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Autonomous Means of Transport – Who Carries Civil Liability?

Florina Mateescu¹

Abstract: The study of our topic aims to identify European legislation, with applications in national law, where Romanian norms allow such similarity. Of course, it is interesting to note the extent to which damage is caused by an entity with artificial intelligence and the manner in which it may be held liable from a civil point of view. The basis of this research are the norms in force in Romania and those within the European Union. The method used is mainly the analysis of existing documents in the European Union. What we have in mind is an improvement of the existing legislative framework, but also an interpretation of the rules at the level of the European Union. This paper can be an interesting read for law scholars, from university professors, lawyers, magistrates and other jurists to students, as it presents a current issue that may not be sufficiently developed in contemporary society. The article is not so much an exhaustive work as a compendium that summarizes the laws and situations in practice, with applicability in the matter of civil liability, in case of damage caused by autonomous means of transport.

Keywords: technology; artificial intelligence; law; prejudice

1. Introduction

Since ancient times, people have sought to find an easy way to transport their goods and, of course, to travel. From which, carts, shipping, cars and then air transport, each means of transport was meant to shorten the time between a point of departure and destination.

Along with technical development and multiplication of the means of transport, there was also the need to legislate the conditions that they must comply with.

For example, in Romania, “Ordonanța nr. 27/2011 privind transporturile rutiere” establishes the conditions under the means of transport can run.

Article number 71 states that “Road transport may be carried out only with road vehicles whose technical condition corresponds to the specific regulations in force, having a valid periodic technical inspection, these being classified according to the regulations in force”.

It is also specified that the vehicles are subject to approval for registration and periodic technical inspection, as the case may be, regardless of whether they are produced in Romania or abroad.

¹ PhD in progress, University of European Studies of Moldova, Republic of Moldova, Address: 2/1 Ghenadie Iablocikin Street, Chisinau 2069, Republic of Moldova, Corresponding author: florina_dede@yahoo.com.

Regarding the carriage of goods or persons by road, paragraph 3 of the same article stipulates that those will be carried out only with road vehicles intended for construction of that type of transport and equipped with tachographs and speed limiters, in accordance with the regulations in force.

Article 72 is a reference for civil liability in the context of our topic, as it classifies technical failures. These can be: minor or major and dangerous, according to the plan of operations established by the specific regulations in force. Although seemingly insignificant and redundant, this classification is very useful for the matter of civil liability and for establishing the person responsible for creating the damage.

After this „short stop” on the „lands” of local legislation, our research will continue with the analysis of European norms. We will seek to develop and observe everything that the European Union has set out to consider in terms of technological development of such vehicles.

2. Autonomous Means of Transport in the Vision of the European Union

The Report with recommendations to the Commission on Civil Law Rules on Robotics, dated 27.1.2017¹, deals in particular with autonomous vehicles and drones.

With regard to the first category, the European Parliament, having regard to article 225 of the *Treaty on the Functioning of the European Union* and *Directive 85/374/EC on liability for defective products*, states that autonomous transport covers all modes of transport: road, rail, air and water, including vehicles, trains, ships, ferries, aircraft, drones, as well as all future forms that developments and innovations in the sector will take.

It is also considered that the automotive sector urgently needs effective Union and global rules to ensure the cross-border development of automated and autonomous vehicles. The economic potential and benefits of the positive effects of technological trends must therefore be fully exploited. Attention is drawn to the fact that fragmented regulatory approaches would hamper the implementation of autonomous transport systems and jeopardize European competitiveness.

We consider justified the legislative concern, which must be one that ensures continuity and accuracy, because it is desired that the implementation of autonomous means of transport be done uniformly, precisely for a normal operation of the new technology.

Another important aspect is the reaction time of the driver when he unexpectedly takes control of a vehicle. That is why Parliament calls on the parties involved to provide realistic values, which are particularly important in matters of safety and liability.

