

KOREA GOVERNMENT STATUS REPORT

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ABSTRACT

Korea has maintained its status as the world's fifth largest player in auto production. Development of both the domestic economy and the auto industry has led to quantitative growth of the auto market with the number of registered car exceeding 20 million. However, Korea still lags behind advanced countries in terms of reducing the number of road traffic accidents and fatalities. Under the circumstance, the Korean government set comprehensive measures to reduce traffic deaths and has put cross-ministry efforts to meet the challenge. In this context, the government is devoted to harmonizing domestic vehicle safety regulations with international regulations while improving the domestic regulations to better fit with the traffic environments of the country. In addition, the government is inducing vehicle manufacturers to produce safer vehicles by strengthening the New Car Assessment Program.

GENERAL STATUS OF KOREAN VEHICLES

Korea has managed to maintain its place as the fifth largest global player in vehicle manufacturing for a decade from 2005 to 2014 (see Figure1.). Such achievement has been possible thanks to the significant progress achieved by the domestic vehicle industry coupled with steady economic growth during the period.

After reaching 1 million in 1985, the number of registered vehicles in Korea had continuously increased and hit 20 million mark in 2014 while the ratio of citizens per vehicle has dropped to 2.5 (see Figure2.).

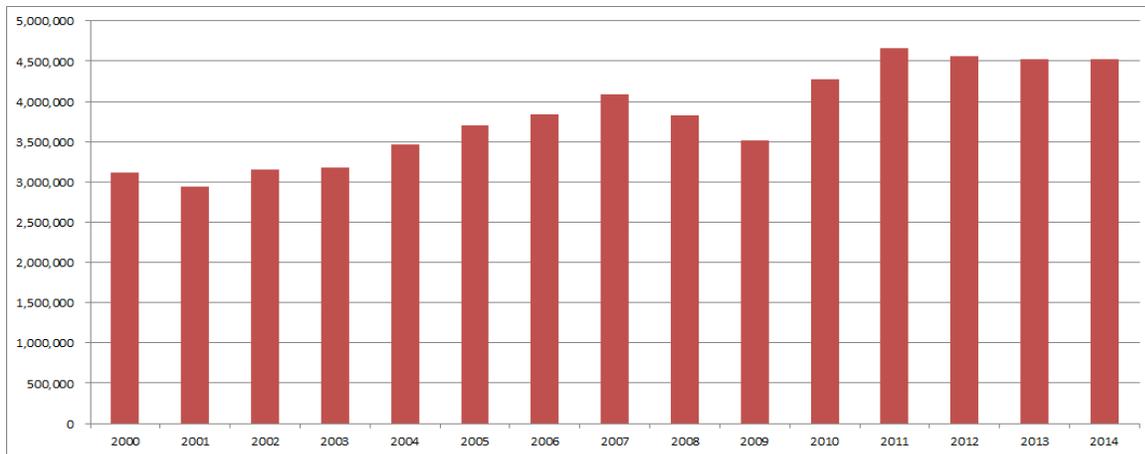


Figure1. Number of vehicles manufactured

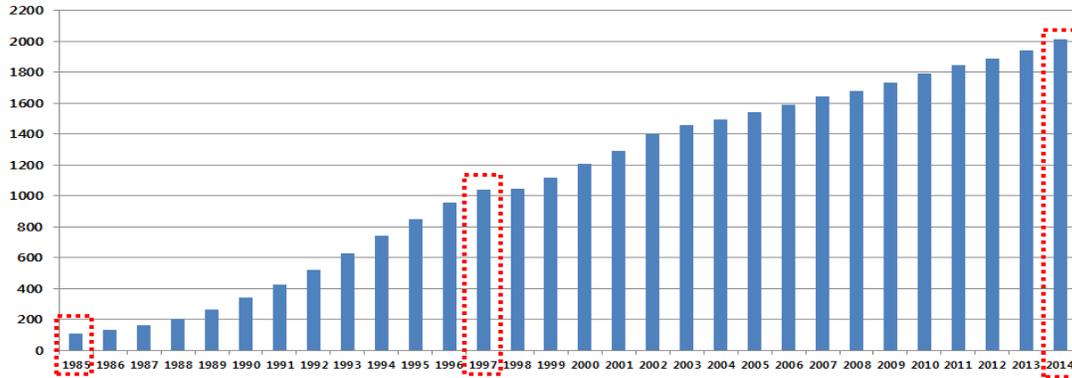


Figure2. Total number of registered vehicles

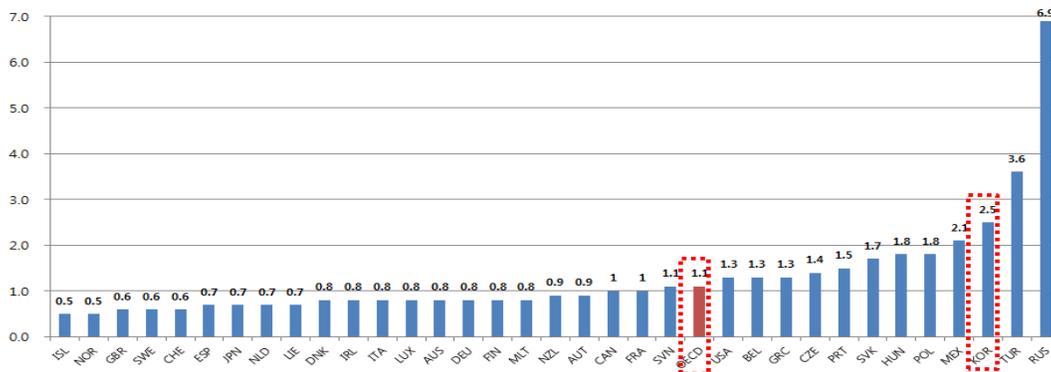


Figure3. Number of deaths from traffic accidents per 10,000 vehicles

Despite the growth of domestic auto market, the traffic fatality per every 10,000 vehicles is 2.5 persons as of the end of 2011, which is one of the lowest ranks among the OECD member countries (see Figure3.). However, the number of deaths caused by road traffic accidents has decreased steadily since 2004 and recorded less than 5,000 for the first time in 2014 (see Figure 4.).

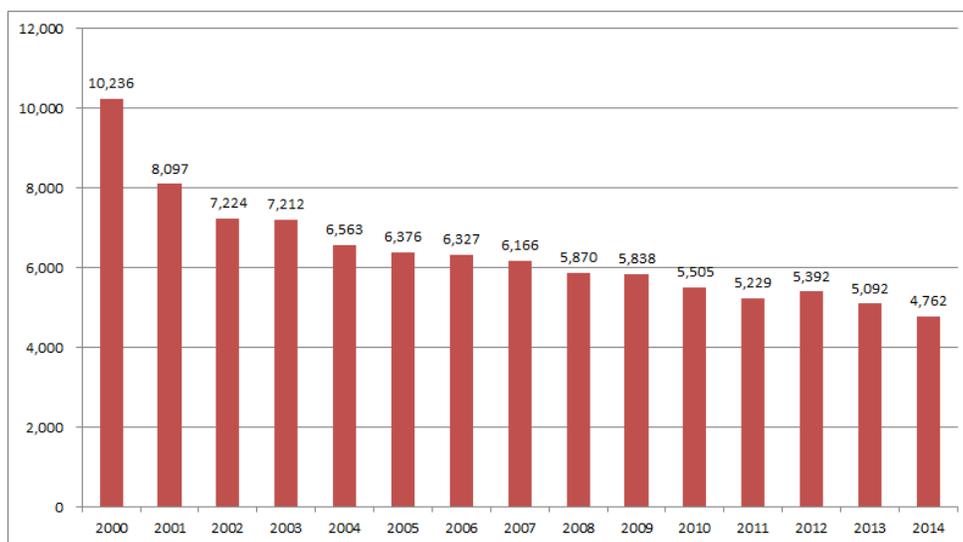


Figure4. Number of deaths from traffic accidents

The recent two years recorded the fastest decline in the traffic-related death rate in a decade. The average annual decline rate of road traffic deaths was 2.4% from 2004 to 2012 and 6.0% during the recent two years. The average annual road traffic death rate dropped by 2.4% from 2004 to 2012 and 6.0% during the recent two years. The road traffic fatality rate also went down from 2.41% in 2012 to 2.36% in 2013 and further declined to 2.1% in 2014. The government's efforts to reduce traffic accidents and fatalities played an important role in cutting the road traffic death rate. In particular, the Comprehensive Plan to Reduce Traffic Fatalities 2013-2017 was released in July 2013 and has been implemented to enhance vehicle safety, promote public awareness on traffic safety and improve road infrastructure.

