
Handling Overload and Overdimension Vehicles in Indonesia

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Abstract

One of the contributing factors in causing the high fatality rate in Indonesia are overload and overdimension vehicles. This can make it difficult to control the movement of the vehicle.

To deal with problems regarding overload and overdimension vehicles, the NTSC providing safety recommendations and advocating for its implementation and present as a bridge in providing solutions or alternatives that can be implemented by all parties.

And the result, there is a good synergy between various stakeholders in Indonesia. All the stakeholders take safety action based on the recommendation given.

At last, the safety improvement can be increased directly and indirectly. Directly, the fatality rate that caused by overload and overdimension vehicle can be reduced by implementing the safety recommendations. One of them is the installation of safe rescue lane at the accident prone area.

Keywords

Accidents; NTSC; overload; overdimension; vehicles

Overload and Overdimension Vehicles in Indonesia

The current fatality rate of road accidents in Indonesia still needs serious attention. Based on police data, the number of fatalities due to road accidents in 2019 was 25,000 and 2020 was 22,500. Even though there is a decline, when viewed more deeply, the number of deaths is still high, which three people die every hour. In general, the occurrence of traffic accidents in Indonesia is caused by the negligence of oneself or others.

One of the contributing factors in causing the high fatality rate in Indonesia is freight transport vehicles that are overload and overdimension. This can cause the mass of the vehicle to become very large and its speed to be difficult to control which can be overspeed or underspeed (Permana, Dwi Bakti, 2014).

Currently, many accidents involving overload and overdimension vehicles occur in accident-prone areas. Generally, these areas are in the form of long descent roads and has extreme gradient such as

in Kretek – Bumiayu, Kertek – Wonosobo, Cangar – Mojokerto, Emen – Subang, etc. And there are also areas in the form of extreme incline and winding such as in Sitingau Lauik – Padang, Bukit Menangis – Bontang, etc.

On long derivative roads and extreme gradients, overload and overdimension vehicle accidents are mostly caused by the occurrence of braking failures on the vehicle. There are many indications that the brakes are overheating, causing the brake fading phenomenon to occur. On an extreme incline, the accident occurred due to the swaying of a vehicle that had reversed due to failure to climb. Poor maintenance on vehicles also contributes to accidents involving overload and overdimension vehicles.

The Impact of Overload and Overdimension Vehicle

Vehicles whose load exceeds the provisions set by the government on the one hand can increase the efficiency of transporting goods and reduce operating costs. Of course, that positive value of overload vehicles is actually only enjoyed by users of transportation services who is the owners of goods. Behind that, all vehicles that are overload and whose dimensions exceed the provisions will always have a negative impact.

Kharvi et al. (2019) stated that overload vehicles will experience various damages and potential risks in terms of vehicle dynamics. Overload vehicles can cause the tires to overheat and wear rapidly which increases the chance of premature, dangerous and expensive failure or blow-outs. Brakes have to work harder and because the vehicle is heavier due to overloading so that brakes overheat and lose their effectiveness to stop the vehicle. The whole suspension system comes under stress and, over time, the weakest point can give way. By overloading your vehicle you will incur higher maintenance costs to the vehicle, tyres, brakes, shock absorbers. In terms of vehicle dynamics, the vehicle will be less stable, difficult to steer and take longer to stop. The overload vehicle cannot accelerate as normal, making it difficult to overtake.

Meanwhile, overdimension vehicles will be difficult for the vehicle to maneuver, especially on narrow roads. There is a risk that the vehicle will hit nearby vehicles or hit other road users. This problem will be increasingly felt on national roads in Indonesia where around 36,703.11 kilometers still do not meet the standard width of 7 meters.

Overload vehicles will clearly cause road damage (reference). Based on data from the Ministry of Public Works, there was a loss of around 43 trillion rupiah annually on national roads and toll roads that were damaged due to overload. This was something that is necessary to get treatment considering that damaged or perforated roads can be a risk of causing accidents.

In terms of safety, overload and overdimension vehicles cause many accidents. Based on police data, it was recorded that in 2021 that the number of accidents were 57 cases which 22 people died, 6 people were seriously injured, and 96 people were minor injuries. Accidents that often occur were the occurrence of brake failure so that large vehicles hit other vehicles. Beside that rear-front collisions also happened due to the speed difference being too high, causing other vehicles to enter the bottom of the vehicle.