Of course, this aspect is very important, given that human being has a certain speed of reaction, which can not compete with technical performance. Therefore, in our opinion, the vehicle must have an alert system that is triggered in a timely manner to allow the driver time to maneuver, when required.

The key is that the widespread use of autonomous vehicles will have an effect on the following issues:

- civil liability (liability and insurance);
- road safety;
- environmental issues (energy efficiency, use of technologies and renewable energy sources);
- data issues (data access, data protection, confidentiality and data sharing);

¹ https://www.europarl.europa.eu/doceo/document/A-8-2017-0005_EN.html, accessed on 21.04.2022.

- aspects related to ICT infrastructure (high density of efficient and reliable communications);
- employment (creation or loss of jobs, training of drivers of heavy goods vehicles to be able to use the automated ones).

These issues, on which the development and use of autonomous vehicles are rooted, will have to be brought into line with specific legislation. Specifically, this new road framework will have to be standardized according to the new cars. Civil liability will of course be a major component of the laws in this area. We believe that this *Report of the European Parliament*, which takes into account *Directive 85/374/EC on liability for defective products*, is the answer that clarifies the issue of liability. Until proven otherwise, until vehicles have „human-like” features, they remain objects that, of course, cannot be held civilly liable. Thus, they will be treated as defective products in the event of damage. Therefore, the responsibility will be borne either by the manufacturer, when there is a manufacturing defect, or by the owner of such a vehicle (we refer here to the companies that offer transport services) - for not maintaining the vehicle in a good technical condition, or the user, for a vicious use or for his own fault.

To this end, Parliament calls on the Commission to take into account the aspects mentioned in its work on autonomous means of transport:

a) emphasizes the importance of reliable positioning and prompt provision of information by the European Galileo and EGNOS satellite navigation programs for the introduction of autonomous vehicles; it is urged that the completion and launch of the satellites needed to complete the European positioning system Galileo be speeded up. Draws attention to the high importance of autonomous vehicles for people with reduced mobility, as they allow them to participate more effectively in individual road transport, thus making their daily lives easier.

Of course, satellites play an important role for autonomous vehicles, as they transmit the necessary coordinates and information to the vehicle system so that it can follow a certain route and avoid obstacles of any kind.

The importance of these vehicles and their proper functioning is undeniable for people with disabilities or those with reduced mobility and is a significant advantage.

b) the positive results recorded in drone technology are recognized, in particular as regards search and rescue; it is of interest to develop a Union-wide framework for the use of drones to protect the safety, security and privacy of EU citizens, and the Commission is called upon to follow up on the recommendations of Parliament's resolution of 29 October 2015. These relate to the safe use of drones, Remotely Piloted Aircraft (RPAS) systems, commonly known as unmanned aerial vehicles (UAVs) in the field of civil aviation. The Commission is requested to provide an assessment of the safety issues with regard to the widespread use of drones and to consider the need to introduce a mandatory tracking and identification system for PSURs, enabling the real-time position of the aircraft to be determined during use. It also recalls that the homogeneity and safety of unmanned aircraft should be guaranteed by the measures provided for in Regulation (EC) No 882/2004, Regulation (EC) No 216/2008 of the European Parliament and of the Council.

Drones are a rather delicate subject in our opinion, because they can be both a positive factor in people's lives, but at the same time they can give rise to violations of rights. They are really very useful for rescue actions or for surveillance (we are thinking here of examples such as: illegal logging of forests, violation of the conditions of detention at home and not only, violation of restraining orders, etc.). But with the help of drones, the right to privacy can be easily violated and certain crimes can arise, such as

harassment, etc. Therefore, it is necessary to develop a strict legal framework and analyze in detail, in order to use drones for non-harmful and harmless purposes.

Unmanned aerial vehicles support the same observations as those mentioned in the case of drones, with the amendment that, however, such an aircraft is not as „invasive” as a drone (the issue here is both visibility and speed of movement, altitude etc.). However, even an aircraft is likely to cause certain legal violations. So, even in this case, the rules must be very carefully adopted.

