

## Analysis on the matching between Chinese vehicles and TIR Convention



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### Abstract

Through the brief introduction of the TIR convention, the connotation of vehicles in the TIR convention is studied, the core of the TIR Convention on vehicle requirements is analyzed, and the basic requirements of the TIR Convention to the cargo carriage are explored. According to the introduction of the official website of the United Nations Economic Commission for Europe, 7 types of vehicles recommended by the TIR Convention are analyzed. According to the relevant laws and regulations of the international road transport vehicles and the actual vehicle standards in China, 6 types of vehicles that can be carried by the TIR Certificate in China are put forward, and the types of vehicles that can not be carried by the TIR license in China are explained. The research results can provide a useful reference for Chinese freight companies to choose vehicle types and customs departments for vehicle supervision.

**Keywords:** TIR Convention, Freight Vehicle, Types of Vehicles, Technical Requirements

## 1. Introduction

《Customs Convention On The International Transport of Goods Under Cover of TIR Carnets》 (TIR Convention, 1975) as a United Nations convention on cross-border transport of goods can effectively reduce customs supervision time, save transport costs and improve the level of facilitation. China formally acceded to the Convention in July 2016 and became the 70th member. The General Administration of Customs has incorporated the implementation of 《TIR Convention》 into its 《Promoting the Customs Clearance Cooperation Plan along the Belt and Road ( 2018-2020 )》 issued at the beginning of 2018. It has preliminarily determined that the Horgos port, the Irkashtan port, the Er lianhaote highway port, the Man Zhouli port and the Sui fenhe port are the pilot ports for China to implement TIR Convention . The General Administration of Customs plans to complete the construction of TIR system by May 2018, and realize that international road transport vehicles can be transported with TIR certificates. China 's freight enterprises can reduce customs clearance time by about 40 % and transportation costs by 30 % by using TIR. The study predicts that the implementation and use of the TIR system in China could boost trade with countries along the Belt and Road by 1.4%, or approximately US \$14 billion.

On February 26, 2016, after consultation with the Ministry of Transport, the General Administration of Customs officially designated the Automobile Transportation Research Center of the Highway Science Research Institute of the Ministry of Transport as the vehicle approval agency for China to implement the TIR Convention, and requested that the corresponding vehicle and equipment testing, approval certification and related technical services should be done according to the TIR Convention. As our country does not yet have relevant experience with vehicles transported under the TIR Convention, a set of regulations needs to be established. In the TIR Convention, Annex 2, regulations on technical conditions applicable to road vehicles which may be accepted for international transport under customs seals, specifies the technical requirements of the vehicle; Annex 3, procedure for the approval of road vehicles complying with the technical conditions set forth in the regulations contained in Annex 2, gives the procedure for the approval of the vehicle; Annex 4, model certificate of approval of a road vehicle, Annex 5, TIR plate, which gives the specifications for TIR plate. Before proceeding with the description of these provisions, it is important to first clarify what the TIR Convention requires of vehicles and what types of vehicles can be transported with a TIR certificate. The following is a brief analysis of the requirements relating to vehicle technology in the light of the content and requirements of the TIR Convention.

## 2. Definition of vehicle in the TIR Convention

In order to ensure that goods are transported with as little disruption as possible while providing maximum assurance to the customs authorities of all transit countries, the TIR Convention sets out six basic provisions, the six pillars of the TIR transit system: controlled vehicles or containers, international guarantees, TIR certificates, mutual recognition of customs control, controlled use under customs authorisation and IRU management, computerisation of TIR and electronic data exchange. The TIR Convention stipulates that goods shall be carried in containers or road vehicles whose compartments are constructed in such a way that the interior is inaccessible after being sealed with a customs seal and that any prying will be clearly visible, which is a requirement for vehicles or containers with controlled installations. This is a requirement for vehicles or containers with controlled installations.

The TIR Convention sets out the technical requirements and approval procedures for vehicles and only road vehicles or containers approved in accordance with these provisions can be issued with a TIR certificate for the carriage of goods. If a container or compartment meets the requirements of the TIR Convention, the relevant national approval or inspection authority issues a certificate of approval for the road vehicle or container in question.

