



AKEBONO REPORT 2013

Business & CSR Activities





akebono's Corporate Mission

Through "Friction and Vibration, their Control and Analysis,"

we are determined to protect, grow and support

every individual life.

Established 1999



akebono's Corporate Mission

Corporate Goals

Customer needs first Technology realignment Establishing a global network Established 1990

akebono's Declaration for the 21st Century

We will continue to create value long into the 21st century as we pursue our Corporate Mission.

We declare that we will:

- 1. Recognize the real value of what we create and provide.
- 2. Assure our own indispensability by continuously creating new value.
- 3. Accomplish our tasks with speed and the courage of our convictions without fear of failure.
- 4. Achieve our aspirations through the pride of each and every individual.

Established 1999

Brand Statement

Since 1929, akebono has brought assurance and peace of mind to our customers and end-users everywhere as a global industry leader in brake design and production. We take pride in our history of achieving safety without compromise, and continue to pursue new standards of perfection with innovation.

Looking to the future, we are inspired by the prospect of delighting and satisfying our customers, and never cease in the challenge to succeed in this goal.

Absolute safety; Unparalleled control. Putting a smile on people's faces all over the world.

Brand Slogan

Absolute safety; Unparalleled control. Established 2005

CONTENTS

akebono's Corporate Mission	1
Top Message	2
Special Features	
New Midterm Business Plan	4
Product Development toward 2020	6
Developments since the Great East Japan Earthquake	10
Our Products	12
Management Systems	18
Toward Further Growth	20
Social Report	
With Local Communities	22
With Our Customers	24
With Our Shareholders/With Our Suppliers	25
With Our Associates	26
Environmental Report	
Environmental Management	33
Initiatives at the Design and Development Stage	41
Initiatives at the Purchasing Stage	44
Initiatives at the Production Stage	45
Initiatives at the Logistics Stage	46
Initiatives at the Consumption Stage	46
Initiatives to Create a Better Workplace	47
Akebono History: Milestones of Global Development	49
Economic Report	
Eleven-Year Financial Summary	50
Financial Review for the Fiscal Year Ended March 31, 2013	52
Fiscal 2012 R&D by Region	57
Consolidated Balance Sheets	58
Consolidated Statements of Income and Comprehensive Income	60
Consolidated Statements of Changes in Net Assets (Summary)	61
Consolidated Statements of Cash Flows	62
Notes to Consolidated Financial Statements	63
Corporate Information	
Directors and Officers	65
Akebono Locations	66
Company Outline/Investor Information	68
Editorial Policy	69



Reinforcing Our Core Competitiveness to Achieve True Globalization

Amid rapid globalization, Japan's manufacturing sector continues to confront significant challenges in spite of some relief afforded by yen depreciation. To survive and prosper in the era of total globalization, it is essential to identify the roles and strengths of Japanese manufacturers, and, further, to reinforce our commitment to Monozukuri, namely, the value-added-product manufacturing that underpins our business, at home and in our manufacturing facilities throughout the world. To this end, the Akebono Group launched the new midterm business plan "akebono New Frontier 30 - 2013" (aNF30 - 2013) aimed at achieving true globalization. A critical priority of this plan is "making a difference with next-generation technologies" by establishing stronger core competitiveness in manufacturing. Immediately following the Great East Japan Earthquake, the Akebono Group's production volume recovered at a pace that was truly remarkable and well beyond expectations-a pace that reminded us of the potential of Group associates. They set an example for all of us and demonstrated that by working together so that we realize everyone's potential we can ensure that Akebono will become a truly successful global company.

"Ai-Village" global training center, completed in December 2012

Two Key Fields: Brakes for High-Performance Commercial Vehicles and Brakes for Cars Produced Using Global Platform Systems

As a part of the initiative to promote "making a difference with next-generation technologies," we are proactive in focusing our efforts to supply products for two key fields: high-performance cars and mass produced passenger vehicles assembled on global platforms.

Since 2007, Akebono has continually pushed the limits of brake technology for Formula One racing cars. This project has required a significant commitment of resources but it has enabled us to nurture and challenge our engineers. In addition to extreme speed, winning in Formula One requires, above all, creativity. We know that in meeting the extreme requirements of a Formula One race, we are building up Akebono's industry-leading brake-related technological competencies. At the same time, our brand name is gaining recognition among the general public and vehicle assemblers, especially in Europe. As a result of these efforts, Akebono's brake systems have been chosen for the P1[™], an ultra-high-performance car produced by U.K.-based McLaren. Building on this achievement, we will step up our efforts to supply brakes for additional high-performance vehicles.

Also, we have made the development of products for the global platform systems being adopted across the automobile industry worldwide a high priority. Automakers expect us to deliver not only high performance but also competitive pricing. We are reviewing our manufacturing footprint across the globe to ensure that Akebono has a production network that covers all major markets around the globe and is capable of efficiently delivering products that satisfy the quality requirements of each market.

We have to be successful in these initiatives because in doing so we will overcome the challenges presented by these initiatives as we move our company ahead of the globalization of our industry. With these in mind, we will further reinforce our quality assurance structure to bolster product safety and quality, two core requirements of Akebono's operations. Simultaneously we have to maintain our cost competitiveness in emerging markets through the development and introduction of differentiated products. This requires us to address issues related to production lead times that are becoming more complex and growing longer as our production network expands worldwide. To that end, we will operate with a management structure capable of handling all of these challenges while allowing for global fluctuations in operational risks.

"C&S+t" Initiatives Aimed at "Making a Difference with Next-Generation Technologies"

The Akebono Group is committed to disseminating its manufacturing expertise and principles to locations throughout the world, sharing the knowledge and experience it has accumulated in Japan. To that end, it is important to establish universal standards for products and production methods as the foundations of manufacturing. To achieve this, efforts are now under way to promote "C&S+t" initiatives, that is, "Commonization and Standardization" plus enhanced product features (which we call "topping") initiatives. Each of these initiatives is critical to our achieving these goals. While promoting C&S in all aspects of business operations to improve efficiency, we must incorporate enhanced product features that precisely meet local market needs and raise our competitiveness in every market. The continuous pursuit of C&S+t initiatives will ensure customer satisfaction with regard to such practical considerations as cost, production methods and product performance. Moreover, this effort directly advances the aforementioned priority of "making a difference with next-generation technologies." We strongly believe that wholehearted commitment to this effort is the best and only way for us to maximize customer satisfaction. Guided by this belief, we must disseminate the "One akebono" manufacturing approach and put it into practice worldwide.

Strengthening Organizational Capabilities through the Promotion of Diversity and Communication

Along with the pursuit of C&S+t initiatives, we have to nurture the growth and development of our staff and associates as a core principle of true globalization. At present, 60% of the Akebono Group's net sales are generated outside Japan and 60% of Group associates are working outside Japan. To be a successful global player, we have to embrace our diversity and learn from the different perspectives found within our company.

Similarly, specifications with regard to product functionality and performance can vary by county and region, and we need to always be sensitive to that to ensure that our manufacturing operations are responsive to each market. Taking the above into consideration, we stepped up our focus on human resources with the



establishment of the "Ai-Village" global training center in December 2012. Serving not only as a training facility, Ai-Village is equipped with a lounge, accommodation for visitors and kitchen facilities for informal exchanges among the participants from around the world in our training programs. Ai-Village is a learning center that aims to create a home away from home where there is an exchange among associates from Group operations worldwide. By establishing a facility that allows visitors to experience other cultures without leaving Japan, Ai-Village is expected to facilitate communications and understanding among associates with different nationalities, languages, and other backgrounds, thereby enhancing the organizational capabilities of "One akebono."

Reconfirming Akebono's Significance as a Provider of Absolute Safety

Brakes are not merely car parts; they are indispensable automobile components that ensure safe and smooth driving. We encourage all who work at Akebono Group companies to take great pride in the fact that they deliver safety and security to people throughout society through the production of superior brake products. By recognizing the importance of the significant contribution they make to society, we hope to stimulate the kind of proactive thinking and response to challenges that provide both personal fulfillment and corporate success. Launched in 2005, corporate brand management is one initiative promoted in line with this aim. Guided by the idea that every associate should be an advocate of the Akebono brand in their day-to-day operations, we will achieve greater recognition for our company among all of our stakeholders.

We hope that all our stakeholders will find that the *AKEBONO REPORT 2013* gives them a better understanding of our global manufacturing operations and our goals. We ask all of you for your ongoing support and invite your comments about this report.

June 2013

Hisataka Nobumoto President and CEO Akebono Brake Industry Co., Ltd.

