# **REVIEW OF OPERATIONS**

# Tire Group

#### THE YEAR AT A GLANCE

Sales increased in Japan and the Middle East,
but operations were severely influenced by
slow sales in North America and the high
value of the yen. As a result, sales by the Tire
Group slipped 0.9%, to ¥270.6 billion.

#### RESULTS IN JAPAN

#### Favorable Demand for Low-Fuel-Consumption Tires

Sales in Japan advanced in units and value for both original equipment (OE) and replacement tires.

Our OE tire business was influenced by the sluggish Japanese economy, but domestic production of automobiles recovered 1.2%, surpassing 10 million units. Yokohama tires were adopted for several popular models.

In the market for replacement tires, we actively introduced new products developed with unique technologies. We reinforced our DNA series of environmentally friendly, low-fuel-consumption tires with the introduction of the DNA dB, providing a low-noise, comfortable ride, and the DNA ECOS, which features a comparatively long product life. We also ran a variety of promotional programs, including a successful campaign under which purchasers of our studless tires can receive insurance to cover a portion of the damage to their cars in the case of accidents caused by slipping on snowy or icy roads.



Domestic sales of DNA-series radial tires, which improve fuel consumtion, were strong in fiscal 2001.
Pictured are the DNA GRANDPRIX, DNA dB and DNA ECOS.

#### Startup of Integrated Logistics System

Strengthening Yokohama's tire business was a central theme of activities under the Action 21 plan. Fiscal 2001 saw the full-scale implementation of the integrated logistics system under development since 1996. This system provides online logistics information to Yokohama's three tire plants, seven distribution centers and approximately 370 sales bases and dealerships throughout Japan. The integrated logistics system has contributed to reductions in inventories, delivery lead times and distribution costs.

To trim tire operations and focus on profitable businesses, we decided to suspend the production of bias tires for trucks and buses at our Hiratsuka Plant by the end of March 2002. However, we will now be able to complete this plan three months ahead of schedule, by December 2001. To improve overall production efficiency, we intend to concentrate production of radial tires for trucks and buses at the Mie Plant by May 2002.



Testing machine for studying tire characteristics during cornering.

#### RESULTS IN NORTH AMERICA

# Three-Year Restructuring of North American Operations

Yokohama's operations in North America center on the production of tires for passenger cars, trucks and buses. In fiscal 2001, the slowdown in economic growth in the second half caused a rapid and significant drop in demand for tires for trucks and buses, and intensified price competition. As a result, Yokohama Tire Corporation (YTC) recorded a loss of US\$79.8 million



Yokohama is promoting electric vehicles (EVs) as environmentally friendly next-generation automobiles by sponsoring EV races and EV tours around Japan. Pictured is an EV made by modifying a Mercedes-Benz A-Class car.

(including US\$38.5 million in written-off goodwill). We are now planning and implementing strategies to restructure YTC. To strengthen our product lines, we plan to introduce new passenger car, light truck, truck and bus tires. In addition, we are working to improve YTC's logistics operations and revamp its management structure. Our targets are to reduce the company's loss to US\$20.0 million in 2001, and to break even in three years' time.

#### RESULTS IN ASIA

#### Sales of the High-Performance A539 Tire Begin

Yokohama's activities in Asia center on sales of passenger car tires, which are covered through exports from Japan and the Philippines. In fiscal 2001, unit-based sales advanced in the Republic of Korea (ROK), Philippines, Singapore and Thailand. However, overall sales in the region finished slightly behind the results for fiscal 2000.



Observers from Yokohama Tire Philippines meet with staff at Yokohama's Shinshiro Plant in Japan.

During the year, we launched the high-performance A539 tire to increase sales in Asia. In Southeast Asia. where awareness of Yokohama is lower than in East Asia, we promoted our brand name using ads in buses and on billboards.

Interest in Japanese tires is increasing in Asia, which is why we devised a sales strategy to introduce into countries in the region tires with a strong reputation for performance in Japan. The first step in implementing this strategy will be the fiscal 2002 release of our DNA GRANDPRIX sports tire in Asia.

