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ANALYSIS OF THE GLOBAL LEGAL REGULATORY FRAMEWORK IN THE SPHERE OF TRANSPORT SUPPORT OF PEOPLE WITH LIMITED MOBILITY

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The existing world regulatory and legal framework of transportation organization of people with limited mobility is analyzed; priorities for use of available international experience in order to improve the organization of transportation of people with limited mobility are identified. Nowadays the urban public transport does not meet the growing needs of residents and visitors of many cities. Also, the level of transport services for people with limited mobility. Based on the analysis the recommendations for improving the management of the logistics system of transport services with limited mobility urban passenger transport are offered.

Key words: people with limited mobility, logistics systems, indicators of mobility, personal mobility.

АНАЛІЗ СВІТОВОЇ НОРМАТИВНО-ПРАВОВОЇ БАЗИ У СФЕРІ ТРАНСПОРТНОГО ЗАБЕЗПЕЧЕННЯ МАЛОМОБІЛЬНИХ ГРУП НАСЕЛЕННЯ

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Проаналізована існуюча світова нормативно-правова база організації перевезень маломобільних груп населення, визначено пріоритетні напрямки використання наявного зарубіжного досвіду з метою підвищення рівня організації перевезень маломобільних груп населення. На сьогоднішній день міський громадський транспорт не задовольняє зростаючих потреб жителів і гостей багатьох міст, у тому числі, неприпустимо низьким є рівень транспортного обслуговування маломобільних груп населення. За результатами проведеного аналізу розроблено рекомендації щодо вдосконалення управління логістичною системою транспортного обслуговування маломобільних груп населення.

Ключові слова: маломобільні групи, логістичні системи, індикатори мобільності, індивідуальна мобільність.

PROBLEM STATEMENT. The most important element of the economy of the city is the urban passenger transport system. Nowadays the urban public transport does not meet the growing needs of residents and visitors of many cities. Also, the level of transport services for people with limited mobility is at a critically low, which include people with disabilities, young children, passengers with prams, pregnant women, the elderly, the temporary restricted in the mobility people, people moving on crutches, walking sticks, etc. It is difficult, or even impossible, for them to climb into the cabin of passenger vehicles currently operating on the routes. Special conditions must be created to transport this people.

Studies confirm the relevance of foreign scientists applying the methods of logistics for economic and organizational problems driving the process of urban passenger transport and the high efficiency of its use. But the problem of improving the logistics service of public passenger transport, especially in the field of passenger transport with limited mobility is not understood well.

The aim of research is to analyze the global standard – the legal framework in the regulation of passenger transport with limited mobility and practical recommendations on the organization of the available urban transport logistics systems for people with limited mobility.

EXPERIMENTAL PART AND RESULTS OBTAINED. According to Eurostat in 1999 in European

countries, there were 18 % of the total population of people with disabilities on average, and the forecast for 2040 is 23 % [1]. In the U.S.A., 19 % are the people with serious health problems [2]. According to the Ministry of Human Resources Development (Human Resources Development, Canada) in Canada, there are 4.2 million disabled, accounting for 16,7 % of the population of all ages [3].

The number of people older than 75 years increases as well, this group in Europe in 2003 was 7,5 %, and by 2040, according to experts' forecasts of Eurostat it will increase up to 14,4 % of the total population [1]. The desire of older people to remain independent and live in their own homes is connected with the improvement of health systems, increased concern of society, the development of techniques and technologies. These reasons led to the need to ensure their access to the existing environment.

In addition, as many of the shortcomings of previously built facilities we should note their lack of access for young children (high sidewalks, narrow doors of lifts and elevators, steep staircases, high boarding platforms, etc.); children under 5 years old have to overcome the same difficulties that people with disabilities. This led to the relevance of solving the problems of accessibility for people with limited mobility.

In 1948 The United Nations (UN) adopted the Universal Declaration of Human Rights, proclaimed the equality of rights of all people without an exception. In 1971 The UN adopted the Declaration on the Rights of

Mentally Retarded Persons. International legal instrument for general information, was the Declaration on the Rights of Persons with Disabilities, adopted by the UN General Assembly on 12.09.1975 year. It said: "All persons with disabilities have the same rights as their fellow citizens, in the first place, means the right to a decent life." 1981 was proclaimed the first United Nations International Year of Disabled, and the period from 1983 for 1992 – Decade of Disabled Persons, adopted the "World Programme of Action concerning Disabled Persons."

