Chapter 2 Overview of Current Road Traffic Safety Measures

1 Improvement of Road Traffic Environment

○ Improvement of People-First Walking Spaces Offering Safety and Security on Pedestrian Roads

While gaining the cooperation of the local communities, traffic safety measures such as actively improving sidewalks in school routes, residential roads, and main roads in town areas were promoted from the standpoint of "people".

(1) In March 2009, Prefectural Public Safety Commissions and road administrations cooperated to implement comprehensive accident prevention measures such as pedestrian improvement in 582 residential and industrial areas with high rates of fatal and injury accidents of pedestrians and bicycles that were assigned as 'Safe Walking Areas'.

Additionally, on residential roads outside of such areas, Prefectural Public Safety Commissions and road administrators worked together to prevent speeding vehicles, to define the shape of roads, and to make clear the existence of intersections to drivers and traffic sections for pedestrians and drivers. Policies for preventing traffic accidents were implemented to promote the initiative for creating secure road spaces that could be safely shared by pedestrians and drivers.

(2) In order to ensure the safety of passage for children and infants attending elementary schools, kindergarten, nurseries, and children's houses, the improvement of sidewalks along school routes were actively promoted.

In addition, improvement was devised for school and kindergarten routes through push-button traffic lights, improving pedestrian lighting and pedestrian overpass, and expanding and augmenting pedestrian crossing.

(3) Furthermore, in order to ensure elderly and disabled people can get around on their own, the roads connecting stations, government facilities, hospitals, etc. by installing wide, flat sidewalks were improved. These improvements are based on the new barrier-free laws.

In addition, electric pole clearance was promoted along with the improvement of barrier-free traffic signals, traffic signals with the function of separating pedestrians and vehicles, pedestrian overpass with lifting and lowering devices, car parking lots, and car parking lots with parking grids for disabled persons. At the same time, LED lighting and higher brightness for road signs were promoted in order to devise the safety and smoothness of passage for elderly and disabled persons along with adapting to the increase of elderly drivers.

○ Promoting Traffic Safety Measures On Highways

(1) The "Zero Accidents Plan," which emphasizes strategies to eliminate danger zone accidents, was promoted during the implementation of development projects that contribute to road traffic safety. This was undertaken to scientifically test the effects and in order to gain the maximum result with a small budget, while implementing efficient and effective measures through the application of a management cycle.

(2) Regarding the particularly "accident hazardous" intervals, 3,396 sections of highways with high percentage of accidents, specified in March 2009, the Prefectural Public Safety Commissions and the road administrators, in cooperation, have promoted intensive measures to prevent traffic accidents through the development and the sophistication of traffic signals, installation of traffic signals with the function of separating pedestrians and vehicles, improvement of visibility of road signs, maintenance of sidewalks, intersection improvements, improvement of visual distance, such as the development of additional lanes, establishment of a central zone, fence installation and protection of bus route stop zones, development of demarcation lines, installation of road illumination and road safety posts, and etc.

○ Comprehensive Improvement of a Bicycle Usage Environment

With the aim of realizing a sustainable clean and energy-efficient transportation system with the cities, it is needed to create a safe and comfortable environment for cyclists; clarifying the role and position of the bicycles, depending on the traffic situation, appropriately separating the pedestrians, bicycles and automobiles and implementing measures to prevent the pedestrian and bicycle accidents from increasing. For this purpose, relevant organizations such as the police and road administrators promoted, in cooperation, the development of the road traffic network for bicycles, road bikes, and bike lanes.

In addition, the review committee consisting of experts in the private sector has examined the way of

the development of bicycles and bicycle traffic space in the future.

- **Use of Intelligent Transport Systems**

An intelligent transport system (ITS), which attempts to unify people, roads and cars systematically, to improve safety, transport efficiency and comfort, and to contribute greatly to environment conservation through smoothening traffic such as reducing traffic jams using cutting edge information technology, is promoted. For this reason, based on the entire ITS concept formulated in 1996 and the New Information and Communication Technology Strategy formulated in May 2010, research and development, field tests, and the development of social infrastructure are to be promoted and improved with the cooperation of industry, government, and academia.

