Aiming for Harmony with Nature and Society
We recognize that our approach to the environment is a crucial consumption of fossil fuels and noise emission. The JAL Group, in fulfilling its mission as a public transportation organization, generates impacts on the environment, such as environmental burden in all our business activities.

Environmental Action Guidelines

Basic Environmental Policy

Adopted in October 2002

The JAL Group, in fulfilling its mission as a public transportation organization, generates impacts on the environment, such as consumption of fossil fuels and noise emission. We recognize that our approach to the environment is a crucial management issue. Accordingly, we will aim for harmonious co-existence with the global environment and strive to contain the environmental burden in all our business activities.

Environmental Action Guidelines

Adopted in October 2002

(1) We will comply with environmental laws and regulations and approach environmental issues proactively.

(2) We will promote the efficient use of various energy sources and resources.

(3) We will promote waste reduction and proper waste disposal and recycling.

(4) We will opt for environment-friendly products, materials and the like, including aircraft.

(5) We will raise environmental awareness and contribute to society.

Abbreviations used in the report:
JAL: Japan Airlines International Co., Ltd. (formerly Japan Airlines Co., Ltd.)
JALJ: Japan Airlines Domestic Co., Ltd. (formerly Japan Air System Co., Ltd.)

JAL Group Environmental Tree
The JAL Group Thinks about the Global Environment from the World’s Skies.

The services and technologies provided by the JAL Group develop hand in hand with the development of society.

A healthy and affluent society starts from coexistence with the global environment.

We believe that all of our business activities should be based on harmonious and balanced coexistence with the global environment.

Today’s world has shifted to face the challenge of creating environmentally-friendly and sustainable social systems.

Fully aware of our mission as a global corporation, we will promote business activities with due consideration of our environment.

Recognizing that responsible actions for the environment will enhance the social value of the JAL Group, we will strive to improve the quality of our environmental management system.

A Message from the Management

In April 2004, the JAL Group, under the holding company, Japan Airlines Corporation, reorganized its business operations, with Japan Airlines International given charge of international passenger and cargo operations, and Japan Airlines Domestic handling domestic passenger operations, and thus completed the full integration of its business management. The “New JAL Group” aims to expand its network at home and abroad and “as an overall air transport enterprise, acts as a bridge to bring peoples, their cultures and their hearts closer together and thus contribute to world peace and prosperity.” Based on this Corporate Policy, we will ceaselessly pursue safety, the foundation of the very existence of the company, and provide safe and reliable air transportation to our customers.

While playing this vital role, however, the JAL Group generates greenhouse gases from the use of fossil fuels, causes noise pollution at airports and their environs, and in such ways places a burden on the environment. Consequently, upon the completion of the business integration, the JAL Group established the CSR Committee to strengthen our efforts to fulfill our corporate social responsibility (CSR). Our activities in the environmental, social, investor relations and other areas will be promoted more effectively, by mobilizing the strength of the entire group.

To tackle environmental problems, which is a crucial challenge that mankind must address in the 21st century, and one of the pillars of our CSR activities, we have established the Environmental Subcommittee, an arm of the CSR Committee. Through the Subcommittee, we have strengthened this system to promote environmental activities for the group under a uniform plan based on the “Basic Environmental Policy” and “Environmental Action Guidelines.” With this system in hand, we commit ourselves to reducing our environmental loads and fulfilling our responsibility as a corporate citizen.

Though the effects of the war in Iraq and the SARS epidemic have receded, the business conditions of the group remain severe, such as the sharp rise in fuel prices. Nonetheless, we reaffirm our commitment to do our utmost to govern the environment in our daily operations, on the precept of “symbiosis with the global environment” and “safety in flight operations.”

We would appreciate your valued and continued support to the JAL Group.

November 2004

Isao Kaneko
The JAL Group CEO
Chairman of CSR Committee

November 2004
Chapter I

JAL Group and Environmental Action Program

Expanding the JAL Group Environmental Committee, theCSR Committee was established in Japan Airlines Corporation, the holding company of the JAL Group. Furthermore, the Environmental Subcommittee was created under the CSR Committee, and the JAL Group Company Environmental Study Group was established by the group companies to promote environmental activities. During FY2003, eight of the ten priority objectives were accomplished, while the remaining two were partially attained. The objective of reducing thermal and electric energy consumption, which was not fully attained in FY2002, was achieved in FY2003 and additional improvements were made. With respect to the Mid- and Long-term Environmental Action Programs, the company formulated Sky Eco [2010], upon which priority targets for FY2004 were established.

Environmental Subcommittee

Aspiring for symbiosis with the global environment, the CSR Committee was established in Japan Airlines Corporation, the holding company of the JAL Group. In April 2004, when the integration of Japan Airlines (now Japan Airlines International) and Japan Air System (now Japan Airlines Domestic) was completed. Under the CSR Committee was created the Environmental Subcommittee, which has embarked upon developing the JAL Group’s environmental policy, launching its action programs and providing guidance for their implementation. The committee meets at least twice a year. Members of the Environmental Subcommittee: Chairman: Director in charge of the environment, Members: Executives marked with asterisk (*) and others, total approx. 20.

Directors’ Committee under the Environmental Subcommittee

To complement the Environmental Subcommittee and to promote efficient activities, the Directors’ Committee convenes a meeting at least twice a year. During these meetings, policies and promotional measures for environmental activities are considered. Furthermore, project teams are organized, as the need arises, to promote activities in such fields as waste reduction, management of chemical substances, green purchasing, and energy saving.

Group Companies and Departments

Environmental activities are promoted through environmental committees, departments, and officers, especially in these companies and departments that impose a heavy environmental burden.
Our business operations include all activities related to civil air transport, encompassing areas such as flight operations and aircraft maintenance, sales and marketing, and information. The environmental aspects of these operations are summarized as follows.

### Inputs to Business Activities
- Aircraft fuel
- Engine oil, hydraulic fluid
- HFC used in food chillers
- Halon used in cabin fire extinguishers
- Anti-icing fluid
- Aircraft components
- Cargo loading equipment (containers, pallets)
- Packing material (polyethylene sheets)
- Cabin-use water
- In-flight sales goods
- Cabin service goods (food, beverages, newspapers, magazines)
- Energy (electric, thermal)
- Fluorocarbons used in ground facilities (air-conditioning, refrigerators, etc.)
- Halon used in fire extinguishers
- Maintenance equipment, chemicals, solvents, materials
- Cargo loading equipment
- Ground vehicle fuel, engine oil
- Batteries
- Paper
- Water, hot water
- Sales and Administration (sales, administration, etc.)
  - To support peripheral duties for aircraft operation, such as flight scheduling, sales, reservation, and ticketing.
- Medical equipment, pharmaceuticals

### Outputs from Business Activities
- **From Aircraft Operation**
  - Emissions from aircraft engines and APUs (Auxiliary Power Units) (CO2, NOX, H2O, HC, SOX, etc.)
  - Halon used in fire extinguishers
  - Fuel jettisoned into the sea in emergencies
  - Used anti-icing fluid
  - Waste (cabin waste, lavatory waste)
  - Aircraft noise

- **From Ground Support Activities**
  - Energy consumption in facilities (emits CO2)
  - Emissions from ground vehicles (CO2, NOx, SOx, NH3, HC, etc.)
  - Fluorocarbons (from air-conditioning, refrigerators, maintenance work)
  - Halon used in fire extinguishers
  - Chemicals
  - Wastewater from cleaning aircraft and components
  - General waste (organic waste, paper)
  - Industrial waste (scraped components, maintenance equipment, cargo delivery equipment)
  - Special-management industrial waste (drain-off water from coating/plating, paint peeling agents, etc.)
  - Noise from ground vehicles and ground facilities

- **From Sales and Administration Activities**
  - General waste (organic waste, paper)
  - Industrial waste (office equipment and supplies)
  - Special-management industrial waste (medical waste and equipment)
  - In addition to the above, these activities generate other outputs, such as fluorocarbons from air conditioning, Halon from fire extinguishers, and noise and other emissions from ground vehicles. However, they are excluded here to avoid overlapping with outputs from ground support activities.

### Environmental Impact
- Global warming
- Ozone layer depletion
- Air and water pollution
- Wastes
- Noise
The JAL Group is working toward the acquisition of ISO 14001 Certification related to environmental management systems, especially in those frontline divisions that have relatively high risks of creating environmental loads.

ISO 14001 Certification Status of the JAL Group

<table>
<thead>
<tr>
<th>Site and Location</th>
<th>Major Scope of Business</th>
<th>Number of Employees</th>
<th>Status of Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAL Aircraft Maintenance Business Division (Haneda Office and Narita Branch)</td>
<td>Aircraft line maintenance and inspection</td>
<td>Approx. 600</td>
<td>Acquired in October 2002</td>
</tr>
<tr>
<td>JAL Aircraft Maintenance Business Division (Narita Airport)</td>
<td>Aircraft line maintenance and inspection</td>
<td>Approx. 1,400</td>
<td>Acquired in November 2002</td>
</tr>
<tr>
<td>JAL Aircraft Maintenance Business Division (Haneda Office and Narita Branch)</td>
<td>Aircraft line maintenance and inspection</td>
<td>Approx. 1,400</td>
<td>Acquired in November 2002</td>
</tr>
<tr>
<td>JAL Aircraft Maintenance Business Division (Narita Airport)</td>
<td>Aircraft line maintenance and inspection</td>
<td>Approx. 1,400</td>
<td>Acquired in November 2002</td>
</tr>
</tbody>
</table>

Hotel Nikko Tokyo

On June 6, 2003, Hotel Nikko Tokyo in Odaiba, Tokyo acquired ISO 14001 Certification in September 2002 at the hotel's site in Haneda (Head Office and Haneda Branch). AGP's management systems during 1995 to ensure safety and achieve greater efficiency in aircraft-related ground work. The hotel's main service is supplying electricity and conditioned air to aircraft parked at the airport. It also provides maintenance and management of the hotel. The company continuously employs the hotel as a cozy hotel with space and time. The hotel's main service is supplying electricity and conditioned air to aircraft parked at the airport. The hotel provides maintenance and management of the hotel.

Hotel Nikko Tokyo's Website is http://www.hnt.co.jp/english.

AGP Corporation

AGP Corporation acquired ISO 14001 Certification in September 2002 at its sites in Haneda (Head Office and Haneda Branch). AGP's maintenance and management of airport facilities and equipment, as well as design, construction, production, and sales of ground support equipment and consultation on ground power and maintenance at airports in Japan and abroad. In addition, AGP also offers design, construction, production and sales of food carts for hospitals, schools and hotels. AGP Corporation's Website is http://www.agpgroup.co.jp.

Environmental Audit

With the aim of achieving the goals listed below, the JAL Group introduced the Environmental Audit System in FY2002.

Purpose of Audit

— Promotion of activities to comply with environmental laws as well as group policies and regulations
— Establishment of preventive measures in normal situations and preparedness for sudden responses in emergency situations
— Dissemination of information on environmental laws and raising of awareness of environmental activities within the group

The audit is carried out by the Business Activities Reappraisal Department of Japan Airlines Corporation with the cooperation of the Environmental Affairs Department. The contents of the audit are as follows:

Contents of Audit

— Compliance check: appropriate understanding of and compliance with related laws and regulations
— System check: assignment of persons in charge, self-checks, drills and training
— Performance check: proper management of environmental goals, and promotion of environmentally-friendly purchases

In the first half of FY2003, since illegal dumping of industrial wastes was becoming increasingly recognized as a social problem, a special audit of waste disposal was carried out in 29 departments of 12 JAL Group companies in the Kanto area. In order to grasp the actual situation, the audit examined compliance (appropriate disposal in compliance with the law) and systems (establishment of a management system). Flaws were found in some departments regarding agreements with waste disposal agencies, management of waste control tags and the waste management system. As a result, instructions were issued for their correction and improvement. Measures were also taken to enhance environmental awareness among employees.

In the second half of FY2003, a follow-up audit was implemented in five departments of four companies for which immediate correction had been prescribed, to check how improvements had been made. The audit found that the improvements either had been made or were in progress. Furthermore, an audit was conducted of the three waste administration agencies. Consideration included such items as the accountability system, contracts, waste control tags, and other data, to determine how waste administration is actually being implemented. The audit found that, apart from a minor item that needed improvement, work was generally being implemented satisfactorily.
Starting in FY2000, Japan Airlines International has been conducting environmental activities by establishing priority action items common to all JAL Group companies. Japan Airlines Domestic has also been engaged in environmental conservation activities by establishing an action program starting in FY2000. From FY2003, the JAL Group decided to develop annual priority action items for the environmental activities of the entire group.

Action programs for each priority item for FY2003, and their results, are as follows.

### Review of JAL Group Environmental Action Program for FY2003

#### Priority Items

1. Efficient use of aviation fuel and other energy
2. Reduction of wastes and promotion of recycling
3. Green purchasing
4. Management of chemicals
5. Introduction of low-pollution, low-emission vehicles
6. Environmental accounting
7. Environmental communication
8. Social activities
9. Environmental auditing

#### Objectives and Targets

- Reduce CO$_2$ emissions, which account for the largest proportion of greenhouse gases, by more efficient use of aircraft tails and thermal/electric energy.
- Reduce annual thermal and electrical energy consumption by 1% from the previous year.
- Achieve a 1.1% reduction in total industrial waste generation in the Kanto area from a year ago and a final 7% reduction in industrial waste to total generated waste.
- Achieved a 13.7% reduction in total industrial waste generated in the Kanto area.
- Continue to promote concrete measures to reduce final industrial waste reduction. Since it is significant, it is not possible to achieve a reduction in industrial waste.
- Reduce fuel consumption by 10% at the end of FY2003
- Achieve a 17% decrease in thermal energy and 10.2% decrease in electrical energy consumption (see page 18).
- Green purchasing by Japan Airlines International averaged 90.3% in FY2003. JAL Green Purchasing Regulation was established and the range of “green goods” was expanded (see page 23).
- Integration of chemical databases is in progress within the group. By introducing electronic accounting and other measures, the amount of CFR (Flammable Restricted) chemicals was reduced by 17% from the FY2002 level (see page 24).
- A natural gas vehicle (Narita) and electric forklift trucks (for Haneda and for Narita) were introduced. Diesel vehicles were either replaced or refurnished to comply with the ordinance that regulates these vehicles (see page 25).
- Each group airline introduced an environmental accounting system that encompasses all Group airline companies.
- The JAL Group Environmental Report was issued. An environmental education program for group employees is still to be developed. Using the internet, in-house publications, e-mails and such, environmental activities of the group, social conditions and information on actions were communicated (see page 26).
- Promote social activities for the environment through projects such as the Tropospheric Observation Project, Marunouchi Citizens’ Environmental Forum, etc.
- Environmental auditing to check whether activities are conducted according to the above, environmental management regulations, whether preventive measures are taken against environmental risks such as wastes and chemicals, and whether compliance is achieved.