From the environmental aspect, overload vehicles also have a major impact on environmental pollution. This is caused by the exhaust emissions produced which different from normal vehicles. On overload vehicles, the exhaust emissions generated are greater than the normal vehicles because the engine works extra.

From the traffic aspect, overload and overdimension vehicles cause congestion. This is due to the movement of these vehicles which tend to be slow. In addition, overdimension vehicles will cover part of the road, causing disruption to the movement of other vehicles, especially on non-standard roads.

Legal Basis Relating to Overload and Overdimension Vehicle

By regulation, in Indonesia the loading capacity and dimensions of vehicles have been regulated in Law 22 of 2009 concerning Road Traffic and Transportation, Government Regulation No. 55 of 2015 concerning vehicles, and Minister of Transportation Regulation No. 33 of 2018 concerning Vehicle Type Testing. To overcome overload and overdimension violations, several things have been carried out starting with the operation of weighbridge units at strategic locations throughout Indonesia, periodic testing of all public transportation vehicles including goods vehicles, taking action by police and ministry officers on goods vehicles that are indicated to be overload and overdimension.

The regulatory framework for national surveillance are :

- Regulation of the Minister of Transportation No. 18 of 2021 concerning Supervision of Cargo Transport and Implementation of Weighing Motor Vehicles on the Road Government Regulation No. 55 of 2012 regarding vehicles
- Regulation of the Director General of Land Transportation No. SK.736/AJ.108/DRDJ/2017 concerning Technical Guidelines for Weighing Motor Vehicles on the Road
- Regulation of the Director General of Land Transportation No. PR DRDJ i of 2021 concerning Technical Guidelines for the Operation of Weighing Equipment for Motorized Vehicles with Dynamic Methods on the Road

In addition, to ensure the performance of the vehicle remains in accordance with the standards and dimensions in accordance with the type test registration letter, then there are Minister of Transportation Regulation No. 133 of 2015 concerning Periodic Testing of Motor Vehicles dan Regulation of the Director General of Land Transportation No. KP.4294/AJ.510/DRDJ/2019 concerning Guidelines for Normalization of Motorized Vehicles, Trailer Trains, and Outboard Trains.

With those regulations, every public goods and passenger vehicle must be tested periodically every 6 months. This is done so that the vehicle is roadworthy as long as the vehicle is operated.

However, there are obstacles which are the occurrence of corruption in the existing system, fines that are too small, and weak law enforcement against existing violations. These three things have resulted in a massive increase in the population of overload and overdimension vehicles, an increase in accidents involving overload and overdimension vehicles as well as damage to road and bridge infrastructure.

Methodology

To deal with problems regarding overload and overdimension vehicles, the NTSC as part of the government whose main task is to investigate accidents and provide safety recommendations related to accidents that occur, encourages road safety improvements by providing safety recommendations and advocating for its implementation (Indonesian Government, 2012). NTSC also conducts a series of laboratory tests or research to validate the results of the investigation. The results of tests and research can be used as new findings for analysis to find out the causes of accidents. The working principle of NTSC can be seen in Figure 1.

Currently there is a sectoral ego among stakeholders. Therefore, NTSC is present as a bridge in providing solutions or alternatives that can be implemented by all parties. In the end, there is a good synergy between various stakeholders in Indonesia starting from the Ministry of Transportation, Police, other relevant ministries such as the Ministry of Public Works, etc, also operators such as toll operators, etc.



Figure 1. National Transportation Safety Committee Task

Overcoming the problem of overload and overdimension vehicles requires an approach so that each stakeholder is aware to carry out their duties and functions in accordance with the regulations that have been set. Currently, there is Government Regulation Number 37 of 2017 concerning Traffic and Road Transportation Safety referring to the Decade of Action for Road Safety 2011–2020. Based on this regulation, there are 5 pillars of road safety in Indonesia, namely a safe system (pillar 1), safe roads (pillar 2), safe vehicles (pillar 3), safe road users (pillar 4), handling accident victims (pillar 5).

However, in its implementation, each stakeholder moves independently so that the goal of improving national safety is not achieved. Therefore, the NTSC is present as a pioneer and catalyst so that the tasks of each stakeholder whose implementation is delayed must be carried out as soon as possible. KNKT monitors recommendations every certain period of time to ensure that relevant stakeholders implement the safety recommendations that have been given.

