Part 3: Air Traffic Safety

1. Achieving a Society with No Air Traffic Accidents

- Reducing air traffic accidents.
- Preventing safety problems that might cause accidents.

2. Objective in Air Traffic Safety

Continue the record of zero passenger fatalities in certain domestic air carriers continuing since 1986.

3. Measures for the Air Traffic Safety

<Three viewpoints>
1) Restoring confidence in air transport safety
2) Establishing safe and efficient air traffic systems
3) Introduction of the national security plan

<Eight pillars>
1) Change to general safety management
2) Improving the air traffic environment
3) Securing aircraft operational safety
4) Ensuring aircraft safety
5) Enhancing rescue and emergency services systems
6) Promoting victim support
7) Investigation of the causes of air traffic accidents and the reoccurrence prevention
8) Promoting research and development in air traffic safety.

Section 1: Achieving a Society with No Air Traffic Accidents

In order to reduce air traffic accidents and prevent safety problems that might cause accidents, the government will make constant efforts to implement measures for air traffic safety.

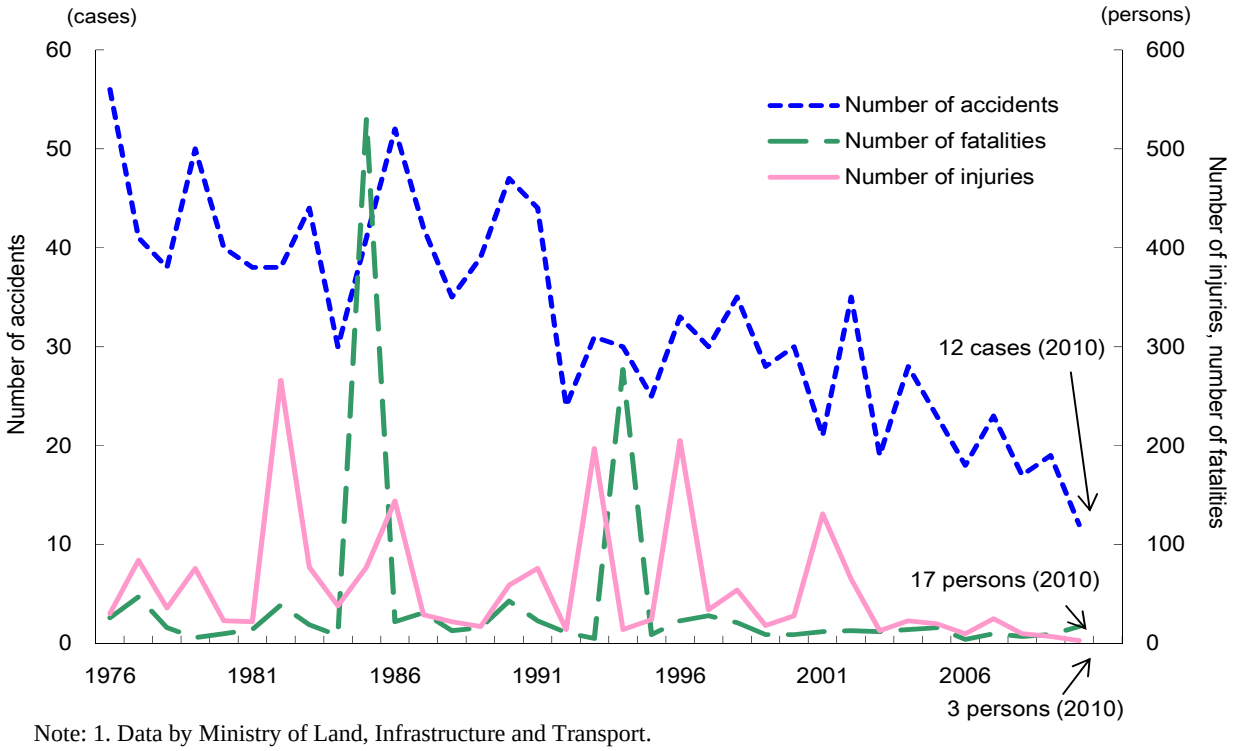
I. Current Status of Air Traffic Accidents

To keep pace with the growing size of aircraft and the increasing volume of air traffic, the government has been developing several measures to ensure air transport safety and to prevent accidents. These include improving aviation safety facilities, modernizing aviation safety services, improving systems for ensuring the safety of aircraft, and improving air traffic information systems.