#### Reduction of JAL Group Aviation Fuel Consumption

<table>
<thead>
<tr>
<th>FY1999 Result</th>
<th>FY2002 Result</th>
<th>FY2003 Result</th>
<th>FY2003 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,771</td>
<td>7,005</td>
<td>8,482</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Environmental Accounting for FY2003

1. **Basic Concept**
   - Based on the Japanese Ministry of the Environment’s Environmental Accounting Guideline (2002 version), with some modifications, and on some company guidelines.
2. **Application**
   - Japan Airlines (now Japan Airlines International), Japan Air System (now Japan Airlines Domestic), group airlines (JIA, JAZ, JTA, JEX, J-AR, RAC, JAC, HAC, HLO), Japan Airlines (holding company), and their domestic companies.
3. **Period**
   - April 1, 2003 - March 31, 2004
4. **Basis for Accounting**
   - Depreciation period: Five years across the board for all investments; residual value is 10% of book value.
   - Period of duration of effects: All investment effects are to be five years; spending effects are basically one year.

---

**Note:** Includes costs where flight operated by other airlines. ATK is calculated using "good circle distance."
Environmental problems present the greatest challenge mankind must face in the 21st century. In order to fulfill its responsibility as a corporate citizen as well as comply with environmental laws and regulations, the JAL Group has committed itself to reducing unfavorable environmental impacts by establishing and implementing the JAL Group Mid- and Long-Term Environmental Action Program, “Sky Eco [2010],” as follows.

**“Sky Eco [2010]” (JAL Group Mid- and Long-Term Environmental Action Program)**

**Mid- and Long-term Environmental Action Program**

Environmental problems present the greatest challenge mankind must face in the 21st century. In order to fulfill its responsibility as a corporate citizen as well as comply with environmental laws and regulations, the JAL Group has committed itself to reducing unfavorable environmental impacts by establishing and implementing the JAL Group Mid- and Long-Term Environmental Action Program, “Sky Eco [2010],” as follows.

1. **Promotion of environmental management**
   - A. Build environmental management systems
     - Promote environmental management systems with the participation of group companies.
   - B. Environmental auditing
     - Carry out environmental auditing with the participation of group companies in accordance with the Group Environmental Management Guidelines and Environmental Auditing Standards.
   - C. Environmental accounting
     - Environmental accounting should also apply to group airlines and eventually to other major group companies.

2. **Prevention of global warming**
   - A. Reduce CO₂ emissions from aircraft
     - By FY2004, reduce fuel consumption per ATK by 10% or more from FY1998 levels, by introducing new aircraft that consume fuel more efficiently, and through efficient operations with use of CNS/ATM, etc.
   - B. Reduce thermal and electric energy consumption
     - By FY2008, reduce annual thermal and electric energy consumption by 10% or more from FY2001 levels.
   - C. Promote use of GPUs
     - Promote the use of GPUs instead of AIPs.

3. **Aircraft noise reduction**
   - Pursue adequate compliance with new Chapter 4 requirements, and with various regulations of local airports.

4. **Prevention of air pollution**
   - A. Reduce aircraft emissions
     - Pursue adequate compliance with the new requirements of aircraft emission standards.
   - B. Introduce low-emission, low-environmental-impact vehicles
     - Promote introduction of low-emission (natural gas, electric, etc.) and low-environmental-impact vehicles to comply with various restrictions by law and ordinance, and to reduce air pollution.

5. **Promotion of resource recycling**
   - A. Reduce waste
     - (1) By FY2002, achieve the final target of zero emissions of industrial wastes and by FY2005, achieve a fixed rate of waste reduction to wastes generated of 10% or less.
     - (2) By FY2008, reduce general office wastes by 50% from the FY2001 levels.
   - B. Promote recycling
     - (1) Promote recycling and implement road management by recycling rates.
     - (2) Establish a mechanism for recycling of plastic waste.
   - C. Utilize resources efficiently
     - By FY2008, reduce water consumption by 10% from the FY2001 levels.

6. **Management of chemicals**
   - A. Publish Environmental Report
     - (1) Strengthen the chemical management system and implement a revised BSOS management on the Internet.
     - (2) By FY2005, reduce the total use and emission of PERP Law-regulated chemicals by 10% or more from the FY2001 levels, without degrading the safety of aircraft operations.
   - B. Environmental communication
     - A. Publish Environmental Report
       - Include items of group company activities other than Japan Airlines International and Japan Airlines Domestic.
     - C. Utilize the Internet
       - (1) Actively disclose environmental data of the group.
       - (2) Publish information on the group’s environmental activities.
     - D. Promote environmental education
       - Establish an education program by identifying the educational needs, by job type and job title.

7. **Environmental social activities**
   - Promote environmental social activities through the Terrestrial Observation Project, the Marunouchi Citizens’ Environmental Fund, natural environmental conservation, and other projects.
Environmental Conservation Activities

As the amount of carbon dioxide emitted by aircraft is proportional to the amount of fuel consumed, the JAL Group is striving to introduce fuel efficient aircraft. In terms of flight routes, the Far East Russia route was inaugurated in expectation of shorter flight hours. In addition to the recycling of air tickets and recycling practiced in the cargo division, a system was developed for recycling uniforms. The “Alumi-Can Dream” campaign, in which cabin attendants sort and collect aluminum cans in bags tailored to the purpose, has been going on for 12 years.

In December 2003, we instituted the JAL Group Green Purchasing Regulation. In this program, group-wide efforts are made to purchase environmentally-friendly products, ranging from aircraft to ballpoint pens. Furthermore, to contribute to ozone layer protection, we have established an internal system for recycling recovered halon, using Japan’s very first Halon 1211 recovery device, introduced in 2002.

Induction of Fuel-Efficient Aircraft

The JAL Group has actively cooperated in the development of the B777-300, Boeing’s state-of-the-art aircraft, as a launch customer (see Glossary on page 43). The B777-300ER shows a 20% improvement in fuel efficiency over the relatively new B747-400. Also, in terms of noise and emissions, this newer aircraft of course satisfies the current standards of the International Civil Aviation Organization (ICAO), and also clears the organization’s new, stricter requirements. It has excellent cruising capabilities and is capable of flying non-stop between Narita and Europe or the U.S. The JAL Group began operation of the first B777-300ER in July 2004 and plans to phase it in for major international routes as a successor to the B747.

Prevention of Global Warming

The JAL Group provides air transportation, an intangible service, and the biggest impact on the environment that accompanies the service is the emission of greenhouse gases resulting from the burning of fossil fuels. The JAL Group sees its greatest contribution to environmental conservation as reducing the emission of greenhouse gases. To that end, the group is making almost efforts to reduce fuel consumption through the following measures.

Comparison of Fuel Efficiency by Aircraft Type

The graph below compares fuel efficiency by aircraft type between Japan and the world. It compares fuel efficiency by aircraft type between the JAL Group’s aircraft and the world’s major aircraft in 1990 and aircraft newly acquired by the JAL Group.

Introduction of Fuel-Efficient Aircraft

The amount of CO2 emitted by aircraft is closely proportional to the amount of fuel consumed. Thanks to advanced aircraft technology, fuel consumption per ASK (available seat kilometer) has almost halved in the past 20 years. The JAL Group continues to minimize fuel consumption by phasing in state-of-the-art fuel efficient aircraft and accelerating the retirement of conventional aircraft. The graph below compares fuel efficiency by aircraft type between major aircraft in 1990 and aircraft newly acquired by the JAL Group.
Prevention of Global Warming

Inauguration of Far-East Russian Route

On December 18, 2003, for service between North America and Japan, the Far-East Russian route was added to the established NOPAC route. The latter uses only Japanese and American airspace and goes over the Aleutian Islands. The new route, however, makes it possible for JAL aircraft to fly from Kansai into Far East Russian airspace and then over the Kamchatka Peninsula to Japan. This route is not necessarily shorter than the NOPAC route in terms of ground distance; however, it is less affected by the characteristic autumn and spring headwinds. As a result, depending on the movement of jet streams, a considerable reduction in flight time can be gained. Due to the payment of air traffic control fees in Russian airspace and then over the Kamchatka Peninsula to Japan, the Far-East Russian route was added to the established NOPAC route. The latter uses only Japanese and American airspace.

Fuel-Saving Measures

The following measures are being taken mainly by the Flight Operations Division on the precondition that safety must be secured first.

Fuel-Saving Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flight Operators</td>
<td>Use of improved main performance fuel-saver system (powered by all aircraft from FY54/55)</td>
</tr>
<tr>
<td></td>
<td>Selection of optimal flight routes, flight speed and flight route</td>
</tr>
<tr>
<td></td>
<td>Use of auto-landing (CAT II) operated under low visibility conditions</td>
</tr>
<tr>
<td></td>
<td>Selection of shorter domestic routes, using Area Navigation System and other tools</td>
</tr>
<tr>
<td></td>
<td>Operation of Communications, Navigation, Surveillance and Air Traffic Management (CNS/ATM) such as TMIST, APIS, CNS/ATM</td>
</tr>
<tr>
<td></td>
<td>Optimized control of aircraft center of gravity (9% aft to reduce drag)</td>
</tr>
<tr>
<td></td>
<td>Expanded use of fuel economy assistance method</td>
</tr>
<tr>
<td></td>
<td>As described by the Law Regarding Rationalization of Energy Use, the following offices in the Kanto area have been designated as electric and thermal energy or electric energy management plants.</td>
</tr>
<tr>
<td></td>
<td>Japanese Airlines International Haneda district office: Electric (Class II) and thermal (Class II)</td>
</tr>
<tr>
<td></td>
<td>Japanese Airlines International Narita district (maintenance) office: Electric and thermal (both Class II)</td>
</tr>
<tr>
<td></td>
<td>Japanese Airlines International Tamachi district office (Hinatake, Tokyo): Electric (Class I)</td>
</tr>
<tr>
<td></td>
<td>Japanese Airlines Domestic M1-M2 Bldg. (Haneda): Electric and thermal (both Class II)</td>
</tr>
<tr>
<td></td>
<td>Other A/P total plant: Electric and thermal (both Class II)</td>
</tr>
<tr>
<td></td>
<td>Lockheed Martin Corporation, Tokyo, Osaka, etc. (maintenance of electrical and thermal energy management plants)</td>
</tr>
<tr>
<td></td>
<td>Use of Ground Power Units (GPUs) for aircraft</td>
</tr>
<tr>
<td></td>
<td>In remote spots at Haneda airport, it is not feasible to have fixed-position GPUs. In May 2004, five mobile GPUs were transferred to these spots to supply power to A300-600 aircraft parked there. This effective redeployment of mobile GPUs, which were seldom used in the past, will also reduce the use of APUs in Haneda’s remote spots as well, where fixed power source is not available.</td>
</tr>
</tbody>
</table>

Mobile GPUs for Handling Operations in Remote Spots at Haneda

CO2 Emissions from Aircraft

The graph below shows changes in CO2 emissions per ATK emitted by commercial operation of JAL Group aircraft, based on estimated fuel consumption. The total CO2 emissions, in FY2003 were 16,486 thousand tons.

CO2 Emissions per ATK of Freighters

CO2 emissions per ATK, by commercial B747F freighter operations of the group are shown in the table below. As the allowable load of freighters is greater, CO2 emissions per ATK of a B747F freighter are smaller than those of a passenger aircraft of the same aircraft type.

Energy-Saving Activities at Offices

As described by the Law Regarding Rationalization of Energy Use, the following offices in the Kanto area have been designated as electric and thermal energy or electric energy management plants.

Japanese Airlines International Haneda district office: Electric (Class II) and thermal (Class II)

Japanese Airlines International Narita district (maintenance) office: Electric and thermal (both Class II)

Japanese Airlines International Tamachi district office (Hinatake, Tokyo): Electric (Class I)

Japanese Airlines Domestic M1-M2 Bldg. (Haneda): Electric (Class I)

Japanese Airlines Domestic M1-M2 Bldg. (Haneda): Electric (Class II)

Japanese Airlines Domestic M1-M2 Bldg. (Haneda): Electric (Class II)

The yearly consumption of electricity, thermal energy and water in domestic offices is shown in the following charts. The charts include energy consumption by the JAL Group companies housed in buildings of Japanese Airlines International and Japanese Airlines Domestic.

Total consumption at domestic offices in FY2003 was as follows.

- Electricity: 220 million kWh (2,162 million MJ)
- Thermal energy: 199 million kWh (736 million MJ)
- Water supply: 798 thousand cubic meters

These results show the positive impact on energy saving derived from office integration or elimination following the integration of JAL and JAS.
Recycling System for Uniforms

In April 2004, upon the integration of JAL and JAS, some 14,000 flight crewmembers, cabin attendants, and ground staff were issued new uniforms. This resulted in some 230 tons of old uniforms. In the past, uniforms were disposed of by incineration for security reasons. Now, however, in view of the environmental impact, the company has decided to recycle them into noise and heat insulation materials for automobiles.

Buttons and the like are also removed and recycled into plastic fuel and metal materials. As for the new uniforms, the company plans to recycle all of them in the future.