Furthermore, the focus on handling overload and overdimension vehicles is still prioritized on the 3rd pillar, namely safe vehicles. In this case, the Ministry of Transportation is the stakeholder responsible for the 3rd pillar. Therefore, there is an action plan for handling overload vehicles and excess dimensions launched by the Ministry of Transportation. This action plan is prepared by each sub-directorate of the Directorate of Land Transportation of the Ministry of Transportation. Most of the action plans made are the result of following up on the safety recommendations provided by the NTSC. Thus, the cooperation between institutions that evaluates the performance of the regulator as well as the responses from the regulators who are given recommendations need to be maintained properly.

In Figure 2, it can be seen about the action plans carried out by the Ministry of Transportation to overcome the overload and overdimension vehicles. The target set is Indonesia to be free from overload and overdimension vehicles on the 1st of 2023.

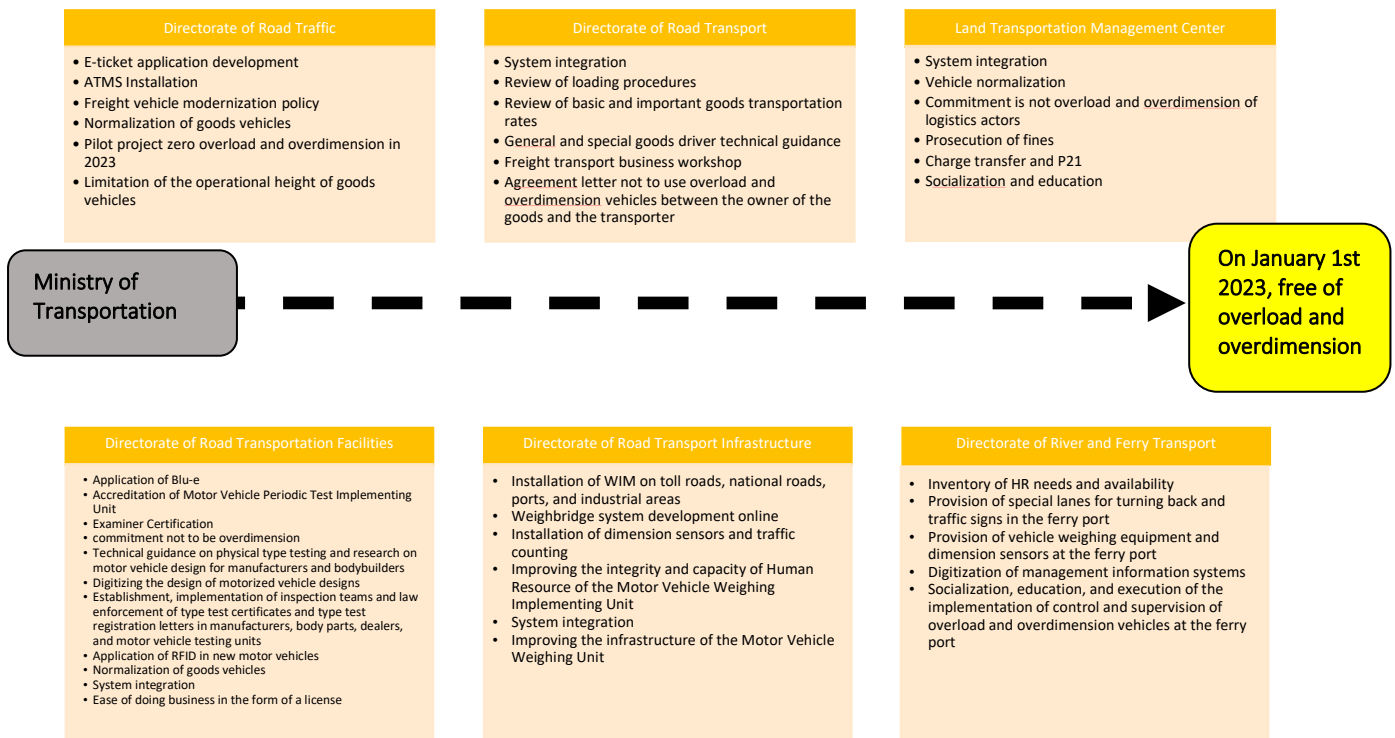


Figure 2. Action Plan by Ministry of Transportation

Coordination with stakeholders who are under other safety pillars is also needed so that the handling of overload and overdimension vehicles is optimal. Like the ministry of transportation, each stakeholder has an action plan related to handling overload and overdimension. The NTSC must also be active in coordinating with these stakeholders which are Indonesian Republic Police, Ministry of Public Works and Housing, Ministry of Industry, Ministry of Trade, Ministry of State-Owned Enterprises, Ministry of Finance, and Supreme Court. The action plan for each stake holder can be seen in Figure 3.

