Disaster Prevention

Building a more disaster resistant nation

Protecting the lives and property of the people from natural disasters is of the utmost importance. On the other hand, the extremely severe natural conditions of Japan's national land and the concentration of the population and assets on the cities tend to increase the potential risk of disaster. With this in mind, MLIT is committed to disaster prevention integrating structural improvements and non-structural measures. Among the ministry’s efforts in this regard are: measures against earthquakes through such means as improving the earthquake resistance and overall safety of homes and buildings and urgent improvements in built-up areas; measures against tsunamis, storm surge, and coastal erosion; flood control measures like provisions to mitigate damage in inundated areas during deluges; measures against urban flood damage; measures against sediment related disasters; works for erosion and sediment control in volcano areas; and measures for snow damage control.

Number of sediment related disasters for the past ten years (1996-2005)

Source: MLIT

Mudslide disaster due to heavy rainfall by Typhoon Nabi (0514) in 2005 (Tarumizu City, Kagoshima Prefecture)

Earthquake-resistant design of port projects

Disaster prevention arrangements

MLIT established the “MLIT Headquarters for the Promotion of Non-Structural Measures for Safety and Security” in November 2005 and continues to review issues and concrete measures in the non-structural aspects of information and announcements concerning safety and security. The ministry is also taking a number of steps to minimize the loss of lives and other kinds of damage associated with natural disasters. Among them are: more sophisticated information for disaster prevention information, including improved hazard maps; measures to care for the elderly, small children, and others with special needs during emergencies; and arrangements to boost emergency responsiveness through
consolidated management of disaster information. In addition, the ministry is working to improve the framework for monitoring earthquakes and volcanic activities and upgrade the management of existing disaster prevention resources and other infrastructure using IT.

**Information Service Center for Disaster Prevention (ISCDP)**

ISCDP provides one-stop information services for the public in an easy-to-understand manner.

Website of ISCDP, MLIT (operated by the Japan Meteorological Agency (JMA))
- One-stop, real-time information
- Disaster prevention-related information and disaster information from each bureau

Archived data information integrated by GIS

Real-time information (River Bureau, Road Bureau, JMA)
- Real-time radar information
- Real-time rainfall information

ISCDP provides one-stop information services for the public in an easy-to-understand manner.

"I want weather and disaster information for this region."

Users (Officials in charge of disaster prevention, citizens, etc.)

Website of ISCDP, MLIT (operated by the Japan Meteorological Agency (JMA))
- One-stop, real-time information
- Disaster prevention-related information and disaster information from each bureau

Various information overlaid on the map by GIS for selected area, data and period.

- Marks or characters displayed in a selected way
- Past data displayed in graph or table

**Status of the development of hazard maps**

- **Flood hazard map**
  - Published for 440 municipalities (as of the end of December 2005)
  - Total municipalities requiring maps: about 1,800 municipalities

- **Tsunami hazard map**
  - Published for 184 municipalities (expected by the end of March 2006)*
  - Total municipalities requiring maps: 657 municipalities

- **Storm surge hazard map**
  - Published for 40 municipalities (expected by the end of March 2006)*
  - Total municipalities requiring maps: 657 municipalities

- **Sediment-related disaster hazard map**
  - Published for 7,117 locations (as of the end of December 2005)
  - Total locations requiring maps: about 30,000 locations

- **Volcano hazard map**
  - Published for 30 volcanoes (as of the end of December 2005)
  - Total volcanoes requiring maps: 30 volcanoes

*Note: Survey conducted in December 2005. Figures indicate the number of cities, towns, and villages in which all or part of the areas in the municipality are expected to be published on by the end of March 2006.

Source: MLIT

○ Ensuring that the transport systems are resistant to disasters

MLIT is committed to ensuring that ports and airports are constructed in such a way to boost their resistance to disasters. The ministry is also trying to secure multiple transport systems and routes by land, by sea and by air, so that alternative systems or routes can be used in the case of disaster. In addition, MLIT encourages public transport operators to boost their disaster preparedness.
Reinforcing safety measures in the transportation sector

Human error has been pointed to as a factor in a large number of accidents and other trouble in the public transportation sector, including the West Japan Railway Fukuchiyama Line derailment and problems in the aviation sector. New directions for policy were indicated at the "Review Committee Meeting on Measures to Prevent Accidents by Human Error in Public Transportation" held in response to this issue. These include the construction of a safety management framework (safety management posture) in a concerted effort from top management on down to the operational level, as well as the necessity of implementing a structure for "safety management assessment" wherein the central government checks organizations' safety management postures.

MLIT submitted the "Bill to Partially Reform Railway Operators to Improve Transport Safety" at the 164th session of the Diet, hoping to see transport safety improvement policies like those mentioned above take shape.

Railway/tracks traffic

MLIT conducts safety audits for railway/tracks operators in relation to the maintenance of facilities and rolling stock, as well as driving and other operations. The ministry is also taking other steps, including the review and implementation of measures in response to shinkansen derailments caused by the Mid Niigata Prefecture Earthquake, the promotion of safety improvement measures in the aftermath of the West Japan Railway Fukuchiyama Line derailment, and the reinforcement of measures to prevent accidents at highway-railroad grade crossings.