#### Full-Scale Production in the Philippines

Operations of Yokohama Tire Philippines, Inc., our base for passenger car tire production and sales in the Philippines, center on exports to Europe, the Middle East and other countries in Asia. A portion of the company's production is sold in the Philippines. In the year under review, the company increased exports to countries expanding their road networks in Asia, the Middle East and Africa. Successful efforts to increase replacement tire sales in the Philippines resulted in a tripling of the company's domestic revenues. OE sales to overseas operations of Japanese automobile manufacturers also improved. Currently, Yokohama Tire Philippines is operating at full capacity, producing 5,200 tires per day. In fiscal 2002, the company plans to expand its production lines to raise daily capacity to 5,900 tires.



In June 2000, a testdriving session for the A539 was held for media representatives from Asia and Oceania in Darlington Park, Australia.

# RESULTS IN EUROPE AND OTHER REGIONS

#### Strengthening On-Site Decision Making

In Europe, Yokohama's sales activities focus on imports from Japan and the Philippines. We operate sales subsidiaries in Germany, Italy, the United Kingdom, Austria, Switzerland, Sweden and Denmark, as well as dealerships throughout the region, which mainly market tires for passenger cars, trucks and buses. In fiscal 2001, though unit-based sales remained at the same level as the previous year, the high yen caused a decrease in the value of these sales.



Yokohama's A039 was selected for standard installation on the Lotus Exige.



At the 2000 24 Hours of Le Mans, a car using Yokohama tires won in the GT class.

With the goal of capturing 3% of the European market for replacement tires by fiscal 2005, we reinforced our product lineup and sales organization. We launched the high-performance A539 tire in the region, and offered an AVS SPORT model with an increased size. As a result, combined sales of these products reached approximately 800,000 units in fiscal 2001. Moves to strengthen our sales network included making Yokohama Suisse SA, our sales company in Switzerland, a subsidiary of Yokohama Reifen GmbH, which handles sales in Germany. We also strengthened the decision-making authority of our European headquarters in Germany by strengthening the organization with product and region managers. Through these and other activities, we are creating a sales organization that can rapidly pursue business initiatives closely linked with customer needs.

Also in fiscal 2001, Yokohama expanded OE sales of its tires to European car manufacturers. Yokohama tires were selected for the Porsche Boxster, Mercedes-Benz G-Class models, Lotus Exige and Aston Martin V12 Vanquish. In addition, we began the OE supply of tires for trucks and buses to the Scania Group, Sweden's leading truck manufacturer.

In fiscal 2002, we plan to launch the AVS Winter V901 tire for passenger cars, as well as a passenger car tire stressing a comfortable and quiet ride. Other tires will be introduced for vans, trucks and buses. Marketing efforts will include a region-wide television ad campaign and participation in the Frankfurt Motor Show. Our sales target for the year is a 10% increase in volume from fiscal 2001.

Tire sales in the Middle East are handled mainly through exports from Japan and the Philippines. New truck and bus tires launched sustained unit- and value-based regional sales increases in fiscal 2001.



The A539 tire for compact to midsized sports sedans, which we marketed in Europe and Asia, features an excellent wet grip and a low-noise ride.

# **REVIEW OF OPERATIONS**

# MB Group

#### THE YEAR AT A GLANCE

Despite the effects of sluggish public works investment and consumer spending,
Yokohama was able to increase sales of its antiseismic rubber bearings, sealants, marine hoses and conveyor belts. However, sales of golf products, aircraft components and fenders dropped from the previous year, leading to a 1.5% decrease in sales of the MB Group, to ¥117.3 million.

#### SEALANTS AND ADHESIVES

Yokohama's HAMATITE® sealants for buildings are the top-selling brand in Japan. We also have about half of the domestic market for windshield sealants, which we deliver on an OE basis to automobile manufacturers. In fiscal 2001, sales grew for our sealants for buildings and windshields, sustaining a rise in overall sales of sealants and adhesives.

In operations for sealants for buildings, sales increased for MILEX-Z, our highly durable and stain-free sealant developed in response to the need for buildings with longer life spans. In addition, we entered the market for hot-melt sealants for multilayered glass products. Efforts to reduce production costs, including the shift to new specifications and materials, helped improve the profitability of these businesses.