(1) The improvement of systems and the implementation of optical beacons[1], which are the key infrastructure of Universal Transport Management Systems (UTMS) were promoted on the basis of the conception of UTMS, that the advanced traffic control center, which plays the leading role, and other equipment attempt to secure the safety and to comfort of traffic, to provide drivers with the advanced traffic information, to control car traffic to attach priority to public vehicles, to reduce traffic pollution, to support the safety of driving, and to ensure the safety of pedestrians through the use of optical beacons capable of two-way communication with cars and the active and comprehensive management of the flow and stream of traffic.

(2) The government will continue to deploy public and private sectors working together to promote the Smart Way by utilizing ITS Spots, which are based on ETC communication technology. Through the use of ITS Spots in addition to the ETC, support services for safe driving will be achieved, such as dynamic route guidance, which allows routes to be selected, adjusting to a wide range of traffic congestion data and provide advance warnings to eliminate close calls during driving.

2 Dissemination and Reinforcement of Traffic Safety

- **Promotion of Traffic Safety Education for the Elderly**

In order to elevate traffic safety awareness based on the mutual edification of elderly communities, the establishment of traffic safety divisions in seniors' clubs and retirement homes as well as the training of elderly traffic safety instructors (silver leaders) was promoted. Subsequently, voluntary traffic safety activities such as the creation of "Close-call maps" were implemented, and instruction and support was given so as to fulfill the leading role of traffic safety activities in local areas and households.

- **Promotion of the Safe Usage of Bicycles**

In order to demonstrate that the bicycle is a vehicle, thus its user need to respect the rules as vehicles and practice traffic etiquette when passing through a road, public awareness-raising activities that apply "5 Rules for Bicycle Safety Usage" shown in the Central Traffic Safety Policy Council Decision were promoted along with traffic safety education such as participatory/revelatory/hands-on bicycle classrooms that target wide bicycle user groups regarding the correct way to ride a bicycle taking into account pedestrians and other bicycles. Such education applies automobile area training courses, audiovisual aids, simulators, and the 'scared straight method' (an experiential educational method that faces fear by seeing accident being reproduced by a stuntman, and so on)

3 Ensuring Safe Driving

- **Augmentation for Better and More Effective Measures for Elderly Drivers**

Seminars for the elderly required for elderly drivers who are aged 70 and above carry out: practical examinations by getting students to actually drive a vehicle, and testing that utilizes driving aptitude test devices. The aim is to make students self-aware of their own physical changes and giving advice and guidance based on these results. People who take this seminar will not need to attend the seminar when renewing their license. In 2011, senior citizens who attended the seminar added up to 2,025,965.

Furthermore, for seminars at the time of during license renewal, an elderly class was organized targeting people between the ages of 65 and 69, and efforts were made to carry out courses that covered the characteristics of elderly drivers and their traffic accidents.

- **Augmentation of Supervision for Road Transport Operators**

Targeting "Zero drunk driving" and "Decreasing the Number of deaths and personal injuries in

[1] Optical beacon - A road installation-type infrared communication device. This device senses passing cars to measure the amount of traffic, and communicates data with car navigation devices and traffic control centers.

commercial vehicles accidents by half in the next 10 years," the various initiatives for efforts to reduce accidents of commercial vehicles are being promoted, based on the "Commercial Vehicles General Safety Plan 2009" established in March 2009.

Moreover, in order to reliably achieve the objectives of the Plan, regular and continuous checks along the PDCA cycle will be conducted, and the goal achievement and progress of the measures will be yearly confirmed among the concerned parties, while new measures will also be considered if necessary, based on factor analysis of traffic accidents.

- **Enhancement of Transportation Safety Management System**

Based on the "Transport Safety Management System" introduced in October 2006, a safety management system was established by the operators, which was taken action by management executives to on-the-site workers as a whole. The country carried out the evaluation for transport safety management to 578 companies by the end of December 2011 to confirm the status of implementation.

4 Ensuring Vehicle Safety Measures

- **Promotion of Vehicle Safety Measures**

In order to promote the dissemination and practical application of development of advanced safety vehicles (ASV) that uses progressive technology to support driving safety, the 5th phase of the advanced safety vehicle (ASV) promotion plan was initiated from 2011. With the collaboration of academic, business, and government circles, the initiative for the practical realization of genuine dissemination of ASV technology utilized up to now and communication-based safety driving support systems is being implemented.

In addition, subsidies to fluctuating alarm and collision mitigation brake for heavy-duty vehicles have been implemented.