As a result of these measures, the number of aircraft accidents in Japan has been decreasing on a long-term basis. There are two to three accidents per year by large aircrafts, mainly caused by air turbulence, and the majority of accidents are by small aircrafts. Although there have been no fatal accidents caused by specified Japanese air carriers (Japanese air carriers that operate air transport services using aircrafts with a number of passenger seats over 100 or a maximum takeoff weight of 50,000 kilogram) since the crash of Japan Airlines Flight 123 at mountain Osutaka of 1985, there have been notable safety problems due to human errors or mechanical problems, including the disobeying of control instructions at New Chitose Airport in January 2005, and aviation following the wrong elevation indicator instructions in June of the same year. In addition, aviation accidents caused by foreign airlines occur, such as the accident of FedEx aircraft landing failure at Narita International Airport on March 31, 2009.

On the other hand, the number of aircraft accidents involving light aircraft has remained relatively steady with only 10 or so accidents in recent years, and the majority of these accidents have been caused by pilot carelessness or basic operational errors.

Trends in the Number of air traffic accidents fatalities and injuries



Note: 1. Data by Ministry of Land, Infrastructure and Transport.
2. Figures are as of the end of December of each year.
3. Figures include accidents related to Japanese aircrafts occurred outside of Japan.
4. Figures include accidents related to foreign aircrafts that have occurred in Japan.
5. The number of casualties, number of fatalities and the number of accidents do not including those in-flight natural deaths, and deaths due to an abusive act inflicted on self or others.
6. The number of fatalities include the number of deaths within 30 days and missing persons.

II. Objectives Set in the Fundamental Traffic Safety Program

To continue the record of zero passenger fatalities in specified domestic air carriers, which has been kept since 1986.

Once an air traffic accident occurs, there is a risk of it becoming a serious accident and every citizen has the possibility of becoming involved in one. By comprehensively and vigorously promoting the various measures in Section 2, the government is to prevent the occurrence of air traffic accidents and continue to hold the record of no fatal accidents caused by specified Japanese air carriers, which has been kept since 1986.

Section 2: Measures for Air Traffic Safety

I. Viewpoints in Considering Future Measures for Air Traffic Safety

Although there have been no fatal accidents caused by specified Japanese air carriers since the crash of a Japan Airlines plane in 1985, there have been occurrence of aviation accidents caused by foreign airlines, such as the accident of FedEx aircraft landing failure at Narita International Airport on March 31, 2009, and notable safety problems caused by human error and mechanical problems. It is an urgent issue to prevent the recurrence of the problems, which can be regarded as seeds of large accidents, and restore public confidence in air traffic safety.

Looking at air traffic conditions, the problems of congestion and delay due to the heavy inbound traffic of aircrafts in airports and in the air have become serious. While air traffic volume is expected to increase further in the future, it is an urgent issue to establish a safer and more efficient air traffic system in the air, as well as to increase the capacity of airports including the project of further expanding Haneda Airport.

Numerous organizations are involved in the provision of air services, such as the national and local governments, air carriers, airport companies, and as such. From the traditional safety administration to oversee compliance with the norms by each entity, and continuous safety performance evaluations (measures) of each entity, making the transition to next-generation safety administration to conduct a comprehensive safety management so that the improvement of aviation safety performance can be achieved as a whole, to reduce the aircraft accidents, in order to prevent safety problems that could lead to an accident, as well as to converse to comprehensive safety management, while further enhancing and strengthening the measures for air traffic safety, development of air traffic environment, ensuring safe operation of the aircraft, ensuring the safety of aircraft, enhancement of the emergency and rescue activities, promotion of victim assistance, identifying the causes of aircraft accidents and preventing their recurrence, and enhanced safety measures of agitation, promoting the development of research on the safety of air traffic, and as such, these measures will be comprehensively and systematically promoted.