Special Feature: New Midterm Business Plan

Next Growth Stage toward Globalization

Establishing "akebono New Frontier 30 - 2013" aimed at achieving "Global 30"

Acquiring a 30% Global Share of the OEM Disk Brake Pad Market

Striving toward business expansion and greater corporate value and competitiveness, the Akebono Group is aiming to attain "Global 30," or its growth target of a 30% global market share for OEM disk brake pads.

In addition to "Global 30," goals set forth in Akebono's longterm vision for fiscal 2020 comprise: "Achieving '8-8-12'" (a cost to sales ratio of 80%, SG&A expenses to net sales ratio of 8% and operating income ratio of 12%); "Establishing a global supply network"; and "Establishing a global R&D structure."

To achieve these goals, in November 2012 the Group formulated "akebono New Frontier 30 - 2013" (aNF 30 - 2013), a new midterm business plan with fiscal 2015 as the target year. The new plan sets the target of acquiring 20% of the global OEM disk brake pad market by the end of fiscal 2015 as a springboard toward attaining "Global 30." The plan also sets forth a number of numerical targets, including net sales of ¥250 billion, operating income of ¥20 billion and an operating income ratio of 8%.

Three Priority Measures

aNF 30 - 2013 focuses on three priority measures, namely:

- Making a difference with next-generation technologies;
- Continuous drastic cost reduction and its global implementation: and
- Acceleration of globalization encompassing Japan, North America, Europe and Asia.

Making a Difference with Next-Generation Technologies

While further developing the expertise we have accumulated over the years in controlling noise and vibration, we will strive to establish unparalleled cost competitiveness by utilizing our expertise to promote such initiatives as "Commonization and Standardization" (C&S). At the same time, we will accelerate aggressive growth strategies, focusing on development in such areas as environment-friendly brakes that utilize cast aluminum instead of cast iron; weight-saving brakes that incorporate plastic materials; friction materials that incorporate little or no copper or antimony with the aim of reducing environmental impact; low-drag calipers that are effective in reducing CO₂ and improving fuel efficiency; and electro-mechanical brakes. Targeting the U.S. market, we will leverage our cutting-edge technologies to develop new products, including modules combining caliper, pad and rotor components as well as antirust rotors made using Ferritic Nitro-carburizing (FNC) technology.

Simultaneously, we will work to develop next-generation manufacturing facilities that consume half the energy of conventional facilities and boast superior cost competitiveness. We will also develop products for high-performance commercial vehicles while reinforcing our competitiveness by augmenting the technological capabilities required to capture greater shares of the markets for small- and medium-size cars that are increasingly being demanded in emerging countries.

Akebono Long-Term Vision (Growth Targets for fiscal 2020)

Global 30

30% global share for OEM disk brake pads



Global footprints for supply

Establishing a global product supply network to increase convenience to our customers

Toward "Global 30"





Cost of sales at 80%, SG&A expenses at 8% and operating income at 12% of sales

8-8-12



Global R&D structure Connecting our R&D bases across the world



Continuous Drastic Cost Reduction and its Global Implementation

We seek to strengthen our competitiveness by pushing forward "C&S+t" initiatives (the aforementioned "Commonization and Standardization" plus enhanced product features (which we call "topping"), see also page 3) throughout our operations with the aim of making these operations more efficient and responsive to individual needs. Our "C&S" efforts also involve comprehensive reviews of back office costs and expenses and the promotion of local procurement. Moreover, we will redouble our efforts to strengthen our profit base in North America and Europe and to streamline resource allocation. In doing so, we seek to establish an optimal global production structure for achieving greater cost reductions.

Acceleration of Globalization Encompassing Japan, North America, Europe and Asia

Positioning Japan as an information hub for the dissemination of our manufacturing technologies and philosophy, we will expand and strengthen our operations in North America while working toward full-scale market entry for our high-performance brakes in Europe. Of course, we will continue to reinforce our operations in emerging countries, particularly in growing Asian markets.

We recognize that a "quality product," if it is to be competitive in global markets, must excel not only in terms of performance but also with regard to cost effectiveness and other features that can be tailored to satisfy the specific needs of local markets. To meet such needs, we will promote the policies of "local production for local consumption" while pursuing R&D at local bases and local procurement. Such efforts support our drive to expand our global supply network and global development structure to achieve greater competitiveness.

We also believe that, to achieve "Global 30," diversity promotion and the enhancement of communication are essential. To be a successful global player, it is necessary our own growth to understand diverse perspectives. Therefore, we must enhance our communication capabilities. Guided by this belief, we established the "Ai-Village" global training center with the aim of facilitating exchange among human resources from Group members worldwide. "One Goal, One Team, One akebono," the corporate slogan established in 2011 expresses our resolve to foster a sense of unity among associates throughout the Group. Going forward, we will strive to further promote diversity and nurture human resources highly capable of communicating in a multicultural environment as we aim to become a successful global player capable of playing a significant role throughout the world. We recognize that when it comes to competing on the global stage, such human resources constitute our greatest strength as they enable us to meet the needs of markets worldwide.

Through the stable implementation of "aNF 30 - 2013," Akebono seeks to become a truly global company that delivers safety and security to people around the world, thereby establishing itself as a global brand of choice.

aNF 30 - 2013's Three Priority Measures



- •Reducing costs through C&S+t initiatives
- Strengthening the profit base of North American and European operations
- •Reorganizing production and reallocating
- resources in line with demand
- 03 ^{Ad}

Acceleration of globalization encompassing Japan, North America, Europe and Asia

- •Nurturing globally capable human resources
- Expanding into emerging countriesExpansion of global supply network and devel-
- opment structure

Globally Pursuing Top-Quality Manufacturing Operations as "One akebono"



Under the new midterm business plan, we are promoting two key concepts that will enable us to attain a technological advantage in the global market: C&S+t ("Commonization and Standardization" plus enhanced product features (which we call "topping")) and "global platform" (GPF). Here, twelve young technicians discuss product development toward 2020.

R&D Management

• New Endeavors through Technical Program Management (TPM)

TPM is a new organizational body established by Akebono's R&D Division in 2013. TPM facilitates communication between customers and the R&D Division, thereby contributing to C&S+t.



Daichi Nakada

Joined Akebono in 2008 R&D Division, TPM

"I'd like to improve communication and eliminate time wasted in R&D."

As a member of TPM, I'm responsible for R&D management and improving operations. People in charge of development and design have always directly communicated with customers; the goal of TPM is to integrate this process and more effectively utilize internal development resources to eliminate time wasted in R&D.

Currently, there are about 30 members, including those assigned to specific manufacturers, managing two Application Development Departments. Our duties include coordinating schedules and connecting customers with people in charge of development and design as well as supporting in-house collaboration.

I think what is expected of TPM is the creation of a fluid

AKEBONO REPORT 2013 Akebono Brake Industry Co., Ltd.

6

and free work environment for the people in charge of development and design. To that end, we need to consolidate everdiversifying customer needs and establish more finely tuned C&S+t. By doing so, we can streamline the decision-making process for preliminary specifications, instead of relying on the intuition and practical know-how of a handful experts, thereby making it possible to keep up with the quickening pace of automotive development. Ideally, we want to create a uniform manufacturing process for all of our products. That would increase the transparency of operations and make it easier to disseminate technology. I believe good internal communication is important for promoting C&S+t and I'm committed to greeting customers and colleagues with a smile.



Masaki Uchida Joined Akebono in 2005 R&D Division, TPM

"I'd like to create a system whereby production can take place anywhere in the world with one design."

I'm responsible for communication between manufacturers and people in charge of development and design. Two pressing issues at the moment are understanding the characteristics of customer needs and meeting deadlines.

One recent trend I've noticed is the increasing stringency of demands regarding noise.¹ In addition, among the growing priorities are U.S. regulations on copper and improving fuel economy by reducing brake drag.² We are currently engaged in establishing a GPF that ensures the uniformity of product

Economic Report

7

manufacture across every local market in Japan, North America, China and Indonesia. Although suppliers in these markets have their own issues, it would be ideal to advance C&S as a step toward producing single-design items suited to all our customers.

Our system prior to TPM was to assign one R&D member per item, but with TPM as an intermediary, our path to C&S+t has become clear. I would like to utilize my position to directly hear from customers in order to satisfy all of their needs as well as to craft mutually beneficial proposals based on C&S+t.

Realizing Akebono Quality Globally

• Developing and Designing Friction Materials

The development of friction materials is handled mainly by the Advanced Development Department and the Friction Materials Application Development Department. A matter of growing concern is maintaining uniform quality globally while meeting our customers' diverse needs.



Yuki Muroya

Joined Akebono in 2004 R&D Division, Advanced Development Department

"I'd like to make comfortable brakes that provide absolute safety for a long time."