The most important outcome of the International Year of Disabled Persons was the adoption by the General Assembly on 3th of December 1982 World Programme of Action concerning Disabled Persons (World Programme of Action concerning Disabled persons), with specific recommendations on accessibility to the built object, including the concept of "access for all". In Germany in 1984, the Basic Law was amended to: "No one must not be oppressed because of his or her shortcomings (mental or physical)" [5]. In 1988, the U.S. Congress passed a law on persons with disabilities become known as the "Tech Act," which recognizes the physical limitations of a "natural part of human existence," which "in no way detracts from the" right of everyone to "independence, self-determination, meaningful career or full participation" in the "general economic, political, social, cultural and educational" of American society [2]. The Act about Americans with Disabilities was signed on 26.07.1990 (Americans with Disabilities Act – ADA) [6], which requires governments at all levels to provide for the disabled "equal access to the benefits of different types of activities, programs and services" to the disabled.

However, the efforts of the international community have not been sufficiently effective: from the UN monitoring (1987, 1992) twice showed that, despite all the changes, people with disabilities have not received equal opportunities, and in many countries remained isolated from society. Basic comprehensive document on the rights of persons with disabilities – the Standard Rules on the Equalization of Opportunities for Persons with Disabilities was accepted in 1993. In 1994, the UN approved a long-term strategy for the further implementation of the World Program of Action concerning Disabled Persons. Its main aim was proclaimed as a "society for all". This program was the first document that changed the approach to solving the problems of the disabled. Prior to its adoption, social policy for people with disabilities included only event medical treatment, rehabilitation and measures to prevent some causes of disability. Proclaimed Program for equality and full participation of disabled people in public life indicated a change in the understanding of the international disability community, recognizing the need for a holistic approach to disability issues.

The Salamanca Statement and Framework for Action on Education for persons with special needs was adopted in 1994. It confirmed their right to have an access to regular schools; in 1995 Beijing Declaration and Platform for Action of the status was adopted,

which targeted and measured the attitude to disabled women [2].

In 2001 the international community established specialized committees to declare a comprehensive and universal international agreement to protect the rights and dignity of persons with disabilities [7]. At the same time, Germany was added for "Rehabilitation and participation of persons with disabilities," the Code of social legislation, which was activated on 1 July 2001 [5].

EU member states in 2000 decided that 2003 should be the European Year of People with physical disabilities. Group of experts from the European Union, analyzing the experience of an accessible environment, developed a strategy consisting of the following four goals [1]:

- the organization of an accessible environment that would increase the competitiveness of the country;
- the achievement of full employment for all groups of the population, which in turn contributes to economic development;
- strengthening the social interaction of all groups in society;
- the promotion of community-supported available environment development.

A list of concrete proposals to improve access to facilities that improve the lives of all members of society and to ensure the availability of Europe for people with limited mobility by 2010 was made up.

The basic principles of the strategy are [1]: accessibility – caring for each to ensuring diversity and appreciation of the needs of different members of society, ensuring unified global effort to create access in all areas, implementation of accessibility should be in the design phase, and only people with limited mobility and non-governmental organizations representing their interests.

Availability means that everyone should have equal access to the environmental objects (buildings, streets, roads, sidewalks, walkways, open spaces and entertaining centers, parks, playgrounds, etc.). Availability means that all objects of the environment should be safe, convenient and comfortable to be used by everyone. Available vehicles and transport infrastructure (bus stops, stations, and railway stations, roads, sidewalks, and information signs) – is the basis of the principles of accessibility to various areas in the environment.

In today's knowledge-based society, widely using electronic devices and equipment, a key element of accessibility to the environment are the objects, sources of information and communication technologies, which should also contribute to reducing barriers for people with disabilities, provide the ability to manage people with physical and mental disabilities.

The main achievement of the organization of accessible environment was "Universal design" – design of products and facilities that are used by all people without the need for adaptation or creation of special projects for people with disabilities.

However, lack of a single official international agreement on the rights of persons with disabilities, the dispersion of rules on the rights of disabled people did not guarantee full protection of the rights of the population. Therefore, a draft of Comprehensive and Integral International Convention on Protection and Promotion of the Rights and Dignity of Persons with Disabilities was prepared. In addition, in December 2006 The UN General Assembly adopted the Convention "On the Rights of Persons with Disabilities" [8] – a document that protects the rights of persons with different types of disorders [9], in which special attention was paid to the access to the physical environment. This document came into force on 3th of May 2008. The problem of ensuring unhindered access for the disabled to social infrastructure is seen as a problem of "personal mobility" (Article 20 of the Convention [8]). Personal mobility of people with disabilities should be carried out because of "promotion of individual mobility of disabled in the manner and in the time of their choice, and at affordable prices, as well as improving of access to high-quality technical mobility aids for disabled people" [10].

