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KEY INTERNATIONAL LEGAL ACTS IN THE FIELD OF ROAD SAFETY: CLASSIFICATION AND APPLICATION PECULIARITIES

Summary. *The article is devoted to a comprehensive analysis of the main international legal acts in road safety, their classification, and the features of their application in modern conditions. The system of international documents regulating road safety issues, including UN conventions, European agreements, resolutions, and action plans of international organizations, is investigated.*

The effectiveness of implementing international standards in countries with different levels of economic development is analyzed, and the main challenges facing the global road safety system are identified. Particular attention is paid to the analysis of statistical data for 2020-2025, which demonstrates global trends in road traffic injuries and the effectiveness of applying international legal instruments.

The role of the 1968 Vienna Conventions as the basis of modern international road traffic law is considered, as well as the significance of UN resolutions and the WHO Global Plan of Action for 2021-2030 in shaping the strategic directions of global safety policy.

The specifics of applying international acts in developed and developing countries are analyzed, and the main barriers to effectively implementing global standards are identified. Prospects for developing international legal regulation

in the context of technological challenges, including the regulation of autonomous vehicles and new types of micromobility, are considered.

The research is based on the analysis of official documents of international organizations, WHO statistical data, and national reports on the state of road safety. The work results can be used to improve national road safety policies and enhance the effectiveness of international cooperation.

Key words: *road safety, international legal acts, Vienna Conventions, road traffic injuries, international cooperation, implementation of international standards, global safety policy, UN resolutions, WHO, European agreements, autonomous vehicles, micromobility.*

Presentation of the primary material. Road safety is one of the most acute challenges in modern society. According to the World Health Organization [1], more than 1.35 million people die annually worldwide from road traffic accidents, and up to 50 million are injured [1, p. 5].

This problem has a global scale: every 24 seconds, a person dies due to a road traffic accident [2, p. 10]. The economic losses from such accidents reach 3-5% of GDP in many countries worldwide [3, p. 25].

An uneven distribution of victims is observed: 90% of road traffic accident deaths occur in low- and middle-income countries, although these countries account for only 60% of the world's vehicle fleet [1, p. 7]. This indicates a significant inequality in road safety issues.

Furthermore, road traffic accidents remain the leading cause of death among young people aged 15-29 [4, p. 12]. The loss of young lives has enormous social, psychological, and economic consequences for families and society as a whole.

In this context, international legal acts become a key instrument for coordinating global efforts to reduce mortality and injuries on roads. They create a regulatory framework that allows for the unification of approaches to ensuring

road safety in different countries, set standards for vehicles, infrastructure, and the behavior of road users, and promote the exchange of best practices and technologies [5, p. 30-32].

The system of international legal acts in road safety is comprehensive and covers various aspects of regulation. These acts can be classified into several main groups based on their legal force, focus, and scope of application:

1. UN Conventions

The Vienna Conventions of 1968 [1] on Road Traffic and on Road Signs and Signals are fundamental documents that establish unified rules for traffic, recognition of driving permits, vehicle registration, and a system of road signs. They have been ratified by over 80 countries [2], making them the most universal international acts in this field.

European Agreements. These complement the conventions by regulating specialized aspects of international transport. Examples include the ADR Agreement [3] concerning the international carriage of dangerous goods by road and the AETR Agreement [4] concerning the work of crews of vehicles engaged in international road transport, which regulate safe transportation and working hours for drivers.

2. UN Resolutions

While not legally binding, they are essential in shaping global policy. In particular, Resolution A/RES/74/299 (2020) [5] proclaimed the Second Decade of Action for Road Safety (2021-2030) and set an ambitious goal — to reduce road traffic deaths by 50% by 2030 [5].

3. Action Plans and Recommendations

These offer concrete measures and indicators for achieving safety goals. The Global Plan of Action of the WHO and UNECE [6] in support of the Second Decade is structured around five pillars: safety management, safe roads, safe vehicles, safe road users, and post-crash response.

These establish minimum requirements for the technical characteristics of vehicles. Examples include UNECE regulations [7] on vehicle construction and safety and ISO standards [8].