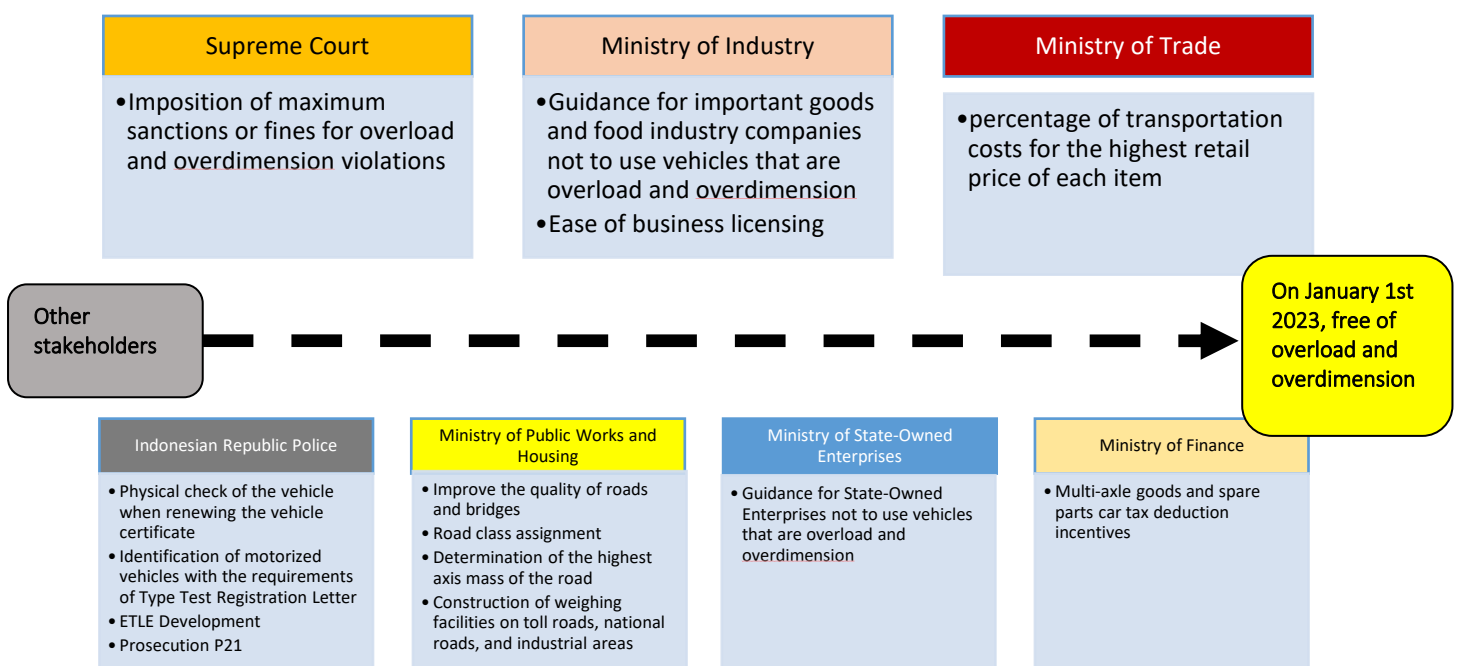


Figure 3. Action Plan by Other Stakeholders Related to The Road Safety

The next step is for NTSC together with the Ministry of Transportation and also the Police to monitor the effectiveness of the action plans that have been implemented. These three stakeholders are the main stakeholders who monitor the development of the level of traffic safety and road transportation, especially those related to handling overload and overdimensions. Of course, coordination meetings with stakeholders in other safety pillars can be held to monitor the implementation of their respective action plans.