I'm responsible for developing friction materials for commercial cars. One of our issues is responding to the combined weight of the car's frame and its load. Most needs are related to product durability. Customers are looking for friction materials capable of withstanding significant abuse. However, sturdiness is not the only important factor; it's also important to be able to maneuver the vehicle without causing damage to the wide range of loads being carried, from foodstuffs to animals and fine machinery. Environmental regulations must also be considered. Our target for the near future is to manufacture brake pads that generate no dust from friction. And, no matter how good the performance is, brake noise will always make drivers nervous. I'm working hard every day to examine the composition of friction materials to resolve the issue of how to create good performance without a lot of noise.

Friction materials C&S is advancing for each classification of vehicles. Due to the large variation in customer requirements, there are parts that can be difficult to simulate and systemize. Because some friction materials can be made only in Japan, I design materials bearing in mind the availability of materials in different local markets.

My all-time dream is to make brakes that provide comfort for people riding in cars. Or, rather, I hope to provide products that are so reliable that people don't have to worry about the brakes at all.



Saki Maruta

Joined Akebono in 2011 R&D Division, Friction Material Application Development Department

"Because brake dust is becoming a global issue, I'd like to make materials that are as eco-friendly as possible."

I design friction materials for brake pads in passenger cars. I'm responsible from the design through production and testing of the prototype and to mass production. Friction materials are highly sensitive to seasonal variations, not to mention local manufacturing environment, so we have to pay special attention to controlling those factors.

Manufacturing a product that displays consistent performance regardless of where it is produced will be a key in advancing global production. Therefore, from the design stage it is important to fully understand the properties of locally purchased materials and consider the local weather conditions. I examine materials from overseas and prototypes and sometimes when the results are less than satisfactory, I point to how the manufacturing process could be optimized. I'm also active in promoting the documentation and digitization of all of the collected data so as to share the information across the entire department.

With regard to production overseas, I'd like to bridge the conceptual gap with overseas branches through proactive communication and increase the quality of our products and thereby improve customer satisfaction.

Brake dust will be a big environmental issue going forward. One car might produce just one milligram of brake dust, but that adds up to tons when you look at it on the global scale. Decreasing dust even by a small amount and creating environmentally friendly friction materials is one of my future targets.



Akiko Obata

Joined Akebono in 2010 R&D Division, Friction Material Application Development Department

"I get so excited thinking about how products I've designed are assembled in factories all around the world."

I carry out application development for drum brake linings and develop brake pads for passenger cars. Although it usually takes one to two years to go from testing to mass production, C&S+t can ensure uniform quality while simultaneously fulfilling customer needs in a shorter time period. Through C&S+t we will be able to share expert know-how and I'd like to work to quicken the pace by building up our technology.

I had the chance to take a tour of a facility in North America in November 2012. The brakes I was responsible for were being assembled there and my work felt really meaningful when the quality control person at the factory told me, "Thanks to you, we are now able to make these brakes." I am so excited that products designed in Japan are being produced around the world. My future target is to be able to design friction materials on my own that are suitable for multiple local markets and purposes.

I also participate in corporate branding activities. Along with the brand slogan, "Absolute safety; Unparalleled control," I would like to instill throughout the Company the understanding that we raise the value of the Akebono brand through our daily operations.

Improving Operational Processes from an Evaluative Perspective

• Evaluation & Analysis

The Testing & Analysis Department scrutinizes the performance of prototypes. We actively make proposals for commonizing test items in line with C&S+t and are building an evaluation system that is suited to each global location.



Nobue Abe

Joined Akebono in 2005 R&D Division, Testing & Analysis Department

"I'd like to streamline and accelerate the development and design process through proactive communication."

I'm responsible for evaluating friction materials under development. My main duties are operating the testing equipment and analyzing the results before any new materials are installed in actual automobiles. After concluding sensory evaluations for noise and vibration, as well as evaluations for environmental performance and durability, products that pass testing will go on to actual automobile evaluation on a test track.

Tests are repeated several times before a product is allowed to pass. Although it is possible to reduce the number of steps involved and shorten the development period, it is impossible to reduce the time taken by durability testing. The question is how we can achieve the right balance between quality and quick development. Another necessary consideration is the manner in which we give feedback on numerical results to the people in charge of development and design. The data used in decision making is ultimately based on the numerical values generated by the testing equipment, but these require visual aids such as graphs in order to be understood. The evaluation items differ from customer to customer. There are also instances in which we propose evaluation items to better meet specific requirements.

Because evaluation tests are expensive, I try my best to keep testing to the very minimum by communicating with the people in charge of development and design. We are currently building a data system that the people can refer to before making test requests.

I'm considering making evaluation devices that are both people- and environment-friendly as an initiative going forward. I'm especially concerned about the burden on the operator's body of handling jigs.³ Because jigs can weigh up to 15 kilograms, I'd like to make improvements to save as much labor as possible.



Shin Nakazawa Joined Akebono in 2006

R&D Division, Testing & Analysis Department

"I'd like to establish an evaluation process that makes us absolutely trustworthy all over the world."

I'm responsible for evaluation and analysis. It's a big challenge also for analyzers to incorporate the GPF and C&S+t. As the first step, we began G5 activities (G5 refers to Japan, North America, Europe, China and Indonesia). One aim of these activities was to increase the speed of development by taking advantage of the different time zones at each region's development location. To do that, it's necessary to commonize and standardize the evaluation process as well as establish communication and information sharing on a global level.

On the other hand, occasionally a customer will have a grievance about a product that has passed testing, and we need to bring that number down as close to zero as possible. A pressing issue is to build a highly reliable evaluation code so that customers can say "If it passes Akebono's tests, there's no problem."

The present organization is divided into friction materials and mechanisms, but, from the customer's perspective, they're all the same brakes. I'd like to be a responsive technician who understands all there is to know about brakes. I also think it's necessary to strengthen the organization in such a way that it nurtures these types of people. I'll continue gaining diverse experiences, aiming to be a well-rounded technician.

In Charge of Akebono's Vanguard

• Developing High-Performance and Next-Generation Brakes

Akebono is engaged in such future-oriented fields as fundamental research into friction materials in addition to developing high-performance brakes based on motor sportsrelated technologies.



Tetsuya Noguchi Joined Akebono in 2001 VCET (Vision Creative Engineering Team)

"I want to uncover hidden needs and build brakes that have functions unlike anything seen yet."

I was with Akebono Advanced Engineering (UK) Ltd. (AAE) in the United Kingdom for the last five years and contributed to the development of Formula 1 brakes. Now I'm at VCET and am responsible for the development of products for high-end cars, including motorsports vehicles and commercial supercars.

VCET spearheads Akebono's ambition to become a global brake expert. The Formula 1 project strengthens Akebono's brand and encourages on-site problem solving while nurturing human resources and increasing motivation. The technological know-how and development speed cultivated amid incessant competitive development ties into our concept of advancing technologies for the future. We cannot overlook the effect of our reliability and technological capabilities on our appeal to top European automakers.

Going forward, increasing emphasis will be placed on improving performance by, for example, reducing weight and improving cooling. My current target is to develop super highperformance brakes unlike any other but that can be massproduced and thereby uncover hidden needs.



9



Hideyuki Hasegawa Joined Akebono in 2006

R&D Division, Module Project

"I'd like to be involved in testing the configuration of modules and analyzing braking mechanisms."

This will be my second year assisting in the development of automotive rotors. The goal/purpose of the Module Project, which I currently belong to, is creating three-piece sets that couple together our two mainstay products, calipers and brake pads, with rotors.

The creation of these three-piece sets allows Akebono to control total brake performance and thus raise the level of quality. The problem with rotors is that the processing equipment used to make them and the trace ingredients in the casting materials can differ among countries, markets and suppliers. Scrap metal is the raw material used in making cast iron, the main material in rotors, and the trace impurities vary widely among local markets. The processing method for finishing the sliding surface varies as well, depending on the supplier. These factors mean that brake performance is not always the same. To advance C&S+t, we plan to examine how the many differences in production processes affect performance and noise in addition to establishing technologies that can ensure uniform friction performance around the globe.

I believe that, going forward, as regenerative brakes become popular with the proliferation of electric automobiles, the performance and use requirements for conventional brakes will evolve. I also believe it is imperative to establish fundamental research for three-piece sets that include rotors in order to constantly deliver products matched to customer needs and assuredly keep ahead of this trend.



"We'd like to strengthen Akebono's core technologies by perfecting fundamental brake technology research."

From our position responsible for fundamental research and sowing the seeds of development, we keep asking ourselves, "What is Akebono's core technology?"

