Contribute to Build Tomorrow’s Transportation Networks

**Network**

Key Functions of JRTT

**Railway Construction**
To develop the railway networks, we construct new Shinkansen lines and urban railways both economically and efficiently. We also carry out various research projects to improve the railway networks.

**Railway Subsidies**
We provide various subsidies to railway companies to promote improvement of railway facilities and technical development.

**Joint Ownership Shipbuilding Scheme of Coastal Ships and Practical Applications of Ship Technologies**
We provide financial and technical support to coastal shipping companies through a joint ownership shipbuilding scheme. We also assist in the practical applications of advanced ship technologies.

**Settlement of JNR**
We continue to work on the sale of land previously owned by the former Japanese National Railways (JNR) to be effectively used for town development. We also provide assistance to JR Hokkaido, JR Shikoku, JR Kyushu and JR Freight in achieving independent management.

**Investment in Local Public Transportation**
We invest, etc. in businesses to reconstruct a sustainable regional public transportation network.

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**Fundamental Principles**

Contribute to Build Tomorrow’s Transportation Networks

- Contributing to create safe, reliable and environmentally-friendly transportation networks
- Contributing to improve people’s lives and develop the social economy by creating transportation networks
- Maximally exploiting our reliable technological capabilities, abundant experience and advanced expertise to create transportation networks

**Action Agenda**

1. To actively take on challenges through new measures to meet changes in society
2. To act responsibly with a strong sense of ethics complying with laws and ordinances and social codes
3. To establish reliability by enhancing the transparency and efficiency of our business
4. To enhance team strength through awareness of the roles each one of us plays and apply that strength collaboratively
5. To grow individually through self-discipline in a rewarding and worthwhile workplace

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**Development of Transportation Networks**

- New Shinkansen Lines P 4
- Urban Railways P 6
- Support for Railways P 8
- Water Transportation P 10

**Technological Development**

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**Contribution to Society**

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- Environmental Efforts P18
- Promotion of Universal Design P22
- Toward the Development of Regional Communities P24
- International Cooperation P28
- Achievements P30

**Outline of JRTT**

- Outline and History of JRTT P34
- Organization Chart P35
We promote the development of new Shinkansen lines in accordance with the Nationwide Shinkansen Railway Construction and Improvement Act.

**New Shinkansen Lines**

The construction cost of new Shinkansen lines is first-covered by a portion of revenues (e.g., lease fee income) whereupon the remainder is funded two-thirds by central government and one-third by local government. We have already completed approximately 781 km of the Hokuriku Shinkansen (between Takasaki and Kanazawa), the Tohoku Shinkansen (between Morioka and Shin-Aomori) and the Kyushu Shinkansen (between Hakata and Kagoshima-Chuo).

On completion, facilities owned by JRTT are leased to and operated by Japan Railway (JR) companies. Presently, construction is underway on four sections of three lines: Hokkaido, Hokuriku and Kyushu lines.

**Hokkaido Shinkansen**

- **Shin-Hakodate Hokuto - Sapporo [211km]**
  Construction is underway and scheduled to be completed about 20 years after the opening of Shin-Aomori - Shin-Hakodate Hokuto. It was decided to target completion at the end of fiscal 2030, five years ahead of schedule, by mutual agreement of the government party in January 2015.

**Hokkaido Shinkansen**

- **Shin-Aomori - Shin-Hakodate Hokuto [149km]**
  Construction is underway with completion planned at the end of FY2015.

**Hokuriku Shinkansen**

- **Kanazawa - Tsuruga [125km]**
  Construction is underway and scheduled to be completed about 10 years after the opening of Nagano - Kanazawa. It was decided to target completion at the end of fiscal 2022, three years ahead of schedule, by mutual agreement of the government party in January 2015.

**Kyushu Shinkansen**

- **Takeo-Onsen - Nagasaki [66km]**
  Construction is underway and scheduled to be completed about 10 years after the approval.

**Kyushu Shinkansen**

- **Hakata - Kagoshima-Chuo [257km]**
  The entire line was opened in March 2011, which made it possible to travel from Shin-Osaka to Kagoshima-Chuo directly.

**Tohoku Shinkansen**

- **Morioka - Shin-Aomori [178km]**
  The entire section was opened in Dec. 2010. The entire line of the Tohoku Shinkansen was opened due to an extension to Shin-Aomori.

**Hokuriku Shinkansen**

- **Takasaki - Kanazawa [345km]**
  The line to Kanazawa was opened in March 2015. This drastically shortened the time required from the Tokyo metropolitan area to the Hokuriku region, raising expectations of the effect on tourism services and businesses, etc.
We promote the development of urban railway networks in metropolitan areas and the environs.