In order to define the terms road vehicles and containers more clearly, the TIR Convention provides clarification. The term "road vehicle" shall mean not only any power-driven road vehicle but also any trailer or semi-trailer designed to be coupled thereto. The term "combination of vehicles" shall mean coupled vehicles which travel on the road as a unit. The term "container" shall mean an article of transport equipment (lift-van, movable tank or other similar structure): (i) fully or partially enclosed to constitute a compartment intended for containing goods, (ii) of a permanent character and accordingly strong enough to be suitable for repeated use, (iii) specially designed to facilitate the transport of goods by one or more modes of transport without intermediate reloading, (iv) designed for ready handling, particularly when being transferred from one mode of transport to another, (v) designed to be easy to fill and to empty, and (vi) having an internal volume of one cubic metre or more "demountable bodies" are to be treated as containers.

It can be seen that the concept of a "vehicle" that can be transported with a TIR permit is a broad one, encompassing goods vehicles, combination of vehicles and containers, and that the core of the TIR Convention's requirements for "vehicles" is the requirement for "cargo compartments". Here "cargo compartment" is also a broad concept, mainly refers to the part of the vehicle that can carry goods, there is currently no relevant standard in China on this concept has the corresponding description.

### 3. Requirements for vehicles in the TIR Convention

All road vehicles shall be manufactured and equipped in accordance with the conditions specified in Annex 2 to this Convention, " Regulations on technical conditions applicable to road vehicles which may be accepted for international transport under customs seals, specifies the technical requirements of the vehicle ", and shall be approved in accordance with the procedure set out in Annex 3 to this Convention, " Procedure for the approval of road vehicles complying with the technical conditions set forth in the regulations contained in Annex 2". The certificate of approval shall be in the same form as shown in Annex 4, " Model certificate of approval of a road vehicle".

Approval for the international transport of goods under Customs seal may be granted only to vehicles, the load compartments of which are constructed and equipped in such a manner that:

- (a) no goods can be removed from, or introduced into, the sealed part of the vehicle without leaving obvious traces of tampering or without breaking the Customs seal;
- (b) customs seals can be simply and effectively affixed to them;
- (c) they contain no concealed spaces where goods may be hidden;
- (d) all spaces capable of holding goods are readily accessible for Customs inspection.

Containers must be constructed in conformity with the conditions laid down in TIR Convention Part I of Annex 7 and must have been approved according to the procedure laid down in Part II of that Annex Containers approved for the transport of goods under Customs

seal in accordance with the Customs Convention on Containers, 1956, the agreements arising there from concluded under the auspices of the United Nations, the Customs Convention on Containers, 1972 or any international instruments that may supersede or modify the latter Convention, shall be considered as complying with the provisions of paragraph 1 above and must be accepted for transport under the TIR procedure without further approval.

When a road vehicle or combination of vehicles is carrying out a TIR transport, one rectangular plate bearing the inscription "TIR" and conforming to the specifications given in Annex 5 to this Convention, shall be affixed to the front and another to the rear of the road vehicle or combination of vehicles. These plates shall be so placed as to be clearly visible. They shall be removable or be fitted or designed in such a way that these plates can be reversed, covered, folded or indicate in any other manner that a TIR transport is not carried out.

#### 4. Vehicles recommended by the TIR Convention

The TIR Convention itself only sets out specific requirements for the cargo compartment or container of a vehicle, for which the technology and type of vehicle should comply with the standard regulatory requirements of the Contracting Parties. Depending on the road vehicles that are regularly carried by countries using TIR certificates, the UNECE has given templates for approval reports for seven types of vehicles to guide the testing of vehicles. The seven types of vehicles are sheeted vehicles, solid-siders, vehicles with sideboards and sliding sheets, vehicles with strap hooks and sliding sheets, tankers, vans, and hydraulic ramps for loading and unloading, as shown in Figures 1 to 7. It can be seen that this is only a description of the structure of the vehicle according to its cargo compartment, and not strictly according to the type of compartment.