In order to prevent accidents resulting from incomplete check and maintenance, such as wheel loss of large-sized vehicle and bus catching fire, the government has continued to conduct intensive checks of large-sized vehicles, newly put into operation in 2007, in September, October, and November including "Promotional Campaign for Motor Vehicle Check and Maintenance" month and has informed about the cautionary items in the check and maintenance of large-sized vehicles such as trucks and buses.

In 2004 the government responded to the need to detect cover-ups and other illicit practices being made by automakers through initiating measures to prevent the recurrence of fraudulent recall-related activities by bolstering the various systems in combating unfavorable information gathering, auditing of defective vehicle-related businesses, and technical inspections, and steadily implemented measures in prevent any recurrence in 2011.

Furthermore, in order to assume the perspective of the user even better, the recall system have been carried out to strengthen the organizational structure that aims to strengthen the research and analysis and information gathering system.

5 Improvement of Rescue and Emergency Medical Systems

- **Promotion of the "Doctor-Helicopter Business"**

For the purpose of augmenting medical treatment during ambulance transport and on emergency sites, doctor-helicopters were in the process of being promoted based on "special law relating to ensuring emergency medical treatment using emergency medical helicopters" established and implemented on June 27, 2007. By the end of January 2011, 32 doctor-helicopters had been deployed to 27 prefectural medical emergency centers (including code-share prefectures).

- **Augmentation of Fire Departments and Collaborative Systems for Medical Agencies**

In recent years the length of time since a call is made to 119 till an injured or ill person is brought to a hospital has been lengthening. Furthermore, these have been cases with the difficulty of selecting a health care facility that will accept the injured or ill person. Given such conditions, the Fire Service Law was amended in 2009, and the criteria (hereinafter referred to as "Performance Standards") related to the implementation of patient transport and acceptance was decided. Such criteria was decided in order for prefectures to swiftly and appropriately facilitate the transportation of sick or injured people and their acceptance into healthcare facilities as emergency operations through the fire department. Also, a committee is to be established to hold conferences regarding performance standards; the members will be the fire department and healthcare facilities. As of now, March 31st, 2012, the performance standards have been developed in all prefectures.

Topics

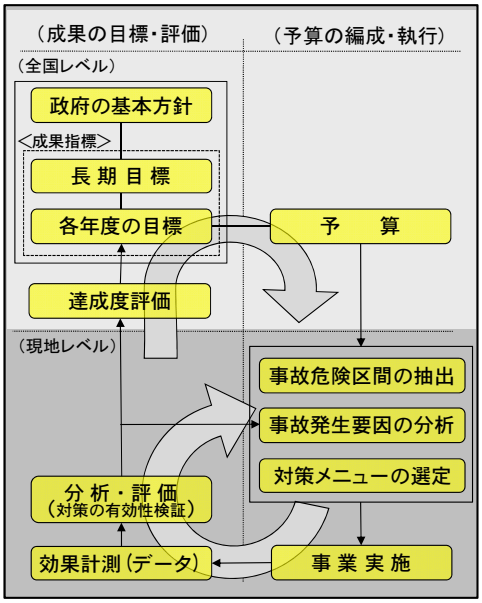
Regarding Traffic Safety Measures on Main Roads

Regarding the promotion of the "Zero accidents plan" (a strategy emphasizing the elimination of accident-risk intervals) and countermeasures against road kills

Promotion of the "Zero accidents plan" (A strategy emphasizing the elimination of accident-risk intervals):

In order to maximize the efficiency of the investment in traffic accident countermeasures and for the development of projects that contribute to traffic safety on main roads, "Outcome-focused management" was introduced in the fiscal year 2010. It selects and concentrates on the eradication of traffic accidents by focusing and intensively working on the implementation of the "Zero accidents plan" (a strategy emphasizing the elimination of accident-risk intervals), through citizen participation and civil cooperation.

Management Cycle
of the Zero Accidents Plan



List of accident risk intervals (as of April, 2011)

Selected number of intervals based on accident data	Selected number of intervals based on indications from citizens	Total intervals selected
10,461 intervals	3,842 intervals	14,303 intervals

* Intervals corresponding to both aggregate to intervals based on accident data

Site inspection and exchange of opinions by relevant organizations and local residents

Regarding Road Kill

In cases where roads were developed in the locations of animal habitats or on the routes where animals move between habitats, many of the animals that lived there continued to move around as usual, even after roads were developed. This means they get hit by cars and this leads to road kill.

It is worrisome, because this could have a major impact on the survival of a species, such as the Okinawa Rails (picture on right) in the northern part of the main island of Okinawa, which have limited numbers and habitats.