Facility reinforcing construction for existing opened lines constructed by JRTT

JRTT was entrusted and is advancing additional double tracking construction of the spur line to the depot of Tsukuba Express Line, which was formerly constructed by JRTT, based on the entrusted requirement from the Metropolitan Intercity Railway Company.

Spur line to the depot of Tsukuba Express Line

Since opening in 2005, usage has shown steady growth, and congestion of trains and stations has tended to intensify. Under these circumstances, the Metropolitan Intercity Railway Company planned to double-track the spur line between Moriya Station and the depot, which is currently operated on a single track, to enhance the depot functions and the JRTT was entrusted with construction.

Major Improvements to Private Railways in Metropolitan Areas

We promote urgently-needed track quadrupling for private railways to enhance transportation capacity in the three major metropolitan areas.

Odakyu Odawara Line

The quadruple tracking on the Odakyu Odawara Line is presently underway in line with the ongoing grade separation of crossings as an urban planning project. This will enhance transportation capacity and also eliminate congestion and level crossings.
We support various projects such as railway station development and railway improvement.

Community Rail

We subsidize the development of railway facilities such as additional stations or platforms to improve convenience for railway users and meet transportation needs in accordance with a comprehensive cooperative plan formulated by a legal council established by the municipality.

Technical Development of Safety and Environmental Measures

We subsidize the technical development of energy-saving rolling stock and highly efficient power systems and technical development to save energy and reduce costs in the railway field.

Renewal of Old Facilities, etc.

We provide loans or subsidies to JR Hokkaido, JR Hokkaido, JR Kyushu and JR Freight to finance projects to renew their old railway facilities and develop new facilities that will help consolidate their business foundations.

Family Doctor for Railway

(Technical Support for Railway Companies)

To repair or manage railway structures, we introduce construction methods and materials and advise on subsidy systems depending on circumstances and based on site investigation results. We also provide data such as analyzing the actual status in the vicinity of the line.

New establishment/improvement, etc. of urban railways

We subsidize new establishment/improvement projects of urban railways, including constructing new lines, large-scale improvements and barrier-free subway designs, improving speed by constructing bypass lines, which effectively utilize existing urban line facilities and converting freight lines to passenger lines.

- Platform screen doors of a subway (Toei Oedo Line)

Smooth Utilization of Station Facilities

We subsidize projects to improve the connectivity of transportation systems through integrated development of the stations and the surrounding areas, including route improvements to facilitate movement and development of station facilities by using existing facilities effectively.

- Development of Sannomiya (Hanshin Electric Railway)

Integrated Development of Railway Stations

We promote comprehensive development by widening passageways and increasing platforms at railway stations, which is carried out comprehensively together with city planning projects such as station plazas or free passageways, or promoting railway station space with livelihood support functions to meet the community’s needs, which is conducted comprehensively with improvements to existing railway stations.

Currently, we subsidize the development of Keikyu-Kamata Station (Keikyu Line) and Koshiba Station (Hanshin Electric Railway), etc.
Mechanism of Joint Ownership Shipbuilding Scheme

Under the joint ownership shipbuilding scheme, JRTT and a domestic shipping company (partner) share the cost of shipbuilding and jointly place orders with a shipbuilding company to construct a ship. When the ship is completed, JRTT and its partner jointly own the ship to an extent commensurate with their contributions to the building cost and the partner utilizes and manages the vessel operation. Under this scheme, a domestic shipping company need not provide any security for the cost shared by JRTT, which enables companies with low fund-raising capacity to easily build ships. In addition, since the ship is jointly owned by JRTT, the shipping company can receive diversified technical support from JRTT. This scheme helps maintain and develop the domestic shipping industry.

Financial support

\[ \text{JRTT} \]
Cost allocation: 70 to 90% of shipbuilding cost

\[ \text{Shipping company} \]
Cost allocation: 10 to 30% of shipbuilding cost

- Mainly small- and medium-sized enterprises
- Lack of sufficient technology

Completion of shipbuilding

Partial ownership of JRTT 70 to 90%

Partial ownership of marine transportation company 10 to 30%

On completion of the ship, the ownership of the ship is jointly registered: commensurate to the contribution of the shipbuilding cost.

Shipping company

Joint order placement and payment

Payment of usage fee

Period of joint ownership: 7 to 15 years

Transfer all JRTT ownership to partner on expiry of the joint ownership period

Company acquires 100% ownership

Technical support

1. Advice for the ship design review
2. Construction supervision during shipbuilding
3. Support for ship management during the joint ownership period
   Contributing to maintenance of the ship asset value

Technical Support

At each stage of the planning, design and building of a ship, JRTT provides technical support from engineers with specialized knowledge and abundant know-how and data acquired through experiences of having jointly built about 4,000 vessels. After completing the ship, JRTT also provides technical support to ensure safety and efficient ship operation.