Results

In the end, the government has taken important steps. The operation of the Type A weighbridge by the regional government which has been considered problematic has been taken over by the Ministry of Transportation starting at the end of 2016. The government has also conducted an audit of motor vehicle testing to ensure the quality of the services provided. Law enforcement is being carried out intensively starting in 2019 by carrying out fines and also cutting vehicles that are overdimension. The Ministry of Transportation will also revise the existing law to increase fines for violations of overload and overdimension. On the technical side, the installation of rescue lanes to anticipate braking failures that occur is carried out at appropriate points in accident-prone areas. The installation of WIM has begun to be carried out by toll operators in March 2021 on 7 toll roads in Indonesia. Toll operators will also install speed cameras starting March 2022 at 25 strategic points

All of the steps taken have to be intensified to date, considering that there are still many government officials who actually commit violations and the level of public awareness of the dangers of overload and overdimensions is still low. However, there are safety recommendations that have succeeded in reducing the fatality rate due to overload and overdimension vehicles that is the installation of safe rescue lanes such as the kretak derivative which has succeeded in holding back more than 50 trucks that experienced braking failure in the 2019-2021 period (Figure 4). Going forward, NTSC will continue to focus on encouraging the installation of rescue routes in other accident-prone areas throughout Indonesia.



Figure 4. Safe rescue lanes in Kretak - Bumiayu

Law Enforcement Due to Overloading

At the beginning of 2022, the police have started to massively carry out law enforcement actions related to overload. Based on data from the police for the period 25 January - 20 February 2022, there were prosecutions for violation cases with a total of 17,552 cases (Figure 5). Most violations are in the province of Central Java (Jateng).

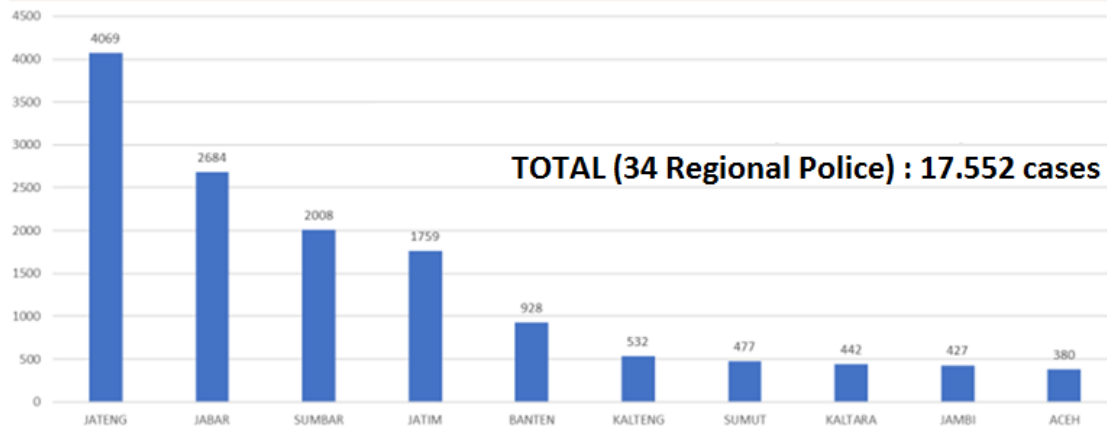


Figure 5. The top ten regional police in law enforcement of overloading violations for the period 25 January - 20 February 2022

The Land Transportation Management Agency (BPTD) also takes action against overdimension vehicles throughout Indonesia. It can be seen in Table 1 that the actions taken from 2019 to 2021 in various areas of operation. The police can also take action against overdimension vehicles (Table 1). Then the Land Transportation Management Agency normalizes overdimension vehicles (Table 2). Normalization is usually done by cutting the housing or chassis that exceeds the provisions.

Table 1. Dimensional Violation Case Enforcement Data

No	Regional BPTD	Year	Amount	Status
1	BPTD Riau & Kep. Riau	2019	1	Inkrah
2	BPTD Sumatera Barat	2020	2	Inkrah
3	BPTD Jawa Tengah & DIY	2020	1	In process
4	BPTD Jawa Tengah & DIY	2021	1	In process
5	BPTD Jawa Barat	2020	1	In process
6	BPTD Jawa Timur	2020	2	In process
7	BPTD Banten	2020	1	In process
8	BPTD Bengkulu & Lampung	2020	1	Inkrah
9	BPTD Jambi	2020	1	In process
10	BPTD Gorontalo	2021	1	In process
11	Polresta Semarang	2020	1	Inkrah
12	Polresta Cianjur	2020	1	Inkrah
13	Polresta Tulungagung	2021	1	Inkrah

*) BPTD : Land Transportation Management Agency

Polresta : City Resort Police

Table 2. Vehicle Normalization Data in Various Provinces in Indonesia (until August 2021)