This extensive system of international acts provides a comprehensive approach to solving road safety problems at the global level, covering both universal rules, specialized requirements, and strategic objectives.

Implementing international conventions into national legislation is a complex process that requires the adaptation of universal norms to local conditions. As a state party to the Vienna Conventions, Ukraine consistently implements its provisions into its legal system [1]. In 2025, a significant update to the Traffic Rules of Ukraine (CMU Resolution No. 1306) [2, p. 7] took place to harmonize national legislation with international standards fully. Key changes included the introduction of new categories of vehicles, updated requirements for lighting devices, improved rules for intersection passage, and enhanced protection for vulnerable road users [2].

Stages of International Convention Implementation:

1. Ratification of Conventions. A country officially accedes to international conventions through ratification, undertaking obligations to comply with their provisions [3, p. 25].

2. Legislative Adaptation. National laws and subordinate acts are revised and amended to conform to international standards, considering local specificities [3, p. 30].

3. Practical Implementation. The introduction of changes into daily practice through employee training, public awareness campaigns, and provision of technical means [4, p. 112].

4. Monitoring and Reporting. Regularly evaluate the effectiveness of implemented measures and report to international organizations on progress in achieving goals [5].

UN Conventions regulate a wide range of road safety issues. In particular, they establish unified standards for road signs and signals, which helps to increase safety during international travel [6]. For example, according to the Vienna Convention on Road Signs and Signals [7, p. 45], warning signs must be triangular with a red border, and prohibitive signs must be round with a red border, which ensures their universal recognition by drivers from different countries. In addition, the conventions define minimum technical requirements for vehicles participating in international traffic [7, p. 60]. These requirements include functional brakes, steering, lighting devices, and rearview mirrors [7]. In Ukraine, these requirements have been implemented through a vehicle technical control system, reformed per European standards in 2023 [8, p. 15]. The regulation of rules for transporting dangerous goods is significant and carried out per the European ADR Agreement [9]. In 2022, Ukraine updated national legislation in this area, introducing electronic document management and strengthening requirements for training drivers in such transportation [10]. An important aspect is harmonizing national norms to ensure unhindered international movement and trade [11]. Mutual recognition of driver's licenses, registration documents, and insurance policies simplifies international transportation and tourism [12]. For example, Ukraine, as a participant in the "Green Card" system, provides insurance protection for its citizens during trips abroad and guarantees compensation for damages to foreigners who suffer in road accidents on the territory of Ukraine [13]. Thus, implementing international conventions into national legislation creates a legal basis for improving road safety and integrating Ukraine into the international transport system [14, c. 200].

Although not legally binding, United Nations resolutions play a decisive role in shaping global policy in road safety [1]. They set strategic goals, unite the efforts of the international community, and facilitate the mobilization of resources to address the problem of road traffic injuries.

Resolution A/RES/74/299 [2], adopted by the UN General Assembly in August 2020 [2, c. 3] became a key document that defined the direction of global efforts for the next decade. It proclaimed the Second Decade of Action for Road Safety for 2021-2030 and set an ambitious goal — to reduce the number of deaths and injuries from road traffic accidents by at least 50% by 2030 [2, p. 5].

Key Elements of Resolution A/RES/74/299:

- Setting a specific target to reduce mortality by 50% by 2030 [2, p. 5]
- Call for a comprehensive approach to road safety [2, p. 7]
- Emphasis on protecting vulnerable road users [2, p. 8]
- Recognition of the link between road safety and the Sustainable Development Goals [2, p. 9]
- Encouragement of international cooperation and exchange of experience [2, p. 10]

A distinctive feature of this resolution is its emphasis on the need for a comprehensive approach to the problem of road safety [3]. This approach, known as the "Safe System Approach," views safety as the result of the interaction of several components: safe roads, safe vehicles, safe behavior of road users, and an effective system for providing emergency medical care after road traffic accidents [3, p. 15-18].

The resolution also emphasizes the need to protect the most vulnerable road users — pedestrians, cyclists, and motorcyclists, who account for almost half of all road traffic fatalities worldwide [4, p. 22]. The document calls for developing safe infrastructure for these road users, including constructing sidewalks, bicycle paths, and pedestrian crossings [2, p. 8].