JRTT is Supporting the Domestic Shipping Industry

While coastal shipping comprises about 43% of total domestic freight, as for raw materials for essential industries such as iron steel, oil and cement, the percentage ratio reaches about 80%. JRTT supports our national life and economy as the largest ship-owner in Japan with 283 freight ships and 55 passenger ships as of the end of FY 2014.
We promote technology development for Gauge Change Trains and other transportation systems.

**Development of Railway Technology**

**Technological Development for Gauge Change Trains**

A Gauge Change Train can automatically adjust the wheel gauge to the track gauge so that a Shinkansen train (standard gauge) can be directly operated on conventional lines (narrow gauge).

Since a Gauge Change Train can be directly operated on different gauge lines, this eliminates the inconvenience of changing trains thus shortening the required travel time.

**Yamanashi Maglev Test Line**

A superconducting magnetically levitated transport system (Maglev linear-motor train) is a new transit system which is attracting global attention as a 21st century railway system. In their evaluation compiled in July 2009, the Maglev Technological Practicability Evaluation Committee of the Ministry of Land, Infrastructure, Transport and Tourism stated “Maglev technological development already has potential for establishing practical technology, including the aspect of operation as an ultra-high-speed mass transportation system, so that the skills to operate commercial lines can be comprehensively and systematically developed and detailed specifications and technical standards, etc. for such lines can be formulated in detail.”

Central Japan Railway Company, Railway Technical Research Institute and JRTT constructed the remaining sections to conduct service tests and verify the long-term durability. In addition, running tests have been implemented across the whole stretch of 42.6 km since August 2013.

● Yamanashi Maglev Test Line

**Development of Snow Melting System**

For trains running through heavy snowfall areas, we have contributed significantly to improving transportation safety during winter season by developing and installing various snow melting systems.

**Development of new train control systems**

An on-board principal ATC (Automatic Train Control) system, which fully adopts a non-insulated track circuit, was introduced to the Tohoku Shinkansen (between Hachinohe and Shin-Aomori) for the first time as Shinkansen, allowing reduced travel time and train operation intervals, as well as improving riding comfort.

In addition, a system was developed allowing its use also for the section at a commercial frequency of 60 Hz for the Hokuriku Shinkansen (Nagano - Kanazawa). Furthermore, for the section of Hokkaido Shinkansen (Shin-Aomori - Shin-Hakodate-Hokuto), which will be a common running path for Shinkansen and conventional railways, an ATC for a three-rail system applicable to both Shinkansen and conventional railways is planned to be introduced.

**Development of a GRAPE System to Assist Transportation Planning**

By optimally exploiting the geographic information system (GIS), the Geographic Information System for Railway Project Evaluation (GRAPE) is a support tool for public transportation planning, primarily for railways. It not only shows an evaluation of how new railway lines develop but also various measures to boost convenience, e.g. those facilitating train connections and revisions to train diagrams.

At the request of the central government, local governments and railway companies, JRTT implements various surveys by effectively utilizing support systems such as GRAPE.

● GRAPE: GIS for Railways Project Evaluation
We promote practical applications and dissemination of ship technology which helps reduce the environmental burden and promote streamlining of coastal shipping.

JRTT has implemented the technical support to help reduce the economic burden on ship-owners and by developing ship models. By the end of FY2014, 25 Super Eco-Ships (SESs) were completed. Four propulsion methods, namely, the line shaft CPP type, which is the most energy-efficient, the pod type with optimal maneuverability, the tandem hybrid type suitable for large vessels and biaxial variable pitch propeller system with improved ship maneuverability and reduced price difference between conventional ships and itself, are adopted as propulsion systems for the SES depending on the application and operation.

**Dissemination of New Technologies for Coastal Ships**

To promote shipbuilding to replace existing coastal ships and satisfy the public need for efficient freight distribution and reduced environmental burden, we are striving to disseminate the use of environmentally friendly and economical electric propulsion ships (Super Eco-Ship: SES).

- Conversion of design concept

**Conventional Ship (Diesel propulsion system)**

- Reverse and reduction gear
- Main diesel engine
- Switch board

**Electricity Consumption on Board**

**SES (Electric propulsion system)**

- Main switch board
- Main propulsion generator
- Main generator

**Electricity Consumption on Board**

**Effects of SES Introduction**

- Increased efficiency
  - Energy-saving effect
  - Reduction of about 10-30%
- Environmentally friendly
  - CO₂
  - Reduction of about 10-30%
  - NOₓ
  - Reduction of about 20-40%
  - SO₂
  - Reduction of about 10-30%
- Friendly for passengers and crews
  - Reduction of vibration and noise
  - Reduction of 5 to 10dB (as quiet as a passenger vehicle)
  - Reduction of engine operation and maintenance work
  - Labor saving by adopting electrically powered material handling equipment etc.
- Increased safety
  - As well as a lower failure rate, operation remains possible, even if a part breaks down
  - Improved operability (particularly inside the gulf)

**Subsidies for Practical Applications of Advanced Ship Technologies**

For new technology which is not in use once basic development is complete, JRTT supports the design costs necessary for practical use.