No	Regional BPTD	Vehicle Amount
1.	DKI JAKARTA	103
2.	ACEH	15
3.	SUMATERA UTARA	48
4.	SUMATERA BARAT	4
5.	RIAU & KEPRI	209
6.	JAMBI	6
7.	BENGKULU & LAMPUNG	8
8.	SUMSEL & BABEL	19
9.	BANTEN	301
10.	JAWA BARAT	79
11.	JAWA TENGAH&DIY	84
12.	JAWA TIMUR	165
13.	BALI & NTB	8
14.	NTT	-
15.	KALIMANTAN BARAT	46
16.	KALIMANTAN TENGAH	-
17.	KALIMANTAN SELATAN	10
18.	KALTIM & KALTARA	5
19.	SULAWESI UTARA	-
20.	GORONTALO	-
21.	SULAWESI TENGAH	-
22.	SULSEL & SULBAR	184
23.	SULAWESI TENGGARA	13
24.	MALUKU	-
25.	MALUKU UTARA	-
26.	PAPUA & PAPUA BARAT	-
	TOTAL	1283

Supervision of Goods Transport Vehicles for the Year 2017-2021

The Ministry of Transportation reports data that From 2017-2021 the number of vehicles inspected has increased in line with the increase in the operations of the motor vehicle weighing unit. Then also the number of violating vehicles decreased by 47.45% in 2021 from the previous 837,935 in 2020 (Figure 6).



Figure 6. Goods vehicle violation

From the types of violations committed on goods vehicles, it can be seen that the violation of carrying capacity is the largest (Figure 7). The trend of overdimension violations is downwards. This happened in line with the massive normalization carried out by the Ministry of Transportation.

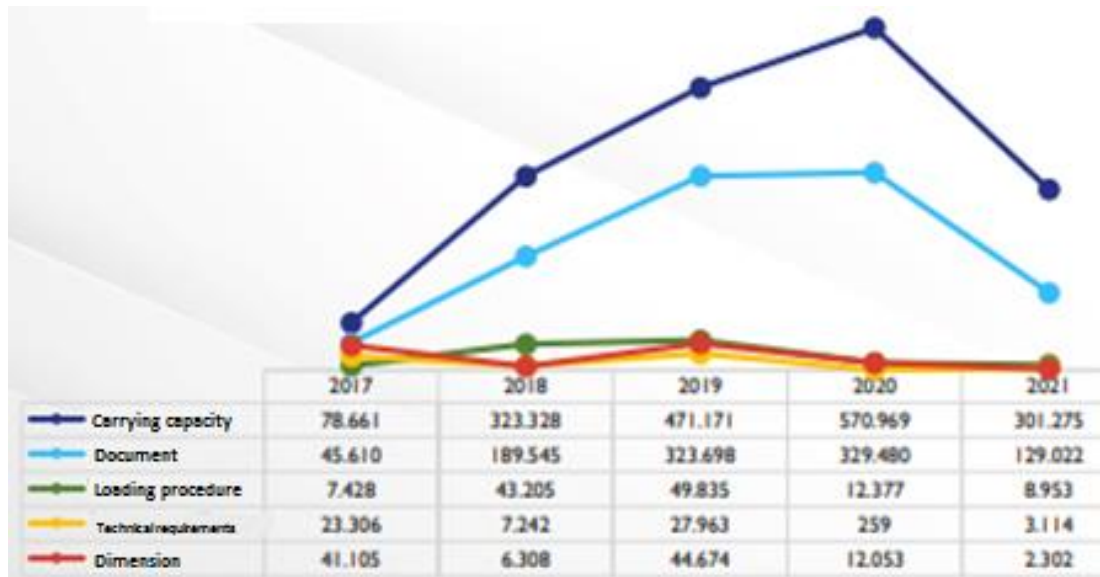


Figure 7. Type of violation

Then with the implementation of the plan to increase the weighbridge facility, including the capacity for temporary storage of cargo from overload vehicles, action by transferring load can already be carried out on overload vehicles. It can be seen that starting from 2020, load transfers have been carried out on 2,727 vehicles that are overload and then increased sharply to 22,247 in 2021 (Figure 8).

Law enforcement at the weighbridge has also started again in 2018 using e-tickets (Figure 8). Then in the following year, manual tickets were also applied to accompany e-tickets. The tickets for overload and overdimension vehicles have also been carried out by the police on the roads starting in 2020 and massively in 2022 (Figure 5).