**Fig. 1 Sheeted Vehicles**



**Fig. 2 Solid-siders**



**Fig. 3 Vehicles with Sideboards and Sliding Sheets**



**Fig. 4 Vehicles with Strap Hooks and Sliding Sheets**



Fig. 5 Tankers



Fig. 6 Vans



Fig. 7 Hydraulic Ramps for Loading and Unloading

## 5. Vehicles currently permitted in China

Article 21 of the Regulations on the Administration of International Road Transport (Order of the Ministry of Communications No. 3 of 2005), which came into force on 1 June 2005, stipulates that "Foreign transport vehicles entering the territory of China to engage in international road transport shall comply with China's regulations on the outline dimensions, axle load and load capacity of transport vehicles. If China has signed specific agreements with foreign countries on the outline dimensions, axle load and load capacity of transport vehicles, the agreements shall be implemented." This means that vehicles engaged in international road transport should comply with the Chinese mandatory national standards Limits of Dimensions, axle load and masses of motor vehicles, trailers and combination vehicles (GB 1589-2016).

On 20 December 2017, the General Administration of Customs issued the Order on the Announcement of the Decision of the General Administration of Customs on Amending Some Regulations (General Administration of Customs Order No. 235), which shall come into effect on 1 February 2018. The General Administration of Customs Order No. 235 amended the Measures of the Customs of the People's Republic of China on the Administration of Transport Enterprises Carrying Goods under Customs Supervision by Road and their Vehicles and Drivers within the Territory by deleting the content of Article 8(2), which states that "the box must be of metal structure". This means that there are no specific requirements for vehicles engaged in international road transport and any vehicle that meets the requirements of the existing standards in China can be driven on the road.

Combined with China's existing model standards and regulations and the relevant requirements of the TIR Convention, vans, solid sliders, tankers, articulated vehicle and goods road train (as shown in Figure 8~Figure 13) can all use the TIR certificate to carry goods. Among them, the tankers can be a tank truck, can also be a tank semi-trailer and semi-trailer tractor combination; semi-trailer towing vehicle can be a combination of container transport semi-trailer, van trailer and semi-trailer towing vehicle, semi-trailer towing vehicle can be a flat-head semi-trailer towing vehicle and be a long-head semi-trailer towing vehicle; truck tractor including centre axle trailer combination and draw-bar trailer combination. However, the dimensions, axle loads, mass limits and the type of vehicle shall comply with the

requirements of the other country. In addition, large transport vehicles that meet the requirements of the standards and regulations of the transit and destination countries may also carry goods using TIR certificates, subject to the relevant approvals.



**Fig. 8 Vans**



**Fig. 9 Solid-siders**



**Fig. 10 Tankers**



**Fig. 11 Articulated vehicle**



**Fig. 13 Centre axle trailer combination**



**Fig. 14 Draw-bar trailer combination**

At present, there is no standard for curtainsiders in China, so this type of vehicle is not allowed to use the TIR certificate to carry goods in China. Although the side curtain vehicle can obtain the "Road Motor Vehicle Production Enterprise and Product Notice" in China, but China does not yet have the relevant standards for this type of vehicle and curtain performance, so for the time being, this vehicle is not allowed to use the TIR certificate to carry cargo in China. When the relevant standards are developed, those that meet the requirements can use the TIR certificate to carry goods.

## 6. Conclusion

Through a brief description of the TIR Convention, it is made clear that vehicles in the TIR Convention are a collective term for goods vehicle, combination vehicles and containers, and it is pointed out that the technical requirements for the cargo compartment are the core of the TIR Convention's requirements for vehicles, and the basic requirements of the TIR Convention for the cargo compartment are briefly described. The seven vehicle types recommended by the TIR Convention are analyzed and illustrations are given according to the presentation on the official website of the United Nations Economic Commission for Europe. By analyzing the relevant regulatory requirements for international road transport vehicles in China and combining them with the actual vehicle standards in China, five vehicle types that can be carried in China using the TIR certificate are proposed. The reasons why curtainsiders and side curtainsiders cannot be transported in China using the TIR certificate are also explained. Through the brief analysis and explanation of the TIR Convention on vehicle technology, it can provide useful reference for China's freight enterprises to select vehicle types and customs departments to supervise vehicles.

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