The current priority is the production of proprietary raw materials for friction materials. If we were able to manufacture the raw materials on our own and not be limited to the raw materials suppliers suggest, that would be a big advantage. One issue with that would be controlling such variables as particle size and composition as well as the shape of the particle needed for friction materials. Another issue would be figuring out what kind of correlation there is between material properties, like particle shape, and actual friction performance. By researching these two areas, it should be possible to freely produce friction materials that have the exact performance we are aiming for. In order to differentiate our technologies from other companies, we'll continue our research in the field, improving simulation technology for configuring composite materials, keeping in mind future environmental regulations and other trends.

While carrying out fundamental research on friction materials, we are also evaluating friction material performance from multiple perspectives in search for the possibility of applications beyond brakes.

Looking ahead to 2020, we'd like to be able to provide information quickly for all development needs while also strengthening core technologies.

Realizing Common Production Anywhere in the World

• Designing Manufacturing Facilities

Realizing uniform quality at the global level is a big issue in designing manufacturing facilities as well. Another factor of growing importance is the ability to easily use and maintain a facility anywhere in the world.



Jun Aoki

Joined Akebono in 2009 Production Engineering Division, Application Engineering Department

"I want to contribute to the GPF and further manufacturing automation with the ease of maintenance in mind."

I am responsible for designing manufacturing facilities and trial operations. I'm currently designing and developing a manufacturing facility for high-performance calipers, and this is one of the central fiscal 2013 programs. The cores⁴ for this machine will, for the first time, be produced by Akebono itself.

Looking ahead to 2020, we are involved in several initiatives with an eye to automating the manufacturing process. I'm currently conducting research and creating trial facilities to see how to cut back manual labor requirements by increasing the number of automated processes. The issue when advancing automation is the diversification of component shapes. To advance C&S+t, people in my department observe and record what happens during component assembly. We then provide feedback to the product developers about which shapes allow for better handling. It's also imperative that when we create manufacturing facilities that can guarantee the product quality our customers demand, we simultaneously put in place maintenance management. We're also working to optimize data management so that the results of standardized quality testing are reflected in actual products and performance.

My target going forward is to create machines that produce no defective products in order to retain the tradition of Japanese manufacturing and establish a GPF. I'd also like to compile data to facilitate maintenance as well as conduct onsite inspections so that production process can be enhanced to better suit each product.

Notes:

- 1. Noise: Resonation produced by the vibration of calipers and other parts due to friction between the pads and rotors.
- 2. Brake drag: Resistance cause by constant structural contact between the disc brake pads and the rotors.
- 3. Jig: A general name for tools and devices that fix an object in place and assist in the control and guidance of a tool.
- Core: The inner mold used with a larger outer mold when producing castings with hollow centers.

Special Feature: Developments since the Great East Japan Earthquake

Two Years of Reconstruction Efforts

Taking lessons from its experience of natural disasters, Akebono is reinforcing its manufacturing structure while deepening ties with local communities.

Fukushima Manufacturing: Creating a Safe and Comfortable Workplace

After the Great East Japan Earthquake struck on March 11, 2011, Akebono Brake Fukushima Manufacturing Co., Ltd. (Fukushima Manufacturing) was forced to suspend production due to damage suffered by its plant buildings. Nevertheless, the company was able to resume operations after only a week.

Since then, Fukushima Manufacturing has reinforced damaged buildings and facilities, working to make sure that they could endure a similar disaster should it occur at some future date. At the same time, associates' emergency contact lists were updated, incorporating maps of their residences to facilitate prompt confirmation of the safety of both them and their families.

In addition, on October 15, 2012, Fukushima Manufacturing conducted a disaster drill from 07:10 p.m. with a focus on being prepared for an emergency situation where there is no lighting available.

Reinforcement Work and Other Disaster Countermeasures Implemented at Fukushima Manufacturing

Damage	Countermeasures	Details
Collapse of walls	Repair of walls and reinstallation of braces	Braces with improved strength were installed in the walls to withstand seismic vibrations
Displacement of equip- ment	Reinforcement of anchor bolts for all plant equipment	All plant equipment was secured using anchor bolts to prevent them from falling
Fall of molds	Installation of improved fall prevention devic- es at mold storage	Improved devices installed in roller shelves to prevent metallic molds from falling
Breakage of sewage treatment tank	Reinforcement of the structure surrounding sewage treatment tank	Constructed steel-reinforced concrete walls around an underground sewage treatment tank
Absence of food and drinking water stocks	Stock food and drinking water	Stocked three days' worth of food and drinking water

Lessons Learned from the Great East Japan Earthquake and Thai Flooding

Dealing with the repercussions of the Great East Japan Earthquake and flooding in Thailand in fiscal 2011, although we managed to avoid significant shortfalls in our product supply to customers, these emergencies revealed that our risk management initiatives with regard to parts and material procurement must be greatly reinforced. In particular, supply sources for input materials were found to be available from only a limited number of companies. Also, the Thai flooding showed us that a natural disaster that strikes a single country may trigger global supply chain problems. To address these issues, we began collecting information on our global supply chain, confirming the interchangeability between parts and materials and developing an integrated database.

Ultimately, we aim to establish a structure that ensures the prompt recovery of production capacity—no matter what

the problem and no matter where in the world it occurs—by employing the resources retained by the Akebono Group members worldwide. We intend to use the collected supply chain data not only for risk management but also to improve selection and procurement process of parts and materials in terms of global cost optimization. Specifically, in pursuit of "Commonization and Standardization" (C&S) and "design manufacturability," we will closely cooperate with suppliers and the Engineering Department to eliminate factors—such as complicated designs or materials—that hinder interchangeability. We will also accelerate our efforts to standardize as well as localize parts and materials for global platform (GPF) business with the main focus put on cost competitiveness and risk reduction.

Addressing Management Issues Needing BCP Coverage

We recognize the maintenance and reinforcement of our Business Continuation Plans (BCPs) to be a crucial management issue. Carrying on with efforts made since the Great East Japan Earthquake, we began drawing up action plans to further strengthen our disaster response capabilities. These plans address the risk of supply chain disruption, a growing cause of concern among our customers, and envisage such events as large-scale natural disasters and pandemics.

Taking into account the guidelines issued by Japan's Cabinet Office and Japan Auto Parts Industries Association (JAPIA), we will step up our efforts to enhance our BCPs for locations worldwide while encouraging our suppliers to formulate such plans.

Management Issues Identified in the Wake of the Earthquake

Initiatives	
• Conduct drills focused on early response and recovery • Review crisis management structure and disaster response manu- als, expanding their scope to cover such events as weather and traffic accidents that may impact safety and product delivery. Other issues for discussion include rules for the setup and management	P c
of response headquarters, the means of ensuring greater informa- tion visibility, and equipment needed for disaster response	
 Review the scale of response headquarters as well as emergency response measures Clarify matters to be confirmed at times of emergency (the safety of associates, the status of shipments, etc.) as well as persons in 	p
charge	d
•Track the attendance and absence of each associate •Establish a real-time update and share system	F
	Initiatives •Conduct drills focused on early response and recovery •Review crisis management structure and disaster response manuals, expanding their scope to cover such events as weather and traffic accidents that may impact safety and product delivery. Other issues for discussion include rules for the setup and management of response headquarters, the means of ensuring greater information visibility, and equipment needed for disaster response •Review the scale of response headquarters as well as emergency response measures •Clarify matters to be confirmed at times of emergency (the safety of associates, the status of shipments, etc.) as well as persons in charge •Track the attendance and absence of each associate •Establish a real-time update and share system

Issues	Initiatives		
Prompt communication	 Collect information on the status of customers, etc., to forecast order trends in the medium and long terms Collect information from external information sources Ensure controlled sharing of information, appointing a person in charge to facilitate communication among bases 		
Review of purchasing	 Collect information on the supply chain on a global basis, confirm the inter- changeability of parts and materials and develop an integrated database Enhance C&S and design manufacturability to eliminate factors that hinder parts interchangeability Drive C&S and localization activities for GPF operations 		
Reform of pro- duction systems	Reorganize global production systems (avoid overconcentration) Promote C&S+t* initiatives (enhance compatibility of production facilities)		
Facility check- ups and rein- forcement	Continued implementation of anti-seismic reinforcement work Establish a back-up functions for the response headquarters at Ai-Village (see page 27) Install emergency power supply systems at each site Update satellite phones		

Special Feature

Corporate Information

Test Course Restored and Renamed "Ai-Ring"

In November 2012, we completed the restoration of the test course in Iwaki City, Fukushima Prefecture, which suffered damage in the wake of the Great East Japan Earthquake. The test course again came into service under the new name "Ai-Ring." "A" and "i" were taken from initials of "Akebono" and "Iwaki," respectively, while "Ring" represents the circle of



Akebono associates worldwide as well as the shape of the test course and is pronounced in the German manner. The reopening ceremony was attended by the vice governor of Fukushima Prefecture and the mayor of Iwaki.