#### HOSES

With approximately 40% of the market, Yokohama is Japan's top provider of hoses for construction equipment and machine tools, and the Company also holds a large share of the market for hoses for automobile use. In fiscal 2001, the rise in domestic automobile production and the selection of Yokohama's hoses for use in popular car models



In fiscal 2001, progress was made in integrating the hoserelated operations of Yokohama and Yokohama Hydex.

Set between viaduct piers and bridge girders, Yokohama's antiseismic bearings for bridges reduce vibrations when earthquakes occur.





Our hydraulic hoses for construction equipment are the top sellers in Japan.

made possible expanded sales of car steering and air conditioner hoses. A slight increase was also posted in sales of hydraulic hoses.

In April 2000, Yokohama began integrating its hose-related operations, including product design, development and manufacturing, with those of subsidiary Yokohama Hydex, which designs couplings and produces hose/coupling assemblies. Our goal is to enhance management efficiency and strengthen profitability. Activities to date have included the introduction of a production management system to share information on orders, production and delivery, improvement of production lines and the considerable shortening of lead times from product order to delivery. In the area of marketing, the two companies integrated sales bases overlapping the same regions, improving operating efficiency while enhancing management of customer information.

#### FENDERS AND MARINE HOSES

Yokohama's independently developed marine hoses and fenders are the top sellers in their markets worldwide. In fiscal 2001, sales of marine hoses increased significantly, mainly owing to large-scale project orders in Saudi Arabia and Iran. However, fender sales declined under the effects of intensified price competition.

#### ANTISEISMIC RUBBER BEARINGS

Moves to strengthen our sales structure, as well as large-scale projects such as the construction of Tomei Expressway No. 2, enabled us to expand sales of our antiseismic rubber bearings for bridges. On the other hand, sales of antiseismic rubber bearings for buildings declined under the effects of lowering prices and a drop in the number of projects for which our products were adopted.



#### **GOLF PRODUCTS**

In an environment of lackluster consumer spending, the active entrance of foreign brands into the Japanese market intensified competition. Yokohama's ZOOM.c utility club and H/S 315, a driver launched in the fall of 2000, sold favorably, but sales of irons decreased, and overall revenues declined from the previous year.

#### AIRCRAFT COMPONENTS

A drop in the production of aircraft influenced Yokohama's sales of lavatory modules and drinking water tanks to The Boeing Company of the United States. As a result, sales in the category decreased.



Our water tanks for airplane use are strong, yet light, thanks to the wrapping of a multilayer compound of epoxy resin and carbon fibers.

#### **OVERSEAS PRODUCTION**

Yokohama is pursuing overseas production of its hoses and sealants, mainly in the United States and Asia. SAS Rubber Company delivers automobile hoses to automakers in the United States via an assembly company; unit sales increased considerably in fiscal 2001. YH America Inc. handles the assembly of hoses and metal couplings, and also produces sealants for automobiles. Sales of this subsidiary were favorable in fiscal 2001, chiefly because of production expansion by U.S. affiliates of Japanese automobile manufacturers. These customers also sustained an increase in sales of windshield sealants and hot-melt-type sealants for automobile headlamps.

Yokohama Rubber (Thailand) Co., Ltd. handles the production of windshield sealants, as well as the assembly of automobile hoses and couplings. Backed by a recovery in automobile production in Thailand and countries in the Association of Southeast Asian Nations (ASEAN), sales of windshield sealant rose considerably in fiscal 2001. The recovery in automobile production also sustained a favorable increase in the company's sales of hoses for automobiles.



Yokohama Rubber (Thailand) increased its sales in fiscal 2001, as economic conditions improved in ASEAN nations.

# --> INNOVATIVE RESEARCH AND DEVELOPMENT

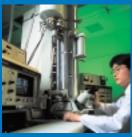
In its continuing development of new technologies, Yokohama's goals are to enhance product performance, to ensure low costs, to conserve energy and to preserve the environment. In particular, we strive to develop new and composite materials.