Recycling of Used Air Tickets

Used air tickets and boarding pass stubs are recycled. As they have personal information on passengers, they are turned into toilet rolls and tissues by melting and other methods to prevent erosion of privacy.

Recycling of Polyethylene Sheets for Cargo Packing

Fully 100% of the polyethylene sheets used to protect cargo from water and dust are collected, at both Naha and Kansai airports (1,561 tons in FY2003). The collected sheets are recycled into new polyethylene sheets (265 tons in FY2003) using a system developed by the JAL Foundation, which engages in R&D for air transport recycling systems. The sheets are also recycled by contractors into wheel covers, boundary stakes, gardening supplies, and other items.

Reduction of Dry Battery Use by Aircraft Maintenance Division

The recycling of dry batteries has been found to be no more than a waste of resources, as it requires approximately three times more energy than extracting the zinc from its native ore. As a consequence, used dry batteries are generally discarded. As part of its ISO 14001 activities, the Maintenance Business Division Narita launched measures to reduce dry battery use. Among the measures taken are the reuse of all D-size batteries that have 1.1 volt or more voltage left, the ratio of final residual disposal to generated wastes in the Kanto area in FY2003 was 7%.

Waste Emissions by the JAL Group

The amount of industrial waste emissions in the Kanto area, which accounts for the greater part of that of the entire JAL Group, is shown in the chart below. In FY2003, the wastes discharged by Japan Airlines International decreased by 476 tons and Japan Airlines Domestic by 165 tons from the previous year. This resulted in a total decline of 641 tons, a 13.7% reduction from the previous year.

JAL Group Operations and Wastes

The wastes from JAL Group operations are categorized as shown below and are all properly managed and disposed of in accordance with Japan’s Waste Management and Public Cleansing Law. There has been no serious violation of the law by the group in the past five years.

<table>
<thead>
<tr>
<th>General office wastes</th>
<th>Aircraft cables and general office</th>
<th>Industrial wastes</th>
<th>Aircraft Engineering and Maintenance Division and Cargo and Mail Division</th>
<th>Special management</th>
<th>Health care (medical) division and Aircraft Engineering and Maintenance Division</th>
</tr>
</thead>
</table>

Measures of the JAL Group

The JAL Group, based on Sky Eco [2010], JAL Group’s Mid- and Long-term Action Program, will strive to build a recycling society.

Reduction of Paper through e-Work

To increase information-sharing within the JAL Group, maximize work efficiency, and improve work speed, an electronic work environment has been created for daily operations. This has brought about a reduction in paper use as follows:

- Reduced paper distribution through availability of electronic manuals.
- Reduced paper distribution by posting in-house publications on the Intranet.
- Elimination of some administrative procedures on paper by developing electronic workflows for application, communication, managerial decision and authorization on the Intranet.

Reduction of Dry Battery Use by Aircraft Maintenance Division

The wastes from JAL Group operations are categorized as shown below and are all properly managed and disposed of in accordance with Japan’s Waste Management and Public Cleansing Law. There has been no serious violation of the law by the group in the past five years.
Waste Reduction and Recycling

There has been no violation of waste-related laws other than the Radioactive wastes, halon, and CFCs are properly treated as prescribed by law. At Naha’s wastewater treatment facilities, which handle wastewater from aircraft maintenance and washing plants, carp have been kept to check the quality of purified water ever since 2003 due to the good quality of the treated water. The company has decided to ask the public to find new homes for these carp.

Compliance with Laws other than the Waste Management and Public Cleansing Law

Polyethylene bags used in packaging in-flight sales items on domestic flights are handled based on the Law for Promotion of Sorted Collection and Recycling of Containers and Packaging. In-flight meal leftovers on inbound international flights are all incinerated in accordance with the law, within a prescribed period of time. Radioactive wastes, halon, and CFCs are properly treated as prescribed by law. PCW wastes are appropriately kept in storage.

JAL Group Measures to Reduce Environmental Noise

JAL Group operations in and around airports impact the environment with the following types of noise:
- Aircraft noise, such as engine noise at takeoff and landing.
- Noise caused by aircraft engine runup on the ground, use of APU, GPUs, and ground vehicles in and around the airports.

Reducing Jet Engine Noise Levels

Over the past few decades, technological advances have contributed greatly toward reducing jet engine noise. The noise level of the Boeing 767, whose fuselage size is similar to that of the DC-8 or Boeing 707 of the early 1960s, has been brought down and the annoyance sensed by humans has decreased to about one-fourth of previous levels.

ICAO’s New Aircraft Noise Standard, Chapter 4

In June 2001, ICAO enforced a new noise standard, Chapter 4, with the following requirements:
- The total of measurements at three points must be at least 10 dB lower than current Chapter 3 noise standards.
- The sum of measurements at any two points must be at least 2 dB lower than current Chapter 3 noise standards.
- No measurement at any of these three measuring points should be higher than current Chapter 3 standards.

The new standards will be applicable to aircraft certificated after Jan. 1, 2006.

Noise Standards in Japan

The Japanese Civil Aeronautics Law has established noise standards, including a new standard equivalent to ICAO’s Chapter 3 and the newest standard equivalent to Chapter 4. Aircraft are inspected for compliance with these standards at the time of airworthiness inspection on delivery.

Noise Reduction Measures during Parking at Airports

Efforts are being made to reduce aircraft noise during parking at airports by using Ground Power Units (GPUs) instead of APU’s. The noise level of an APU is 85 to 98 dB (A) for a B747, while a GPU can keep the noise level to within 55 to 59 dB (A), which is lower than the ICAO noise level of Chapter 3 aircraft.

Noise Reduction Hangar for Engine Test Run

To control aircraft engine test run noise at Naha airport, a noise reduction hangar was built in cooperation with the Naha Airport Authority and another airline. Within the hangar, engine test run can now be performed without regard to hours or wind direction.
Green Purchasing and Procurement

Having adopted green purchasing as one of the Environmental Action Guidelines, the JAL Group purchases and procures environmentally-friendly goods. To promote group-wide activities, we established the Green Purchasing Regulation in December 2003, which identifies target areas and criteria for environmentally-friendly products. We aim to carry out green purchasing from aircraft to pens, broadening the scope step by step.

Green purchasing has been implemented as follows.

(1) Aircraft

The JAL Group is changing over to aircraft that operate with increased fuel efficiency and, therefore, lower CO₂ emissions and reduced noise. For further information, see pages 16-18 and 21-22.

(2) Vehicles

The use of electric vehicles is being promoted for forklift trucks and cargo tractors in the following airports and divisions.

(3) Office Equipment Automation

We are working toward the acquisition of energy saving type office equipment made of recycled plastics (e.g. computers), and the use of rechargeable toner cartridges. Many computers are used in our offices, especially in reservations and airport sections. In the past, these sections consumed many ink ribbons for printers. Responding to the strong criticism of single- round ink ribbons, the company requested that the manufacturer rewind these ink ribbons for reuse. In recent years, printers have improved, with toner cartridges replacing ink ribbons, and now recycling of toner cartridges is a common practice. Of course, the company’s enthusiasm for ink-ribbon recycling lives on in terms of today’s toner cartridge recycling.

(4) In-Flight Cabin Service Goods

The material used for in-flight magazine covers has been changed from polyvinyl chloride to polypropylene, and that of trays and rice bowls, from polycarbonate to polyethylene. In September 2002, for security reasons, metal knifes for in-flight meals were replaced with plastic ones. Now the plastic knifes are reused, under full sanitation control.

(5) Paper

A. Printed matter

Flight timetables and stockholder newsletters are now printed on 100% recycled paper, and 70% recycled paper is used for in-flight passenger magazines such as “Skyward,” “Agora,” “Asia Echo,” “JEN GUIDE” (a guide to in-flight entertainment), and “JAL SHOP” (a guide to in-flight and mail-order sales items).

B. Copying paper

Japan Airlines International has been using 78% recycled paper with 80% whiteness since FY1998. In other group companies we are also promoting the use of this paper that is considered environmentally friendly in the manufacturing process and which holds up well to repeated recycling.

C. Sanitary paper

In-flight toilet rolls use 100% milk-carton-recycled paper, and 70% recycled paper is used for in-flight passenger magazines such as “Skyward,” “Agora,” “Asia Echo,” “JEN GUIDE” (a guide to in-flight entertainment), and “JAL SHOP” (a guide to in-flight and mail-order sales items).

(6) Stationary and Office Supplies

Japan Airlines International has been carrying out green purchasing of stationary and office supplies since FY2001. On a price basis, the average green purchasing rate in FY2003 was 90.2%. The electronic purchasing system implemented in FY2002 within the group has allowed easy selection of environmentally-friendly products, thus expanding green purchasing by more group companies, and making possible easy tabulation of green purchase results. We plan to expand the system to items other than stationary and office supplies.

Management of Chemicals

In maintaining safe aircraft operations, many chemicals are used in aircraft materials, as coatings, operating oil, and so on. The group airlines and manufacturing companies are continuing their efforts to find more environmentally-friendly alternatives to those chemicals.

Total Management of Chemicals

The JAL Group uses over 1,700 products in aircraft maintenance. We developed an information database of the chemicals contained in those products, and based on this database, a total management system was created in FY2001. This system makes possible MSDS management and browsing on the Internet (to comply with MSDS requirements, Occupational Safety and Health Law), quantity calculations of PRTR/Prerogatory Managed required chemicals (to comply with PRTR Law and Tokyo Metropolitan Government ordinances), and disclosure of technical information, applicable regulations and supply information. During FY2003, 256 pieces of product data were revised or added.

In addition, through information exchanges with aircraft maintenance contractors and manufacturers, we are striving to incorporate even more new, environmentally-friendly alternatives products.

Reduction of Chemicals

In FY2003 the JAL Group achieved target objectives with reductions of 13% in the use and 43% in the emission of PRTR-Law regulated substances to the environment, such as the air, compared to FY2001 levels. No health casualty, complaint, or accident occurred within or outside the group with regard to soil contamination and chemical substances.

Class 1 Chemicals Regulated by the PRTR Law Used and Emitted by the JAL Group (FY2003)

Release of PRTR Law-regulated Chemicals from Aircraft

In March 2004, the Ministry of the Environment made public on its Website a summary of PRTR-Law regulated substances released from automobiles, railways, ships and other means of transportation. According to this list, 28 tons were released from aircraft, accounting for 0.019% of the total emissions of 154,000 tons from all modes of transportation.

Green Purchasing and Procurement

Having adopted green purchasing as one of the Environmental Action Guidelines, the JAL Group purchases and procures environmentally-friendly goods. To promote group-wide activities, we established the Green Purchasing Regulation in December 2003, which identifies target areas and criteria for environmentally-friendly products. We aim to carry out green purchasing from aircraft to pens, broadening the scope step by step.

Green purchasing has been implemented as follows.

(1) Aircraft

The JAL Group is changing over to aircraft that operate with increased fuel efficiency and, therefore, lower CO₂ emissions and reduced noise. For further information, see pages 16-18 and 21-22.

(2) Vehicles

The use of electric vehicles is being promoted for forklift trucks and cargo tractors in the following airports and divisions.

(3) Office Equipment Automation

We are working toward the acquisition of energy saving type office equipment made of recycled plastics (e.g. computers), and the use of rechargeable toner cartridges. Many computers are used in our offices, especially in reservations and airport sections. In the past, these sections consumed many ink ribbons for printers. Responding to the strong criticism of single-round ink ribbons, the company requested that the manufacturer rewind these ink ribbons for reuse. In recent years, printers have improved, with toner cartridges replacing ink ribbons, and now recycling of toner cartridges is a common practice. Of course, the company’s enthusiasm for ink-ribbon recycling lives on in terms of today’s toner cartridge recycling.

(4) In-Flight Cabin Service Goods

The material used for in-flight magazine covers has been changed from polyvinyl chloride to polypropylene, and that of trays and rice bowls, from polycarbonate to polyethylene. In September 2002, for security reasons, metal knifes for in-flight meals were replaced with plastic ones. Now the plastic knifes are reused, under full sanitation control.

(5) Paper

A. Printed matter

Flight timetables and stockholder newsletters are now printed on 100% recycled paper, and 70% recycled paper is used for in-flight passenger magazines such as “Skyward,” “Agora,” “Asia Echo,” “JEN GUIDE” (a guide to in-flight entertainment), and “JAL SHOP” (a guide to in-flight and mail-order sales items).

B. Copying paper

Japan Airlines International has been using 78% recycled paper with 80% whiteness since FY1998. In other group companies we are also promoting the use of this paper that is considered environmentally-friendly in the manufacturing process and which holds up well to repeated recycling.

C. Sanitary paper

In-flight toilet rolls use 100% milk-carton-recycled paper, and 70% recycled paper is used for in-flight passenger magazines such as “Skyward,” “Agora,” “Asia Echo,” “JEN GUIDE” (a guide to in-flight entertainment), and “JAL SHOP” (a guide to in-flight and mail-order sales items).

(6) Stationary and Office Supplies

Japan Airlines International has been carrying out green purchasing of stationary and office supplies since FY2001. On a price basis, the average green purchasing rate in FY2003 was 90.2%. The electronic purchasing system implemented in FY2002 within the group has allowed easy selection of environmentally-friendly products, thus expanding green purchasing by more group companies, and making possible easy tabulation of green purchase results. We plan to expand the system to items other than stationary and office supplies.

Management of Chemicals

In maintaining safe aircraft operations, many chemicals are used in aircraft materials, as coatings, operating oil, and so on. The group airlines and manufacturing companies are continuing their efforts to find more environmentally-friendly alternatives to those chemicals.

Total Management of Chemicals

The JAL Group uses over 1,700 products in aircraft maintenance. We developed an information database of the chemicals contained in those products, and based on this database, a total management system was created in FY2001. This system makes possible MSDS management and browsing on the Internet (to comply with MSDS requirements, Occupational Safety and Health Law), quantity calculations of PRTR/Prerogatory Managed required chemicals (to comply with PRTR Law and Tokyo Metropolitan Government ordinances), and disclosure of technical information, applicable regulations and supply information. During FY2003, 256 pieces of product data were revised or added.