Maritime transport

During 2005, MLIT supported the government in revising domestic laws associated with the revision of the International Convention for the Safety of Life at Sea (SOLAS Convention). MLIT is committed to improving the safety of vessels themselves as well as navigation safety. To this end, the ministry is taking a number of steps, including: strict implementation of Port State Control (PSC); development of next-generation navigation support systems that take advantage of the Automatic Identification System (AIS). In addition, MLIT strives to improve rescue preparedness with the deployment of mobile rescue technicians. Furthermore, the ministry is committed to studying the causes of and prevention of maritime distress.

Air traffic

In light of conspicuous safety problems attributable to human error and equipment malfunction in the aviation industry, MLIT has issued a business improvement order to the Japan Airlines Group. The ministry is also promoting safety measures such as strengthening airline monitoring and supervision through the introduction of unannounced on-site inspections.

In addition, MLIT has been working on the development of the future air navigation systems aimed at meeting the current and future air traffic demands by utilizing new technologies, such as satellite navigation and datalink, to increase the capacity of airspace and en-route. An airspace restructuring plan known as "Sky Highway Program" is one of the implementation plans of such future air navigation systems.

Future air navigation systems

MTSAT (Multi-functional Transport Satellite)*

(Fункции)
- Control communication and the locating of aircraft from the ground with the help of satellites
- Reinforcement of GPS
- Significantly reduces separation in oceanic airspaces
- Allows for flexible flight routes
- Improves aeronautical safety services at low altitudes and in mountainous areas

* MTSAT: a single satellite that has both the functions of the former geostationary meteorological satellite “Himawari” and aeronautical safety functions.
Road traffic

MLIT is taking measures to reduce traffic accidents at black spots, including improving intersections, intensively developing sidewalks, with special emphasis on highways. The ministry’s comprehensive automobile safety initiative involves: expansion and strengthening of safety standards; provision of safety information through automotive assessments; development and dissemination of Advanced Safety Vehicles (ASV); technical validation and other countermeasures to prevent the recurrence of dishonest behavior in the automobile recall system; and safety measures for commercial vehicles.

Typical measures against black spots

- Installing the right-turn signal
- Setting a cyclist crossing zone
- Anti-skid pavement
- Colored pavement
- Relocating the pedestrian crossing
- Permeable pavement
- Improving the corner cut
- Setting a right-turn zone
- Setting a right-turn lane
- Installing road lightings

Security measures on international navigation ships and at international port facilities

- International navigation ship:
  - Control of cargo handling
  - Ship Security Alert System
  - Surveillance inside and outside of the ship
  - Appointment of the ship security manager

- International port facility:
  - Access control
  - Control of cargo handling
  - Designation of restricted area
  - Surveillance cameras
  - Security lighting

Crisis management and security

Promoting measures against crime and terrorism

MLIT is taking steps in coordination with its counterparts in other countries in the field of crisis management and security assurance, as highlighted by its hosting of the Ministerial Conference on International Transport Security, as well as its commitment to the Secure and Facilitated International Travel Initiative (SAFTI), anti-piracy efforts, and efforts to prevent terrorism on the seas and the proliferation of weapons of mass destruction. The ministry is also strengthening measures to beef up border control and risk management arrangements at airports and seaports.

For its part, the Japan Coast Guard is strengthening maritime safety arrangements by making urgent improvements to its patrol vessels and craft, aircraft, and other units, as well as tightening security to prevent terrorist incidents from occurring and making those assets bullet-proof to better cope with suspicious ships and spy ships. The agency is also taking measures against crimes at sea, including international organized crimes, malicious poaching, and environmental crimes harmful to the ocean.

Other activities MLIT is implementing include: ensuring maritime security with the enforcement of the Law for the Security of Ships and of Port Facilities; enriching and strengthening aviation security standards; reinforcing security measures for air cargo and other aviation security measures; railway terrorism countermeasures like setting and operating under “risk management levels” in response to the threat of terrorist acts; measures to prevent automobile-related crimes; studying measures to achieve safe and efficient international physical distribution; and security measures for information systems.
Establishing responsiveness to incidents
MLIT considers it important that prompt and appropriate action is taken in response to traffic incidents so as to minimize damage, stabilize the situation, secure and recover traffic services as soon as possible. The ministry is also committed to establishing a system that can promptly and effectively handle marine pollution accidents involving harmful and dangerous substances.

Protecting Japan's interests in the ocean
Maintaining the order in the ocean is vital for the protection of Japan's interests in the ocean. With this in mind, Japan is strengthening the patrol technique and information gathering system around the Senkaku Islands (Japanese waters). The country is also demanding the cessation of research by foreign vessels doing research in its exclusive economic zone without consent from Japan, a condition provided for in the United Nations Convention on the Law of the Sea.

MLIT is working with government ministries concerned to conduct Continental Shelf Survey that is necessary to establish the outer limit of the continental shelf. With regard to the Okinotorishima Island, the central government, as the coast authority, implements appropriate maintenance operations entirely at national expense.

Ensuring safety and protecting national lives and property
In October 2005, MLIT, the Geographical Survey Institute, the Japan Meteorological Agency, and the Japan Coast Guard put together the "Citizens' Protection Plan," a plan detailing measures for the protection of Japan's citizens in situations of armed attack on the country.