An essential aspect of the resolution is its emphasis on the link between road safety and the UN Sustainable Development Goals [5]. In particular, improving road safety directly contributes to achieving Goal 3.6 (reducing deaths and injuries from road traffic accidents) and Goal 11.2 (providing safe, affordable, and sustainable transport systems for all) [5, p. 34-35].

The resolution calls for broad involvement of various stakeholders: governments, international organizations, civil society, academia, and the private sector [2, c. 11]. This multilateral approach promotes consolidating efforts and resources to achieve the stated goals. For example, in 2022, the Global Alliance of Cities for Road Safety was established, uniting over 30 major cities worldwide to exchange experience and implement best practices [6].

Thus, despite their recommendatory nature, UN resolutions significantly influence the formation of national policies and strategies in road safety, contributing to global coordination of efforts and the establishment of common goals [1, p. 5; 7, p. 88-90].

The Global Plan of Action for Road Safety 2021-2030 [1, p. 5], developed by the World Health Organization in cooperation with the UN, was officially launched in October 2021 [1]. This document serves as a roadmap for achieving the Second Decade of Action goals and proposes concrete measures to reduce fatalities and injuries on the roads [2]. The Plan of Action is based on the principles of the "Safe System Approach" and identifies five key pillars on which national road safety policy should be built [1, p. 8]:

1. Road Safety Management. Development of institutional capacity, elaboration of national strategies and action plans, establishment of systems for collecting and analyzing road accident data, ensuring adequate funding for safety measures [1, p. 10-12].

2. Safe Roads and Mobility. Design and construction of roads taking into account the needs of all road users, implementation of infrastructure solutions to reduce risks (separation of flows, speed limits in populated areas, safe pedestrian crossings) [1, p. 13-15].

3. Safe Vehicles. Implement minimum safety standards for all new vehicles, promote active and passive safety technologies, and ensure proper technical condition of cars [1, p. 16-18].

4. Safe Road Users. Development and enforcement of laws regarding key risk factors (speed, alcohol, use of seat belts and helmets), raising public awareness, improving driver training systems [1, p. 19-21].

5. Effective Post-Crash Response. Development of emergency medical response systems, ensuring quick access to medical care for victims, providing psychological support to road accident victims and their families, and guaranteeing fair investigation of incidents [1, p. 22-24].

A key feature of the Global Plan is establishing a target to reduce road fatalities by 50% by 2030 [1, p. 6]. The plan proposes a set of performance indicators to achieve this goal by which countries can evaluate their progress [1, p. 25]. These indicators cover various aspects of safety: from the availability and quality of legislation to indicators of protective equipment use and the speed of emergency services' response [1]. The Plan also pays significant attention to developing sustainable transport as an essential component of road safety [1, p. 28]. Promoting walking, cycling, and public transport reduces the number of cars on the roads and improves the environmental situation and quality of life in cities [3]. According to studies conducted in 2023, towns with well-developed public transport and cycling infrastructure demonstrate 30% lower road fatality rates [4, p. 45]. Special attention in the plan is given to the needs of low- and middle-income countries, which bear a disproportionately high burden of road traffic injuries [1, p. 30]. For such countries, the plan creates special financial and technical support mechanisms, including through the UN Road Safety Fund (UNRSF), which from 2021 to 2024 funded road safety projects in 30 countries for over 50 million US dollars [5]. Monitoring and reporting mechanisms are essential to the plan's implementation [1, p. 32]. Countries are encouraged to regularly report on progress towards the Decade of Action's goals, allowing for the evaluation of the effectiveness of implemented measures and the adjustment of national strategies [1]. In 2024, an interim review of the plan's implementation was conducted, which revealed uneven progress in different regions of the world

and emphasized the need to strengthen efforts in countries with high road fatality rates [6, p. 10-12].

Statistical data analysis for 2020-2025 allows for identifying key trends in road safety and evaluating the effectiveness of international legal acts in various regions [1].