What we can deduce from these provisions of the European Parliament is that the European Union wants a regulatory framework that gives the utmost importance to the human being that these devices serve.

To these means of transport will be applied the legal regime of some goods, products, which will have developed high-performance technical characteristics and which must respect and help both humanity in general and people, individually.

Therefore, if from the human-artificial interaction one suffers damage created by such autonomous means of transport, then the responsibility will belong to the persons previously indicated in our analysis.

3. Autonomous Means of Transport in Romania

In our country, drones are the most common. They do not yet have a separate legal regime, they are not classified as autonomous machines, but are assimilated to products.

They are used for entertainment, filming at events, or for other commercial purposes, etc.

In case of violation of certain rights, drone users will be liable according to the Criminal Code or Civil Code, depending on the specifics of the harmful action. In the event that civil damage of a civil nature arises as a result of the misuse of this device, the drone user will be liable. If the result of the harmful action is a defect due to the manufacturer, then the latter will be held liable for damages, possibly with the award of damages to the victim.

4. Stations with Own Intelligence and Autonomous Trains

4.1. Premises

In recent years, there has been an increasing emphasis on the development of autonomous means of transport. The proof comes from the French, because the Thales group presented in 2018, at InnoTrans - the largest international transport fair - the latest technologies in the railway industry¹.

From rail-mounted fiber-optic systems capable of calculating the number of passengers in each carriage to fully autonomous trains, the public was led on one of the most digitally possible rail journeys.

Thales, one of the giants of the railway industry, launched the first autonomous metro in 1985. Now it wants to design the autonomous train, which will be equipped with signaling, communication and surveillance systems based on digitization. Thus, with the help of the concept of „internet of things” the aim is to move from „identify and repair” to „anticipate and prevent”.

¹ https://adevarul.ro/economie/business-international/garile-inteligenta-proprie-trenurile-complet-autonome-statie-distanta-realitate-1_5bb605b2df52022f7528f5b6/index.html, accessed on 23.04.2022;

The notion of „big data”¹ will be used to improve the passenger experience, transmitting messages designed to contribute in the future to the improvement of services.

The technology on which the autonomous train will operate is artificial intelligence. The whole system will need to ensure not only efficiency but also safety.

In terms of cybersecurity, Thales wants to reduce critical moments in the railway infrastructure by eliminating them, using prediction.

The whole mechanism is explained by the marketing director of the Thales group, Pierre Antoine Benatar: „For example, by installing sensors and fiber optic systems right on the rail, we can analyze the weight of trains, calculate the number of passengers in each car, receive signals that there is a malfunction in the train, rail or even that there are various types of obstacles in the way of wagons. This is already happening in many parts, with the most modern railway systems we have implemented being in Hong Kong”².

The usefulness of such a system also lies in reducing the cost of repairs and maintenance. Between 15 and 20 billion euros are spent annually in Europe alone. According to Benatar, implementing such a concept is very useful, as it will reduce the cost of repairs and prevent a critical situation before it happens. However, the infrastructure of each country will be the one that will influence the technological evolution. The multinational Thales is present in more than 50 states and will try to adapt to the needs and budgets of each country.

4.2. The Situation in Romania

Although Thales has an impressive portfolio, covering more than 630 km of lines in collaboration with the Shanghai Railway since 2010 and until now, unfortunately in our country it has often been hit by the problem of „insufficient funds”.

According to the statements of the director of Bids & Projects Thales, Claudiu Seicean, the most important projects in Romania are those related to the technology of electronic centralization. Specifically, it refers to systems that allow real-time data collection and display on station and platform panels. Basically, with the help of this technology, information is transmitted to the dispatchers who monitor and coordinate the railway traffic, information about the train route, the traffic speed, the technical condition of the infrastructure components, the degree of heating of the train axles, as well as the data necessary to organize the traffic in the railway stations.

