

*Materials of Conferences***THE PRESSURE CONTROL IN MOTOR VEHICLE TIRES, AS THE TRAFFIC SAFETY GUARANTEE**

Kolbasov A.F.

«MAMI» MSTU, Moscow, e-mail: audit@jai-audit.ru

The motor transport is considered, as the most unsafe and rather dangerous one. According to all available data, exactly the traffic accidents (TA) are being taken the first place, by the lost and the injured persons' number. The automobiles are considerably being overtaken the railway, the air service, and the water transport, under all these parameters.

The traffic safety guaranteeing challenge, as usual, is being taken one from the leading places in the country's social and the economic development. Today, this challenge solution has already been related and referred to the state policy higher – priority directions number, – the RF Police Colonel – General Victor Kiryanov noted, who is the RF Traffic Safety Main State Inspector, having made his speech at the «Traffic Management in the Russian Federation (RF)» International Congress opening in Moscow.

According to the Russian IM TSSI official data, the 199,431 traffic accidents (TA) have been fixed on the country's roads and the highways during the 2010 year, that is for 2,1 % less of the last year similar index. As a result of it, the 26, 567 persons have already been lost (e.g. that is less for 3,9%), and the 250,635 persons have been received the various wounds (e.g. that is less for 1,9%).

So, the statistics data is indicated to the fact, that the accident rate in Russia is being decreased throughout the last some years. At the same time, RF, as usual, is being held its unfortunate lead on the accident rate among the European countries. Annually, about 1,7 mln. persons in Europe are being received the various wounds, in a result of the traffic accidents (TA). So, the traffic accident traumatism and the injury rate in Russia have been made up more than 260 thousands persons, by the others, only for the 2009 year. By the Russian IM TSSI official data, the 8,5 thousands persons' lives have already been saved for the last 60 months (e.g. the last 5 years), despite the fact, that the transport vehicle park has been increased only for a quarter. Thus, the motor vehicle tires are closely connected with the traffic safety all the three components: the transport vehicles safety, the traffic participants' behavior, and the infrastructure. The first two elements, directly, are being connected with the motor vehicle tires. So, the correct motor vehicle tires, having corresponded with the road and the highway conditions and their wheeling, are being increased the transport vehicle safety. The motor vehicle tires, especially, having developed for the safety indices further improvement,

are also being played their significant role in the safety on the roads and the highways, day in day out. Besides, the confidence in the motor vehicle tires safety and also the correct maintenance for them are meant more confident behavior at the wheel, that is why, it is quite possible to be said, that the motor vehicle tires contribution into the safe driving guarantee is greatly significant.

So, the pressure in the motor vehicle tires is being fixed, depend on the fact, what kind of the machinery these motor vehicle tires are being operated, and what the maximum load is on them. It is quite possible to be found all the necessary the character references on the optimal pressure in the motor vehicle tire, which, in their turn, which are made their start from the automobile's working and the service conditions, its horse power, and the maximum load on the axis in the specifications to the automobile. So, the insufficiently inflated or the over-inflated motor vehicle tires, as the traffic accidents (TA) statistics is shown, quite often are the accidents' main cause and the corresponding reason. By the www.autonews.ru cite information, the incorrectly inflated motor vehicle tires in Europe, where there are the sufficiently safe roads and the challenge – free highways, have already been become the main cause and the corresponding reason of every sixth traffic accident (TA) in July – August, in the holiday season, when the families go on their holiday by the car. By the Traffic Safety National Agency of the USA data, annually, up to 660 persons are lost their lives and the 33,000 persons are received their various wounds in the country, owing to the traffic accidents (TA), having closely connected with the motor vehicle tires.

By the Swedish Committee on the traffic accidents (TA) investigation research data, exactly motor vehicle tires have played their decisive and the crucial role in every sixth fatal and the lethal traffic accident (TA).

The «DEKRA» firm, which is engaged in the official check ups and the examinations carrying out in Germany, the automobiles' safety studies and the corresponding researches, the consultation and the advisory activities, the automobiles' tests and the operational materials and the engineering maintenance ones, having conducted the traffic accidents (TA) main causes and the corresponding reasons analysis, has been fixed the following:

1. The automobile's engineering deficiencies and the technical shortcomings are the main cause and the corresponding reason of every tenth traffic accident (TA).
2. The traffic accidents' (TA) share is made up 47% from the traffic accidents' (TA) total number, having made for the technical reasons and the corresponding technical challenges, due to the motor vehicle tires' defects and the shortcomings.

Pierre Poncelet, the motor vehicle tires tests department manager of the «Goodyear» research – and – development center in Luxemburg, tells beforehand, that the drivers often forget, that the inflated motor vehicle tires are quite able to be coped with their challenge only in the proper way, ipso facto, having provided the automobile's necessary steerability. So, as the over – inflated motor vehicle tires, well as the insufficiently inflated ones are made their considerable influence upon the automobile's service behavior, and also its breaking distance. So, the studies and the researches, having conducted in the European Union (EU), are testified, that more 64% of all the automobiles are driven on the partly flat motor vehicle tires. Thus, many drivers simply do not check up with the following necessary regularity, but yet it is able to have the serious influence on the driving safety, as Pierre Poncelet noted.

Thus, the pressure check up and the corresponding testing in the motor vehicle tires must to be carried out, obligatorily, just before the tour's start, on the cold motor vehicle tire, and with due regard for the automobile's weight, and also its necessary loading.