- Scheme of Subsidies for Practical Applications

**Results of Subsidies**

Propeller made of composite materials (Fiscal 2014)

A propeller made of composite materials comprises a combination of a conventional axis of rotation (boss) made of aluminum bronze casting (NAB) and blades made of carbon-fiber reinforced plastic (CFRP). CFRP is lightweight, strong and has high vibration damping compared to NAB. The propulsive performance and silence of ships in which it is installed can thus be improved.
We engage in construction work to support the restoration of the Sanriku Railway, Kita Rias Line and Minami Rias Line.

Restoration Work for Sanriku Railway

The construction of Sanriku Railway was initially launched by the former Japan Railway Construction Public Corporation (JRCC) in 1965, starting with Kuki Line on the north side and Sakari Line on the south side, but was suspended in 1980 when the JR Reconstruction Act was enacted. Subsequently, the Sanriku Railway Company was founded as a public-private joint venture in November 1981 and construction resumed. Finally, on April 1, 1984, the two lines of Sanriku Railway opened as the first specified local line under the scheme, named Kita Rias Line and Minami Rias Line, respectively. The Sanriku Railway lines were seriously damaged by a giant tsunami caused by a massive earthquake that occurred on March 11, 2011. At the request of Sanriku Railway Company, JRTT undertook railway restoration work on November 1, 2011. JRTT has progressed such work within a short construction schedule of 2.5 years, while securing the cooperation of Sanriku Railway Company, municipalities and institutions concerned, consequently, each operation of Kita Rias Line (Tanohata - Rikuchu-Noda), Minami Rias Line (Sakari - Yoshihama), Minami Rias Line (Yoshihama - Kamaishi) and Kita Rias Line (Omoto - Tanohata) was started on April 1 in 2012, April 3 in 2013, April 5 in 2014 and April 6 in the same year respectively, resuming operation on the whole line as scheduled.

Outline of lines

(1) Kita Rias Line
- Section: Miyako Station - Kuki Station
- Number of stations: 16
- Length of line: 71.0km

(2) Minami Rias Line
- Section: Kuki Station - Kamashi Station
- Number of stations: 10
- Length of line: 36.6km

Outline of the commissioned work

Client: Sanriku Railway Company
Commissioned sections: Kita Rias Line, Miyako Station - Kuki Station
Minami Rias Line, Sakari Station - Kamaishi Station
Details of work: Civil engineering, construction of tracks and buildings, and mechanical and electrical engineering for the commissioned sections
Period of work: From November 1, 2011, to September 30, 2014

(1) Kita Rias Line: Tanohata - Rikuchu-Noda

Opening Ceremony with Local Children

- Within the airport tunnel: Track irregularity and the joint shapers
- Near the exit of the airport tunnel: Cable repair of electricity facilities and sound barriers

(2) Minami Rias Line: Sakari - Yoshihama

After restoration

Restoration work for the Sendai Airport Line

The Sendai Airport Line was completed by JRTT under commission and opened on March 18, 2007. This line also suffered devastating damage due to the Great East Japan Earthquake on March 11, 2011, and was forced to stop service along the entire section. In response to a request for assistance from Miyagi Prefecture and Sendai Airport Transit Co., Ltd., JRTT sent an advance survey team for on-site observation immediately after the earthquake and also sent two employees to Sendai Airport Transit in April 2011 to discuss a restoration plan, manage the restoration work and check the soundness of existing structures, thus providing overall technical support for restoration. Furthermore, by establishing a support system as its internal organization and taking other measures, JRTT helped restore this line at an early stage, starting with a partial opening between Natori and Mitazono stations on July 23, 2011, followed by the full opening to Sendai Airport Station on October 1, 2011.
**Basic Environmental Policy**

JRTT has established principles and ideas for environmental considerations in operating its business as its “Basic Environmental Policy” and promotes efforts to reduce environmental burden.

1. We strive to reduce the environmental burden of all our activities, which include railway construction, support services such as subsidies for railway and marine transportation companies to promote the development of transportation facilities.
2. We observe environmental laws and regulations as well as our own voluntary standards.
3. We actively participate in local environmental conservation activities, thereby contributing to regional communities.

**Improvement of Environmentally-friendly Transportation Systems**

CO₂ emissions constitute a significant portion of greenhouse gases, which are major causes of global warming. In 2012, the transportation sector accounted for nearly 20% of all CO₂ emissions within Japan.