The Ai-Ring reopening ceremony

Supporting Restoration: Co-Sponsored LFA Test Driving Event

Seeking to encourage young people in Fukushima to have dreams and hope for the future in the post-earthquake world, on October 20, 2012, we held a Lexus Future Advance (LFA) test driving event at Ai-Ring in tandem with Toyo System Co., Ltd., an lwaki-based company that organized the event, and Toyota Motor Corporation.

A luxury car marketed by Toyota under the Lexus brand name, the LFA boasts extremely high performance and no more than 500 vehicles have been manufactured and made available around the world. A total of 108 students from local universities and vocational schools were invited to the event and displayed great interest in these luxury cars that many were seeing for the first time. Five LFA vehicles were readied for the course and the students were given the chance to ride in the navigator's seat as a professional motor sports driver took the wheel. At the event, Akebono demonstrated its products and technologies, such as an Anti-Lock Braking System (ABS). We also presented visual materials showing the extent



of the earthquake damage the test course suffered. The event was successful. providing young people with a fun day and good opportunities to learn about Akebono.

An LFA test car

Passing on Lessons Learned from the Disaster to the Next Generation

A Diorama Created to Preserve the Memory of the Earthquake Although the test course suffered considerable damage from the Great East Japan Earthquake, Akebono associates have worked as "One Team" to restore it, achieving the re-opening of the site in November 2012. We created a diorama that replicates the damage as a means to preserve the memory of the earthquake and pass it to future generations.

Looking Back at the Earthquake—Remembrance Lunch Menu Two years after the earthquake, on March 11, 2013, rice balls were served at the cafeteria of Fukushima Manufacturing for lunch. During the period in which Fukushima Manufacturing was struggling in the turmoil after the earthquake, the kitchen of the cafeteria was out of service due to the breakage of a sewage treatment tank. Because of that, nothing but rice balls could be served for lunch every day. During the crisis, scholarship students working at Fukushima Manufacturing volunteered to wake up earlier and prepare 350 rice balls every morning, which they kept doing for a month until a temporary sewage treatment tank was installed.

Comments of associates recalling those days:

"I still remember the fear induced by a six intensity seismic shock."

"Remembering how much support we were given those days, I feel a renewed sense of gratitude."

"I was so panicked, but then I heard a colleague asking me if I was alright and it calmed me down a lot."

"I suppose we should gather and talk over the earthquake at least once a year."

"I will remember the support given to me by Akebono ever after. I will, in turn, support creating 'One Team' to enhance the Company's value."



Preparing rice balls while recalling those days



TOPICS

2011 Graduation Ceremony for Vocational School Students Who Worked at Fukushima Manufacturing

A Memorable Graduation Ceremony in Nihonbashi

Fukushima Junior College suffered damage to its school buildings in the Great East Japan Earthquake. This led to the cancellation of the graduation ceremony scheduled for March 17, 2011, which would have included some students who attended the junior college while working at Fukushima Manufacturing. Instead, Akebono held the graduation ceremony for these students on April 10, 2011, at its Global Head Office in Tokyo, inviting their families, who were joined by President Nobumoto and other directors. Thanks to the



dress rental shops and beauty salons, all of the students were well coiffed and dressed, wearing Hakama, the

cooperation of

traditional Japanese formal clothing for such celebrations. The event was followed by a farewell party filled with tears and laughter.



Comment from a 2011 Graduate Risa Kamekawa (Tagajo City, Miyagi Prefecture)

I was so moved at the graduation ceremony, for many people from Akebono, including Mr. Nobumoto the president, were so very kind. It was a heartwarming event that I will never for-

get. I am now working at a nursery school in Tagajo City, where I grew up, and am currently taking care of 12 one-year-old children. I feel that my days at Akebono, working there while studying, have made me who I am today, providing me with great confidence. I am so thankful that Akebono helped me achieve my dream.

Graduation ceremony in Nihonbashi, Tokyo (April 10, 2011)

Brakes Save Lives: Ensuring Absolute Safety

Mechanism of delivering unparalleled control

What is a brake?

- A device that causes a vehicle to decelerate and/or cease motion by converting kinetic energy into heat energy utilizing friction
- An important security component that brings a vehicle to a halt safely

When brake pedal is pressed:

- 1. The hydraulic pressure of the brake fluid builds
- 2. The pressure is transferred into the brake mechanism
- 3. The transferred pressure causes: Disc brake: the pads clamp the rotor Drum brake: the lining (friction material lining the shoe) is pushed into and applies pressure to the drum
- 4. Friction due to the above process converts kinetic energy into heat, thereby causing the vehicle to decelerate and eventually stop moving.

Kinetic energy is translated into heat energy:

The sudden application of brakes when a vehicle is travelling at 100km/h, generates enough heat to raise the temperature of two liters of water from 0°C to boiling (100°C).

Disc brakes (usually used in passenger cars)

Pads clamp rotor, stopping its spinning



<Braking system: in case of disc brakes>



Each of the four tires of a car may be equipped with brakes. The brakes can be configured in a number of different ways: disc brakes on the front and rear tires, only drum brakes, or a combination of the two.



Brakes fall roughly into two categories, namely, disc brakes and drum brakes. Disc brakes deliver a stable braking force for high-speed running. Drum brakes are best suited to bringing heavier automobiles to a halt.

Friction Materials for Brakes

A brake is a mechanism that presses friction material against a rotor, stopping its spinning. Friction materials comprise three main components:

- 1. Reinforcements to enhance strength
- 2. Friction modifiers to enhance performance and reduce noise
- 3. Binders to form and stick together these compound materials

Because the performance requirements for the friction materials used in pads and brake linings depend on vehicle type, the raw materials and formulations used vary. The formulations also vary between local markets. In Europe, the most common are low-steel and semi-metallic pads, which perform well at high speed and temperatures but generate significant noise and brake dust due to the high level of abrasion. In Japan, non-asbestos pads, which feature reduced noise and abrasion, are most common. Both types of pads are used in North America.

Pads Should be Replaced When They Thin to about 4mm

The friction materials of new brake pads are about 10mm thick. About 7mm to 8mm of that can be used. For safety, pads should be regularly checked and replaced when they have thinned to 4mm or less.

Components of Friction Materials

	Category	Purpose	Materials
			Organic fiber
s	Deinfereente	Ensure strength and resilience	Steel fiber
eria	Reinforcements	Ensure strength and resilience	Inorganic fiber
late			Metallic fiber
2 L			Lubricants
tio	Friction modifiers	Adjust control and wear perfor- mance to increase reliability	Grinding materials
Fric			Metallic dust
			Filling materials
	Binders	Form and stick together the com-	Thermosetting
	5	pound raw materials	resins



Main Products

For automobiles (disc brakes and drum brakes)

Products for Automobiles

- Disc brake calipers
- Disc brake pads
- Drum brakes
- Drum brake shoes
- Brake linings
- Disc rotors

Disc brake

Brake drums



Main Components of Disc Brakes (Type AD)



12 Shims

- 13 Pad clips
 - Mounting bracket
- 15 Rotor
- 6 Bleed screw 7 Cylinder body

6 Bleed screw cap

8 Lock pin

4 Boot ring

Guide pin

1 Bolt 14 Adjuster screw 2 Bleeding screw 6 Adjuster nut 3 Bleeding cap 6 Adjuster socket 4 Check hole cover Adjuster lever (B) Shoe hold down spring 6 Back plate 6 Wheel cylinders body (1) Shoe hold down cup Wheel cylinder cup Shoe hold down pin 8 Wheel cylinder boot 2) Parking brake lever 9 Piston 2 Lining 10 Retainer Shoe 24 Rivet

Main Components of Drum Brakes (Type LT)

- Retainer spring 12 Return spring
 - (shoe to shoe spring)
- (3) Return spring (shoe to lever spring)

Anchor plate

26 Wire guide

2 Drum

Brake drum

Main Products

For other vehicles and industrial machinery

Products for Rolling Stock

- Bullet train disc brake calipers
- Bullet train disc brake linings
- Brake linings for rolling stock
- Brakes for maglev trains



Railroad train brake shoes

N700 series bullet train

Bullet train disc brake



Bullet train disc brake pads

Maglev train brake





Products for Motorcycles

- Disc brake calipers
- · Disc brake pads
- Master cylinders



Disc brake



Master cylinder



Products for Industrial Machinery

- Forklift brakes
- Disc brakes for wind power generators
- Disc brakes for rough terrain cranes



Other Products

Brake caliper for touring car endurance racing

Sensor cluster



Brake caliper for motorcycle racing



Concrete pouring detection system



Main Products

Production sites



Akebono Group (Overseas)

Please see page 67 for each plant's principal products.