II. Measures to Be Taken

[Priority Measures and newly-introduced measures in the Ninth Program]

- Conversion to comprehensive safety management (1)
- Improving the safety of air traffic and enhancing the services (2 (2))
- Promoting the development of facilities for the safety of air traffic (2 (3))
- Strengthening supervision system for air transport companies (3 (2))
- Promotion of preventive safety measures through the aviation safety information (3 (3))

1. Conversion to comprehensive safety management

(1) Introduction of National Security Planning (SSP: State Safety Program)

In order to continue globally ensure the safety of air navigation which is becoming more complex and sophisticated, there is a global need to move from traditional regulatory compliance-based safety supervision, to safety performance oriented safety supervision that will measure safety according to the performance bases (index) and will improve management, which is determined by the International Civil Aviation Organization (ICAO).

In Japan also, the government defined a management plan for the overall aviation safety objective indicators and their achievement, and mutually agreed with the aviation activities performing service providers on the individual safety objective indicators, to continuously monitor the safety management activities of the Service Providers (Safety Management System: SMS), to conduct supervision, auditing, and to gradually introduce the framework for the National Security Programs (State Safety Program: SSP), which strives to comprehensively improve the safety of the entire aviation.

(2) Establishment of the voluntary safety reporting system

There are many accidents, (so-called “close calls”), safety related happenings in day-to-day activities in each field of aviation that might not get noticed, due to the intangibility of the trouble in safety. Regarding these as a potential risk, bringing them to surface and collecting, taking prevention measures, as well as recurrence prevention, along with continuing to share information with other countries, is very important from the viewpoint of preventing aviation accidents due to such happenings, therefore a voluntary safety reporting system will be established and the efforts to maintain the report friendly environment will be made.

(3) Strengthening analysis and evaluation of safety information

The safety information gathered from the voluntary safety reporting and mandatory safety reporting will be subjected to trend analysis, factor analysis, and risk assessment. In order for the preventive safety measures to be properly planned, based on the results of the above, the analysis and evaluation of safety information needs to be strengthened.

2. Development of air traffic environment

(1) Promotion of preventive safety measures

Regarding the safety measures in airports and aviation offices, the government will clarify the policies and objectives for safety, formulate and implement a management plan to achieve the objectives, monitor the situation, and by taking necessary measures will work on fixing a systematic comprehensive continual management approach, (Safety Management System), to comply with international obligations. In addition, it will create a safety indicator for monitoring the safety management system, examined in order to correspond to the new international standards, appropriately deployed to airports and aviation offices nationwide.

(2) Improving the safety of air traffic and enhancing the services

A. Airport and airspace capacity expansion in the Tokyo metropolitan area

To enhance air traffic services by expanding the capacity of the airspace and airports in the Tokyo metropolitan area while ensuring safety:

1) The government will use the four runways curb placement from October 31, 2010 at Haneda Airport to perform the departures and arrivals of aircrafts to close the gap between the departures and arrivals of aircrafts on the other runways, with operational methods being eco-friendly and completely different from the past, the simultaneous introduction of LDA (Localizer-type Directional Aid) entry system that enables simultaneous parallel approach in Tokyo Bay is carried out in order to achieve a gradual departure capacity of 447 000 times per year, planning to fiscal year 2013 in the earliest, and steadily proceed to adopt the new operating system after using runway D.
2) In Narita, the government will expand the capability of arrivals and departures for the realization of the 300,000 capacity from this year, planned within the fiscal year of 2014 the earliest, without increasing the area noise impact while assuming two runways of the current order, including the introduction of simultaneous parallel takeoff method will be the first in our country with a few examples in the world, in order to introduce and to adapt to the operation of the new system.
3) With the expansion of the above capacity, the government will promote the implementation of the control offices with efficient integrated radar approach control of Haneda into Haneda and Narita terminals, along with establishing sector specializing in aircraft departures and aircraft arrivals at Haneda and Narita in Tokyo airspace jurisdiction of the control unit, aiming at the decentralization of the load of the air traffic controllers and pilots, with 447 000 times in the future into Haneda, and 300,000 into Narita, to promote investment in the sector composition of the new adaptations.