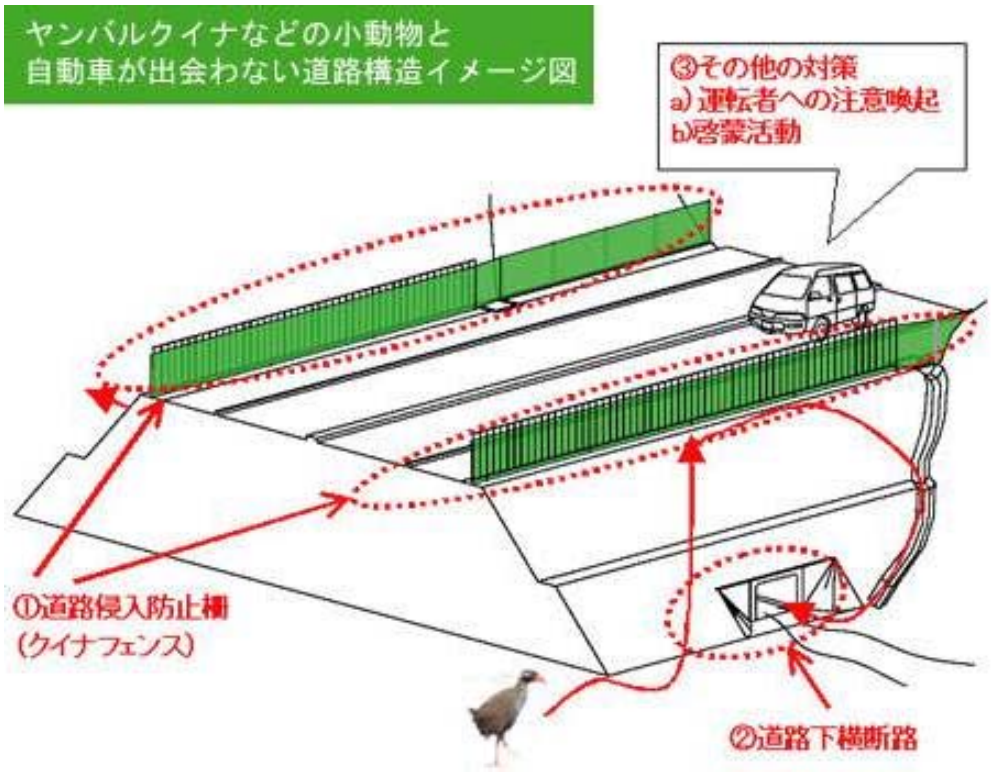
Also, a road kill affects not only the animal being hit, but the car that struck it as well, because it causes a significant impact on the car that tried to avoid it and in some cases it leads to personal injury, especially in the case of large animals, such as deer.

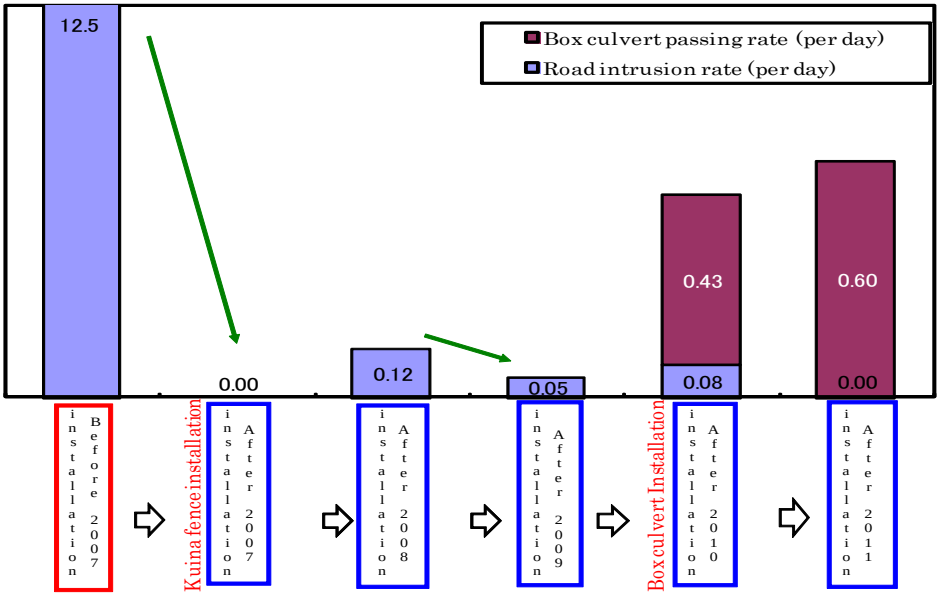
Therefore, to prevent the intrusion of the road of animals attempting to cross the road, countermeasures such as enclosing it with a preventive fence and, in order to avoid the division caused by the road, providing a box culvert that allows the animals to cross under the road or providing a bridge crossing over the road, where possible.