In addition, through information exchanges with aircraft maintenance contractors and manufacturers, we are striving to incorporate even more new, environmentally-friendly alternatives products.

Reduction of Chemicals

In FY2003 the JAL Group achieved target objectives with reductions of 13% in the use and 43% in the emission of PRTR-Law regulated substances to the environment, such as the air, compared to FY2001 levels. No health casualty, complaint, or accident occurred within or outside the group with regard to soil contamination and chemical substances.

Class 1 Chemicals Regulated by the PRTR Law Used and Emitted by the JAL Group (FY2003)

Release of PRTR Law-regulated Chemicals from Aircraft

In March 2004, the Ministry of the Environment made public on its Website a summary of PRTR-Law regulated substances released from automobiles, railways, ships and other means of transportation. According to this list, 28 tons were released from aircraft, accounting for 0.019% of the total emissions of 154,000 tons from all modes of transportation.
The JAL Group also uses, as much as feasible, Ground Power Units (GPU), which supply electricity and conditioned air to aircraft on the ground in place of an onboard APU. (See page 17 for more information about GPU.)

### Implementation of Electrostatic Painting by the Engineering and Maintenance Division

The Engineering and Maintenance Division has reduced its environmental impact on air quality through a variety of measures. Improvements in painting procedures and quality control have resulted in the use of less paint. Other measures include using paint containing a smaller percentage of volatile solvent; limiting the use of consumable maintenance materials such as solvents; implementing mechanical paint removal; and changing the paint removal method.

Since 1999, the company has been considering the use of electrostatic painting, to prevent the diffusion of organic solvents used during the aircraft coating process. Test results show that organic solvent use can be reduced through improved adherence, and that waste protector use can also be minimized by reducing the solvent application area on work floors. For these reasons, and for the consequent benefits in quality and productivity, the company officially converted to electrostatic painting in March 2003.

### Increased Use of Unpainted Aircraft

An aircraft with no paint applied on its exterior was first used for freighters in 1992. This was done to reduce the volume of paint used on the aircraft’s surface (amounting to approximately 150 kg per aircraft), and thus also to obviate the need for paint remover. (However, periodic painting and destaining of the aluminum surface is required, to prevent corrosion.) No problem has been found with unpainted aircraft in actual commercial operation over an extended period, and its environmental impact is favorable. Accordingly, the company has decided to deploy additional unpainted freighters, as surface destaining is required, to prevent corrosion.

### Anti-pollution Activities

Facilities and equipment in maintenance and other areas are properly managed in accordance with the requirements of various environmental laws such as the six pollution control laws including the Air Pollution Control Law. (The others are the Water Pollution Control Law, Offensive Odor Control Law, Agricultural Land Soil Pollution Prevention Law, Vibration Regulation Law, and Noise Regulation Law.) There has been no violation of the six pollution control laws in the past five years.

### Spraying Anti-ice and De-icing Fluid on Aircraft

The principal ingredient in anti-ice and de-icing fluids is propylene glycol. The amount used for removing snow and ice from aircraft during winter varies depending upon the amount and quality of snow and frequencies of removal. Propylene glycol is also used as a food additive, as a thickener. But this chemical must be handled carefully, for when it flows into public water such as lakes and rivers, it creates harmful eutrophication (nutrient pollution). The appropriate use of anti- and de-icing fluid has been under study since FY2002 in the De-Icing Problem Study Meeting sponsored by the Ministry of Land, Infrastructure and Transport, in which Japan Airlines International and Japanese Airlines Domestic are both taking part.

### Wastewater Treatment

Wastewater drained from maintenance hangars and facilities is controlled and treated properly under law by using wastewater treatment facilities in six locations, and then transferred to sewers. For details, see page 21.

### Ozone Layer Protection

The ozone layer, which is in the stratosphere at an altitude of 10 to 50 km above the earth, protects living organisms on the earth by absorbing the greater part of the harmful ultraviolet rays in sunlight. However, it has been discovered that manmade chemicals such as CFC, HCFC, and halon are depleting this protective layer. The JAL Group uses CFC and HCFC, as shown below (excluding those for car air-conditioners). Used CFC, HCFC, and halon are all recovered and then either properly stored or destroyed.

#### Status of Measures on Ozone Layer Depleting Substances at the JAL Group

#### Use of Halon Collecting Devices

The halon used in JAL Group aircraft fire-extinguishing system can be categorized into two types: Halon 1301, used in engines and cargo compartments, etc., and Halon 1211, used for passenger cabins. Halon has great fire extinguishing power, versatility, and post-use viability. However, as halon contributes to the depletion of the ozone layer, we have been collecting it without discharging it into the air, and reusing or storing it during maintenance inspection of fire extinguishing systems. Formerly, JAL only had collecting equipment for Halon 1301, and no device was available in Japan for collecting Halon 1211. In December 2002, with the help of JAL Airbus Co., Ltd., JAL became the first company to start using a collecting device for Halon 1211, which was installed in the Namba Component Services Business Division, and established the system for collecting halon for aircraft within the company.
Environmental Communications

We disseminate the latest information on the efforts of the JAL Group in the environmental field in various ways: through our Website, as broadband broadcast contents, and as environment-related articles in our in-flight magazines and airline management trend magazines. We have participated in environmental symposiums and the Energy and Environment Exhibition (ENEX) as part of our efforts to enhance our dissemination of environmental information. In terms of in-house educational activities within the group, we hold environmental seminars to educate employees in this area. In FY2003, 25 such seminars were held targeting domestic bases. We also provide environmental information to employees by issuing internal newsletters, sending out news through e-mail, and issuing leaflets to JAL Group employees. Along with in-house activities, we have carried out activities based on the “Global Warming Prevention Voluntary Plan” developed by the airline industry. We are involved in such activities as a main member of organizations outside the company.

Chapter III

Disseminating Environmental Information to Customers

### Carrying Environmental Articles in In-flight Magazines

We carry environment-related articles in magazines published by JAL, such as our in-flight magazines (Skyward and Agora) and a quarterly magazine (Current), which provides information on airline management trends.

### Environmental Advertisement: “Sky Eco”

“"We are using aircraft with reduced exhaust emissions as a means to prevent global warming. We are using fuel-efficient aircraft. We are giving full attention to flying with a proper balance to promote efficiency."”

We created the “Sky Eco” advertisement as a means to publicize the efforts for the environment of the JAL Group. We ran this ad in regular economic newspapers, environmental information magazines, and others, as well as in our in-flight magazines.

### Display at ENEX 2004 (Energy and Environmental Exhibition)

On February 12-14, 2004, the 28th Energy & Environment Exhibition was held at the Tokyo Big Sight, sponsored by the Energy Conservation Center. From the JAL Group, JAL, AGP, and JAL Foundation participated with panel displays on aviation fuel consumption reductions, tropospheric observation, and other themes. The event was participated in by 83 organizations, and there were some 55,000 visitors. Many people visited the JAL Group booth, providing us with a good opportunity to explain our efforts on the environment.

### Environmental Communications

We release the latest information on the environmental activities of the JAL Group on the JAL Website, and the content of our environmental reports are available there. We also release videos of our environmental activities, such as in the “Tropospheric Observation Project,” “JAL Recycling,” etc. through JAL TV and “Environment Front Runner” of Channel J, an Internet broadband broadcasting channel.

### Chiba Symposium 2003

On October 4-5, 2003, JAL Foundation participated in the Chiba Symposium 2003 for Environmental Education and Environmental Protection, held on the campus of the College of Industrial Technology of Nihon University, under the theme of “Talking About the Environment Together.” A panel display concerning the Tropospheric Observation Project that has been conducted by the JAL Group as part of our environmental protection activities, an explanation on the mechanisms of global warming, and a report on an observed increase in greenhouse gases in the stratosphere at a height of 10,000 meters, attracted a great deal of attention from the 400 or so participants.

### Aviation Safety Symposium

On March 5, 2004, the 16th Aviation Safety Symposium was held at the JAL Building in Tokyo, sponsored by the Japan Aeronautical Engineer’s Association. Presentations by speakers from the Manufacturing Industries Bureau of the Ministry of Economy, Trade and Industry, the Civil Aviation Bureau of the Ministry of Land, Infrastructure, Transport, and the Commercial Airplanes Division of The Boeing Company, among others, were followed by a lecture titled “Efforts of Airline Companies on the Environment” by the head of JAL Environmental Affairs.
Environmental Education Program

In order to raise awareness of global environmental problems among JAL Group employees, we send out Eco-News, which reports on the group’s environmental protection activities, to group offices in Japan and abroad every two months, and we also upload the same news on the Intranet. The top news items in each issue of FY 2003 were as follows:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>Top news</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4</td>
<td>Apr. 2003</td>
<td>Second JAL Group Environmental Committee held</td>
</tr>
<tr>
<td>No. 5</td>
<td>Jun. 2003</td>
<td>JAL’s maintenance division holds ISO 14001 certification</td>
</tr>
<tr>
<td>No. 6</td>
<td>Aug. 2003</td>
<td>The latest trends concerning environmental rating</td>
</tr>
<tr>
<td>No. 7</td>
<td>Oct. 2003</td>
<td>JAL Group Environmental Committee and Director’s Committee meeting held</td>
</tr>
<tr>
<td>No. 8</td>
<td>Dec. 2003</td>
<td>Second session of the Conference of Parties to the LRT Framework Convention on Climate Change (CDIP) held</td>
</tr>
<tr>
<td>No. 9</td>
<td>Feb. 2004</td>
<td>5R certification at the energy and environment exhibition “ENEX 2004”</td>
</tr>
<tr>
<td>No. 10</td>
<td>Mar. 2004</td>
<td>JAL engages in “One Mind Project” and environmental protection activities reported by Kazuko Okamoto</td>
</tr>
</tbody>
</table>

Publication of Leaflet “We Are Residents of the Earth”

In order to raise environmental awareness among the roughly 54,000 employees of the JAL Group, and to encourage them to become involved in environmental activities at work and in their daily lives, we have published a leaflet every year on June 5, Environment Day, since 1997. We summarize the latest developments inside and outside the group regarding the environment. The FY2003 edition, under the main theme of “Efforts for a recycling-based society as a corporate social responsibility,” appealed for efforts toward a recycling-based society in an easy-to-understand way, using illustrations and other features, with such articles as, “Toward a recycling-based society: why is the environment being destroyed?”, “The legislation system for the creation of a recycling-based society in Japan,” “Three Rs that you can do at home,” and “Let’s look for environmental labels around ourselves.”

Environmental Seminars

Taking advantage of the integration of JAL and JAS, Japan Airlines Domestic has deepened its understanding of environmental problems and the latest trends both in Japan and abroad, and is also involved in the promotion of group-wide environmental activities. As part of these efforts, we have held environmental seminars at the national level such as, “Explaining global environmental issues, environment related legislation, environment protection organizations and Japan’s Basic Environmental Policy, and the relationship between the airline industry and environmental issues.” We are deepening our understanding of environmental issues and trying to raise environmental awareness. In FY2003, we held 25 seminars (with 396 participants), targeted at domestic bases in Japan.

JAL Group In-house Environmental Information Dissemination and Education

JAL Group Eco-News

In order to raise awareness of global environmental problems among JAL Group employees, we send out Eco-News, which reports on the group’s environmental protection activities, to group offices in Japan and abroad every two months, and we also upload the same news on the Intranet. The top news items in each issue of FY 2003 were as follows:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>Top news</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4</td>
<td>Apr. 2003</td>
<td>Second JAL Group Environmental Committee held</td>
</tr>
<tr>
<td>No. 5</td>
<td>Jun. 2003</td>
<td>JAL’s maintenance division holds ISO 14001 certification</td>
</tr>
<tr>
<td>No. 6</td>
<td>Aug. 2003</td>
<td>The latest trends concerning environmental rating</td>
</tr>
<tr>
<td>No. 7</td>
<td>Oct. 2003</td>
<td>JAL Group Environmental Committee and Director’s Committee meeting held</td>
</tr>
<tr>
<td>No. 8</td>
<td>Dec. 2003</td>
<td>Second session of the Conference of Parties to the LRT Framework Convention on Climate Change (CDIP) held</td>
</tr>
<tr>
<td>No. 9</td>
<td>Feb. 2004</td>
<td>5R certification at the energy and environment exhibition “ENEX 2004”</td>
</tr>
<tr>
<td>No. 10</td>
<td>Mar. 2004</td>
<td>JAL engages in “One Mind Project” and environmental protection activities reported by Kazuko Okamoto</td>
</tr>
</tbody>
</table>

“The Global Environmental Page” on the Group Intranet

We post information related to the environment on the Intranet for JAL Group employees. In the News section, we provide readers with the latest information on environmental volunteer activities and various environment-related events such as seminars, symposiums, and exhibitions, and in the JAL Group Activities section we upload information on environment-related activities and news materials published by the group companies and divisions.

The Maintenance Business Division Narita 5R News

As of the end of FY2003, the JAL Group has acquired ISO 14001 environment management system certification at seven sites. Each site publishes activity-promotional materials periodically for its employees, putting out various ideas. 5R News, published by the Maintenance Business Division Narita of Japan Airlines International, is widely known not just within the division but also the entire group, and is used as a guide for environmental activities. The record for FY2003 is as follows:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>Top news</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1</td>
<td>May</td>
<td>Recycling</td>
</tr>
<tr>
<td>No. 2</td>
<td>June</td>
<td>Recycling</td>
</tr>
<tr>
<td>No. 3</td>
<td>July</td>
<td>Recycling</td>
</tr>
<tr>
<td>No. 4</td>
<td>August</td>
<td>Recycling</td>
</tr>
<tr>
<td>No. 5</td>
<td>September</td>
<td>Recycling</td>
</tr>
<tr>
<td>No. 6</td>
<td>October</td>
<td>Recycling</td>
</tr>
<tr>
<td>No. 7</td>
<td>November</td>
<td>Recycling</td>
</tr>
</tbody>
</table>

Kazuhiro Okamoto
ISO 14001 Secretariat, the Maintenance Business Division Narita Japan Airlines International

I have been editing 5R News since May 2003. Although it was in February 2003 that the Maintenance Business Division Narita acquired our ISO 14001 certification, 5R News (it was originally called 3R News) has been published monthly since September 2003. Each month, 5R News focuses on the environmental activities to be carried out that month (carrying out ISO surveillance, etc.) and the introductions of activities conducted at the work site. We try to keep the themes timely. In producing the newsletter, we try not to have just text, but to mix it with photographs and other materials in order to catch our readers’ eyes and show how their activities could lead to cost reductions, showing amounts and graphs, to convey the results of activities in an easy-to-understand way. We would like to continue to convey the message that although it is easy for environmental activities to become dull, if each person is involved in a steady way, it will definitely lead to results.