Data on road traffic accident mortality per 100,000 population by world regions show different trends from 2020 to 2024 [2, p. 10]. Europe shows a stable decline in indicators: from 8.3 in 2020 to 7.8 in 2022 and 6.9 in 2024. Asia also records positive dynamics, with a decrease in mortality from 20.7 to 19.1 and 17.8 for similar periods. In contrast, in North America, after a slight increase from 13.5 in 2020 to 14.7 in 2022, the indicator decreased to 13.2 in 2024. Africa remains the region with the highest mortality rate, although a slight decrease is observed: from 26.6 in 2020 to 25.9 in 2022 and 25.1 in 2024 [2, p. 11-12].

Despite the COVID-19 pandemic, which in 2020 significantly reduced road traffic intensity in many countries, global road accident mortality remained at over 1.3 million people per year [3, p. 5]. Some countries even saw an increase in fatalities per kilometer traveled, which was attributed to increased speeds on empty roads [3, p. 7]. Two thousand twenty-three specific positive shifts were recorded in European and Asian countries, where road fatalities decreased by 10-15% [4, p. 25]. This resulted from strengthened legislation and enforcement, and the implementation of new safety technologies. For example, in Sweden, a pioneer of the "Vision Zero" concept (zero road fatalities), a record low mortality rate of 1.9 cases per 100,000 population was recorded in 2024 [5, p. 3].

Among European countries, Norway achieved the most significant reduction in road fatalities for 2020-2025, with indicators decreasing by 43% [6, p. 18]. This was made possible by a comprehensive approach to road safety and strict adherence to international standards.

South Korea demonstrated stable progress, achieving a 15% reduction in mortality [7, p. 32]. Implementing intelligent transport systems and enhanced enforcement of traffic rules facilitated this.

In Ukraine, a 7% reduction in road fatalities was registered in 2024 compared to 2020 [8, p. 14]. This was facilitated by updating traffic rules per international standards, strengthening enforcement of speed limits through an automated violation recording system, and implementing a program to improve safety on accident-prone road sections [8, p. 15-16].

At the same time, African countries show the slowest progress, with a mortality reduction of only 3% [9, p. 21]. This highlights the need for additional efforts and international support to implement safety standards in these regions.

However, in low-income countries, especially in Africa and parts of Asia, road mortality remains extremely high—up to 30 cases per 100,000 population [10, p. 45]. This is 10-15 times higher than in the safest countries in the world [10, p. 46]. This situation emphasizes the need for international support to implement safety standards in these regions. The statistical analysis also revealed that pedestrians, cyclists, and motorcyclists remain the most vulnerable road users, accounting for almost 55% of road traffic accident victims worldwide [11, p. 8]. In low-income countries, this figure reaches 70% [11, p. 9]. This indicates the need for special attention to protecting these categories of road users when developing and implementing international standards. A positive trend is the increasing use of protective equipment (seat belts and helmets) in many countries. This is directly linked to strengthened legislation and awareness campaigns recommended by international organizations [12, p. 30]. For example, in Cambodia, after adopting a law on mandatory helmet use for motorcyclists in 2023, their usage rate increased from 40% to 85%, leading to a 25% reduction in mortality among this category of road users [13, p. 17].

The effectiveness of applying international legal acts largely depends on the country's economic and institutional development level. An analysis of the

practice of implementing global standards in various regions allows identifying specific features and challenges faced by countries with different income levels [1, p. 15-18].

In developed high-income countries, such as the European Union states, Japan, and Australia, the most complete and adequate integration of international standards into national legislation and practice is observed [2]. These countries have developed institutional mechanisms, financial, and technical resources for implementing advanced road safety practices [3, p. 20-22].

A characteristic feature of developed countries is the application of innovative technologies to enhance safety. For example, in 2024, the European Union introduced a requirement for new vehicles to be equipped with intelligent speed adaptation (ISA) systems, automatic emergency braking, and driver state monitoring, which complies with UNECE recommendations [4, p. 5-7].