International standards for the protection of persons with disabilities based on the total for the whole system of human rights principle of universality of human rights and the prohibition of discrimination. The value of this principle for the disabled is the idea of creating a "society for all".

Analysis of international experience in this field of action showed that the proclamation of social society, based on equal rights, provides citizens with an easy access to social and economic life of all populations.

A condition for providing individual mobility of people with disabilities is to ensure the availability of transportation infrastructure. Attention is drawn to the following examples of best international practices in this field:

- in the United States, Britain, and other countries all buses (district, city and coach) are equipped with special devices for transportation of persons with disabilities;

- mayor of New York City offers special minibuses for people with disabilities for various travel, to order special taxi is enough to apply to the Department of Transport, in case of failing in providing own car a cab will be ordered to that person [2];

- the Canadian city Winnipeg visually impaired people can use the Auto Guidance, which reports an approach to an object and provides an information on its purpose. In Saskatoon transport service is implemented by the Centre for Independent Living Abilities Council. The program is fully funded from the local budget. In Vancouver all sidewalks and bus stops are equipped with special ramps. Buses and commuter trains are equipped with special pads to lift-workers [11], there are transportation companies, such as HandyDART, with the available "door to door" specially equipped vehicles. Passengers are registered in the system for maintenance, dispatcher's office coordinates drivers and directs them to the address. So

during the Olympic and Paralympics Games, the system Handy DART performed more than 1,000 orders for the Olympic meeting and served to the tourists and local residents. In Calgary any information on transport can be found at Calgary Transit, the bus number, and/or stop to see the time of the next bus arrival or the schedule for a day;

- in Sydney, Australia [13] there are many affordable ways to travel for people in wheelchairs: personal transport, providing special places for parking, at least one-fifth of all the taxis have a special cabin for a wheelchair, and a retractable ramp, buses with space with folding chairs, designed for two wheelchairs. In case there is a disabled person in a wheelchair at the bus stop, bus pulls up exactly to the spot on the sidewalk, where it waits for a passenger. The ramp extends from the rear platform, the door opens, the driver warns passengers of finding a bus man in a wheelchair, and encourages them to be attentive to it. While boarding in the new buses the footboard lowers to enter easily. Public transportation for people with disabilities is free of charge. Seniors, who have difficulty in walking, ride a small truck with an electric motor, which they can easily manage. All pedestrian walkways equipped with ramps for safe exit at the road;

- in Germany interests of persons with disabilities are represented by non-governmental organizations and coordinating the work of the German Disability Council (Deutscher Behindertenrat) [5], 70 % of the transport network is specifically adjusted for easy movement of wheelchairs. Verbal announcement facilitates transportation of people who lost their sight. People with disabilities can travel using special transportation services for the disabled. In 1999, the country created the Mobility Center, where you can call to order the help which is available at boarding and transferring. In order to get a disabled person in the salon, you need to stand on a platform in the place marked with a special icon. People, who work at the stations, which will be planted, meet people with disabilities. In England, disabled are generally moving around by taxis. Nonperforming disabled can ride 18–20 times a month, working – 40 for free. Finnish public transport, as well as German, today is fully adapted to carry this group. All public places have ramps or elevators. Beacons and raised floors are installed everywhere for blind people;

- in Sweden work private companies operate simultaneously offering services and transportation departments of nongovernmental organizations. Furthermore, there is a system of benefits for the purchase of specially equipped trucks and vans; the government pays 50 % of the cost of even the most expensive minivan equipped with automatic lift and remote control, for an individual [2]. In Stockholm 225 minibuses have contracts with the municipality, serve only to the elderly and the disabled people (more than 1 million visits per year);

- in Spain all transport, streets, museums, shops are equipped for wheelchair users. [10] In Barcelona, the city transport is adapted for people with disabilities. Tourist infrastructure was specially adapted for the

disabled. This trend began with the Olympic and Paralympics Games in 1992 in Barcelona, all the main streets of the city are equipped with ramps, all buses are adapted for the disabled. Therefore, travel companies, offering tours for people with disabilities, recognized Barcelona as one of the top tourist destinations in the world from that perspective. A special website "Accessible Tourism", technique which allows the majority of people with disabilities themselves, without assistance, to have full access to information due to sharper images, special tools to help screen readers, audio, etc. Now there are six languages in which the board works: Catalan, Spanish, English, French, Italian, and German.