The B747 Flight Crew Department Activities of the “747 Flight Crew Earth-Friendly Working Group

From the standpoint that cooperating with activities to prevent global warming is a social responsibility, the “747 Flight Crew Earth-Friendly Working Group” was established in 1998 within the B747 Flight Crew Department of Japan Airlines International. This group attempts to gain cooperation from crew members of the department by demonstrating.

1. Methods to reduce exhaust gas without affecting safety while maintaining the day-to-day flight service.
2. Reductions that can be achieved through adjustments to flight operations.
3. The social background and issues, using indices that are as easy as possible to understand.

The efforts of this group were given a President’s Award in FY2003 as an excellent corporate activity showing awareness of the global environment.

Toshihiko Tanaka
Working Group member, Captain, the B747 Flight Crew Department

It’s been eight years since I started working as a captain on B747 on the “jumbo jumbo”.

Thirty years ago when I was sent to a training class in Alaska, I spent a lot of time looking at the earth from the sky, the recent changes of the earth make me worry. For example, the glaciers in Alaska have retreated quite a bit and the ice sheets of Greenland are shrinking.

Both of these changes seem to be due to global warming.

Every other month, we publish a document titled “Would you like to participate in preventing global warming?” taking turns compiling data and ideas related to flight service and distributing it to crew members in the department, calling on them to reduce CO₂ emissions. For example, we promote the idea of “Three Engine Taxiing” (after landing, taxiing with one of the four engines stopped) and “Reduced Pitch Operation” (while cruising, reduce the use of air-conditioning). This saves each time are small, but since the number of flights is so large, one can achieve a great deal of reduction with a little bit of thinking. Information concerning the distribution of the documents and activities of the group is posted on the Intranet, and so it is widely available to employees.
In response to the request in August 1996 by Keidanren (Japan Federation of Economic Organizations) for industry-wide voluntary action plans, three major domestic airlines submitted a voluntary action plan on the environment in November 1996. In it, they promised to reduce emissions of carbon dioxide (CO2) by 10% compared to FY1990.

### Outline of Voluntary Action Plan

<table>
<thead>
<tr>
<th>Activities of Related Organizations</th>
<th>Date</th>
<th>Paper</th>
<th>Land</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3. Activities at ICAO and IATA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Since Japan is a member of the Council of the International Civil Aviation Organization (ICAO), JAL cooperates with the Civil Aviation Bureau of the Japanese Ministry of Land, Infrastructure, and Transport by participating in meetings of the Committee of Aviation Environmental Protection (CAEP) of the ICAO and working group discussions. Also, as a member of the International Air Transport Association (IATA), JAL supports the environmental activities of the ICAO, and takes steps to resolve common issues faced by airlines.

CAEP has discussed ICAO standards related to aviation engine emissions, flight regulations related to aircraft noise pollution, measures against global warming caused by international aviation, and other issues. At the CAEP6 meeting in February 2004, the following resolutions were adopted:

**Economic Measures to Reduce Greenhouse Gases Emitted by Aircraft**
- CAEP agreed to insert a model memorandum draft and guidance concerning voluntary action plans into the Circular published by ICAO and its Website. It was decided that CAEP would monitor development towards the conclusion of a voluntary action plan memorandum in each country, and report on the enforcement situation. Also, as a measure to promote such voluntary action plans, ICAO has plans to give out “environmental awards.”

**Environmental Consideration for Business Overseas**
- CAEP agreed that the current CAEP/4 standard would not be applied to installed engines.

2. The Keidanren Voluntary Action Plan on the Environment

In response to a request in August 1996 by Keidanren (Japan Federation of Economic Organizations) for industry-wide voluntary action plans, three major domestic airlines submitted a voluntary action plan on the environment in November 1996. In it, they pledged to achieve a reduction of CO2 emissions per available seat-kilometer (ASK) to 10% less than 1990, and have been regularly reporting to Keidanren (now the Japanese Business Federation) for the progress. The outline of the plan is as follows:

-- With regard to emission trading, a consultant who had been commissioned to study the issue presented the results of a study on options for the structure design, and it was decided to further study 1 and 3 of the following three options.
- 1. Utilize the framework of emission trading in the Kyoto Protocol
- 2. Establish an emission trading system specifically designed for the international aviation field
- 3. Establish a voluntary emission trading system (including participation of airlines)

There were voices from the developing countries that they should be exempted from the obligation of all the economic measures based on the spirit of the Kyoto Protocol and the Framework Convention.

Reduction of Aircraft Emissions (nitrogen oxides)

Ultimately, under the condition that the standard be reviewed before the CAEP9 meeting to be held in six years, it was agreed that the current CAPE14 standard that went into effect on January 2004 would be further strengthened by 12% (to begin in 2011, with the target being engines with new model certifications). Also, it was agreed that the current CAPE14 standard would not be applied to newly manufactured engines.

Measures against Aircraft Noise Pollution

A draft guidance concerning a balanced approach to reducing noise pollution around airports was submitted and agreed upon without amendment.

4. Environmental Efforts of the Scheduled Airlines of Japan

The Scheduled Airlines of Japan, consisting of 15 scheduled airlines, established an Environmental Subcommittee in January 2001 to allow the industry as a whole to take concerted action to tackle the global issue of climate change. The Association has conducted an “Environmental Consideration for Business Overseas” campaign targeting all companies involved in the airline business since 2001. Japan Airlines International and Japan Airlines Domestic actively cooperate with the Association as members. For the activities for the year 2003, they refer to their Website: www.jalkeenanet.or.jp (in Japanese)

Also, JAL extends cooperation to the Japanese government, which is a member of the following organizations.
Since 1993, we have been a proud cosponsor, along with Tokio Marine & Nichido Fire Insurance Co., Ltd. and Mitsubishi Corporation, of the Marunouchi Citizens’ Environmental Forum, a seminar open to the general public. In 2003, the JAL Group launched a series of “Global Lectures,” and at sessions in Tokyo and Okinawa, we invited Professor Toshibumi Sakata of Tokai University to talk about the current situation of the earth, using many images, and to explain the importance of protecting the earth’s environment.

Our tropospheric observations, conducted since 1993, have won worldwide praise as contributing to clarifying the mechanisms of global warming. We will continue this work, while expanding the observation area and the size of the collected data. From April 2003 we have been cooperating with the Boreal Forest Fire Control Initiative Project, with the Flight Operation Division at the center of our efforts. The aim of the project is to achieve the early detection and prevention of the spread of large-scale forest fires in Siberia, which have been frequent in recent years, by conducting observations from scheduled flights.

### Environmental Seminars and Other Events

#### Marunouchi Citizens’ Environmental Forum

Since 1993, along with Tokio Marine & Nichido Fire Insurance Co., Ltd. and Mitsubishi Corporation, we have been cosponsoring the Marunouchi Citizens’ Environmental Forum. This Forum, for the general public and the employees of the cosponsoring companies, has been held three times a year at the head office of Tokio Marine & Nichido in the Marunouchi district of Tokyo. A total of 37 forums have been held during the last ten years.

In FY2003, the following forum was held:

37th: August 2003
Kotaro Yamamoto (folk singer, professor at the Department of Business Management, Hakuoh University)
Theme: My Ecological Life

#### Global Lectures

JAL Foundation held an Environmental Symposium in Tokyo in August 2003 and in Okinawa in February 2004, inviting Professor Toshibumi Sakata of Tokai University, who is also the Chairman & CEO of the Advanced Earth Science and Technology Organization. Professor Sakata is an authority on the analysis of terrestrial images taken by satellites.

Professor Sakata explained the present situation of the earth, using many images and explaining the importance of protecting the global environment using simulations of expected changes caused by future changes to the environment.

Starting from FY2004, we are planning to present a wider range of contents, with the new title “Global Citizen Seminar.” JAL Foundation also organizes “Green Concerts” to promote the use of wind and solar energy, which have small environmental loads, and carries out study and publicity activities on the preservation of landscapes, in Japan and abroad, in order to protect environmental beauty and to promote town development with beautiful landscapes. For details, refer to the JAL Foundation Website: www.jal-foundation.or.jp

#### Meeting of the Marunouchi Citizens’ Environmental Forum during the Past Five Years

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>25th Jul.</td>
<td>Ms. Reiko Yukawa, music critic</td>
<td>Emergence of the 21st century: what is music?</td>
</tr>
<tr>
<td>26th Oct.</td>
<td>Prof. Naoki Maruyama, Tokyo University of Agriculture and Technology</td>
<td>Revival of wolves - will the forest return?</td>
</tr>
<tr>
<td>27th Mar.</td>
<td>Mr. Koji Suzuki, writer</td>
<td>Let’s sing a new song for our children</td>
</tr>
<tr>
<td>28th Jul.</td>
<td>Mr. Koji Suzuki, writer</td>
<td>The landscape is being eaten up</td>
</tr>
<tr>
<td>29th Nov.</td>
<td>Prof. Toshibumi Sakata, Tokai University</td>
<td>The earth’s environment was the universe</td>
</tr>
<tr>
<td>30th Mar.</td>
<td>Prof. Naoki Maruyama, Tokyo University of Agriculture and Technology</td>
<td>The earth’s environment was the universe</td>
</tr>
<tr>
<td>31st Jul.</td>
<td>Mr. Eisuke Ishikawa, writer</td>
<td>A new age is coming</td>
</tr>
<tr>
<td>32nd Nov.</td>
<td>Ms. Tokiko Kato, singer</td>
<td>A new age is coming</td>
</tr>
<tr>
<td>33rd Mar.</td>
<td>Mr. Toyohiro Akiyama, astronaut and farmer</td>
<td>A new age is coming</td>
</tr>
<tr>
<td>34th Aug.</td>
<td>Mr. Shinsuke Sugiyama, Director of Business</td>
<td>A new age is coming</td>
</tr>
<tr>
<td>35th Nov.</td>
<td>Mr. Tadao Ando, architect</td>
<td>A new age is coming</td>
</tr>
<tr>
<td>36th Mar.</td>
<td>Mr. Tetsuya Makabe, Matsushita Electronic Industrial Co., Ltd.</td>
<td>The global environment has reached this point</td>
</tr>
<tr>
<td>37th Aug.</td>
<td>Mr. Koji Suzuki, writer</td>
<td>Think globally, act locally</td>
</tr>
</tbody>
</table>

#### Friendship Lectures

Global lecture held in Tokyo
31st July 2003
Mr. Tetsuya Makabe, Matsushita Electronic Industrial Co., Ltd.
Theme: The global environment has reached this point

Global lecture held in Okinawa
14th February 2004
Mr. Koji Suzuki, writer
Theme: Let’s sing a new song for our children
In order to clarify the mechanisms of global warming, the concentration of greenhouse gases (including CO₂, methane [CH₄], and CO) in the troposphere, is regularly observed using specially devised automatic air samplers installed on JAL Boeing 747s flying on regular routes between Australia and Japan, which measure the regional distribution and periodical changes in concentration.

Route: Brisbane to Narita
Altitude: 9,000-13,000 meters

The observations revealed a great deal of important information, including the following:
- CO₂ generated at the surface is carried into the troposphere by air convection.
- CO₂ generated mainly in the mid-latitudes in the northern hemisphere moves to the southern hemisphere.
- In addition, CO reacts with other substances in the atmosphere, leading to increased ozone concentration in the atmosphere.

Dr. Hidekazu Matsueda of the Meteorological Agency Research Institute, the geochemical analyst in charge of this project, was honored with the 1999 Horiuchi Award from the Meteorological Society of Japan for his pioneering work in clarifying CO₂ distribution in the atmosphere. In 2000, Japan Airlines (the current Japan Airlines International) and JAL Foundation jointly received an award from the Minister of Transport (current MLIT) for the project.

The results of the project are drawing attention worldwide, as they contribute to better understanding of the mechanisms of global warming.

For more details, refer to the JAL Foundation Website.
http://www.jal-foundation.or.jp

At all latitudes, the concentration of CO₂ is constantly and steadily increasing.

The reason why seasonal variations during single years exist is that CO₂ in the atmosphere is absorbed in the summer as a result of photosynthesis by plants on the surface, while plants wither and rot in the winter, discharging CO₂.

The reason why seasonal variation is more conspicuous in the northern hemisphere is the higher percentage of land area than in the southern hemisphere.
**New Tropospheric Observation Project**

Both aircraft used for the observations are scheduled for retirement around 2006. Although the observations will continue using new airplanes, a decision was made to utilize this opportunity to start a new Tropospheric Observation Project, involving the expansion of the observation area and the size of the collected data, rather than to simply continue past observations. Under the new observation project, automatic equipment to continuously observe CO₂ will be developed, and the sampling equipment called "flask sampling equipment," which is currently used for atmospheric observations, will be updated. This new observation project aims to create a world standard for methods to monitor greenhouse gases using civil aircraft. Therefore, it is a large project going far beyond the existing framework, and a decision was made to carry it out as a cooperative project between industry and academia, with the understanding of various related ministries and agencies.