Furthermore, even if an animal were to enter the road, countermeasures, such as providing one-way direction/one-way gates for easy escape to the outside, can be used.

With the development of these facilities on the 2.7km section of National Highway No. 58 on the

inland of Hedo, Okinawa Prefecture, the number of Okinawa Rails entering roads has decreased sharply, as a result of the increased number of box culvert crossings, as shown below.





* Installing the video camera during the research period

Individual road entry rate and box culvert passing rate (3.8kP point)

Topics

Working towards the Realization of Orderly Bicycle Traffic

Bicycles are used by a wide range of people, from children to the elderly, in particular, recently, with the traffic confusion caused by the Great East Japan Earthquake and other matters, bicycles have come under the spotlight as a means of getting to and from work as well as other purposes. However, on another note, accidents involving bicycles account for about 20% of total traffic accidents, and there is an endless stream of criticism from the people regarding the traffic rule violations and etiquette of bicycle users, while at the same time, the development of the traffic environment for bicycle users is inadequate.

In view of this situation, the National Police Agency issued a notice entitled "Promotion of Comprehensive Measures to Realize Orderly Bicycle Traffic" in October 2011, and is now fully engaged in measures for bicycles in cooperation with related agencies, organizations, and others.

The basic concept of the notice places a particular emphasis on raising awareness among all persons who comprise the "traffic society", that bicycles are also vehicles, in a bid to secure the safety of not only cyclists, but also motor vehicle drivers and pedestrians.

Under the previously mentioned basic concept, police are comprehensively promoting measures such as the establishment of bicycle traffic environments, promoting full awareness of rules and safety education among cyclists, and reinforcing enforcement against cycling related offenses. More specifically, in cooperation with related agencies, organizations, the following various measures are being promoted.

(1) Establishment of bicycle traffic environment

In order to achieve a good bicycle traffic order in terms of bicycle traffic environment, promoting the development of passing spaces specified for bicycles as well as the separation of pedestrians and bicyclists are indispensable. More specifically, working to ensure the safety of pedestrians and bicycles through the developing the bicycle lanes and bicycle paths, as well as reviewing the locations for implementation of the traffic regulation that allows ordinary bicycles to pass on pedestrian roads, and the removal of bicycle crossing zones connecting the roads where that regulation is been implemented.

In order for the main traffic parties, such as the pedestrians and bicyclists can safely run in the future as well, and so that they can properly coexist, the police road administrators and other relevant agencies have cooperatively decided to continue to promote the development of bicycle traffic environment.

Examples of the bicycle paths development

Installation of bicycle lanes
(Kikugawa, Shizuoka Prefecture)

(2) Thorough awareness of the rules for bicycle user

In order to reach the understanding of bicycle users, that a bicycle is a vehicle and must comply with the traffic rules and traffic manners as a vehicle, public activities to promote awareness, that apply "five rules for safe bicycle use," which clearly show the main rules of bicycle traffic to the a wide range of bicycle users, such as students, the elderly, housewives, and others, aiming to make the rules of bicycle traffic well-known.

Five rules for safe bicycle use:

1. For bicycles roadway is the principles sidewalk is an exception
2. On a roadway use the left side
3. On a sidewalk - give priority to pedestrians, near a roadway - slow down.
4. Observe the safety rules:
   - Riding when drunk, two-seaters, riding side by side is prohibited
   - Use lights at night
   - At intersections observe the signals, pause and check safety
5. Children should wear a helmet

(3) Promotion of bicycle safety education

Bicycle classrooms using the Scared-Straight method (accident being reproduced by a stuntman) or using a bicycle simulator for hands-on, experience and participation, make bicycle safety education more effective by making it possible to clearly imagine the seriousness of the responsibility at the time of a perpetrating accident and the potential danger caused by violation of a specific rule, have been actively carried out in collaboration with schools and local governments. In addition, a variety of educational opportunities, such as driver-training courses during the update, from the point of view of automobile drivers, the implementation of education about the considerations to ensure the safety of bicycles is being committed to.