Akebono's Motorsports Challenge

Pursuit of "Absolute Safety and Unparalleled Control"

Grand Prix Racing

Since 2007, Akebono has been supplying brake calipers and brake master cylinders to the "Vodafone McLaren Mercedes" team as an official supplier.



In Grand Prix racing, which is the world's most prestigious racing, brakes must be specifically tailored to high-speed running. For example, when a racing car is approaching a turn at a speed of 300km/h and has to decelerate to 80km/h within a mere three seconds, the braking for the deceleration heats the rotor almost instantly to about 800°C. To create brakes that are always reliable and stable under such conditions, Akebono continually strives to enhance all aspects of its products, including structure, materials and surface finishing.

Mountain Bike Racing and Motorcycle Racing

In 2002, Akebono entered the world of mountain bike downhill racing and in 2003 began supplying a team in the All Japan Road Race Championship in the JSB 1000 class that captured the title thanks to brilliant performances.



a HONDA CBR1000RR equipped with an Akebono brake system

Road racing requires high-performance brakes that enable a rider to quickly decelerate his motorcycle from a speed of 300km/h using just one finger. Riders also demand extreme responsiveness.

Since 2011, Akebono has been providing braking systems to "MUSASHI RT HARC-PRO," one of Japan's leading road racing teams.

Taking on the Challenge to Excel at the Highest Level of World Motorsports

Partnership with Vodafone McLaren Mercedes

Akebono Extended Technical Partnership with Vodafone McLaren Mercedes



President Hisataka Nobumoto shaking hands with John Cooper, Commercial & Financial Director of McLaren Racing

On October 4, 2012, Akebono and Vodafone McLaren Mercedes announced the extension of their successful longterm technical partnership.

Akebono began collaborating with Vodafone McLaren Mercedes in 2007 as an official supplier of brake calipers and master cylinders. In addition to F1-related products, in 2011 Akebono was selected by McLaren to supply calipers and brake pads for MP4-12C GT3* cars.

In the period from the start of the partnership until the end of the 2012 season, Vodafone McLaren Mercedes has recorded 32 grand prix wins, 28 pole positions and 154 pointwinning finishes. During the 2012 season, the team recorded 7 grand prix wins out of 20 races.



Following the announcement of the partnership, President Hisataka Nobumoto commented, "This is a proud moment in Akebono's history as we embark upon the next chapter in our quest to be the best brake manufacturer in the world. Our appetite for continued development and new technology is considerable."

Akebono will continue its pursuit of excelling in the highest level of motorsports. A range of technical know-how obtained through the partnership with McLaren, including refined weight-saving and temperature control technology, will be applied in developing energy-efficient products for commercial cars, enhancing our contribution to society as a brake expert.

*GT3: Motor race competed with arranged commercial sports cars

TOPICS

Akebono Products Exhibited at the Paris Motor Show 2012

The Paris Motor Show (Mondial de l'Automobile) is a biennial auto show and is one of the world's largest exhibitions of its kind. The 2012 motor show took place from September 29 to October 14. As in the 2010 motor show, Akebono set up a booth and exhibited products designed for the MP4-12C GT3 (McLaren), Panamera (Porsche), and F1 racing cars.



6-pot opposed piston type aluminum MP4-12C GT3, which uses Akebono caliper



brake calipers and pads



The Akebono booth. McLaren kindly allowed us to present its unique MP4-12C GT3 in Union Jack livery

Management Systems

Corporate Governance and Internal Control System

Constantly striving to better meet our shareholders' expectations, we continually develop our corporate governance and internal control system.

Basic Approach to Corporate Governance and Implementation Status

Akebono's corporate governance is intended to maximize corporate value to enable the execution of business operations in a transparent and fair manner from a global perspective. Increasing management transparency, carrying out rapid and appropriate decision making, disclosing appropriate information in a timely manner, upgrading internal control systems and ensuring that management meets compliance requirements are all indispensable to achieving this objective. To realize its corporate social responsibility, Akebono strives to maintain sound and positive relationships with customers, shareholders, suppliers, staff and local communities, and aims to enhance its corporate governance as a manufacturer of essential safety equipment.

Akebono has put in place an Audit & Supervisory Board, understanding that its auditing system, operated by said board, ensures the appropriate execution of business by directors. In general, Board of Directors' meetings are convened monthly and extraordinary meetings are held as needed. To deal with important issues, Akebono has established such bodies for advanced deliberation as the Management Council and the Technology Council in order to provide the Board of Directors with advice to help it to make timely and correct judgments. The Executive Officer System was introduced in April 2000 with the objectives of clarifying management responsibility and authority and improving management efficiency.

In order to provide an independent viewpoint to management, Akebono invites individuals from outside the Company to become non-executive directors. Akebono reflects to Company management the counsel it receives from Dr. Kunio Ito, based on his broad knowledge and vast academic experience, and Mr. Takuo Tsurushima, who is a highly experienced and knowledgeable business manager. Dr. Ito is currently a professor in the Faculty of Commerce of Hitotsubashi University and Hitotsubashi Graduate School's Graduate Course of Commerce. Mr. Tsurushima is a former president of Tokyo Stock Exchange Group, Inc. Of the 14 Board of Directors' meetings held in fiscal 2012, Dr. Ito attended 11, while Mr. Tsurushima was present for all. Neither of the two external directors has a conflict of interest with the general shareholders of Akebono, and both retain highly independent status vis-à-vis its management. Akebono has registered these two directors as independent directors in accordance with the rules of Tokyo Stock Exchange.

Maintaining an Internal Control System

In May 2006, Akebono established the "Basic Policy Regarding the Establishment of In-House Regulatory Systems" to respond to risks related to company size, business characteristics and management actions. On the basis of this policy, Akebono maintains systems related to risk management, adherence to laws and regulations, effective business performance, accurate financial reporting and the promotion of the development and operation of internal control systems throughout the Group. In addition, the Company implements regular checks, oversight and verification of internal control systems, utilizing the auditing capabilities of auditors and the Audit Department to ensure these systems' effectiveness and upgrade their functionality as needed. With regard to internal control based on the Financial Instruments and Exchange Law, systems within the Company for financial reporting are continually upgraded to ensure the reliability of information that can have a major influence on financial statements.



Corporate Governance Structure

Management Systems

Risk Management, Compliance Structure and Information Security Activities

We are upgrading our risk management, compliance and information security-related activities, keeping a close eye on the latest business trends.

Risk Management

Akebono has established the Risk Management Committee, an entity that promotes the construction of a risk management system, chaired by the Representative Director & CEO and participated in by five officers in charge of risk management and a Chief Financial Officer (CFO). The Risk Evaluation Committee established under it, chaired by the Representative Director & Executive Vice President identifies critical issues and supervises risk management activities.

As for our Groupwide efforts in fiscal 2012, we identified 14 categories as critical issues, namely, quality, overseas businesses, technology, disaster, Euro-zone debt crisis, yen appreciation, HR, market changes, power shortage, intellectual property, procurement, information control, compliance and the environment. The results of actions taken to mitigate risk in each category are summarized at the end of each fiscal year to be used as a reference in the following fiscal year.

For fiscal 2013, we will classify Groupwide critical risks into priority management issues (six categories: disaster, procurement, overseas businesses, environment and safety, information control and quality) and regular management issues (six categories: market and business climate changes, technology, compliance, intellectual property, currency fluctuation, and HR recruitment and development). Activities to address the priority management issues will be monitored by the Risk Evaluation Committee. Moreover, a special subcommittee has been launched in fiscal 2013 to work on business continuity management (BCM) in a focused manner.



Compliance Structure

As it expands its business globally, it is important that Akebono, beyond complying with the law and regulations, correctly understands and fulfills its corporate social responsibility. For these purposes, we have established the Compliance Committee, chaired by the Director and Senior Managing Executive Officer, along with the "akebono Global Code of Conduct" and "akebono Global Standard of Behavior" to be observed by each associate.

We are implementing a range of educational programs in order to raise the level of compliance awareness among our associates. In fiscal 2012, we asked all associates to take a "compliance proficiency test."

For the prevention and early detection of problems, we have set up in-house and outsourced consultation counters to accept inquiries from people, including contract workers. The inquiries can be made anonymously. We are making sure to protect the confidentiality of information, including inquirers' personal profiles. In fiscal 2012 a total of 15 such inquiries were received and they were addressed under the leadership of the Compliance Committee.

Akebono conducts hearings for associates every year on compliance. In fiscal 2012 we included the overseas sites in the scope and conducted hearings for over 100 persons inside and outside Japan. As a result, we have identified a lack of communication as a Groupwide issue, based on which we have revised the content of training.