### Flooring Sealant for Homes to Help **Counter Sick House Syndrome**

Volatile organic compounds (VOCs) included in materials for newly constructed homes can affect people in a variety of ways, such as causing eye and throat irritation. Such problems are known as sick house syndrome. As a countermeasure, Yokohama has developed a new elastic adhesive for flooring materials (ECU-193) that uses neither organic substances nor plasticizers that generate VOCs. This highly powerful adhesive is designed for affixing wood flooring to a variety of bases, including concrete, mortar, aluminum and polyvinyl chloride. In addition, it is highly heat resistant, making it usable at high temperatures with floorheating units.

# **Electromagnetic Wave Absorbent to Protect IT Equipment**

In a collaborative project with Aoyama Gakuin University of Japan, Yokohama is working on the development of an absorbent for electromagnetic waves, which can damage information technology (IT) equipment. By absorbing electromagnetic waves of a specific frequency, such devices help prevent operating mishaps caused by the irregular reflection of electromagnetic waves. The subject of the current project is an absorbent











that comprises two layers: a rubber sheet and metal plate. The wavelength to be absorbed is determined by the thickness of the rubber sheet and the mixture of dielectric substances with rubber. In fiscal 2001, we commercialized an electromagnetic wave absorbent for use in electronic toll collection systems, which allow drivers to pay highway tolls without stopping their cars.

# **HITES 2 Tire Control System to Enhance Driving Safety**

HITES 2, a computerized system for trucks and buses that comprehensively controls tire air pressure, temperature, remaining tread and other data characteristics, contributes to reduced tire maintenance and safer driving. A sensor placed within the tire monitors air pressure and temperature, which is displayed in real time on a cockpit monitor, allowing drivers to check the status of each tire at any time. What's more, this data is automatically transmitted to Yokohama's host computer, where it is managed along with information gained through periodic checks of tire wear, damage and distance traveled. All of this data can be analyzed within the computer and provided via the Internet, enabling customers to precisely calculate the appropriate times for tire changes and rotations.

# ENVIRONMENTAL PROTECTION

In its environmental preservation activities, Yokohama focuses on reducing and reusing resources, promoting activities to prevent global warming, developing products and procuring materials that are environmentally friendly, and reinforcing the Yokohama Group's environmental management structure.

#### **Organization for Environment Preservation**

In 1992, Yokohama established the Environmental Preservation Promotion Department with the mission of tackling environmental issues. In the following year, the Environmental Preservation Promotion Committee was launched, with the president of Yokohama serving as chairman, to oversee all of the Company's environmental activities. The basic themes of this organization are reducing Yokohama's burden on the environment, developing environmental preservation measures and contributing to society.

#### Working to Achieve Zero Emissions by 2006

Yokohama decided to set the goal of achieving zero emissions, or completely eliminating the emission of waste buried in landfills, at its plants in Japan by the year 2006. Full-scale planning to meet this target—such as resource reduction, designing and developing easy-to-recycle products, thoroughly separating waste by type of processing required, and securing recycling outsourcers—were commenced in January 2001.

#### Strengthening Chemical Substance Management

Japan enacted a Pollutant Release and Transfer Register (PRTR), an information database designed to manage harmful chemical substances, in 1999. From 2001, companies in Japan are required to collect and report to the government data on the volume of their emissions into the environment and transfer as waste of some 350 substances specified

as pollutants. From 2000, Yokohama took the spirit of the PRTR one step further, not only keeping data on the volume of chemicals it uses and emits, but also implementing "entry stage management" to eliminate harmful chemicals at the research and development stages and Chemical Substance Safety Assessments to monitor the chemicals its uses. We have analyzed a wide range of data on the possible harmful characteristics of chemicals, and put in place an evaluation system organized by the ranking of each characteristic.

#### Issuing of the Yokohama Environmental Report

In May 2000, we published the first Yokohama Environmental Report, which introduces the Yokohama Group's environmental preservation activities. Information contained in this report was also provided on our web site. This report summarizes our environmental management system, environmental activity goals and results, activities at the production level and environmentally friendly product development.

#### Yokohama Tire Philippines Earns ISO 14001 Certification

In October 2000, Yokohama Tire Philippines, a manufacturer and marketer of passenger car tires, earned certification under the ISO 14001 series of international environmental management standards. The company is the first tire manufacturer in the Philippines to achieve this accreditation.