<table>
<thead>
<tr>
<th>Emission source</th>
<th>10,000 tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial sector (such as plants)</td>
<td>41,755 (32.7%)</td>
</tr>
<tr>
<td>Business and other sector (such as commercial and services sectors and business offices)</td>
<td>27,237 (21.4%)</td>
</tr>
<tr>
<td>Transportation sector (such as automobiles, railways and ships)</td>
<td>22,634 (17.7%)</td>
</tr>
<tr>
<td>Household sector</td>
<td>20,349 (16.0%)</td>
</tr>
<tr>
<td>Others</td>
<td>15,586 (12.2%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>127,561 (100%)</strong></td>
</tr>
</tbody>
</table>

Source: Prepared by data from the website of the Greenhouse Gas Inventory Office, National Institute for Environmental Studies

Looking at CO₂ emissions in the transportation sector, automobiles comprise the majority, 86.8%, whereas ships and railways comprise 4.8 and 4.2%, respectively.

Railways and ships are means of mass transportation allowing many passengers or bulk freight to be transported at once. As for CO₂ emissions, when carrying passengers or freight for a distance of 1 km, railway transportation for passengers produces only one-eighth of the CO₂ emissions generated by private cars. In addition, in the case of freight transportation, transportation by railways and ships generate approximately one-eighth and one-fifth of the CO₂ emissions generated by commercial trucks, respectively.

Accordingly, railways and ships are environmentally-friendly transportation modes and outperform all equivalents in terms of energy efficiency. JRTT contributes to creating environmentally friendly transportation systems with lower CO₂ emissions by constructing railways and ships.

**Transmission of Environmental Information**

JRTT prepares an annual “Environmental Report” in accordance with the Environmental Consideration Act (Act on the Promotion of Business Activities with Environmental Consideration by Specified Corporations, etc. by Facilitating Access to Environmental Information, and Other Measures) so that as many people as possible will understand our basic principles and efforts for environmental conservation.

Environmental Efforts
**Environmental Efforts**

**Efforts to Reduce the Environmental Burden**

Although railways and ships are environmentally-friendly transportation, JRTT is striving to reduce the environmental burden, even during construction. Major efforts are as below.

**Transport of Excavated Soil by a Belt Conveyor in Tunnel Construction**

In tunnel construction, excavated soil is generally taken from the pit to the temporary storage yard by heavy machines such as dump trucks. In the tunneling projects for the Tawara-zaka Tunnel (Takeo-Onsen - Nagasaki) and Sonogi Tunnel on the Kyushu Shinkansen line, we use a system to take out excavated soil by a belt conveyor. This system reduces CO₂ emissions that would otherwise result from a heavy machine such as a dump truck when transporting excavated soil, thus helping cope with global warming. It also improves the working conditions in the tunnel by enhancing tunnel construction safety and reducing exhaust and mine dust. We will continue to use a belt conveyor in long tunnels, aiming to reduce CO₂ emissions.

**Processing of Waste Water Associated with Tunnel Construction**

During tunnel construction work, groundwater flowing into the tunnel from the surrounding soil is mixed with excavated soil. If this groundwater is discharged into rivers with the excavated soil, it is processed at a muddy water treatment facility to fulfill the effluent standard.

**Use of Generated Soil for Other Projects**

We reuse generated soil such as excavated soil discharged from tunnel construction as embankment materials for other Shinkansen lines and also transfer them aggressively to other public work projects (land reclamation and development of residential land) as embankment materials or filling soil, in an effort to use construction soil effectively.

**Promotion of Shipbuilding which can Contribute to Environmental Conservation**

We support to construct Super Eco-Ships and ships with lower CO₂ emissions, which can meet policy challenges including global warming countermeasures, environmental measures to prevent marine pollution and efficiency of freight distribution.

**Environment Consideration during Land Selling**

When selling land succeeded from the former JNR, we promote environmental measures by conducting surveys on specified hazardous substances related to soil pollution and by safely and definitely processing polychlorinated biphenyl (PCB) waste generated in association with the dismantling of unused rolling stocks or removal of unused facilities.

**Transmission of Environmental Information and Social Contribution activities**

To encourage more extensive understanding of preparing an environmentally friendly transportation system and consolidate a partnership with local societies, we are implementing participation in related events, holding site tours and cooperating with local environmental conservation activities, etc.
Promotion of Universal Design

Easy-to-use, Everybody-friendly Facilities

Examples of Universal Design at Railway Stations

A platform on which people can pass safely
The safe platform is designed with high-visibility and a broad passageway. Screen doors have been installed, which prevent accidents such as passengers colliding with a train or falling onto the tracks.

Easy-to-follow and viewable concourse
The concourse is bright and features a viewable design. Stairs, elevators, and escalators are easy-to-find, and guide signs and textured paving blocks have been installed.

Accessible elevators
See-through elevators (fitted with glass) increase visibility and reduce crime. Moreover, the elevators are large enough to be accessed by wheelchairs or strollers and both up and down escalators have been installed between the platform and concourse.