Middle-income countries (Brazil, Malaysia, Ukraine, Turkey) show uneven progress in implementing international standards [5]. On the one hand, they actively update national legislation per global requirements. On the other hand, they face problems ensuring compliance with laws and financing infrastructure projects [6, p. 30-32].

In these countries, technical and financial support from international organizations plays an important role. Specifically, the UN Road Safety Fund (UNRSF) implemented projects in 15 countries in this group from 2021 to 2025 to strengthen control over speed limits and improve the system for collecting road accident data [7].

In low-income countries, primarily in Africa and parts of Asia, implementing international standards faces the most significant difficulties [8, p. 40-42]. Limited resources, weak institutional mechanisms, and often a lack of political will complicate the implementation of even basic safety measures. According to WHO data, only 28% of low-income countries have adequate

legislation regarding key risk factors (speed, alcohol, seat belt, and helmet use) compared to 76% of high-income countries [9, p. 55-58].

. Financial Challenges. Limited budgets do not allow for the implementation of large-scale infrastructure projects and the assurance of proper rule enforcement. Solution: international grants, innovative financing mechanisms, inclusion of safety components in transport projects [10, p. 65-68].

2. Institutional Capacity. Insufficient training of specialists and weak inter-agency coordination complicate the implementation of comprehensive measures. The solution is technical assistance programs, experience exchange, and the creation of specialized road safety agencies [11].

3. Cultural Peculiarities. Local customs and practices may conflict with international safety standards. Solution: adaptation of measures to the local context, community engagement, educational campaigns considering cultural peculiarities [12, p. 75-77].

An essential aspect of applying international acts is their adaptation to local conditions and cultural peculiarities [13]. Successful road safety programs consider the specifics of the local context, involving communities and public organizations. For example, in Vietnam, a campaign to promote motorcycle helmet use was adapted to local cultural norms and involved celebrities and community leaders, which ensured its success [14, p. 80]. An interesting example of adapting international standards is India's experience, which developed its own vehicle safety rating system (Bharat NCAP), considering the specifics of local roads and traffic conditions, but based on the methodology of the Global New Car Assessment Programme (Global NCAP), recommended by UNECE [15]. In conclusion, it can be noted that the practical application of international acts in road safety requires a differentiated approach that considers the country's development level, available resources, and cultural context. The international community should focus on supporting countries with limited resources to ensure global progress in reducing road traffic injuries [16].

The international legal regulation of road safety faces several challenges due to technological, economic, and social changes [1]. At the same time, these changes create new opportunities to increase the effectiveness of international acts and strengthen their influence on national policies. One of the key challenges is the need to improve coordination among global organizations. In the field of road safety, numerous international structures operate: the UN and its specialized agencies (WHO, UNECE, UNDP), regional organizations (EU, ASEAN), financial institutions (World Bank), non-governmental organizations [2, p. 5-7]. The lack of effective coordination can lead to duplication of efforts and inefficient use of resources.

. Technological Challenges. The emergence of new types of transport and technologies (autonomous vehicles, electric scooters) requires updating legal norms. The existing regulatory framework does not always keep pace with technological progress [3, p. 102].

2. Coordination Challenges. The multiplicity of international organizations working in the field of road safety creates risks of duplicating efforts and inefficient use of resources. New coordination mechanisms are needed [4].

3. Implementation Challenges. Many low- and middle-income countries lack sufficient resources and institutional capacity to implement international standards [5, p. 45].

4. Data Collection Challenges. The lack of reliable and comparable data on road accidents in many countries complicates the evaluation of the effectiveness of implemented measures and developing evidence-based policies [6].

An important direction for developing international legal regulation is the implementation of digital technologies for monitoring and control [7]. Telematics, artificial intelligence systems, and big data analysis open new opportunities to improve road safety. For example, in 2024, UNECE developed recommendations on using telematics systems for monitoring commercial transport driver fatigue, supplementing the AETR Agreement's provisions on

working time and rest periods [8]. The emergence of new types of transport also requires updating the international legal framework. The growing popularity of electric scooters and other micro-mobility devices has created new challenges for road safety, especially in urban environments. In 2023, UNECE began work on recommendations for regulating micro-mobility, which should form the basis for updating national legislation [9]. The international community pays special attention to the regulation of autonomous vehicles [10, p. 78-81]. In 2024, amendments to the Vienna Convention on Road Traffic were adopted, allowing the use of automated driving systems under certain conditions. However, issues of liability in road accidents involving autonomous vehicles, ethical aspects of algorithm decision-making, and cybersecurity remain subjects of active discussion [11].