B. Improving the Air Traffic Management (ATM) system

The concerned parties will make decisions in coordination, incorporating the concept of

collaborative decision-making (CDM) into the operational method, by sharing information and situational awareness, in order to ensure the safety of air traffic while increasing air traffic capacity, engaging in offshore management, air traffic flow management, airspace management, and from now on, obtaining the participation of airlines to further develop the collaborative operational method.

C. Strengthening of the airspace safety evaluation and the monitoring system

Although the vertical interval shortening to reduce the minimum standards of the vertical spacing of aircrafts has been introduced in Japan from September 2005, in order to improve the accuracy of the evaluation of aircraft safety operation in accordance with the above, the advanced monitoring devices measuring the flying altitude of the aircraft and airspace safety assessment system to analyze the performance of advanced maintenance will be reformed.

D. Maintenance of RNAV (Area Navigation)

The government will sequentially introduce the RNAV routes, which enable the flexible setting up of flight routes, throughout Japan, and work to improve the aviation efficiency by making the flight routes more direct, expand airspace capacity by increasing the number of routes, and take safety measures such as one-way traffic. In addition, the government will promote the introduction of a high standard RNAV that enables curve approach at Haneda Airport re-expansion project, to be completed in FY 2010.

Furthermore, in the island airports, where the Instrument Landing System (ILS) has not been established yet, the government will sequentially promote the development of RNAV, so that by setting a flexible flight path the chances of possible landing in fog, cloudy conditions, and as such, can be increased.

E. Improvement of small aircraft operating environment

By reducing the minimum route altitude for existing air routes and setting new air routes of low minimum route altitude, and by promoting the consideration of setting methods for heliports entrance and departure, the realization of the flying operated by operated by instrument flight method in low altitude airspace is aimed for.

Furthermore, the government will promote providing information on obstacles for air transport companies in specified areas to prevent collisions with electrical power cables at sea or in the mountain areas.

F. Enhancement of flight inspection system

In order to enhance the flight inspection system, due to the anticipation of a further increase in demand of Haneda Airport, the flight inspection device bases placed in Haneda regulated landing slots are to be moved to other airports.

G. Initiatives aimed at building the future air traffic system

In Europe and the United States, the long-term planning of the air traffic system based on the guidelines of the International Civil Aviation Organization (ICAO) has been established. In Japan also while ensuring international interoperability, as well as responding to global environmental issues such as air the increase of the traffic demand in the long-term, in order to improve the safety, Collaborative Actions for Renovation of Air Traffic Systems (CARATS) will be promoted.

(3) Promoting the development of facilities for the safety of air traffic

A. Development of aviation safety systems

To prevent human errors, the government will promote the introduction of control by data communication. In addition, at airports, the government will promote the installation of Secondary Surveillance Radar Mode S (SSR Mode S) to strengthen aircraft surveillance in high-traffic airspace.

In addition, the government will integrate the system according to the renewed air traffic control information processing system, along with centralized management of information concerning the operation of aircrafts in the country, the air route radar data processing systems currently located at four traffic control offices will be integrated into 2 bases, to ensure continuity of service with control by enhanced mutual backup and to respond to the increasing demand for air traffic. In addition, while ensuring the safety, in order to improve convenience by improving the actual service rates and punctuality, new and high categorization such as for precision approach and runway lighting Instrument Landing System (ILS) will be implemented.

B. Facility development of major airports in metropolitan areas

To cope with the increasing demand for domestic and international air services, the government will promote improvements to major airports in large cities as a high-priority task. In addition, they will promote necessary improvements to general airports, through measures such as upgrading existing facilities.