The development of the measuring equipment and the modifications to the aircraft used for the project will be conducted with Special Coordination Funds for Promoting Science and Technology extended by the Ministry of Education, Culture, Sports, Science, and Technology. There is a need for an interdisciplinary research structure to carry out the development work. With JAL Foundation as the core agency, the project has been joined by Tohoku University, National Institute for Environmental Studies, Japan Aerospace Exploration Agency, Meteorological Research Institute, and JAMCO from the JAL Group. Under the plan, the development work will be finished by the end of FY2006. The automatic equipment to continuously observe CO₂ will be mounted on five airplanes, and the flask sampling equipment on two of the five, at the beginning of 2006. The automatic equipment to continuously observe CO₂ will also be mounted on an aircraft of the Japan Aerospace Exploration Agency.

**Comparison of the New and Old Measuring System**

<table>
<thead>
<tr>
<th>Item</th>
<th>Current Tropospheric Observation</th>
<th>New Tropospheric Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization structure</td>
<td>Japan Airline Corporation, Meteorological Research Institute, Ministry of Land, Infrastructure, and Transport</td>
<td>Tohoku University, National Institute for Environmental Studies, Japan Aerospace Exploration Agency (JAXA), Ministry of Education, Culture, Sports, Science and Technology</td>
</tr>
<tr>
<td>Number of airplanes</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Sampling method</td>
<td>Flask sampling (5 planes + 1 aircraft)</td>
<td>Flask sampling (5 aircraft) + Automatic equipment to continuously observe CO₂ (5 aircraft + 1 JAXA airplane)</td>
</tr>
</tbody>
</table>

**Cooperation with the Tropospheric Observation Project of Tohoku University**

Since 1979, Japan Airlines Domestic has been cooperating with Tohoku University in its medium and upper atmospheric sampling, using aircraft on scheduled flights between Sendai and Fukuoka. In FY2003, 12 samplings were conducted at a pace of one a month. For details of the atmospheric observation by Tohoku University, refer to the following Website: [http://caco-a.geophys.tohoku.ac.jp/bujohan/index.html](http://caco-a.geophys.tohoku.ac.jp/bujohan/index.html)

Forests are believed to have the function of absorbing carbon dioxide and thus breaking global warming. However, frequent large-scale fires in Siberia in recent years have become a cause of concern. Tohoku University, for the provision of forest fire information from scheduled flights over Siberia, JAL decided to cooperate with this project, placing the Flight Operations Division at the center of this effort for the prevention of global warming. During the intensive summer observation period between May and July 2003, 101 reports were made. This cooperation is continuing in FY2004.

**Siberian Forest Fire Reporting**

During the intensive summer observation period between May and July 2003, 101 reports were made. This cooperation is continuing in FY2004.

**Other Activities**

Annual donations are given to the following environmental organizations:
- Wild Bird Society of Japan
- Japan National Trust
- Japan Society of Aerospace and Environmental Medicine

In FY2003-FY2004, donations were given to the 2005 World Exposition, Aichi, Japan and as the official airlines of the Expo, we are participating by painting the mascot character on the aircraft and through other activities. We also provide support for the Grand Prize for the Global Environment Award sponsored by Nihon Kogyo Shimbun.
# JAL Group Profile

## 1. Holding Company
- **A. Registered name:** Japan Airlines Corporation (Changed from Japan Airlines System Corporation as of June 26, 2004)
- **B. Head office:** 4-11, Higashi-shinagawa 2-chome, Shinagawa-ku, Tokyo, Japan
- **C. Date of establishment:** October 2, 2002
- **D. President:** Toshiyuki Shimachi
- **E. Paid-in capital:** 100 billion yen
- **F. Number of stockholders:** 278,296 (as of March 31, 2004)
- **G. Major scope of business:** As the holding company, control and administration of the business activities of affiliated companies engaged in air transport and related businesses
- **H. Website URL:** www.jal.co.jp/en

## 2. JAL Group (as of March 31, 2004)

### A. Company structure: Japan Airlines Corporation, 160 consolidated subsidiaries, and 24 equity holding companies (Major group companies are listed in the chart below)

Among the above consolidated subsidiaries, the main business companies, Japan Airlines Co., Ltd. (JAL) and Japan Air System Co., Ltd. (JAS), changed their names to Japan Airline International Co., Ltd. (JALI) and Japan Airlines Domestic Co., Ltd. (JALJ), respectively in April 2004.

### B. Employees: 54,053 (excluding 24 equity holding companies and employees on loan to outside companies, etc.)

- **C. Sales:** 1,931,742 million yen

### Number of JAL Group Employees

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Domestic</th>
<th>Other group companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>15,266</td>
<td>12,339</td>
<td>2,927</td>
</tr>
<tr>
<td>2002</td>
<td>15,752</td>
<td>13,055</td>
<td>2,697</td>
</tr>
<tr>
<td>2003</td>
<td>16,089</td>
<td>13,726</td>
<td>2,363</td>
</tr>
</tbody>
</table>

### Sales of the JAL Group

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Domestic</th>
<th>Other group companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>10,000</td>
<td>9,000</td>
<td>1,000</td>
</tr>
<tr>
<td>2002</td>
<td>20,000</td>
<td>18,000</td>
<td>2,000</td>
</tr>
<tr>
<td>2003</td>
<td>25,000</td>
<td>22,000</td>
<td>3,000</td>
</tr>
</tbody>
</table>


### A. Passengers

<table>
<thead>
<tr>
<th>Year</th>
<th>International</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>10,000 people</td>
<td>10,000</td>
</tr>
<tr>
<td>2002</td>
<td>11,053</td>
<td>10,000</td>
</tr>
<tr>
<td>2003</td>
<td>10,297</td>
<td>10,000</td>
</tr>
</tbody>
</table>

### B. Revenue passenger kilometers (RPK)

<table>
<thead>
<tr>
<th>Year</th>
<th>International</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>146,752</td>
<td>12,329</td>
</tr>
<tr>
<td>2002</td>
<td>151,319</td>
<td>12,329</td>
</tr>
<tr>
<td>2003</td>
<td>166,303</td>
<td>12,329</td>
</tr>
</tbody>
</table>

### C. Cargo traffic: Revenue ton kilometers (RTK)

<table>
<thead>
<tr>
<th>Year</th>
<th>International</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>4,859</td>
<td>1,000</td>
</tr>
<tr>
<td>2002</td>
<td>4,362</td>
<td>1,000</td>
</tr>
<tr>
<td>2003</td>
<td>4,652</td>
<td>1,000</td>
</tr>
</tbody>
</table>

### D. Available seat kilometers (ASK)

<table>
<thead>
<tr>
<th>Year</th>
<th>International</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>245,730</td>
<td>19,317</td>
</tr>
<tr>
<td>2002</td>
<td>254,851</td>
<td>20,835</td>
</tr>
<tr>
<td>2003</td>
<td>269,671</td>
<td>21,875</td>
</tr>
</tbody>
</table>

## 4. Note: There was an increase of approx. 3,000 employees in FY2002 due to a review of group company definitions.

## JAL Group Profile

### The 13 Major Companies of the JAL Group

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Abbrev.</th>
<th>Major Scope of Business</th>
<th>Website URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan Airlines International Co., Ltd.</td>
<td>JALI</td>
<td>Air transport</td>
<td><a href="http://www.jal-i.co.jp">www.jal-i.co.jp</a></td>
</tr>
<tr>
<td>Japan Airlines Domestic Co., Ltd.</td>
<td>JALJ</td>
<td>Air transport</td>
<td><a href="http://www.jal-j.co.jp">www.jal-j.co.jp</a></td>
</tr>
<tr>
<td>Japan Air System Co., Ltd.</td>
<td>JAS</td>
<td>Air transport</td>
<td><a href="http://www.japan-air.co.jp">www.japan-air.co.jp</a></td>
</tr>
<tr>
<td>Japan Trans Ocean Air Co., Ltd.</td>
<td>JTA</td>
<td>Air transport</td>
<td><a href="http://www.japan-air.co.jp">www.japan-air.co.jp</a></td>
</tr>
<tr>
<td>JAC Air Co., Ltd.</td>
<td>JAC</td>
<td>Air transport</td>
<td><a href="http://www.jac-air.com">www.jac-air.com</a></td>
</tr>
<tr>
<td>Japan Air Commuter Co., Ltd.</td>
<td>JAC</td>
<td>Air transport</td>
<td><a href="http://www.jas-air.co.jp">www.jas-air.co.jp</a></td>
</tr>
<tr>
<td>JAL Hotels Co. Ltd.</td>
<td>JALH</td>
<td>Hotel management &amp; operation</td>
<td><a href="http://www.nikkohotels.com/index.html">www.nikkohotels.com/index.html</a></td>
</tr>
<tr>
<td>JALUX Inc.</td>
<td>JALUX</td>
<td>Wholesale, retail sale, &amp; non-life insurance agency</td>
<td><a href="http://www.jalux.com/en/profile">www.jalux.com/en/profile</a></td>
</tr>
</tbody>
</table>

### Other Group Companies or Entities Introduced in this Report

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Abbrev.</th>
<th>Major Scope of Business</th>
<th>Website URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAL Hotels Co. Ltd.</td>
<td>JALH</td>
<td>Hotel management &amp; operation</td>
<td><a href="http://www.nikkohotels.com/index.html">www.nikkohotels.com/index.html</a></td>
</tr>
<tr>
<td>JALUX Inc.</td>
<td>JALUX</td>
<td>Wholesale, retail sale, &amp; non-life insurance agency</td>
<td><a href="http://www.jalux.com/en/profile">www.jalux.com/en/profile</a></td>
</tr>
</tbody>
</table>

### Note: Companies marked with * are equity holding JAL Group companies.
JAL Group Profile

4. JAL Group Network (online cities)

Asahikawa
Tokachi-Obihiro
Kushiro
Memanbetsu
Europe/Middle East
China/Korea/Asia
North America/Latin America

*Madrid
*Barcelona
*Stockholm

Frankfurt
Zurich
London
Rome
Milan

Taipei
Tianjin
Xian
Hangzhou
Kunming
Xiamen

Tokyo
*Chiang Mai
*Chiang Rai
*Hat Yai

Izumo
Oki
Kounotori-Tajima
Nanki-Shirahama
Kansai
Osaka (Itami)

Kagoshima
Miyazaki
Kumamoto
Nagasaki
Oita
Fukuoka

JAL Group Profile

Name Aircraft Type Number of Seats Number of Aircraft Addition and Reduction in FY2003
B747F Boeing 747-200F (Freighter) – 10
B747SR Boeing 747SR (Short Range) 533•563 3
B747-400 Boeing 747-400 (Long Range) 303~449 34
B767-300 Boeing 767-300 232~270 30 +5 aircraft
B777-300 Boeing 777-300 470 7 +2 aircraft

What is the main focus of the JALKIDS Ecology Project and how does it engage children in environmental activities?

The JALKIDS Ecology Project started in 1998 as an organized event where children from big cities were given a feel of the importance of nature by “experience learning” through outdoor activities such as making recycled paper and hunting for hermit crabs.

6. Examples of Products Developed by the JAL Group

**Sky Sleeper Solo**
The New Sky Sleeper Solo, which is used for First Class seats on international flights to destinations such as London, Paris, New York, and Chicago, has received enthusiastic reviews from passengers since its introduction in 2002. Thanks to its stylish form and various functions that ensure a peaceful sleep to passengers, the bed can be retracted at an angle of 130 degrees for sleeping. The space surrounded by the “shell” with its stylish form and many curved lines and surfaces, secures a private space for the passenger during sleep, and also to its excellent design creates a rubbing-in-flight space filled with a futuristic atmosphere.

The Shell Flat Seat, for Executive Class on flights to destinations such as London, Paris, New York, and Chicago, has been well received to passengers thanks to its beautiful design with curved lines and various functions that provide comfortable seating even during long flights.

The New Sky Sleeper Solo received the Good Design Award for FY2003, winning recognition for its excellent design and functions.

**Class J**
Class J was introduced on domestic flights in June 2004. The Class J seat is a body-friendly seat that puts less strain on the back, thanks to the adoption of a new reclining mechanism based on advanced ergonomics. The Class J has been introduced only on domestic flights, which are shorter than international flights. Although it is smaller than the Super Seat and Rainbow Seat introduced before, this is in order to allow more people to use it and in this sense it can be called a design that takes the global environment into consideration. The Class J seat received the Good Design Award for FY2003.

**Ticket-less Service**
For domestic flights, we offer a convenient and economic ticket-less service, which allows passengers to make reservations by phone and over the Internet, make the payment using a credit card or at a convenience store, etc., and receive the ticket on the day of the flight prior to boarding, at the ticketing counter or from an automatic check-in/ticketing machine at the airport.

**JALKIDS Club**
JALKIDS Club is an organization that anyone can participate in with a focus on environmental activities and cultural activities, encouraging children to think and act globally.

We have different tours and events for elementary and junior high school students and their guardians, and welcome you to participate. Volunteers from the JAL Group help with the activities.

The JAL Group started the 2003 JAL Kids Environment Project as a project aimed at promoting harmony between children and nature. At the JAL Group Environment Project YORONTO held at the Yoronto Island, Kagoshima Prefecture in July 2003, children from big cities were given a feel of the importance of nature by “experience learning” through outdoor activities such as making recycled paper and hunting for hermit crabs.

**Evaluation**
The JAL Group started the 2003 JAL Kids Environment Project as a project aimed at promoting harmony between children and nature. At the JAL Group Environment Project YORONTO held at the Yoronto Island, Kagoshima Prefecture in July 2003, children from big cities were given a feel of the importance of nature by “experience learning” through outdoor activities such as making recycled paper and hunting for hermit crabs.

**Ecology Project YORONTO**

**International Flights**

**Sky Sleeper Solo**

**Class J**

**Ticket-less Service**

**JALKIDS Club**

**Evaluation**

**Ecology Project YORONTO**

**International Flights**

**Sky Sleeper Solo**

**Class J**

**Ticket-less Service**

**JALKIDS Club**

**Evaluation**

**Ecology Project YORONTO**

**International Flights**

**Sky Sleeper Solo**

**Class J**

**Ticket-less Service**

**JALKIDS Club**

**Evaluation**

**Ecology Project YORONTO**
Ground Power Unit (Ground equipment or vehicle with alternator to supply electricity to aircraft on the ground)

Available weight of each route segment times the distance of the route in kilometers.