With the goal of cutting road traffic fatality rate by 30% by 2017, five strategies were set under the Comprehensive Plan to Reduce Traffic Fatalities. Main action plans to achieve the strategies include obligating the use of safety belt for all vehicle passengers on expressways, conducting campaigns with active involvement of citizens and establishing institutional basis for Emergency Call System(e-call system) to further advance the accident response system.

Table1. Comprehensive plan to reduce traffic fatalities

| Strategies & Action Plans |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Creating the culture of valuing people the most to promote traffic safety - Advancing traffic regulations and applying stricter punishment for traffic violations - Advancing insurance systems and rooting out illegally registered cars under someone else's name - Strengthening education on traffic safety - Conducting traffic safety campaigns with the participation of citizens |
| 2. Expanding infrastructure to promote safety - Eliminating causes of traffic accidents by securing safety infrastructure in the road environments - Realization of smarter and safer roads - Securing safety on the road for safer daily lives of pedestrians - Strengthening vehicle safety regulations and expanding the application of advanced safety devices |
| 3. Establishing customized measures for relatively vulnerable groups in the transportation sector - Strengthening safety management to prevent accidents caused by senior citizens - Spreading customized safety education programs and creating culture of considering others - Strengthening traffic safety for children - Strengthening traffic safety for families with multi-cultural backgrounds and foreigners residing in Korea |
| 4. Enhancing traffic safety for vehicles used for business purposes and advancing the accident response system - Strengthening safety management for vehicles used for business purposes - Tightening enforcement on traffic violations related to vehicles for business use and providing guidance to traffic offenders - Providing information on road safety and building up the capacity of professionals in the related fields - Introduction of the Emergency Call System and prevention of secondary accidents |
| 5. Improving the system of traffic safety policies - Strengthening managing and adjusting functions of traffic safety policies - Enhancing local governments' capacity for traffic safety - Securing stable financial resources for traffic safety programs - Providing more support for traffic safety programs of local governments |

The following is the recent legal development in vehicle regulations, in terms of their improvement and harmonization to international regulations and the New Car Assessment Program aimed at improving vehicle safety.

IMPROVEMENT IN VEHICLE REGULATIONS

Safety-belt reminder for unbuckled passengers

In the case of vehicle crash, whether a passenger fastens a seatbelt or not is a crucial determinant of how seriously the passenger is injured. It was found that the fatality and serious injury rates surged by more than nine times when seat belts were not worn by passengers on the rear seat in collision tests conducted by KATRI in 2010. Even though the use of seat belts by all vehicle passengers is mandatory on expressways, the rate of buckled rear seat passengers remains at 19%[1]. So, with the aim of promoting the use of seat-belts, the government plans to make audible warning devices that send alarms to unrestrained rear seat passengers as one of evaluation items of the new car assessment starting from 2015.

In addition, Korea proposed the mandatory installation of Safety-belt Reminders for rear seats at the WP.29 Working Party on Passive Safety in December 2014[2]. The rationale is the low safety-belt wearing rate for rear seats in nations such as Korea, which becomes all the more important for such nations where occupancy rate for rear seats is relatively higher.

Mandatory installment of a Daytime Running Lamp (DRL) for all vehicles

After the introduction of DRL in 2010, installment of DRL was initially optional and became mandatory in June 2014.

The mandatory use of DRL is based on results of studies that suggest the positive impact of DRL on ensuring the field of visions of drivers and road users under foggy, rainy, dusty and other adverse weather conditions during daytime as well as in the evening and at dawn. A study shows that mandatory installation of DRL would reduce the regional traffic accidents by 19% in average, suggesting an expectative traffic-accident prevention effect [3].