In order to ensure passenger safety, the government will work to make air passenger terminal facilities "barrier-free", by eliminating steps and by designing them to ensure safe use by the elderly and disabled people, and promote universal-designs from the viewpoint of achieving comprehensive and general environmental improvements.

(4) Improving safety measures at airports

A. Promotion of measures for runway incursions

As measures to cope with runway incursions and a prevention of communication divergence, such as the rule of repetition of instructions by the air traffic control to the pilot and by the pilot to the traffic control, the development of a system to transmit visual displays and to air traffic controllers and pilots runway occupancy status, etc., while encompassing both tangible and intangible measures will be promoted.

B. Strengthening airport safety technology

To ensure air traffic safety, it is very important that facilities such as runways are constructed strictly in accordance with designated standards. In addition, facilities must be maintained and managed to ensure that they are in perfect operating condition at all times. In view of this, the government will improve airport safety technology that directly influences air traffic safety. This includes measures to ensure air traffic safety when construction work is in progress at airports, upgrading of airport signaling facilities, checking for tarmac deterioration, maintenance to prevent destruction of vital facilities, and measures to quickly remove and melt away snow at airports where it snows.

(5) Improving education for aviation safety officers

In order to respond to the safety of air traffic and increasing air traffic, with the introduction of new globally promoted technology of CNS / ATM (communications, navigation and surveillance /air traffic management), the government will aim for technological change towards the advancement of future air traffic and promote the introduction of internationally standardized teaching methods, while promoting the improvement of training programs related to the development of aviation security personnel and strengthening of the training.

(6) Strengthening of disaster countermeasures for airports and air navigation systems

A. Strengthening of disaster countermeasures for airports

After the Niigata Chuetsu Earthquake the airport facilities were able to provide emergency transport and alternative transport for disrupted railway and road services, as well as to serve as bases for restoration activities.

In this way, airports are required to maintain their functions even in times of disasters. Therefore, the government will work to strengthen measures against disasters for airports and

aviation safety facilities.

(a) Review of the status of disaster-resistant airports

The government will examine disaster-resistant airports according to the needs, while taking into account the roles of airports in regions, and improve the disaster-prevention performance of airports so that their functions can be maintained in times of a disaster.

(b) Improving the earthquake-resistance of airport facilities

There is a possibility that some of the existing facilities such as airport runways, taxiways and control towers do not satisfy current earthquake-resistance requirements, either because they were constructed according to old design standards, or because they have become too old and deteriorated. The government will work to improve the earthquake-resistance of airport facilities by implementing appropriate diagnosis and instituting foundation liquefaction countermeasures based on the diagnosis for these facilities.

B. Strengthening disaster countermeasures in aviation security system

The government will promote the improvement of risk management capacity, by building a system that makes it possible for the alternative work to be implemented in the Systems Development, Evaluation and Contingency Management Center (SDECC), the adjacent control area, even if one of the 4 control units is affected in a large-scale disaster. In addition, the government will properly implement the improvement of earthquake resistance due to seismic retrofitting based on the detection of disaster countermeasures at air navigation facilities and construction facilities of the control units, and as such to improve the disaster recovery.

3. Securing aircraft operational safety

(1) Enhancement and strengthening of transportation safety management system

The government will encourage transportation operators to establish and improve a safety management system that involves every level of operators and introduce a safety management assessment scheme in which the government will assess and give advice to secure aircraft operational safety.

(2) Strengthening supervision system for air transport companies

In view of the increasingly complex and diverse corporate structure of air transportation companies, the government will strengthen the on-site inspection system drastically, and implement systematic audits by grasping the status of safety and future risks of airliners. Also to achieve professional and accurate audits, the government will improve training for officials in charge of audits.

(3) Promotion of preventive safety measures through the aviation safety information

In order to prevent the occurrence of accidents and serious problems, the government will promote sharing preventive safety and other troubleshooting information on safety measures among relevant parties and to review safety standards by collecting and continually analyzing information on accidents, incidents, mechanical problems, human errors and other aviation safety issues.