Countries of the EU adopted the Directive 2001/85/EC, which stipulates that buses should be fitted with devices to allow them access to people with disabilities, people with limited mobility. These rules are standards in the production of public transport. They, in particular, require that the height of the first step was not higher than 250 mm above the road, given the size of spots (there should be at least four of them) wheelchair lift (for the double-decker buses), indicate the strength of fasteners for wheelchairs, seat belts and etc.

In the salons of vehicles there is a free space for the disabled, equipped with fixtures, folding seats, handrail and a button to alert the driver that he is going to go [2]. Table 1 presents data on the proportion of vehicles equipped to transport people with limited mobility in some countries of the EU in 2008.

Table 1 – The share of vehicles equipped to transport reduced mobility in some countries of the EU in 2008

№	Country	Average share of low-floor vehicles and semi low-floor in the fleet, %
1	Luxembourg	85
2	Germany	84
3	Spain	79
4	France	56
5	Italy	52
6	Austria	50
7	Finland	33
8	Poland	28
9	Malta	26

Currently there is a trend in increasing of the number of rolling stock that is suitable to serve all segments of the population in the world. All new vehicles are designed for more than 16 passengers for the carriage on a fixed route, shall be of available class. European Bus Directive defines affordable vehicle as a vehicle of Class I or II, in which at least 35 % of the floor area is available for standing passengers, it forms an area without footsteps and includes an access to at least one door. In 2005, the proportion of low-floor buses and trolleybuses on average was 54 % of the entire area of the low-floor salon, 14,5 % low-floor

requirements for EU Bus Directive (the so-called semi low-floor) and 31,5 normal (high floor). The total number of urban land vehicles, adapted for the transport of MOG in the EU in 2005 was an average of 68,5 %.

The analysis showed that the value of public participation in the planning of accessibility (in participation in the public funding), all countries can be divided into four types of states:

- States in which there is no transportation planning;
- States in which an accessibility is funded and widely used, but the public transport accessibility planning does not exist (the Netherlands);
- Countries with limited access to public transport planning (U.S.);
- States, for which a comprehensive national planning of availability is proclaimed (UK, New Zealand, Sweden, 16 % of municipalities have access to programs and even subprograms, such as "Affordable City", "Overcoming Barriers", "Streets for All", etc.

In the European transport policy, there are six criteria for effective regulation: consistency, predictability, ability, independence, validity and transparency. Sequence implies that regulatory policy is based on the laws that are applied sequentially. Predictability means that there are no sudden changes in the framework regulatory or in the way of decision making. Ability requires that the regulatory organ has competent personnel or institutionalized power. To make regulatory organ effective, it must be independent of the interference in its activities of central ministries, local authorities and other public authorities, investors or clients. This guarantee can be provided only by its financial autonomy, competence prescribed period of pre-specified criteria for the appointment and sufficient resources. Actions of regulatory organ must also be reasonable, that means taking just solutions that protect the legal rights and economic interests of the state, providers and consumers. Transparency means the right to all interested parties to be informed of important decision-making for them, and the open nature of the regulatory body. International Organization for Standardization (International Standards Organization – ISO) develops and promotes ISO TC 59/SC 16 «Accessibility and Usability of the Built Environment» (accessibility, convenience, and ease of use in creating the environment [13]. Researchers Eduardo Álvarez, Andrés Balcázar de la Cruz, Pierre Legault, Elisabet Svensson, Riadh R. Tappuni, Ph.D. Arch, C. J. Walsh [13] studied the best practices of the organization, available in different countries, and made recommendations on the organization of the various spheres of life: walking paths, inclined plane, ramps, intersections and pedestrian crossings, placards, parking, displays, signage, training, social and sporting facilities, recreational facilities, libraries, government buildings, hospitals, classrooms, auditoriums, cafeterias and restaurants, communication, entrances, fire exits, safety equipment, stairs, railings, doors, elevators, kitchens, apartments and hotels, toilets,

passenger lifts and elevators, security, identification, telephones, workstations.