In Romania there is a total length of 20.077 km of railway. However, only 1.000 km are provided with electronic centralization systems, 32 control points being implemented by Thales, and hundreds of them operating with relays.

According to Claudiu Seicean, in the Ilia-Lugoj railway infrastructure project, completed in 2017, an electronic line centralization installation was implemented for the first time, which can operate within a radius of seven stations. Such an installation is usually installed from station to station, for optimization and cost reduction, with the consent of the Romanian Ministry of Transport.

¹ According to the European Parliament, "big data" refers to volumes of data collected that are so large and complex that new technologies, such as artificial intelligence, are needed to process them - <https://www.europarl.europa.eu/news/en/headlines/society/20210211STO97614/big-data-definition-advantages-challenges-infographics>, accessed on 23.04.2022;

² https://adevarul.ro/economie/business-international/garile-inteligenta-proprie-trenurile-complet-autonome-statie-distanta-realitate-1_5bb605b2df52022f7528f5b6/index.html, accessed on 23.04.2022.

So, the novelty is that it will be possible to control 72 km of railway segments from a single command point, established in Făget.

The year 2018 brought two other Thales projects, one being an electronic centralization contract in Videle, and another consisting in participating in the largest railway infrastructure project in Romania, on the Sighișoara-Brașov route, worth 700 million euros¹.

In our opinion, such projects are auspicious both at European and national level. First and foremost is the safety of passengers, who will be much better able to avoid accidents through the new technology for detecting obstacles in the way of trains.

Most railway accidents are due to collisions between trains, as everyone's route information is not transmitted fast enough. We believe that the new technology will detect in time the approach of another locomotive on the same rail and will help to avoid a frontal collision, for example.

Also, the implementation of fiber optics will facilitate the discovery of faults in the wagons, also in order to avoid accidents.

We believe that Romania should also allocate more funds in order to have access to such performances, which would guarantee an increased safety of train travel and would also optimize the costs for maintenance and repairs. Basically, a new era would be born in terms of this means of transportation, an era that would be in line with the technological changes of our times.

Therefore, such future projects should be encouraged and implemented as soon as possible, as they would be of great help to both passengers and railway companies, and the states would also benefit (economically, tourism, etc.).

We are of the opinion that the civil liability in case of damages would fall on the transport company that owns the respective train, when a wrong maneuver was executed or when the damage occurred as a result of a faulty use or orders. Or, if it's the manufacturer's fault or the person's who implemented the technology, he will have to ensure the repair of the damage.

5. Conclusions

It is quite difficult to assess when and if the autonomous means of transport will be able to respond civilly. Although the very name of "autonomous" leads to the idea of something independent, which acts by its own will and desire, such predictions are still reserved for them.

For the moment, we can see that human being is the one who is responsible for the occurrence of damages, when they will exist.

However, this developing technology brings considerable help in everything that means traffic activity. An important argument is what the European Parliament decides. He says that "big data collected through GPS and social platforms can help reduce traffic jams. Better regulation of traffic flows also contributes to time and fuel savings and reduced CO2 emissions"².

So, this information obtained with the help of the new technique also helps in other areas, such as economics. Of course, time is saved in this way as well.

¹ https://adevarul.ro/economie/business-international/garile-inteligenta-proprie-trenurile-complet-autonome-statie-distanta-realitate-1_5bb605b2df52022f7528f5b6/index.html, accessed on 23.04.2022.

² <https://www.europarl.europa.eu/news/ro/headlines/society/20210211STO97614/big-data-definitie-avantaje-provocari-infografice>, accessed on 23.04.2022.

Therefore, the impact of new technologies is great and is, of course, beneficial to mankind, being an „adjuvant” in many areas, not just in the automotive industry. It is interesting to analyze and observe each new step and it is desirable that the help that the technique gives us be substantial and more and more efficient, but with limits.

Given that everything is constantly changing and improving, we believe that the study of this topic will always be a worthy concern.

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