(4) Improving the skills of aviation workers

In order to respond to the growing demand for pilots due to the expansion services at Haneda Airport, and since the mass retirement of baby boomers, the government will promote training of core pilots for air carriers at the Civil Aviation College to ensure a stable supply of pilots. At the same time, aiming at the improvement of flight safety the government will revise the institutional training for pilots and enable the air transport companies to conduct effective and efficient training for pilots as well.

The government will provide guidance to the doctors that conduct health examinations of aircraft crew to be instructed through seminars to apply evaluation criteria of examinations uniformly, while requiring air transport companies to perform suitable daily health controls of their

aircraft crews.

(5) Securing the safety of foreign aircraft

For the purpose of securing the safety of foreign aircrafts entering Japan, the government is implementing on-site inspections on foreign aircrafts (ramp inspections) based on the Convention on International Civil Aviation and the Civil Aeronautics Act (Act No. 231 of 1952), and will expand the ramp inspections to include all air service operating countries and all carriers that come into Japan.

(6) Improving guidance on accident prevention of small aircraft

To prevent accidents involving small aircraft, the government will strengthen guidance on observation of all laws and relevant regulations, comprehensive education and training of small aircraft operators, and accurate understanding of meteorological conditions. The government will also advise parties involved in the increasingly popular pursuit of aerial recreations to prevent accidents, by working through relevant groups and organizations. Furthermore, for rescue planes in the event of a natural disaster, the government will work to improve measures to ensure their safe operation in congested airspaces.

(7) Improving safety standards for transportation of hazardous materials

As a result of developments in medical technology, the volume of radioactive materials being transported by air is increasing. The quantity of hazardous materials being transported by air is also increasing, and these materials are becoming more and more diverse, as developments in chemical engineering give rise to new hazardous materials. To deal with this issue, the ICAO and the International Atomic Energy Agency (IAEA) are improving safety standards relating to the transport of hazardous materials. In accordance with these international trends, the government will revise relevant standards as necessary.

In addition, the government will advise air transport companies on providing comprehensive education and training to workers involved in transporting hazardous materials.

(8) Improving meteorological information for air transport

The government will accurately understand any weather conditions or natural phenomena which could influence air transport safety, and make efforts to improve various qualities of aviation weather information, such as meteorological forecasts and warnings for airports, meteorological reports on airspaces, aviation forecast charts and volcanic ash advisories, and to ensure appropriate timely announcements and prompt conveyance of such information. Furthermore, facilities for observing weather conditions and volcanic activities will be constructed as necessary, maintenance and improvement of those facilities will be promoted, and the observation and monitoring systems strengthened.

4. Ensuring aircraft safety

The government will work to improve aircraft safety by promoting safety measures aimed at improving technical standards, information collection and processing systems, and inspection systems.

(1) Improving technical standards for aircraft and equipment safety

To improve the safety of aircraft, the government will collect, analyze and provide information relating to the safety of Japanese aircraft, as well as safety assurance-related information obtained from foreign governments and foreign manufacturers. At the same time, the government will draw up improved safety standards to keep pace with technological advances, and investigate technology that can be used to improve safety.

(2) Correct implementation of aircraft inspection

The government will improve inspections of aircraft designs in type certification procedures for both domestically produced and imported aircraft. They will then improve aircraft inspection systems by guiding and supervising the private companies that check for conformity to standards on behalf of the national government.

In addition, the government will try to improve the quality of inspections by improving training for airworthiness engineers.

(3) Improving aircraft maintenance examination systems

To respond to the new entry of air transport companies and the diversification of the maintenance systems by contracting maintenance services, the government will improve their examination, guidance and supervision system for aircraft maintenance.

In addition, the government will try to enhance the quality of examinations by improving training for air-carrier airworthiness engineers.

5. Enhancing rescue and emergency services systems

To deal promptly and effectively with air distress incidents and other aircraft accidents, the government will improve rescue and emergency service systems by promoting closer cooperation between relevant organizations.

(1) Improving search and rescue systems

To launch prompt and effective search and rescue operations when aircrafts are in distress or missing, the Rescue Co-ordination Center in cooperation with relevant administrative bodies, will work to improve activity planning, training, and information collection and processing systems, to deal efficiently with a wide variety of emergency situations.

