė, K.; Zemlickienė, V. 2009b. Transport management: The popularity of study programmes among the applicants to Lithuanian universities evaluating the qualifications of graduates in the labour market, *Transport* 24(2): 154–169
- Prentkovskis, O.; Sokolovskij, E.; Bartulis, V. 2010a. Investigating traffic accidents: a collision of two motor vehicles, *Transport* 25(2): 105–115. doi:10.3846/transport.2010.14
- Prentkovskis, O.; Beljatynskij, A.; Juodvalkienė, E.; Prentkovskienė, R. 2010b. A Study of the deflections of metal road guardrail post, *The Baltic Journal of Road and Bridge Engineering* 5(2): 104–109. doi:10.3846/bjrbe.2010.15
- Rismark, M.; Sølvberg, A. M. 2007. Effective dialogues in driver education, *Accident Analysis and Prevention* 39(3): 600–605. doi:10.1016/j.aap.2006.10.008
- Rukuiža, E.; Eidukynas, V. 2009. Investigation of drivers poses influence to the intervertebral forces in the junction of thoracic and lumbar spinal curves, *Mechanika* (2): 61–64.
- Sadauskas, V. 2003. Traffic safety strategies, *Transport* 18(2): 79–83.
- Sadauskas, V. 2006. Investigation of road accidents on Lithuanian state roads, *Transport* 21(4): 289–292.
- Sapragonas, J.; Dargužis, A. 2011. Model of radial deformations of protector of vehicle tire, *Mechanika* 17(1): 21–29.
- Senserrick, T. M. 2007. Recent developments in young driver education, training and licensing in Australia, *Journal of Safety Research* 38(2): 237–244. doi:10.1016/j.jsr.2007.03.002
- Sivilevičius, H. 2011. Modelling the interaction of transport system elements, *Transport* 26(1): 20–34. doi:10.3846/16484142.2011.560366
- Šliupas, T. 2009. The impact of road parameters and the surrounding area on traffic accidents, *Transport* 24(1): 42–47. doi:10.3846/1648-4142.2009.24.42-47
- Vaišis, V.; Januševičius, T. 2009. Modelling of noise level in the northern part of Klaipėda city, *Journal of Environmental Engineering and Landscape Management* 17(3):181–188. doi:10.3846/1648-6897.2009.17.181-188
- Vasilis Vasiliauskas, A.; Vilkelis, A.; Zinkevičiūtė, V.; Batarlienė, N. 2010. Development of automobile distribution networks on the basis of multi-criteria evaluation of distribution channels, *Transport* 25(4): 361–367. doi:10.3846/transport.2010.45
- Vega, H. L.; Penne, L. 2008. Governance and institutions of transportation investments in U.S. mega-regions, *Transport* 23(3): 279–286. doi:10.3846/1648-4142.2008.23.279-286
- Vitkūnas, R.; Meidutė, I. 2011. Evaluation of bypass influence on reducing air pollution in Vilnius city, *Transport* 26(1): 43–49. doi:10.3846/16484142.2011.561004
- Wolming, S.; Wiberg, M. 2004. The Swedish driver licensure examination: exploration of a two-stage model, *Journal of Safety Research* 35(5): 491–495. doi:10.1016/j.jsr.2004.08.003
- Žvirblis, A.; Zinkevičiūtė, V. 2008. The integrated evaluation of the macro environment of companies providing transport services, *Transport* 23(3): 266–272. doi:10.3846/1648-4142.2008.23.266-272