CONCLUSIONS. The analysis of foreign experience of accessibility revealed the following guidelines to ensure the improvement of traffic with limited mobility:

- to coordinate the work of the departments of transportation with other city departments involved in street furniture and pedestrian routes to ensure that all passengers can get to the stops and stations. This coordination will ensure that pedestrian paths provide affordable way;

- the creation of systems of stops that must be in a form which can eliminate or reduce the height difference from surface to stop the floor of the vehicle as much as possible, or have a lift for the physically challenged passengers, or portable bridges and platforms for boarding and boarding-landing;

- buses have to stay close to the stop;

- vehicles must be equipped with lifts or inclined folding ramps or special folding bridges (for example, the system of Curitiba), have a kneeler system that allows the driver to lower the input, reducing the height of the first step in a vehicle;

- stopping pavilions should be equipped with a bright color guides (in many countries, a yellow color), marking the landing site and inscriptions executed in a large font, contrasting colors, duplicated in Braille;

- vehicles must be equipped with comfortable seats and reliable strapping to people in wheelchairs;

- the introduction of a sufficient number of small vehicles for service "door to door" (minibus, taxi cars). In the 70 years of the last century, these systems began to serve people with disabilities in Sweden, the UK, North America, they are now widely used in various cities on all continents. Fares are usually subsidized by the municipal authorities;

- the use of "special routes", which were first used in Sweden. These routes are designed to residences of people with disabilities and the main destination trips: shopping and entertainment centers, schools, rehabilitation centers, etc.;

- training of the drivers a safe and reliable delivery, careful handling of physically challenged people;

- costs associated with providing access should be seen as investments in infrastructure, leading to increased production and higher productivity. For example, the study of Sears in the USA showed that of the 436 changes in availability, conducted by the company for the period from 1978 to 1992, 69 % required no cost, 28 % took less than \$ 1000, and only 3 % cost more than \$ 1000 [14];

- the application of the principles of accessibility, improving the safety of the full (eliminating slippery surfaces and stairs, avoid risky changes in height, improved warning signs, risk of accidents, etc.) and entailing lower costs for insurance payments from the accidents;

- systematic approach to ensure the availability of residential houses, various buildings and structures, ways to approach them and transportation;

- to build a network of information availability, which will enable users to explore and choose the best methods of moving, and its creators to disseminate information on accessibility issues and to create a network of information centers;

- accessibility has to be provided, using all the tools based on a single principle – all legislation, standards, guidelines, etc. should be designed and implemented with the aim of building accessible environment to all consumers;

- each level of government should be responsible to ensure the availability within their powers;

- everyone has to design, manufacture and make available facilities, products and services, based on the technical expertise and the involvement of all potential users;

- the "accessibility assessment" of sites, workshops and training places and transport information should be held regularly;

- organizations of standards should develop a database and knowledge of the organization and accessibility and distribute through handbooks and manuals, websites, conferences, television, etc.

Effective stakeholder participation can be achieved through a holistic approach to the problem of accessibility in all areas (employment, housing, transport, etc.) and coordination of participants in various areas of expertise. At the national level, this objective is realized in the following ways:

- development of an independent, non-profit, "center on accessibility," which would carry out testing and evaluation of the preliminary design, training and dissemination of information on "best practices";

- establishment of the responsibility for ensuring the availability;

- creation of a "Commission of availability" to coordinate relevant standards with the participation of citizens;

- creation of the European and other awards "Best available jobs," or "most accessible building (agent, object)."

- support the development of card availability, accessibility evaluation facilities for people with disabilities.

Based on the analysis the recommendations for improving the management of the logistics system of transport services with limited mobility urban passenger transport are offered, implementation of these recommendations will increase the availability of social, engineering, informational and transformational infrastructure for people with limited mobility.

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АНАЛИЗ МИРОВОЙ НОРМАТИВНО-ПРАВОВОЙ БАЗЫ В СФЕРЕ ТРАНСПОРТНОГО ОБЕСПЕЧЕНИЯ МАЛОМОБИЛЬНЫХ ГРУПП НАСЕЛЕНИЯ

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В статье анализируется существующая мировая нормативно – правовая база организации перевозок маломобильных групп населения, определены приоритетные направления использования имеющегося зарубежного опыта с целью повышения уровня организации перевозок маломобильных групп населения. На сегодняшний день городской общественный транспорт не удовлетворяет возрастающие потребности жителей и гостей многих городов. В том числе, недопустимо низким является уровень транспортного обслуживания маломобильных групп населения. По результатам проведенного анализа разработаны рекомендации по совершенствованию управления логистической системой транспортного обслуживания маломобильных групп населения.

Ключевые слова: маломобильные группы, логистические системы, индикаторы мобильности, индивидуальная мобильность.

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