(2) Improving fire-fighting and emergency medical systems

The government will work to improve fire-fighting systems at airports managed by the national government, in accordance with relevant international standards, through measures such as providing for chemical fire engines as needed. The government will also instruct the privately managed airports and specific regionally managed airports as well as airports managed by local governments, and other airports as well, to improve fire-fighting facilities by adopting necessary measures, as mentioned above.

Also, to improve emergency medical systems at airports, the government will proceed to provide appropriate medical equipment and materials according to annual plans. At the same time, they will improve cooperation with relevant medical institutions so that emergency medical activities can be conducted smoothly and effectively.

Furthermore, to provide adequate fire-fighting and emergency systems in municipalities close to airports, the government will instruct the relevant fire-fighting bodies to improve their facilities and take necessary measures. Also, to ensure that first aid treatment can be promptly delivered when needed, the government will encourage airport officers to attend first aid treatment seminars.

6. Promoting victim support

With the participation of victim organizations, by considering the contents of assistance sought by traffic accident victims in Japan, the reality of the roles of relevant institutions and national governments, businesses, and etc., the realization of the centralized counter feature for traffic accident victims, and the realization of a system that is required, the government will make the necessary efforts towards the development of mechanisms and systems of support according to the actual situation in Japan.

7. Identifying the causes of air accidents and preventing their recurrence

In order to perform accurately and quickly to investigate the causes for signs of air accidents (serious vessel incidents), to enhance the training specialist for the staff in charge of the investigation, along with improving survey techniques, for various surveys and air accidents, the government strives to improve analytical skills through the use of the equipment to contribute to the prevention of air accidents. In addition, the government will promote comprehensive research through the use of know-how and various stock analysis techniques, such as accident analysis results obtained in the study for past accidents, etc., with the results reflecting the investigation of the causes.

In addition, based on the results obtained in the accident investigation, for accident prevention or for the relief of victims of the cases of accidents occurrence, if necessary, the government will report to the Minister of Land, Infrastructure and Transport, or the cause parties concerned or the relevant administrative organs of the Minister of Land, Infrastructure, Transport and Tourism by expressing an opinion to the head, or asking for the implementation of the necessary measures, and will contribute to the safety of aviation traffic.

In addition, based on the knowledge that has been accumulated from the investigation of the past accidents, for the particular accident types, the government will analyze trends, problems, prevention measures, and publicize the results, in a way that is easy to understand the survey results of such accidents, and will conduct educational activities that lead to the prevention of accidents, such as issuing a magazine to introduce periodic information.

In addition, based on the Convention on International Civil Aviation, along with ensuring the implementation of aircraft accident investigation when more than one country is involved, participating in the study on accident investigation in International Society of Air Safety Investigators (ISASI), by exchanging information, the government will contribute to the improvement of the safety of aviation traffic in the world.

8. Promoting research and development of air transport safety

The government will encourage independent administrative organizations and other testing and research institutes to conduct research and studies into: 1) Research and development on improving the safety of aviation accident prevention measures, 2) Research and development in order to accommodate the increased air traffic at congested airports and airspace congestion, beginning with the Tokyo metropolitan area, 3) Research and development on improving punctuality, actual service rate, speediness and convenience of air transportation, 4) Research and development on improving operational efficiency and CO2 reduction due to the reduction in fuel consumption of aircrafts, 5) Improvement of safety and efficiency by preventive safety technology and new technologies, 6) Study of civil engineering facilities, such as airport runways for takeoff and landing for aircraft safety, 7) Technology for improving passenger cabin safety by providing better protection in the event of an accident, 8) Technology for detecting air turbulence and other abnormal conditions from aircrafts. In addition, the government will promote comprehensive research and development efforts through closer liaison and cooperation between relevant testing and research institutions.

Furthermore, the government will conduct proactive research and development related to aviation safety, such as techniques for preventing aviation accidents and safety technology to protect the passengers in case of accident event.