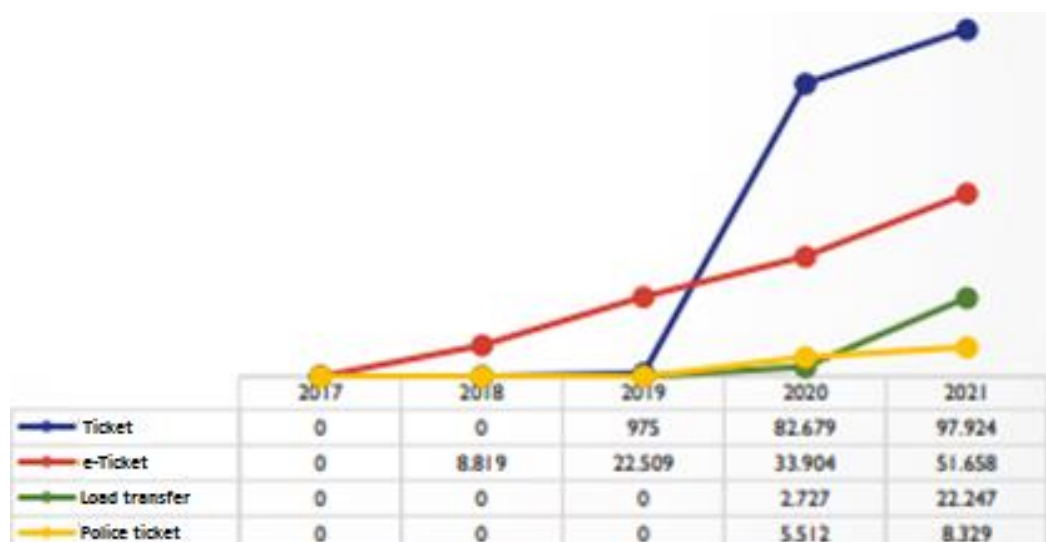


Figure 8. Prosecution of violations of goods vehicles

Conclusion

In conclusion, to improve road safety, all stakeholders need to be invited to work together to take steps or actions that are in accordance with their respective authorities. Continuous and consistent advocacy is needed so that the steps that have been planned can be realized in a real action. Lastly,

focus on concrete steps that have clearly succeeded in reducing the fatality rate, such as the installation of rescue routes in accident-prone areas.

The overload and overdimension can be handled as long as all stakeholders work together to take steps or actions that are in accordance with their respective authorities as well as road safety pillars :

- NTSC provide safety recommendation based on the research and investigation of the overload and overdimension vehicle accident
- NTSC conduct continuous and consistent advocacy so that all stake holders safety action planning can be realized in a real action
- Safety improvement can be increased directly by implementating safety recomendation that can reduce the fatality rate such as arrester bed installation
- Safety improvement can be increased indirectly with implementating safety recommendation based on each stakeholder authorities
- Ministry of Transportation focused on vehicle improvement
- Police focused on vehicle user improvement
- Ministry of Public Works focused on road improvement
- Coordination between stakeholders needed for conducting inventory and communication, education, prosecution or supervision

Recommendations

Follow-up steps need to be taken immediately so that the handling of overload and overdimension vehicles is effective :

- Revision of the law to increase fines of violations and criminals sanction as well as broading the legal subject.
- Focused on the installation facilities or infrastructure that can reduce the fatality rate and volation such as arrester bed, weight in motion (WIM), Blu-e, Electronic Traffic Law Enforcement (Figure 9) , Speed Camera



Keterangan:
 Klasifikasi Kendaraan = 12
 Jumlah berat beban (JBB) = 26.000 Kg
 Jumlah berat yang diizinkan (JBI) = 24.000 Kg
 Berat Kendaraan = 49.180 Kg
 Selisih = 25.180 Kg

Melebihi daya angkut atau jumlah berat yang diizinkan (JBI)
 Pasal 307 jo 169 ayat (1) Setiap orang yang mengemudikan kendaraan bermotor angkutan umum barang yang tidak mematuhi ketentuan mengenai tata cara pemuatan, daya angkut, dimensi kendaraan

Tata cara konfirmasi melalui website:
 • Akses domain <https://etle-korlantas.info/id/>
 • Masukkan No referensi pelanggaran
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Scan QR Code untuk melihat media bukti pelanggaran di online

No Referensi Anda: DGPBE8215YX31

Figure 9. ETLE implementation plan on toll roads.

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