So, the insufficiently inflated motor vehicle tire is quite able to be resulted in a number of the following challenges, namely: the pressure strengthening on the motor vehicle tire's side wall, in a result of it as far as the further movement, the side wall is being overheated, that is affected upon the automobile's general steerability and the traffic safety, further the motor vehicle tire is also quite able spontaneously dismounted; the decrease in the contact area between the motor vehicle tire and the road, having resulted in the poor adhesion, in the stopping distance lengthening, and, consequently, in the traffic safety reducing; the wear increase of the motor vehicle tire's external face, that is being reduced the motor vehicle tire's wear resistance and the wear-resisting properties, as the tread is being worn quicker and unevenly; the fuel consumption increase, as the insufficiently inflated tire is being consumed more energy for the smooth motion;

However, at the motor vehicle tire's operation and its service at the low temperatures, it is much worst to be remembered, that the air inside the motor vehicle tire is being compressed with the further temperatures decrease, ipso facto, and the pressure is also being decreased. Accordingly, it should be created the necessary pressure slightly more, that it is quite necessary and it is supposed in the motor vehicle tire, at the operation and its service, at the low temperatures.

So, the excess pressure in the motor vehicle tires is also being resulted in the negative consequences: the motor vehicle tires' interior face accelerated wear, in a result of which, also, as and at the insufficient pumping, the wear resistance and the wear – resisting properties are being lowered down; the motor vehicle tire is became more exposed to the blowouts and unprotected to the pun-

tures, the motor vehicle tire's flexibility is being impaired, that, in its turn, is being resulted in the motor vehicle tire's more severe reactions for the obstacles' passing; the motor vehicle tire's service life and its operation are being shorten; the motor vehicle tire is became heavy, and this is made the additional loading upon the automobile's hydraulic steering control.

Thus, the excess pressure in the motor vehicle tires is also being posed the traffic safe threat. However, in the extreme cold and in the strong frosts, the service operator is quite able to be exceeded the recommended pressure in the motor vehicle tire, for the purpose of the further adaptation to the cold.

So, it is quite possible to be made the conclusion on the fact, that it is necessary regularly and correctly to be controlled the pressure in the motor vehicle tires. The pressure check up in the motor vehicle tires is usually carried out by the manometer just under their «cold» condition. At present, the motor vehicle tire – pressure monitoring system, having derived and further displayed the necessary information on the pressure at the fascia instrumentation panel just in the automobile's saloon, is used in the modern automobiles with their superior comfort. So, at the same time, the motor vehicle tire – pressure monitoring system is quite allowed efficiently to be received the necessary and the precise information on the present pressure in the motor vehicle tires, having given the alarm signal to the driver, in the case of the critical deviations detection from the rating and the technical regulations. They usually use the piston pump or the pumping post, if necessary to be made the urgent boost pressure of the motor vehicle tire. So, the motor vehicle tires pumping post – this is the specialized center, having situated at the overwhelming majority of the gas service stations. So, the automobile's motor vehicle tires are quite able to be pumped by the air or by the nitrogen – in the full compliance with the technical requirements and the standard specifications. So, the experienced drivers the most necessary equipments and the corresponding devices have with themselves, for example, the compressor for the motor vehicle tires pumping, which it is quite be purchased, practically, in the every car dealer's. So, the auto compressors, by their device, are being divided into, as the vibrating ones, well as the piston ones. The vibrating type is quite frequently distinguished by the not high price, so its main purpose – is the motor vehicle tires pumping of the small – sized cars, with the wheels, the radius of which is not being exceeded the 14 inches. So, the piston compressor is quite able to be made more pressure, having, substantially, exceeded the vibrating compressors by this factor. It should not be forgotten, that these compressors are quickly overheated, and they are needed the work break just after every 10–15 minutes of their operation. Practically, the whole services spectrum, from the pressure survey in the motor vehicle tires up to its complete nor-

malization, is always able to be rendered the service help in every tire fitting shop center.

So, the optimal pressure maintenance in the motor vehicle tires challenge is, particularly, actual and urgent for the Russian Federation (RF) vast territory with the quite different and the various climatic zones and the conditions, as the present pressure in the motor vehicle tires is being depended on the surrounding environment temperature, the atmospheric temperature and also the air moisture. The surrounding environment temperature researches in the diurnal regime have been conducted by us by many stations in the following cities and the towns: Arkhangelsk, Astrakhan, Krasnodar, Moscow, Novosibirsk, Rostov – on – Don, Saint – Petersburg, Sochi, Khabarovsk, Perm, Yakutsk, which are rather representative for the Russian territory. (This kind of the information by the above – mentioned stations has been presented by the «All – Russian Research Scientifically Institute of the Hydro – Meteorological Information – The World Data Center» State office («ARRSIHMI – WDC» SO)). For example, the motor vehicle tire's temperature measurement in the Sochi city, at the Sochi – Adler highway's route, in the midday, having carried out by the TEHE 5 contact electronic thermometer, was shown, that the surface temperature had been reached 58,4 °C, that it is more the air temperature for 26,1 °C. For all this, the pressure change in the motor vehicle tire has been made 0,5 atm. So, such

pressure changes in the motor vehicle tire are, considerably, being affected on the steerability, reliability, and the economic efficiency of the traffic motor transport's operation and its service on the Russian territory during the changing.

Thus, the external climatic conditions various measurements on the pressure in the motor cars' motor vehicle tires, having conducted by us, by example of the «VAZ» motor car's the «175/70R13» motor vehicle tire, have been allowed to make the conclusion on the challenge formulation necessity of the pressure control in the automobiles' motor vehicle tires in the process of the operation and its service at the State level, for the purpose of the whole traffic safety rise and the further improvement.

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