Furthermore, in light of the recent crackdowns on cartel in the auto parts industry, we conducted additional training and campaigns on the issue in both domestic and global bases.

Information Security Activities

Akebono has established the Information Security Committee in addition to various in-house rules and regulations in order to protect information systems and data owned in-house or provided by our customers from all kinds of risk, including accident, disaster and crime. In fiscal 2012, we revised our information security guidelines, making them shorter and more easily understood by our associates both inside and outside Japan. We also established working groups under the Information Security Committee, creating a structure for self-checks to be done at each section on particular risks.

While ensuring strict adherence to related laws and regulations, we are continuously upgrading our information management structure to match the changing business environment. In light of the heightening risk of information leakage due to global business expansion, growing dependence on IT and the increased liquidity of employment, we are developing a structure to strengthen controls on critical information.

Toward Further Growth

Corporate Brand (CB) Management and Corporate Social Responsibility

Achieving Akebono's Corporate Mission through the Steady Promotion of CSR

Further Enhancing Our Corporate Brand and Pursuing Contributions to Society

We believe that we must continue to move forward to realize "akebono's Corporate Mission," because we believe that this is the best way to contribute to society. To this end, we are persistently communicating and sharing this belief in our mission with our associates worldwide, along with "akebono's Declaration for the 21st Century," which sets forth a code of conduct for realizing the Corporate Mission.

We formulated our Brand Statement pursuant to the Corporate Mission as a part of initiatives based on corporate brand management that were kicked off in 2005. The Brand Statement presents the ideal form of company that is our goal on a medium-term basis—with the aim of realizing the abovementioned mission on a long-term basis—as well as outlining a practical and effective way of achieving this goal in line with the changing times. Moreover, we set our focus on two aspects of our corporate image, namely, the provision of high-quality products and services and being a technologically advanced manufacturer. Since then, we have been striving to enhance our corporate image through corporate branding promotion activities.

Akebono's corporate brand management is based on the recognition that among the various stakeholders we come in contact with in the course of business operations, the most important are our customers, shareholders and associates. Given this, we constantly strive to enhance our corporate value, trying to place equal emphasis on these three stakeholder groups.

The purpose of the Company's corporate brand management is to enhance Akebono's uniqueness and attractiveness in support of its Corporate Mission by encouraging pride in the Akebono brand among associates and creating a vibrant organization. Each of our associates is fully aware of their connection with Akebono's corporate brand and is assiduously working to enhance the brand image through their day-to-day tasks and activities.

Enhancing the Corporate Brand by Steadily Promoting CSR

We recognize that CSR is indispensable to corporate brand management and essential to our continued business

Relationship Diagram—Corporate Brand and CSR



operations. Guided by "akebono's Corporate Mission" and Brand Statement, we are becoming an organization that meets the various requirements of our stakeholders and voluntary targets as a matter of course as we proceed with CSR activities that aim to offer greater safety and security to people throughout society.

It is our hope that through the promotion of CSR activities, our associates will come to understand that they are able to contribute to society through various aspects of business activities. By facilitating their confidence in Akebono, we believe that they can take greater pride in delivering safety and security to society, not only through brake products but through all aspects of their service in the Company. Thus, we recognize that steady promotion of CSR contributes to enhance attractiveness of our corporate brand and corporate value.

Corporate Brand Awareness Survey and Brand Reports

Akebono has conducted surveys on corporate brand awareness both inside and outside the Group since 2005, aiming to improve the effectiveness and efficiency of its corporate brand management. Surveys are significant part of the Plan, Do, Check and Act (PDCA) cycle in corporate brand promotion activities. In addition to Akebono associates, the scope of the survey includes customers and suppliers in various industrial sectors.



The scope of the fiscal 2012 survey was expanded further to include all Group sites in Japan, North America, Europe and Asia along with the 6,284 associates working there.

By accepting stakeholder feedback and opinions with sincerity, we are aiming to ensure that our stakeholders gain greater satisfaction from our products and services. Sharing what our stakeholders have to say with our associates worldwide, we issue the *Brand Report* in-house newsletter both in Japanese and English, helping further our corporate brand promotion activities.

Status of CSR Promotion (in-House)

In accordance with the *CSR Guidebook* (revised edition as of April 2010) issued by the Japan Auto Parts Industries Association (JAPIA), Akebono is preparing a list of its ongoing CSR activities. By making those activities more visible and managing them in a systemized manner, Akebono is ensuring that all its CSR activities are steadily implemented.

When preparing the abovementioned list, Akebono is utilizing ISO 26000 management system and the internal inspection system which is incorporated in said system. Also, committees and project teams launched to promote CSR are evaluating the CSR activities conducted in each business segment. By doing so, Akebono works to clarify its management issues on CSR from global perspective and sets priorities for addressing them, thereby improving overall CSR activities.

CSR Promotion Status (in-house: fiscal 2012)

Explanatory note: A: 5.0 points, B: from 4.0 to 4.9 points, C: from 3.0 to 3.9 points, D: 2.9 points and below Points represent result of self-evaluation on a scale of 1.0 to 5.0 points that was implemented in reference to the "CSR Check Sheet (revised version as of April 2010)" formulated by JAPIA.