Accident being reproduced by a stuntman

(4) Strengthening enforcement guidance for bicycle

Focusing on the districts and routes with strong emphasis on educational leadership for bicyclists[2], the warning guidance against bicycles without lights, two-seaters, ignoring the signals, and temporarily do not stop, in addition strictly taking measures such as arrest application of traffic tickets to the bicycles, that operate with the braking device failure (bikes that do not have brakes), or are likely to cause danger to the vehicles and pedestrians passing by a concrete violation or danger of traffic violation and other malicious or repeated violations without following the warning guidance,

The status of implementation of the bicycle inspection

[2] Based on the status of complaints and requests of local residents about the occurrence of traffic accidents with pedestrians and bicyclists, 1,860 locations nationwide were specified the (as of 1 January 24, 2010), where awareness-raising activities, such as teaching in the streets for bicycle users are being promoted.

Topics

Holding Traffic Safety Forum

- On November 10th, 2011 with the cooperation of Kumamoto prefecture and city, traffic safety forum with the theme: "Aiming at the eradication of drunk driving – Do not Drive or Let Drive if Drunk," with about 350 people participants was held at Kumamoto Terrsa Hotel in the same city,
- Based on the problems raised through the implementation of traffic safety measures by prefectural governments, while holding important national policies in the Cabinet Office, obtaining effective appropriate recommendations for the prevention of traffic accidents through research presentations and discussions by experts, such as academics, and adding place for public debate, the "Traffic Safety Forum" is held annually in various locations for the purpose of raising traffic safety awareness of the public.
- At the same forum, there were proposals through keynote speeches and panel discussions, aimed at "eradicating drunk driving" from experts in various positions, creating a place to raise awareness towards the society without traffic accidents caused by drunk driving.

The recommendations from the experts

Keynote Speech and Panel Discussion Coordinator

Mr. Yoichi Yamamura
Former president JR Bus Kanto region
ASK (Japan Specified Non-profit Corporation to Prevent Alcohol and Drug Problems)
Chairman of the Special Committee for Measures against Drunk Driving

Creating the necessary "drinking in moderation" awareness

"Drinking and driving cannot be prevented only by severe punishment and moral improvement. Knowledge about the alcohol is also indispensible. It takes four hours for an adult man to completely decompose 1 unit (20g) of alcohol. (1 beer can, 500ml, 1 portion of sake or shochu, 100ml). If 2 units are taken it doubles the time to 8 hours.
In other words, if you have a job the next day, drinking one unit would make the line of whether or not you will be drunk when driving. We all need to reflect on the "drinking too much, making others to drink too much" culture of the past, and create the awareness changing towards "drinking in moderation."

("Keynote Speech" presentation status)

Panel Discussion Panelists

Mr. Kazunori Shidoji Kyushu University Faculty of Information Science and Electrical Engineering Department of Information Professor of Intelligence Science **Changes in driving that definitely occur after drinking** "We have conducted experiments on the effects that drinking has on driving. When comparing driving behavior before and after drinking alcohol, there was a trend that driving becomes rough, eye movement dulls, and autonomous nervous system is reduced. The frightening thing is that was observed is that people answer in the self-evaluation: "I do not notice the effects of drinking, nothing has changed." Even if they think so, the numbers show the effects. One should not forget that even after a little drinking, changes would certainly occur in the movements."	Mr. Junichi Hamamoto Kumamoto Prefectural Medical Center of the Heart Director **Alcoholism that requires support** "Many of those who habitually drink and drive are thought to be alcoholics. In Japan, the prevalence based on the diagnostic criteria is 1.9% for men, 0.1% for women, and 0.9% for the whole population with the number of patients estimated to be about 800,000 people. On the other hand, the current situation is that only few, 1/47th part of them are receiving treatment at a hospital, with the estimated number of patients being 17,100 people. Alcoholism is a curable disease. Treatment based on "learning and empathy" and support for abstinence education are needed."
Mr. Koba Tsuyoshi Kumamoto Prefectural Police Headquarters Chief Counselor, Ministry of Transportation and Transportation Planning **Accidents caused by drinking tend to be serious accidents** "Although the number of accidents caused by drunk driving, was reduced to about a quarter compared to a decade ago, the risk for those accidents to become serious ones is increasing. While the number of people to drive carelessly is reducing, there is an impression that a lot of accidents are caused by people who are addicted or might be at a stage previous to addiction. It has been pointed out, that during drunk driving, normally unthinkable reckless driving often occurs, with the risks of probability of a fatal accident being about 6.9 times and the probability of an accident leading to hit-and-run about 14 times higher than that of accidents without drinking."	Ms. Yoshiko Miyazaki Actress **It is necessary to change the concept and the tendency of forgiving the "drunk"** "Recently there are a lot less "cigarette smoking" scenes in TV-series. However, we can still often see plenty of "drinking alcohol – getting drunk" scenes. We can also see situations when liquor is readily available for teenagers. There is still a concept and the tendency of somehow forgiving the "drunk" living within us, isn't it? I feel, that considering this kind of tendency, we must appeal the fear and the danger of driving under the influence of alcohol."