Available ton kilometers (Refer to Glossary)

Classification of visibility at aircraft landing set by ICAO in order to develop an all-weather landing system to secure safe and sure aircraft landing under adverse weather conditions. There are three categories, i.e., 1 through III, of which III is for the worst weather conditions with runway visibility less than 1,200 feet (approx. 366 m).

A general rule used to select equipment such as cargo nets, step chairs, and wooden pallets (stuffed skids), which are used when cargo and baggage are loaded onto an aircraft, to prevent baggage from shifting or being broken during flight.

A new navigation system developed to cope with increased air traffic, which uses various signals from airborne navigational components or ground navigational assistance facilities to calculate the current aircraft position and set a new desired course. The system enables the pilot to set any course in a particular area, thereby increasing the allowable amount of traffic in the area.

The number of Base provided for each route segment times the distance of the route in kilometers.

Weather conditions with runway visibility less than 1,200 feet (approx. 366 m).

A standard for environmental management systems established by the International Standardisation Organization defining the way companies tackle environmental issues.

Air traffic control system using artificial satellites and navigational communications, navigation and surveillance worldwide.

Observing the law, accepting and following demands and orders. The JAL Group uses this term to also mean “following social rules, regulations, morals, and customs.”

Aluminum box used for loading and unloading aircraft cargo and baggage.

Using the “C” (communication) part of CNS/ATM, the control personnel and the pilot exchange and communicate data (not verbally). Much of the information exchanged by the control personnel and the pilot during flights is formulaic, and because CPDLC excels in sensitivity compared with verbal information exchanged by the control personnel and the pilot, exchange and communicate data (not verbally).

A new navigation system developed to cope with increased air traffic, which uses various signals from airborne navigational components or ground navigational assistance facilities to calculate the current aircraft position and set a new desired course. The system enables the pilot to set any course in a particular area, thereby increasing the allowable amount of traffic in the area.

A flight plan which is made based on an airport closer to the departing airport than the end destination. At a certain point on the route, the remaining fuel quantity is reviewed and if the quantity is found to be insufficient to continue on to the real destination, the flight is changed to the original destination. When flight plans are made, the aircraft is loaded not only with enough fuel to fly to the original destination, but also with extra fuel to compensate for errors resulting from the wind at high altitudes. This extra fuel is not usually consumed, but sometimes amounts to 20 tons in a long-range flight, resulting in restrictions on the amount of fuel in passenger and cargo.

The distance traveled by an airplane between two points along a plane that intersects the center of the earth, that is, the distance between two points on a great circle.

Putting priority an soliciting and purchasing environmentally-friendly goods and services supplied on the market.

An aluminum square plate with edges for cargo nets on four sides, used for handling and unloading cargo-carrying aircraft.

The performance of the completed aircraft might be lower than expected, the carrier’s request concerning the aircraft design might be refused in the future.

An aluminum square plate with edges for cargo nets on four sides, used for handling and unloading cargo-carrying aircraft.

The number of passengers, cargo, baggage and mail times the distance of the route in kilometers.

The weight of revenue passengers, cargo, baggage and mail times the distance of the route in kilometers.

The weight of revenue passengers, cargo, baggage and mail times the distance of the route in kilometers.

A compound of fluorine and carbon, which also includes chlorofluorocarbon (compounds of chlorine, fluoride, and carbon), and which is widely known in Japan as “Freon.” “Freon” is a brand name of Dupont USA. They are colorless and colorless gases or liquids with low boiling points. Non-toxic and non-flammable, stable thermally and chemically. They are good refrigerants for refrigerators and air conditioners, and also as cleaners for semi-conductors and precision instruments. Used in spray gun to produce smoke from.
Year | Global | Environmental Chronology
--- | --- | ---
1973 | Global | Enactment of Pollution related Health Damage Regulation
1983 | Global | Signing of UN Convention on the Law of the Sea
1990 | Global | Adoption of International Convention to Combat Pollution by Dumping of Wastes and other Matter into the Mediterranean Sea (London Convention)
1991 | Global | Global Environment Charter by the Federation of Economic Organizations (Keidanren)
1993 | Global | Launch of activities for ISO 14001 accreditation at JAL
1994 | Global | Establishment of Basic Environmental Plan by the Ministry of the Environment
1996 | Global | Request on Voluntary Action Plan on Environment by MITI
1997 | Global | Initiation of PRTR Pilot Program by Environmental Agency
1998 | Global | Reexamination of Voluntary Action Plan on Environment by MITI
1999 | Global | Acquisition of ISO 14001 by the Dock Maintenance Department
2000 | Global | Acquisition of ISO 14001 by the Repair and Overhaul Business Department
2001 | Global | Acquisition by Hotel Nikko Tokyo of ISO 14001 Certificate
2002 | Global | Full enforcement of Land Use Planning to Arrest Global Warming
2003 | Global | Acquisition of ISO14001 Certification at Component Aerodrome Department, JCAB
2004 | Global | Establishment of JAL Group Environmental Risk Management System
2005 | Global | Development of a uniform recycling system based on PRTR law
2006 | Global | Acquisition of ISO 14001 by the General Affairs Mail Narita Office
2007 | Global | Full-scale introduction of environmental audits
2008 | Global | Partial amendment of Waste Management and Public Cleansing Law
2009 | Global | Announce of Greenhouse Gas Reduction Measures in Japan
2010 | Global | Acquisition of ISO14001 by Maintenance Business Department
2011 | Global | Expansion of ISO 14001 Certification to the entire Non-manufacturing Category (transportation/ warehouse)
2012 | Global | First publication of environmental education magazine, "We Are Residents of the Earth"
2013 | Global | Establishment of Joint Environmental Action Plan on Marine Pollution, the Ministry of the Environment
2014 | Global | Acquisition of ISO 14001 by the Research and Development Business Division
2015 | Global | Acquisition of ISO 14001 by the Environmental Public Relations Department
2016 | Global | Establishment of JAL Group Basic Environmental Conservation Activities (JAL)
2017 | Global | Acquisition of ISO 14001 by the Bus Maintenance Department
2018 | Global | Acquisition of ISO 14001 by the Engineering Business Department
2019 | Global | Acquisition of ISO 14001 by the Repair, Overhauling and Recycling Business Department
2020 | Global | Acquisition of ISO 14001 by the General Affairs Business Department
2021 | Global | Acquisition of ISO 14001 by the Design Business Department
2022 | Global | Acquisition of ISO 14001 by the Safety and Environmental Business Division
2023 | Global | Acquisition of ISO 14001 by the Support Business Division
2024 | Global | Acquisition of ISO 14001 by the Consumer Business Division
2025 | Global | Acquisition of ISO 14001 by the Environmental Business Division
2026 | Global | Acquisition of ISO 14001 by the Rider Business Department
2027 | Global | Acquisition of ISO 14001 by the Maintenance Business Division
2028 | Global | Acquisition of ISO 14001 by the Repair and Overhaul Business Department
2029 | Global | Acquisition of ISO 14001 by the Recycling Business Department
2030 | Global | Acquisition of ISO 14001 by the Sales Business Department

Environmental Chronology
The meaning of Corporate Social Responsibility (CSR) is changing enormously with the times. In recent years, a major increase in the commitment to the environment has emerged concerned with securing the earth’s sustainability together with the long-term stability of the corporation.

In order to carry out our responsibilities to all stakeholders, the JAL Group must be keenly aware of its obligations as a global corporation. It is, therefore, JAL Group’s intention to conduct its activities in the appropriate manner as a global corporate citizen.

Conducting CSR activities of value to society will be the best way in which to raise our levels of management to the highest recognized worldwide, and to strengthen our competitiveness as a corporation.

Corporate Policy of the JAL Group

We, the Japan Airlines Group, as an overall air transport enterprise, will act as a bridge to bring people, their cultures and their hearts closer together and thus contribute to world peace and prosperity.

(1) We will prioritize safety and quality.
(2) We will think and act from the standpoint of the customer.
(3) We will strive to maximize corporate value.
(4) We will fulfill our responsibility as a corporate citizen.
(5) We will appreciate hard work and take on a positive attitude.

Toward the Future and CSR

CSR Activities

(1) CSR Activities of the JAL Group

Our vision is “to become one of the world’s top airlines in terms of service quality and business volume” and to strive towards improving corporate value as outlined in the JAL Group Corporate Policy’s Medium-term Business Plan which was created when the new JAL Group was established in October 2002. Based on our corporate policy, inclusion of CSR in our everyday business activities will ensure that JAL Group achieves sustainable group growth in a way that not only secures economic trust but also environmental trust in society.

The CSR Committee was established in FY2004, under the chairmanship of the JAL Group CEO, to carry out unified group CSR activities. Creation of a CSR report, to be published in FY2005, will enable us to relay our efforts to the general public and help to develop a greater understanding of our CSR activities.

(2) Fulfilling Our Responsibility to All Stakeholders

Up to now, the JAL Group has made efforts in various areas including activities on global environmental issues, a thorough commitment to compliance, IR activities that focus on our shareholders, social activities that take advantage of the special characteristics of the air transportation business, and the introduction of various systems for employees in response to the diversification of lifestyles. We are working to further strengthen our relationship of mutual trust with all our stakeholders through the steady efforts of each employee of the JAL Group within our daily work as an air transportation company.
2 Efforts on Compliance

The JAL Group Code of Conduct: “Commitment to Society”

On its establishment in October 2002, the new JAL Group established the JAL Group Code of Conduct, “Commitment to Society,” as a code to observe in putting the corporate principles into practice, and as a standard of conduct for each group company and group employee.

As a first step to carrying out this resolve, “Commitment to Society” was formulated as a way to make a sound resolution as the new JAL Group, to conduct business activities in a way that will be highly appreciated and trusted both socially and economically as a corporate citizen, based on fair and transparent compliance and public responsibility. It consists of the following five items.

1. Assurance of safety in flight operations
2. Creation of a safe and comfortable environment on board
3. Compliance with laws and regulations
4. Sound business activities
5. Responsible management of confidential information

After establishing this Code of Conduct, we also published an explanatory brochure, and distributed it to all (approximately 50,000) group employees in an effort to achieve penetration of the principles.

Compliance Promotion Structure

In October 2002, with the goal of fulfilling corporate social responsibility through the establishment of transparent and stable group management, the JAL Group established a Corporate Compliance Committee and Business Risk Management Committee within the holding company and a Business Activities Reappraisal and Risk Management Committee in Japan Airlines International and Japan Airlines Domestic, with the goal of promoting information exchanges on compliance, raising awareness, and establishing and strengthening the compliance promotion structure. Approximately 100 companies from the group both inside and outside Japan are involved. The main activities are as follows:

1. Publication of magazine Mamorukun (bimonthly)
2. Overall support for measures to establish and strengthen the structure of group companies
3. Implementation of education or provision of educational materials to group companies
4. Communication of Messages

We have conducted self-checks using a check sheet and a survey on awareness about compliance for all group employees. In FY2003, as an example, we sent out ten issues of “Compliance Talk” between October and February, which took the form of a dialogue between two persons dealing with familiar topics at work.

5. Sections Providing Consultation

We have set up an information network based on voluntary participation among group companies, including the holding company, Japan Airlines International and Japan Airlines Domestic, with the goal of promoting information exchanges on compliance, raising awareness, and establishing and strengthening the compliance promotion structure. Approximately 100 companies from the group both inside and outside Japan are involved. The main activities are as follows:

1. Assurance of safety in flight operations
2. Creation of a safe and comfortable environment on board
3. Compliance with laws and regulations
4. Sound business activities
5. Responsible management of confidential information

We have carried out this activity approximately once a year since FY2001 as a group program with the purpose of promoting compliance activities and ensuring the thorough acceptance of the JAL Group Code of Conduct. We have conducted self-checks using a check sheet and a survey on awareness about compliance for all group employees.

4. Communication of Messages (to Group Employees)

The JAL Group has been providing information and messages on compliance to all group employees, utilizing various opportunities. In FY2003, as an example, we sent out ten issues of “Compliance Talk” between October and February, which took the form of a dialogue between two persons dealing with familiar topics at work.

5. Sections Providing Consultation

We have set up sections to provide consultation on compliance in the holding company and Japan Airlines International and Japan Airlines Domestic, and have responded to various requests from group employees. We also have established a separate Legal Consultation Center as a contact for the whole group.

Examples of Activities to Promote Compliance

1. Various Educational Activities

We carry out training using various opportunities, such as newly promoted manager training, training prior to the dispatch of employees on loan, training prior to overseas assignments, and leadership training for new employees.

2. Compliance Network Activities

We have set up an information network based on voluntary participation among group companies, including the holding company, Japan Airlines International and Japan Airlines Domestic, with the goal of promoting information exchanges on compliance, raising awareness, and establishing and strengthening the compliance promotion structure. Approximately 100 companies from the group both inside and outside Japan are involved. The main activities are as follows:

1. Publication of magazine Mamorukun (bimonthly)
2. Overall support for measures to establish and strengthen the structure of group companies
3. Response to questions and consultations from group companies
4. Implementation of education or provision of educational materials to group companies
5. Compliance Month

We have carried out this activity approximately once a year since FY2001 as a group program with the purpose of promoting compliance activities and ensuring the thorough acceptance of the JAL Group Code of Conduct. We have conducted self-checks using a check sheet and a survey on awareness about compliance for all group employees.

6. Communication of Messages (to Group Employees)

The JAL Group has been providing information and messages on compliance to all group employees, utilizing various opportunities. In FY2003, as an example, we sent out ten issues of “Compliance Talk” between October and February, which took the form of a dialogue between two persons dealing with familiar topics at work.

