

Preserving the Environment through Innovative Transportation at JFE Steel

JFE Holdings				
JFE Steel	JFE Engineering	Kawasaki Microelectronics	JFE Urban Development	JFE R&D

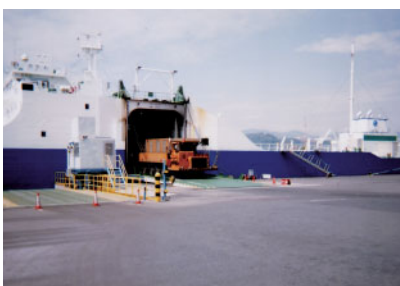
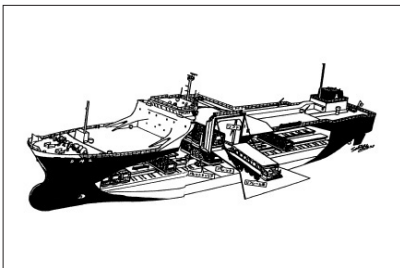
Rational/Efficient Transportation of Steel Products

JFE Steel believes that reducing CO₂, NO_x, and SPM^{*1} through improved fuel efficiency in steel product transportation is an important issue. The company is therefore promoting a modal shift^{*2} aimed at reducing environmental loads in physical distribution, for example, by operating trucks and ships efficiently and selecting transportation modes rationally.

Improved efficiency in marine transportation with innovative ships

In marine transportation, JFE Steel has introduced innovative ships such as the RORO ship,^{*3} which makes it possible to drive special large-scale vehicles directly into the ship and load/unload products packed on pallets in pallet units. This reduces the number of transportation-related handling operations in the works and eliminates reloading for transshipment at the wharf, reducing environmental loads through energy saving and other effects.

With conventional ships, information on the ship's operational status and loading/unloading destinations is controlled in a unified manner by the Coastal Ship Control Center, realizing efficient transportation, for example, by reducing dead-heading between destinations.



Concept and view of actual RORO ship

Environmental efforts in physical distribution

Viewpoint of improvement	Specific measures
1) Modal shift	• Shift to marine transport of traditional overland products by improving transportation lots (approx. 60,000 tons/year)
2) Reduction of tractor exhaust gas	• Positive introduction of new low-exhaust gas vehicles • Response to stronger environmental regulations on SPM, etc., particularly in urban areas
3) Introduction of larger vehicles and control system	• Introduction of 160 tons carrier and special large-scale trucks • Development/introduction of automatic truck dispatching system, optimizing trailer transportation efficiency
4) Others	• Increased recycling ratio of in-ship retaining materials and simplified packaging

Improved efficiency in on-site transportation using large-scale vehicles

JFE Steel has introduced a 160 tons carrier and other special large-scale vehicles for use in transportation of materials/products within its works. Because larger loads can be transported with these vehicles than with conventional trailers, total number of transportation are reduced and total emissions of CO₂ can be reduced by approximately 10% with the 160 tons carrier compared with conventional trailer.



160 t carrier

Rational land transportation by Optimized Land Transport Network

To achieve higher efficiency in land transportation of steel products, JFE Steel created a member-type internet-based joint transportation system. With this system, cargo/vehicle information can be grasped in real time, and the optimum vehicle can be dispatched based on product features and the conditions specified by the customer. This makes it possible to group multiple loads on transportation routes where this was difficult in the past, resulting in an improved vehicle utilization ratio and reduced environmental impacts through energy saving, etc.

*1) SPM

Suspended Particulate Matter. Fine particulates under 10µm (1µm = 1/1000mm), which remain suspended in the atmosphere for long periods and tend to accumulate in the lungs and windpipe when inhaled, and to affect respiratory apparatus.

*2) Modal shift

Shift in transportation modes from truck to rail or ship to improve transportation efficiency and reduce environmental loads.

*3) RORO ship

Abbreviation for Roll-On/Roll-Off ship. To speed up loading, cargos are loaded and unloaded directly by trucks and trailers from the front and rear rampways of the ship.

Internet-based joint transportation system