14 December 2011 "Published in Kumamoto Nichi Nichishinbunsha evening paper"

(Panel discussions being held)

(Kumamoto surprise character, Kumamon, also appeared)

Topics

Economic Losses Due to Traffic Accidents

In the Cabinet Office, in fiscal year 2011 and fiscal year 2010, Investigation Review Committee was held regarding the economic analysis of damage and loss of traffic accidents and calculated the amount of loss due to traffic accidents. The results of the summary are as follows.

1. The range of the calculation of loss from traffic accidents

The range of the calculation includes monetary losses and non-monetary losses caused by traffic accidents per year.

Monetary losses were calculated in the range of subjects including physical loss, such as lost profits, treatment-related costs and consolation money, in addition to material loss, such as repair costs of vehicles and constructions, loss of business entities, such as decrease in the amount of value added by incapacity to work, the loss of various public institutions, such as ambulance costs related to traffic accidents, police accident processing costs, court costs, operating costs of insurance and congestion loss.

Non-monetary losses were calculated in the range of subjects of the losses related to death (Death loss) and injuries (Injury loss) of the victim, including the non-monetary losses of pain, suffering, decreased quality of life and not being able to enjoy the happiness of life due to a traffic accident.

2. The total amount of loss caused by traffic accidents

Losses due to traffic accidents were estimated to be 6.33 trillion yen in total, which is 1.3% of the GDP ratio (Figure 1).

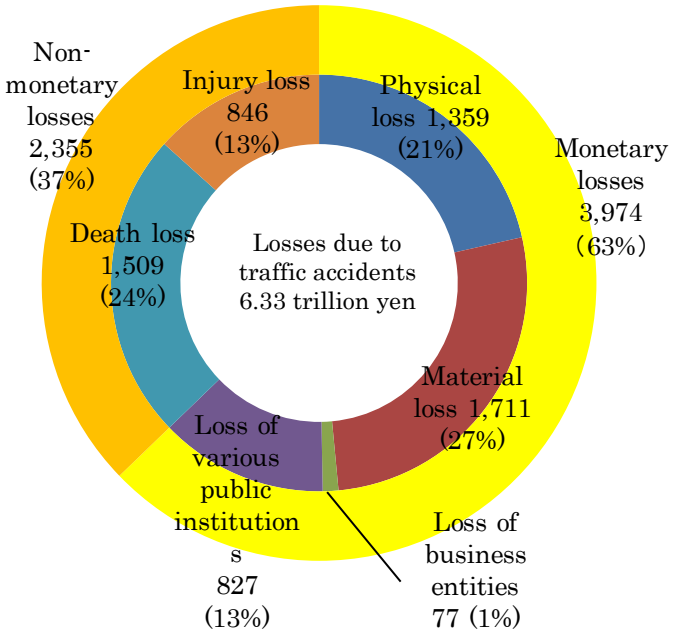
A. Monetary losses

Monetary losses were calculated to be 3.97 trillion yen in total. Out of which: physical loss is 1.36 trillion yen (21%), material loss is 1.71 trillion yen (27%), loss of business entities is 0.08 trillion yen (1%), loss of various public institutions is 0.83 trillion yen (13%).

B. Death loss

The death loss value per person was based on the calculation by correcting the amount from the previous investigation[3] the Cabinet Office and using a yearly deflator of the national accounting. As a result, death loss was calculated to be 1.51 trillion yen in total.

Figure 1 Losses due to traffic accidents (Unit: Billions of Yen)



[3] Investigative Study for Economic Losses Caused by Road Traffic Accidents (Cabinet Office: March, 2007)

C. Injury loss

Injury loss is calculated in two different ways depending on the conditions.