Accessible restroom
In addition to multi-purpose beds and toilets for ostomate, toilets which are larger than the usual stalls have been installed for wheelchair users. “Flush lamps”, which inform the hearing impaired of an emergencies, have also been installed and toilets have been improved for ease of universal use.

Universal Design in coordination with Passengers

To adopt universal design ideas, we appreciate the opinions of various users, including local civic groups, under the cooperation of municipalities.

Construction of Jointly Owned Ship with a Barrier Free Design

Jointly Owned Super Eco Cargo-Passenger Ship “Tachibana Maru”
Tachibana Maru went into service on the line between Tokyo and Miyakejima Island/Akura Island/Hachijojima Island in June 2014. The ship is a cargo-penger vessel, capable of accommodating 596 passengers (1,000 passengers from Tokyo to Mikurajima Island) and with a high-quality barrier-free design and onboard facilities such as an elevator for wheelchairs, accessible restrooms and 2nd class priority seats, all of which are easily usable by even people on wheelchairs or the lame. It won the Ship of the Year 2014 for the Large-sized Passenger Ship Category, hosted by the Japan Society of Naval Architects and Ocean Engineers.
We contribute to regional development by improving transportation networks.

Hokuriku Shinkansen (Takasaki - Nagano)

Thanks to the opening of the Shinkansen, the travel time from each municipality to Tokyo was shortened significantly.

- Expansion of Area Accessible from Tokyo

Narita Rapid Rail Access

Thanks to the opening of the Narita Rapid Rail Access, the time required to travel from the center of Tokyo to Narita International Airport was shortened to 36 minutes.

Development of Communities along the Tsukuba Express Line

In the vicinity of the Tsukuba Express Line, to boost housing construction progress and open large-sized commercial facilities, the passenger total has increased by 2.1 times within approximately 8 years from the opening of the line.

- Changes in the monthly-averaged daily number of passengers (unit: 10,000 persons)

Transition of transport share

After the opening of the Morioka - Hachinohe on the Tohoku Shinkansen Line in December 2002, the share of railway among transportation modes used to travel from the Tokyo metropolitan area to Aomori increased by 31%, from 39% to 61% to 70% surpassing the share of planes and continuing to climb.

Transition of share of transportation modes used to travel from the Tokyo metropolitan area to Aomori.

- Prepared by the data of the Metropolitan Intercity Railway Company (MIR)
Securing Remote Island Infrastructure by Supporting Sea Routes

To maintain sea routes for remote islands, JRTT provides passenger shipping companies with financial aid and technical support required for shipbuilding. We have constructed about 600 jointly owned ships for remote island sea routes for over half a century.

We continue to contribute to the sound development of the national economy and improvement of living standards by maintaining remote island sea routes through shipbuilding for daily transportation for residents residing on remote islands.

Investment etc. in local public transportation

For a business approved based on the Act on Revitalization and Rehabilitation of Local Public Transportation System, which aims to restructure the sustainable local public transportation network by improving service level and the route reorganization etc., we invest using industrial investment financing, where mid-and-long term profitability is expected. This enables a new company, which implements business to restructure a local public transportation network, to finance the initial investment required to advance the business flexibly, and it is expected to attract required private funds from local companies or financial institutions.

This operation will commence on the date of enforcement of the law, which revises part of the Act on Revitalization and Rehabilitation of Local Public Transportation Systems and the Act on JRTT, Independent Administrative Agency (Act No. 28 of 2015).

Examples of Districts Planning to Effectively Utilize Land in the Future

The land owned by JRTT adjacent to JR Osaka Station, which is a "large scale prime land remaining at an urban core" in terms of the location and the scale across the country, is expected to be reformed for new urban development as a base to lead the revitalization of the Kansai region as well as Osaka and the reclamation work was finished at the end of fiscal 2014. The first development district was completed and opened in April 2013 as “Grand Front Osaka.”

Furthermore, for the Second Development Zone, the city plan such as land readjustment programs was decided and the town planning aiming an integration base of “Green” and “Innovation” will be reportedly conducted.

What is a remote island sea route?

- Sea route connecting a remote island to the mainland
- Other than the above, a sea route between two geographic points where no land transportation is available or land transportation is extremely inconvenient.

Contruction to Society

Toward the Development of Regional Communities

Shiodome District

The "Shiodome District", where the former JNR Settlement Corporation owned land, has been revitalized as a base for dispatching information and culture globally, with leading companies in Japan, especially those in mass media (such as advertising companies, TV stations and news agencies), relocating their head offices to this district.

Umeda District

Umeda District

Umada District

Umada District

Umada District
Japanese railway construction technologies and the joint ownership shipbuilding system are effectively utilized in many countries around the world.