Strengthening safety regulations for vehicles used for commuting school children

The MOLIT enhanced vehicle safety regulations to prevent accidents involving backing school bus, traversing children after getting off the school bus or children accidentally stuck in the school bus. Major strategies to prevent accidents caused by those vehicles include installing automatic stop signal devices near the driving seat to catch the attention of other drivers who try to overtake the vehicle and installing Rear view camera and backup audible warning devices. In addition, wide-angle mirrors which are currently installed on the right side of the driver's seat will also be extended on the left to minimize blind spot areas for drivers [4].



Figure5. Commuting school children applied Strengthening safety regulations

Strengthening performance requirements for Endurance (Auxiliary) Braking System for the safety of vehicles used for commercial purposes

A series of road accidents has claimed many lives in Korea as large-sized passenger vehicles carrying groups of students deviated from steep and winding downhill roads in local areas or plunged off mountain roads. In this regard, given the geographical features of Korea, the government strengthened the endurance (auxiliary) braking regulation in June 2014. While Endurance (Auxiliary) Braking System is usually used to support service brakes, researchers suggest that Auxiliary Braking System can also be used to prevent brake fade on steep downhill roads.

In this regard, the use of high-performing Endurance (Auxiliary) Braking System is expected to contribute to enhanced braking performance on steep downhill roads.

HARMONIZATION OF VEHICLE REGULATIONS

As a member country of the 1958 Agreement and the 1998 Agreement, Korea has updated the domestic regulations in accordance with international regulations since 1996. As a result, 47 UN Regulations and 9 UN GTRs were reflected on domestic regulations. The table below shows the updates made in the domestic regulations.

Table2. Status of harmonization in Korea

| Year | UN Regulations | UN GTRs |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 2006 | - UN R13H : Passenger vehicle brake - UN R19 : Front fog lamp | - GTR No.1 : Door locks & Retention |
| 2008 | - UN R14 : Safety Belt Anchorages - UN R53 : Motorcycle Installation - UN R57 : Motorcycle Headlamps - UN R107 : Safety Inclination Angle - UN R39 : Speedometer - UN R95 : Side Collision - UN R123 : Semi-AFS | - GTR No.3 : Motorcycle Brake - GTR No.9 : Pedestrian Safety |
| 2009 | - UN R48 : Hazard Warning Signal - UN R73 : Lateral Protection | - |
| 2010 | - UN R6 : Side Direction Indicator - UN R10 : EMC - UN R13 : Spring Brake - UN R46 : Rear View Mirror - UN R79 : Steering Effort - UN R87 : DRL(Optional) - UN R112 : Asymmetric Headlamps - UN R123 : Full AFLS - UN R125 : Field of Vision | - GTR No.6 : Safety Glazing - GTR No.7 : Head Restraint - GTR No.8 : ESC |
| 2011 | - UN R64 : TPMS - UN R85 : Engine and Net Power - UN R42 : Bumper - UN R91 : Side Marker Lamp | - |
| 2012 | - UN R1,2,8,20,72,112,113 : Headlamps for Motorcycle - R53 : Light & Lighting devices for Motorcycle - UN R13 : Brake Assist System(BAS) - UN R107 : Minimum Turning Radius | - GTR No.4 : WHDC - GTR No.11 : Engine emissions for Non-Road Machinery |
| 2014 | - UN R30, 54 : Pneumatic Tyres - UN R100 : Electric Powertrain - UN R73 : Lateral Protection - UN R58 : Rear Underrun Protection - UN R55 : Coupling Components - UN R21 : Power-operation of windows - UN R119 : Cornering Lamps - UN R7 : Front & Rear position Lamps, Stop lamps and End-outline Marker Lamps - UN R3 : Retro-reflecting devices - UN R4 : Rear Registration plate lamps - UN R23 : Reversing lamps - UN R70 : Rear Marking plates | - GTR No.5 : ODB |
| Total | 47 | 9 |

Researches on 14 items including brake lining, wheels and camera monitoring systems for replacing mirrors will be conducted in 2015 to harmonize domestic regulations with international ones. In addition, medium and long term plans (2016-2019) for researches on autonomous vehicles and related new technologies along with vehicle regulations are being developed.