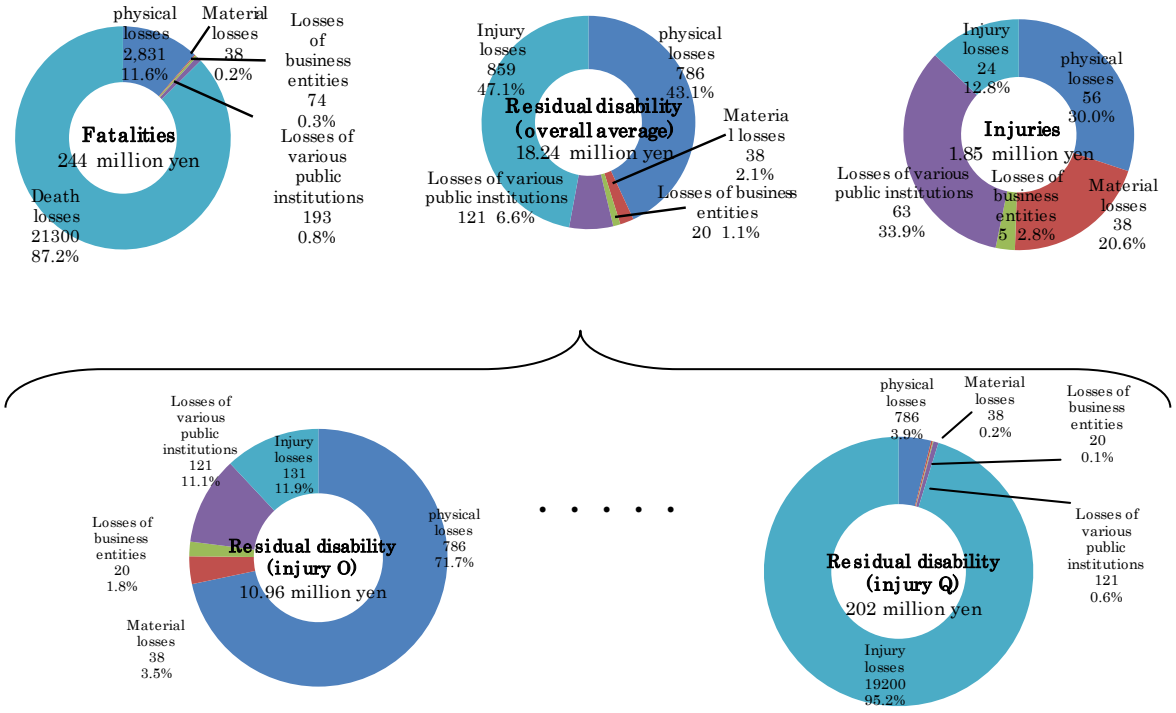
For relatively severe conditions, it is calculated on the basis of survey conducted by Standard Gamble method (Confirming the extent of the probability of success in regards to the gamble of special treatment, with the two selections of immediate cure or death, in the case where a patient involved in a traffic accident may require long-term hospitalization or may be left with a severe disability if they receive conventional treatment.).

For relatively mild conditions it is calculated on the basis of the survey conducted by the virtual market valuation method. (Ensuring willingness to pay[4] for the medical expenses to be paid if any special treatment for immediate cure is received) As a result, the injury loss was calculated to be 0.85 trillion yen in total.

3. Losses due to traffic accidents per person

When calculating the amount of loss per person for death, disability, injury, it was 244 million yen and 18.24 million yen, and 1.85 million yen accordingly. In addition, although the amount of loss in case of a permanent injury is value by the overall average grade of disability from mild to severe, some injury losses are now being calculated separately from injury indicators, such as the weight of the disability grade, when calculating the amount of injury loss per capita in each segment, ranges of up to 202 million yen from 10.96 million yen exist (Figure 2).

Figure 2　Losses due to traffic accidents per person (Unit: million yen)



Note) injury Q...Remaining injury corresponding to the first class residual disability grades specified in the appendix 1 or grade1 specified in the appendix 2 of Order for Enforcement of the Automobile Liability Security Law

Note) injury O...Remaining injury corresponding to the grades from 10 to 14specified in the appendix 2 of Order for Enforcement of the Automobile Liability Security Law

[4] The amount may be considered as the maximum pay for the improvement condition due to policy.