Our Railway Construction Technologies Effectively Utilized around the World

By making use of comprehensive technologies and experience cultivated in construction of the Seikan Tunnel, the Joetsu, Hokuriku, Tohoku and Kyushu Shinkansen lines, and urban railways, JRTT actively provides technical cooperation by dispatching experts (long-term or short-term) overseas and accepting trainees from abroad, at the request of the client. As of March 2015, we have provided technical cooperation to 68 nations and regions and dispatched 2,068 experts in total. Our overseas technical cooperation encompasses many fields including feasibility studies on new railway construction or improvement work, construction planning, designing and construction work.

Countries and Regions Where Technical Cooperation has been Effectively Utilized

- **Europe and CIS Countries**
  1. UK
  2. Italy
  3. Ukraine
  4. Uzbekistan
  5. Austria
  6. Netherlands
  7. Kazakhstan
  8. Switzerland
  9. Sweden
  10. Spain
  11. Germany
  12. Turkmenistan
  13. Finland
  14. France
  15. Bohemia
  16. Poland
  17. Hungary
  18. Russia

- **Asia and Middle East**
  1. India
  2. Iraq
  3. Iran
  4. Indonesia
  5. Korea
  6. Cambodia
  7. Iran
  8. Saudi Arabia
  9. Singapore
  10. Sri Lanka
  11. Thailand
  12. Taiwan
  13. China
  14. Turkey
  15. Pakistan
  16. Bangladesh
  17. Philippines
  18. Brunei
  19. Vietnam
  20. Malaysia
  21. Myanmar
  22. Mongolia
  23. Laos

- **Africa**
  1. Uganda
  2. Egypt
  3. Ghana
  4. Kenya
  5. Democratic Republic of the Congo
  6. Zambia
  7. Sudan
  8. Tanzania
  9.
  10. Togo
  11. South Africa
  12. Mozambique
  13. Morocco

- **Central and South America**
  1. Argentina
  2. Guatemala
  3. Costa Rica
  4. Colombia
  5. Jamaica
  6. Chile
  7. Panama
  8.
  9. Peru
  10. Venezuela
  11. Bolivia
  12. Mexico

- **Oceania**
  1. New Zealand

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**Visit to the construction site of Vietnam's new railway (through line of Vietnam's Line 1 and LE)***

**Technical cooperation for Taiwan High Speed Rail (track and electricity) (Taiwan)***

**Training on technology transfer of slab track to China (Tohoku Shinkansen)***

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Intensified Interest in Joint Ownership Shipbuilding Scheme Abroad

In recent years, the need for marine transportation at Southeast Asian countries with soaring economies is increasing, and the joint ownership shipbuilding scheme and reuse of Japanese domestic vessels has attracted attention to advance the preparation of the marine transportation network. Accordingly, we dispatched lecturers to JCA training and experts to requesting countries and held workshops and others.

**Lecture to Vietnamese trainees (Headquarters)***

**Field survey for high-speed rail in India (India)***

**Holding a workshop (Philippines)***

**Indonesia plans to modernize its domestic ships***
We promote the development of Shinkansen lines and urban railways to create a national land transportation axis.

We constructed and opened a total of 116 lines in the past almost 50 years since 1964 including Shinkansen lines such as the Kyushu Shinkansen line (Hakata - Kagoshima-Chuo), Tsugaru Kaikyo Line, JR lines, private railways and subways entrusted by municipalities, the total length reaching approximately 3,490km. During this period, we have received many prizes at home and abroad.

**Achievements**

**Major Achievements of Railways**

- herd, Shinkansen line (Hakata - Kagoshima-Chuo)
- Tsugaru Kaikyo Line JR lines, private railways and subways entrusted by municipalities, the total length reaching approximately 3,490km. During this period, we have received many prizes at home and abroad.

**Line constructed by JRTT**

- Shinkansen Line
- Non-Shinkansen Line
- Subway Construction
- Conventional Line
- Express Line
- Connecting Line
- Dedicated Line
- Tramway Construction

**Other Lines**

- Shinkansen Line
- Non-Shinkansen Line
- Subway Construction
- Conventional Line
- Express Line
- Connecting Line
- Dedicated Line
- Tramway Construction

**Contributions to Society**

- Pro/Prime Minister’s Award (1987), etc.
- Pro/Technical Award of the Japan Society of Civil Engineers (1990), etc.
Contribution to Society

Achievements

Subsidies for Urban Railway and Trunk Railway

Over the past 23 years since 1991 (until the end of FY2014) in total, we have provided subsidies to railway companies throughout Japan for the construction of subways, railways for new housing developments and airport access lines, the speeding up of JR lines and the improvement of railway facilities by local railway companies.

Subsidies for recently-opened lines, etc.