Promising directions for the development of international legal regulation:

- Creation of a single global road safety monitoring system using big data and artificial intelligence [12]
- Development of new legal instruments for regulating autonomous vehicles and micro-mobility [13]
- Strengthening mechanisms for financial support to low-income countries through innovative financial instruments [14, p. 23]
- Integration of road safety goals into other international programs (sustainable development, climate change, urban development) [15]
- Development of public-private partnerships in the field of implementing new safety technologies [16]

An essential aspect of the development of international legal regulation is the increasing role of education and public awareness campaigns. Studies show that changing road user behavior is one of the most effective ways to reduce the number of road accidents [17, p. 30]. In 2023, the WHO developed new recommendations for conducting road safety awareness campaigns based on the principles of behavioral economics and psychology [18]. Another prospect is the

strengthening of the integration of road safety goals with other global programs and initiatives, particularly the Sustainable Development Goals, the Paris Agreement on climate change, and urban development programs. This approach allows for a synergistic effect and the most efficient use of limited resources [19]. Thus, despite the existing challenges, the international legal regulation of road safety has significant potential for further development and improvement, which will contribute to achieving global goals of reducing road traffic injuries [20].

Conclusions. The research on the main international legal acts in road safety allows for several important conclusions regarding their classification, application features, and impact on the global situation with road traffic injuries.

International legal acts form the foundation of the global safety system. They create a unified regulatory framework, ensure the harmonization of national legislations, and facilitate the exchange of best practices among countries. UN Conventions, European agreements, resolutions, and action plans form a comprehensive regulatory system covering all road safety aspects.

The classification of international legal acts reflects their diversity. The system includes legally binding documents (conventions and agreements) and recommendatory acts (resolutions, action plans, recommendations). This multi-level structure provides regulatory stability and flexibility necessary for adapting to new challenges.

Statistics from 2020 to 2025 demonstrate uneven progress. Developed countries have successfully reduced road fatalities due to the full implementation of international standards, while low-income countries continue to face serious problems. This underscores the need for a differentiated approach and increased international support for the most vulnerable regions.

The effectiveness of the application depends on the national context. The implementation of international standards must consider each country's economic, social, and cultural context. Successful strategies include adapting

international norms to local conditions, involving communities, and ensuring high-level political support.

Technological and social changes create new challenges. The emergence of autonomous vehicles, new forms of mobility, and changes in travel patterns after the COVID-19 pandemic require an update of the international legal framework. At the same time, digital technologies open new opportunities for monitoring, control, and improving safety.

To achieve the goals of the Second Decade of Action for Road Safety (2021-2030), enhanced international cooperation, innovation, and adaptation to new realities are necessary. Key areas of work should include:

- Strengthening coordination among international organizations to ensure policy coherence and effective use of resources;
- Developing new international standards for regulating autonomous vehicles and micro-mobility;
- Implementing innovative financing mechanisms for road safety measures, especially in low and middle-income countries;
- Developing a global system for monitoring and evaluating progress, based on reliable and comparable data;
- Integrating road safety goals with other global programs and initiatives.

As an active participant in international processes, Ukraine demonstrates progress in implementing international road safety standards. In particular, the update of national legislation per European norms, the development of an automatic violation recording system, and the implementation of road safety audits contributed to a 7% reduction in road fatalities in 2024 compared to 2020. However, to reach the level of the safest countries in the world, systematic work on implementing international standards must continue, especially in safe infrastructure and the protection of vulnerable road users. Thus, international legal acts remain a key instrument in global efforts to improve road safety and reduce road traffic casualties worldwide. Their practical application, adaptation

to new challenges, and support for innovative approaches are the key to achieving the ambitious goal of halving road fatalities by 2030.

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