5. Sections Providing Consultation

We have set up sections to provide consultation on compliance in the holding company and Japan Airlines International and Japan Airlines Domestic, and have responded to various requests from group employees. We also have established a separate Legal Consultation Center as a contact for the whole group.

Examples of Activities to Promote Compliance

1. Various Educational Activities

We carry out training using various opportunities, such as newly promoted manager training, training prior to the dispatch of employees on loan, training prior to overseas assignments, and leadership training for new employees.

2. Compliance Network Activities

We have set up an information network based on voluntary participation among group companies, including the holding company, Japan Airlines International and Japan Airlines Domestic, with the goal of promoting information exchanges on compliance, raising awareness, and establishing and strengthening the compliance promotion structure. Approximately 100 companies from the group both inside and outside Japan are involved. The main activities are as follows:

1. Publication of magazine Mamorukun (bimonthly)
2. Overall support for measures to establish and strengthen the structure of group companies
3. Response to questions and consultations from group companies
4. Implementation of education or provision of educational materials to group companies
5. Compliance Month

We have carried out this activity approximately once a year since FY2001 as a group program with the purpose of promoting compliance activities and ensuring the thorough acceptance of the JAL Group Code of Conduct. We have conducted self-checks using a check sheet and a survey on awareness about compliance for all group employees.

6. Communication of Messages (to Group Employees)

The JAL Group has been providing information and messages on compliance to all group employees, utilizing various opportunities. In FY2003, as an example, we sent out ten issues of “Compliance Talk” between October and February, which took the form of a dialogue between two persons dealing with familiar topics at work.

5. Sections Providing Consultation

We have set up sections to provide consultation on compliance in the holding company and Japan Airlines International and Japan Airlines Domestic, and have responded to various requests from group employees. We also have established a separate Legal Consultation Center as a contact for the whole group.

Examples of Activities to Promote Compliance

1. Various Educational Activities

We carry out training using various opportunities, such as newly promoted manager training, training prior to the dispatch of employees on loan, training prior to overseas assignments, and leadership training for new employees.

2. Compliance Network Activities

We have set up an information network based on voluntary participation among group companies, including the holding company, Japan Airlines International and Japan Airlines Domestic, with the goal of promoting information exchanges on compliance, raising awareness, and establishing and strengthening the compliance promotion structure. Approximately 100 companies from the group both inside and outside Japan are involved. The main activities are as follows:

1. Publication of magazine Mamorukun (bimonthly)
2. Overall support for measures to establish and strengthen the structure of group companies
3. Response to questions and consultations from group companies
4. Implementation of education or provision of educational materials to group companies
5. Compliance Month

We have carried out this activity approximately once a year since FY2001 as a group program with the purpose of promoting compliance activities and ensuring the thorough acceptance of the JAL Group Code of Conduct. We have conducted self-checks using a check sheet and a survey on awareness about compliance for all group employees.

6. Communication of Messages (to Group Employees)

The JAL Group has been providing information and messages on compliance to all group employees, utilizing various opportunities. In FY2003, as an example, we sent out ten issues of “Compliance Talk” between October and February, which took the form of a dialogue between two persons dealing with familiar topics at work.

5. Sections Providing Consultation

We have set up sections to provide consultation on compliance in the holding company and Japan Airlines International and Japan Airlines Domestic, and have responded to various requests from group employees. We also have established a separate Legal Consultation Center as a contact for the whole group.
JAL Group Social Activities

Cooperation with 2005 Special Olympics World Winter Games

The Special Olympics, an athletic meet for people with intellectual disabilities, is scheduled to be held in Nagano, Japan in February 2005. JAL is providing cooperation to the organizers of the event in various ways, such as sending personnel to the secretariat.

Used Telephone Card Collection Campaign

In May 2003, we began to ask people to collect used telephone cards and other prepaid cards as well as postcards that had to be discarded due to mistakes in writing. In response to our call, around 20,000 used cards have been sent from companies in the JAL Group. The cards were donated to the JAL Foundation as well as the JOKITF (Japanese Organization for International Cooperation in Family Planning).

Plant Visits

We invite customers and the general public to visit the aircraft maintenance plants in Haneda to give them a greater awareness of the work of JAL. These plant visits are particularly popular with high school and junior high school students. After a general explanation of the aircraft and watching a video, visitors move on to a hanger and observe aircraft maintenance work. The number of the visitors in FY2003 was approximately 46,300. For the social activities of JAL, see the following Website: www.jal.co.jp/society/ (in Japanese)

Collaboration Program with the JAL Foundation

JAL is also cooperating with JAL Foundation activities. For details, refer to the JAL Foundation Website: www.jalfoundation.or.jp/gyosei.html

Scholarship Program

This program was launched by JAL in 1975 to bring university students from the Asia-Oceania region to Japan under the theme of “Friendship between Asia and Japan.” The JAL Foundation has been operating the program since 1990. This program has produced 1,172 graduates, many of whom now lead various fields in their mother countries and are active on the global arena. JAL has offered air tickets to these students.

World Children’s Hakusui Contest

This is a program aimed at promoting the inclusion of hakusui into primary and junior high schools curricula around the world in order to spread the joy of creating hakusui, leading to a deeper understanding of the Japanese culture from which this poetic art form originated and further of modern day Japan. The Hakusui Contest has been held every two years. In FY2003, we have been inviting children to enter the World Children’s Hakusui Contest since October. In June 2003, we published World Hakusui, a compilation of excellent works.

Fulbright Program

The JAL Foundation cooperates with the Fulbright Japan-US exchange program and is involved in its work. JAL offers air tickets to American Fulbright scholarship students coming to Japan.

Program for Understanding Japan (acceptance of students from Australia)

The JAL Foundation cooperates with Macquarie University, a national university in Australia, in its Program for Understanding Japan, and JAL provides air tickets to participants of the program.

With regard to topographic observations, see pages 35-37.

Corporate Philanthropy

JAL cooperates with various art exhibitions by transporting paintings and other items to be put on display. In FY2003, we worked with 49 art exhibitions. Utilizing our international network linking cities around the world, we have cooperated with the transportation of art work between various countries and Japan, and trips of exhibition staff, including curators. Through Tokyo Opinions, a stage arts support group, JAL has supported Art Sphere in Tennōzu, Tokyo. JAL is also a corporate member of the Mori Art Museum at Roppongi Hills, Tokyo and a supporting member of New National Theater Tokyo. Managing Foundation, and supports the operation of art museums and theaters.

Major Art Exhibitions Supported by JAL

Jean-Francois Millet Three Famous Picture Exhibition/Frida Kahlo and Her Age/Alexander the Great: Western Cultural Contacts from Greece to Japan/Sekukki Kamisaka Exhibition/Van Gogh and Flowers/Osaka University Special Exhibition/Renbrandt and the Rembrandt School/Tatsu-Takaya Exhibition/Diamond Exhibition/Yes, Ono Yukio Exhibition/Main Art Museum Invitational Exhibition Happiness/Monon and Ranier. Two Great Impressions/Trends/21st Century Museum Exhibition Japan 2004/Museum Summit Symposium

Music Program

We provide a program called “Obitaula” (Stage Sound), where first-class artists from both Japan and abroad perform in temples, the historic buildings of Kyoto and Nara.

Cultural Lectures

We hold lectures abroad, inviting writers and people of culture from Japan.

Main Social Activities of Employees of the JAL Group (Companys)

Fukuoka district

Tokiwa Park: Participation in clean-up activities. The group has been involved in social exhibitions in a sensational manner since 1994. The group saw the opening of the Fukuoka International Airport.

Osaka district

Osaka Clean-up Group: Charter Bus. Profile is organized in a regular event and a group of volunteers every year. A cleaning is held in the city, cleaning main roads and city parks.

Japan district

The “Ooki Group Charter Bus” On October 16, 2003, a cleaning bus was held in conjunction with the 16th anniversary of the Kansai Group. Approximately 85 people visited the north, the south and the east and cleaned areas of the city.

Shizuoka district

A cleaning is held every year in the city of Shizuoka. The group is composed of visitors from brother countries.

Tezuka, Tokyo

The “Tezuka Group Charter Bus.” On October 30, 2003, a cleaning bus was held in conjunction with the 1st anniversary of the Kansai Group. Approximately 85 people visited the north, the south and the west and cleaned various areas of the city.

Saitama district

Saitama Clean-up of Beach Area Employees of the Saitama branch office and local artists.

Hokkaido district

Hokkaido Clean-up of Beach Area Employees of the Hokkaido branch office organized a cleaning bus.

Love Wing (a volunteer group at Kansai International Airport)

“Tobubai Fukuoka” Love Wing cooperation to the organizations. Through Tokyo Opinions, a stage arts support group, JAL has supported Art Sphere in Tennōzu, Tokyo. JAL is also a corporate member of the Mori Art Museum at Roppongi Hills, Tokyo and a supporting member of New National Theater Tokyo. Managing Foundation, and supports the operation of art museums and theaters.

Japan district

Saitama Clean-up of Beach Area Employees of the Saitama branch office and local artists.

Hokkaido district

Hokkaido Clean-up of Beach Area Employees of the Hokkaido branch office organized a cleaning bus.

Support of Japanese speech disabled in public places

Some JAL overseas branch offices accept speech disabled people and conduct for deaf in places where conversations in public places are conducted.

Cultural Lectures

With such a program were held in Japan and abroad.

North American District of USA

Canada

North American District of USA

Mexico

European District of Netherlands

Spain

Germany

Panama

Asian District

Indonesia

Singapore
On the Publication of the Environmental Report 2004

The JAL Group has made active efforts to tackle global environmental issues under the Environmental Committee, established in 1996 in Japan Airlines (now Japan Airlines International) and in 1999 in Japan Air System (now Japan Airlines Domestic). With the total integration of management in April this year, the Environmental Committee has been reorganized into the newly established Environmental Subcommittees under the CSR Committee, with the view to strengthening and promoting the environmental activities of the JAL Group, centering around Japan Airlines International and Japan Airlines Domestic.

This report is the first issued under the “New JAL Group,” and contains a variety of information integrated from Japan Airlines International and Japan Airlines Domestic. In addition to dealing with topics found in previous reports, such as the reduction of CO2 emissions by aircraft, energy conservation, waste reduction, green purchasing, and environmental auditing, we have included further information under the heading of “Toward Future CSR Activities” on compliance, social activities, and other values. We hope that the report can provide a total picture of the many activities we have been engaged in as a group, both in name and substance.

With the announcement that Russia will sign on, the Kyoto Protocol is expected to go into effect soon, making greenhouse-gas reductions an ever more urgent issue. Most of the environmental load of the JAL Group comes from the consumption of aviation fuel, which is unavoidable in the air transport business. The transportation industry accounts for 21% of total greenhouse gas emissions in Japan, and aviation accounts for a mere 4% of the total of the transportation industry, we recognize the need to strengthen our efforts to steadily reduce our emissions through the upgrading of equipment and other efforts. Aiming for synergies with the global environment, we are determined to actively fulfill our responsibility as a corporation of the 21st century through various activities to protect the natural environment, taking into consideration the protection of biodiversity and the construction of a recycling-oriented society.

We hope that from reading this Environmental Report, you will gain a better understanding of our efforts in the environmental field, and that you will send us your frank opinions about our future activities.

Let us add that we are planning to publish our report as a CSR Activity Report next fiscal year. Thank you very much for your kind support for the JAL Group, which cherishes the one earth that we have been given.

November 2004

[Signature]

[Signature]

Comments Sent in Regarding the Environmental Report FY2003

We printed 5,000 copies of the JAL Environmental Report FY2003. We asked readers to respond to a questionnaire with their impressions and views after reading the report, and received quite a number of responses. Thank you very much. We will try to examine these views, and reflect them as much as possible in our daily work.

The following presents the result of our analysis of the questionnaires and some of the views expressed in them.

Results of the analysis of responses

<table>
<thead>
<tr>
<th>Question</th>
<th>Number of responses</th>
<th>Percentage of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>2,500</td>
<td>50%</td>
</tr>
<tr>
<td>Disagree</td>
<td>1,500</td>
<td>30%</td>
</tr>
<tr>
<td>Neutral</td>
<td>500</td>
<td>10%</td>
</tr>
</tbody>
</table>

Comments on JAL’s Environmental Efforts

I proved without saying that piffle from the cab should be separated by category, but would it be impossible to use “Eco Containers” (made of corn, potatoes, etc.) instead of plastic containers for food, etc.? I feel what is most regrettable is the aircraft themselves. While in the case of cars, development work is going on to create less polluting cars, I cannot understand why you could not make such demands toward Boeing and Douglas. If you cannot do it, there is no point in talking about green purchasing.

Don’t provide about 45% of primary energy and about 80% of transportation energy. Report cannot function without oil. It is necessary to start preparatory work now of the government and examination. As the may become a devastating problem for Japan and to some extent that need to be dealt with by the government, please pressure the government.

Comments on the Environmental Report FY2004

I have received this photograph in an envelope containing some questions and a note saying “I made it for my grandchildren by recycling a JAL towel.” Wouldn’t it be possible to use “Eco Containers” (made of corn, potatoes, etc.) instead of plastic containers for food, etc.? I feel what is most regrettable is the aircraft themselves. While in the case of cars, development work is going on to create less polluting cars, I cannot understand why you could not make such demands toward Boeing and Douglas. If you cannot do it, there is no point in talking about green purchasing.

On the report was not able to be able to learn about the environment with them. In order to build a serious business connecting factories spread over a wide area, it is not good enough to just compile knowledge. Since the report on the environment has come to influence the basis for management, it should contain fundamental data that can determine the direction of the management policy. Hope that JAL will publish a report from which we can feel the underlined reducing the environmental load in an active program that will determine the fate of the corporation.

Unless otherwise specified, the coverage of this report is as follows.

Company: Japan Airlines Corporation, Japan Airlines International and Japan Airlines Domestic

Period: April 1, 2003-March 31, 2004

Offices: All offices in Japan

Unless otherwise specified, the coverage of this report is as follows.

[Signature]
Aiming for Harmony with Nature and Society