- Preparation of a new station (Fudanotsuji Station of Nishi-Nagoya Subway Railway)
- Construction of a subway (Sakura-Ohori Line of Nagoya Municipal Subway)
- Comprehensive reformation of a railway station (Kokusaipei Station of Kintetsu Electric Express Railway)
- Preparation of an access service by railway to an airport (Narita sky access line of Kintetsu Electric Railway)
- Disaster prevention work for a railway (Rock fall countermeasures) (JR Kyushu)
- Preparation of a railroad crossing (Chichibu Main Line)

Results of Joint Ownership Shipbuilding Scheme

Since 1959 (until the end of March 2015) in total, we have built approximately 2,969 freight vessels and 1,006 passenger ships.

Advanced Low-CO₂ Emission Ship ”Kosyu Maru”

The ’Kosyu Maru’ was built under a scheme whereby an energy-saving ship developed independently by a shipbuilding company was tested in model experiments and certified by JRTT as an advanced low CO₂ emissions ship. Due to the development of the advanced ship design, considerable energy-saving can be expected.

Super Eco-Ship ”Sakurajima Maru II”

We constructed the super eco passenger ship ”Sakurajima Maru II” with jointed two sets of high efficiency counter-rotating pod type propulsion devices as propulsion system. This ship was designed considering increased silence at the cabin and barrier-free in addition to energy saving.

JRTT Award-winning Vessels of Japan’s “Ship of the Year” by the Japan Society of Naval Architects and Ocean Engineers

Japan’s “Ship of the Year” provided by the Japan Society of Naval Architects and Ocean Engineers is awarded to technically, artistically and socially superior ships built in Japan which acquired a positive reputation. JRTT’s jointly-owned ships have been awarded eleven times since the prize was established.

- Ship of the Year 2011 for Small-sized Cargo Ship ”Yone Maru”
  “Yone Maru” realized unprecedented sea speed of 17 knots as 749 GT class and won the Ship of the Year 2011.

- Ship of the Year 2012 for Small-sized Cargo Ship ”Shinshin Maru”
  ”Shinshin Maru” is the lead ship of new-structure form twin propeller type super eco-ships, of which type of vessel was developed by JRTT and won the Ship of the Year 2012.
### Outline of JRTT

**Outline**

The Japan Railway Construction, Transport and Technology Agency (JRTT) was founded in 2003 as an independent administrative agency by integrating the Japan Railway Construction Public Corporation (JRCC) and the Corporation for Advanced Transport & Technology (CATT).

<table>
<thead>
<tr>
<th>Name</th>
<th>Japan Railway Construction, Transport and Technology Agency (JRTT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of foundation</td>
<td>October 1, 2003</td>
</tr>
</tbody>
</table>

**Purpose**

Its purpose is to promote the establishment of transportation systems based on mass transportation by constructing railways and providing subsidies for railway companies and marine transport companies to improve transportation facilities.

### History until the Foundation of JRTT

- **Mar. 1964**: Japan Railway Construction Public Corporation (JRCC)
- **Apr. 1987**: JNR Settlement Corporation
- **Oct. 1987**: Shinkansen Holding Corporation
- **Oct. 1997**: Maritime Credit Corporation
- **Dec. 1978**: Corporation for Advanced Transport & Technology (CATT)
- **Mar. 2001**: Association for Structural Improvement of the Shipbuilding Industry (Name change in Jul. 1989)
- **Oct. 2003**: Japan Railway Construction, Transport and Technology Agency (JRTT)

### Organization Chart (As of August 1, 2015)

- **President**
- **Vice-President**
- **Deputy President**
- **Executive Director(7)**
- **Auditor(3)**
- **Director-General for Special Project Coordination**
- **Director-General for Facility Management**
- **Director-General for Railway Development**
- **Director-General for Infrastructure Development Work**
- **Director-General for JR Full Privatization Promotion**
- **Senior Director**
- **Audit Department**
- **General Affairs Department**
- **Corporate Planning Department**
- **Finance and Fund Raising Department**
- **Facility Management Department**
- **Railway Development Department**
- **JRTT Construction of Ship Raising and Management Department**
- **JRTT Construction of Ship Assistance Department**
- **JNR Settlement Administration Department**
- **JNR Settlement Land Business Department**
- **JR Full Privatization Promotion and Finance Department**
- **Mutual Assistance Insurance Department**
- **JNR Settlement West Japan Regional Bureau**
- **Tokyo Regional Bureau**
- **Osaka Regional Bureau**
- **Hokkaido Shinkansen Construction Bureau**
- **Aomori Shinkansen Construction Bureau**
- **Kyushu Shinkansen Construction Bureau**
- **Toyama Construction Bureau**
- **Kantokoshi Construction Bureau**
- **Railway Construction Headquarters**
- **Director-General for Administration and Right-of-Way**
- **Senior Director**
- **Administration Department**
- **Right-of-Way Department**
- **Planning Department**
- **Construction Department**
- **Equipment Department**
- **Shinkansen Department**
- **Electrical Engineering Department**
- **Design and Technology Department**
- **2nd Construction Department**