STRENGTHEN NEW CAR ASSESSMENT PROGRAM (NCAP)

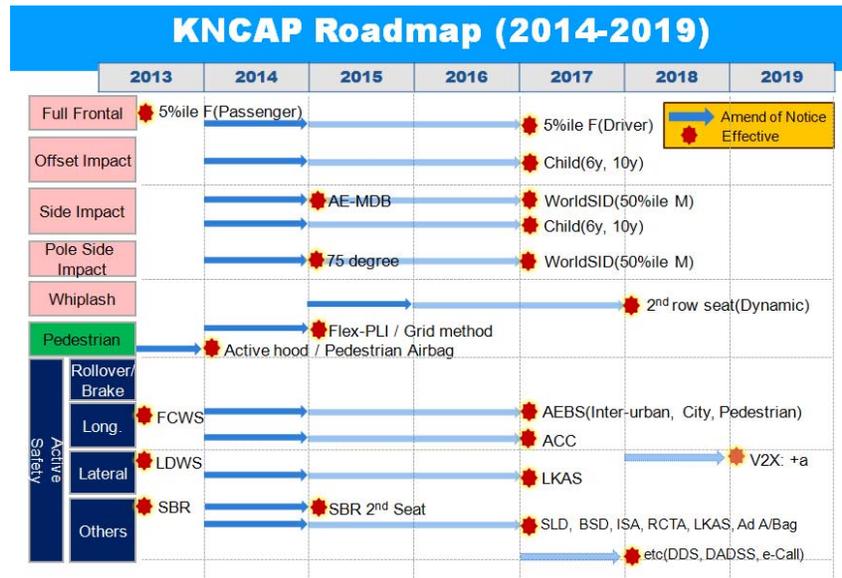
The Korean government is encouraging the production and sale of safer vehicles and is providing information about safety of vehicles by implementing New Car Assessment Program and disclosing its result. A total of 127 types of vehicles have been evaluated by 2014 since the New Car Assessment Program was introduced in 1999. The government has upgraded the assessment program by widening the pool of evaluated vehicle types ranging from compact cars to vans and trucks and by adding evaluation items. The Comprehensive Grading System was expanded as they are now in 2013 to help consumers to make more informed decisions. The applied percentage of evaluations items was also changed based on data about domestic traffic accidents. As a result, the percentage of pedestrian safety was set at 25% given the high fatalities of pedestrians (see Table3.).

Table3. Sample of the Comprehensive Grading System of KNCAP

| Evaluated Fields | | Crash worthiness [65%] | | | | | Pedestrian safety [25%] | Driving safety [10%] | | Accident prevention safety [additional point 1.0] | | |
|------------------|--------------|----------------------------|----------------------|--------------------|--------------|------------------|-------------------------|---------------------------|---------------|---------------------------------------------------|----------------------|-----------------|
| Evaluation items | Vehicle Type | Full frontal impact [16.0] | Offset impact [16.0] | Side impact [16.0] | Seat [10.0] | Pole side [+2.0] | Pedestrian safety [30] | Rollover resistance [5.0] | Braking [5.0] | Forward collision [0.4] | Lane departure [0.3] | Seat belt [0.3] |
| | | Small | xxx | 15.9 (99.4%) | 13.5 (84.4%) | 16.0 (100.0%) | 8.7 (87.0%) | 2.0 (100.0%) | 17.0 (56.7%) | 4.4 (87.7%) | 3.9 (78.0%) | |

The mid-to-long term road map was established in 2014. The main strategies under the road map include the introduction of advanced airbags and an evaluation system for the relatively vulnerable groups in the transportation sector such as women and children. Enhancing assessment procedures in such areas as broadside collisions and adding six evaluation items including proactive safety devices are also expected to be included in the scheme (see Table4.).

Table4. The Roadmap of Korean New Car Assessment Program (KNCAP)



CONCLUSIONS

The Korean government is putting efforts to improve traffic safety by establishing “The Comprehensive Plan to Reduce Traffic Fatalities 2013-2017” following the “Reduce Traffic Fatality by Half”. Improvement of vehicle regulations and the New Car Assessment Program to facilitate the production of safer vehicles provide a basis for such efforts. To that end, exchanging information and setting the right direction through international discussion are also as important as maintaining the potential of continuous improvement of vehicle safety by promoting the development and application of advanced technologies.

REFERENCES

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