Category	Initiatives	Responsible	Numerical targets (if applicable)	Structure for promotion action taken and degree of attainment	Self-	
outogory	induttoo	organization		Proactively seek to know the latest customer needs through meetings, etc.	evaluation	
Safety and quality	1-1. Understanding custom- er needs, providing products	Sales Division, R&D Division and		 Process inquiries and estimation requests in accordance with prescribed workflows and pass them on to the relevant sections through in-house computer networks 		
	that benefit society	Quality Assurance Department		• Update customers' product requirements and pass this data on to the relevant sections in a Systematic manner • Analyze collected market information and pass it on to the relevant sections in accordance with prescribed workflows lespent products prior to delivery in a systematic manner to verify performance in the actual usade environment		
	1-2. Providing information	Sales Division and		Provide appropriate information on R&D phase technologies in accordance with prescribed workflows	1	
	on products in an appropri- ate manner	Department; production sites		 Provide information in a systematic manner on product composition, such as chemical content, in accordance with customer and legal requirements Collect information on product failures and share such information in a systematic manner. 		
		production office		Verify the safety of pre-productions pursuant to the prescribed operation procedures Evamine and write and the pre-productions pursuant to the prescribed operation procedures Evamine and write and the productions pursuant to the prescribed operation procedures Evamine and write and the productions pursuant to the prescribed operation procedures Evamine and write and the productions pursuant to the prescribed operation procedures Evamine and write and the productions pursuant to the prescribed operation procedures Evamine and write and the productions pursuant to the prescribed operation procedures Evamine and write and the productions pursuant to the prescribed operation procedures Evamine and write and the productions pursuant to the prescribed operation	в	
	1-3. Ensuring product safety	R&D Division and Quality Assurance		Quality risk items requiring compliance with legal and safety requirements are identified and are closely controlled		
		production sites		•For defective products that are found after the start of mass production, ensure appropriate processing in accordance with pre- scribed workflows that set forth procedures to check the details of the defect, analysis of magnitude and actions to be taken		
				against its recurrence •Establish and apply quality management systems within an organizational structure designed to assist quality management activ- tion		
	1-4. Ensuring product quality	Quality Assurance Department	Quality Management System Steering Committee (once a month)	• Quality management activities are constantly pursued using the PDCA method, with policies and targets being formulated for each fiscal year		
		-		Integrate product development processes at locations worldwide while reviewing Advanced Part Quality Planning (APQP) Acquiring and maintaining the ISO 9001 and ISO/TS 16949 certifications		
	2-1. Abolishment of discrimi- nation (ensuring equal	HR Department		•Wage structure and personnel evaluation system are set forth irrespective of gender •Gender is eliminated from items verified at the examination for wage raise and promotion		
	2-2. Respect for human	HR Department,	Activities aimed at raising associates'	Conduct "compliance proficiency tests" aimed at raising associates' awareness of compliance across the board (twice)	1	
Iment	ment)	Committee	awareness of compliance (twice a year)	Whistle blowers are protected under the prescribed in-house rules		
nviror	2-3. Abolishment of child labor	HR Department		•The Company demands newly recruited employees to submit documents to identify their age under the rules of employment	-	
king e	enforced labor	HR Department	Confirmation of minimum works out forth	Although the company may check employee's passport for proof of identity, the submission of a passport is not required The Company is companied its used levels and minimum used set forth by each prefecture, ensuring that it is completed with the		
d wor	2-5. Appropriate wages	HR Department	by local governments (once a year)	 The company is company is company its wage reversion in minimum wage set form by each prefecture, ensuing that it is complying which the law (implemented utilizing a wage database system) 	в	
ts an	2-6. Working hours	HR Department		 In accordance with an agreement with the labor union, notification of overtime work exceeding prescribed baseline hours must be submitted and permission gained in advance. Attandance manadement system is utilized to verify whather working situations are complying with the Labor Standard Law. 		
n rigt	2-7. Communication and consultation with associates	HR Department		Frequency of labor-management consultations as well as matters to consult with are set forth in labor agreement	1	
Huma		Central Safety and		Annual activity plans for safety countermeasures and sanitary control at workplaces are formulated and implemented by the Safety and Health Committee	1	
	2-8. Safety and health of the working environment	Environment Committee		FRESH Center and Health Management Office formulate annual activity plans for health management and manage their implementa- tion		
			Education programs for each rank and	Introduced standardized safety manuals for global locations based the manual used in Japan Education programs for associates tailored to their rank and job roles are implemented (conducted programs for newly appointed	-	
	turing	HR Department	job role (once a year for all)	team leaders on two occasions, those for newly appointed assistant managers and for new managers on one occasion each and those for newly hired associates on two occasions)		
	3-1. Environmental manage- ment	Global Environment Committee, etc.	Renewal of the ISO 14001 certifications Environmental education	•Renewed the ISO 14001 certifications at AKBT (Thailand), Yamagata Manufacturing, AI-City Headquarters, Tatebayashi Foundry and other locations (see page 36) •Redan providing online educational programs with redard to environmental activities (see page 36)		
		Global Environment	Set voluntary target to reduce CO ₂ emis- sion volume by 7% on average from fiscal	Reduced CO ₂ emissions 16% (compared with 1990 level) in fiscal 2012 through the utilization of waste heat from in-house power	1	
	3-2. Reduction of green-	Emission Reduction Project)	2008 to fiscal 2012, compared with 1990 (in reference to JAPIA target value)	generators to operate boilers and the introduction of energy-saving compressors (see page 38). The average reduction rate over the five fiscal years from fiscal 2008 to 2012 was 18% (compared with 1990 level)		
	house gas emissions	Global Environment Committee	Improvement of transportation efficiency: set target to reduce energy intensity 1% year on	•Reduced energy intensity 1.6% year on year through efforts aimed at improving transportation efficiency, including a review of trans-		
		(logistics environment sectional committee)	year basis (in reference to revised Energy Conservation Law)	portation routes (see page 46) and the introduction of energy-saving trucks	.	
onmei	3-3. Preventing pollution of environment (air, water and	Manufacturing Division	Continued efforts aimed at reducing environmental impact	 Improved the quality of wastewater through such means as stepping up derauting and the adductional installment of on skimming devices (The average BOD** between five domestic locations was improved from 5mg/l to 3mg/l) *Oxygenate wastewater to facilitate the decomposition of pollutants 		
Envir	son	Global Environment		**Biochemical oxygen demand: One index for measuring water pollution; (standard value is set at 25mg/l)		
	3-4. Resource saving and waste reduction	Committee (zero- emissions section- al committee)	Maintenance of zero-emissions status (no direct landfill of waste)	 Zero-emissions (no direct landfill) of waste sand was accomplished in fiscal 2012 for the second consecutive year through the efforts such as recycling of sand into cement raw material (see page 40) 		
			Response to regulations on copper used in friction materials set forth by states of		1	
	3-5 Chemical substance		California and Washington, the United States After January 1, 2021, materials for new	•The Company is developing copper-free friction materials. The development is completed for rear brakes and ongoing for front		
	management	R&D Division	automobile containing 5wt% of copper or more are going to be prohibited	brakes •Chemical substances designated by PRTR laws contained in newly developed friction materials are checked and tracked		
			After January 1, 2025, materials for new automobile containing 0.5wt% of copper or			
	4.1. Compliance with laws	Compliance	Compliance Committee meetings (six	Compliance Committee meetings are held six times a year and relevant issues and initiatives are discussed Conducted "compliance proficiency tasts" for all demostle accessions to improve their understanding in addition to other relevant		
	and regulations	Committee	Compliance understanding tests (twice a year)	vant activities inplemented in line with priority themes set for each fiscal year (the tests were conducted on two occasions in fis- cal 2012)		
	4-2. Compliance with com-	Compliance Committee	Provision of training sessions themed on relevant laws (seven occasions per year)	Training sessions: three sessions focusing on the prevention of private monopolies and cartels and four focusing on Japan's "Act Against Delay in Payment, etc. to Subcontractors"		
	4-3. Corruption prevention	Compliance	(Leven eccelerit per feli)	Ine company raises alerts, regularly snamp data on the latest cases of legal violations through intranet The Company raised awareness of the issue of illicit contributions, including political donations, and bribery by distributing booklets that property action guidelings for associations at downcare interactions		
	4-4. Control and protection	Compliance	Audit and review of trade secret manage-	••Conduct audit and review of the status of trade secret management on an annual basis while raising alert over the handling of such ocated by the distribution benefities to an annual basis while raising alert over the handling of such ocated by the distribution benefities to an annual basis while raising alert over the handling of such	в	
	or secret mormation	committee	ment on an annual basis	secrets or warmoung womens presenting the dotion guidelines for associates at domestic and overseas locations • Export transactions are managed and overseen by structures set forth in the in-house rules and processed with prescribed oper- reliand flaw revided by using house.		
	4-5. Control of export trans- actions	Compliance Committee	Provision of training sessions themed on relevant laws (twice a year)	The Company submitted the "Export Control Rules for National Security" to the Ministry of Economy, Trade and Industry, and is registered as an exporter		
		Legal & Intellectual		•Training sessions themed on relevant laws were held to raise associates' awareness of compliance (twice a year) •In fiscal 2012, established the R&D Patent Committee to regularly confirm the latest patent information throughout the year. The		
	4-6. Intellectual property protection	Property Department		activities are planned to continue in fiscal 2013 and beyond Incorporate patent clearance into essential procedures set forth in ISO manuals so as to confirm noninfringement at every design review (near review held to contact product development process)		
				 Information is appropriately disclosed to stakeholders, including mass communication media, shareholders, investors and associates giving sufficient consideration to the content and the timing 		
	5-1. Information disclosure	Corporate	(once a year, both in Japanese and English) and fact sheets (Japanese vor	Matters such as financial conditions, performance and business activities are disclosed through such media as TDnet and EDINET pursuant to the rules of information disclosure set forth by such media		
. Info discl	to stakeholders	Office	sion: four times a year; English version: twice a year)	Update the Company's websites as needed to improve visibility and to ensure that the latest information is disclosed The Company issues "AKEBONO REPORT," which integrates the corporate brochure, CSR report and annual report for the conve- inance of etablobles.		
	6-1. Companywide risk man-	Risk Assessment	Risk assessment meetings (four times a	The Company produced a video introducing its activities to general public	$\left - \right $	
. Risk anage- nent	agement structure	Committee Natural Disaster	year)	•rusk assessment meetings are neid periodically to follow-up on the outcomes of initiatives •Continued to improve the level of first emergency response through the update of response plans, the implementation of earth-	в	
	business continuity plan	Crisis Management Project	tion between locations (once a year)	quake drills and the preparation of disaster response manuals. Future issues include reinforcing the Group's BCM while improv- ing its BCPs, developing such plans as those aimed at restoring damaged facilities and ensuring seamless operations.		
ion ion			Meeting with local residents for the exchange of opinions (once a year or	requiring now interungs with local residents for the exchange of opinions (three meetings were held in fiscal 2012 attended by 43 people in total) •Voluntary cleanup activities at the local areas are undertaken by associates regularly (such activities were held 15 times in fiscal		
	7-1. Contribution to local communities	General Affairs Department	more) Summer festivals (once a year)	2012 with 604 associates participating in total) • Sponsoring summer festivals every year (such festivals were held at six domestic locations in fiscal 2012 with a total of 7,507	в	
			voluntary cleanup activities at the local areas (twice a year)	people parulparing). •Co-sponsored test-driving event inviting 108 students from Iwaki City, Fukushima Prefecture, with the aim of encouraging young people whose lives had been damaged by the Great Fast Ianan Farthnuake		
	8-1. Structure for developing	Corporate Branding		 CSR activities are led by the Corporate Brand Management team under the recognition of "CSR is indispensable for corporate brand management and an essential for continuing our business onerations" 		
promo cture	Group	Management Office		 Each relevant section and committee sets targets and evaluates achievements on a separate basis. The Company recognizes that those initiatives must be integrated and promoted on a Groupwide basis in the future 	в	
	8-2. Structure for developing	Purchasing Division		Work to nurture more favorable partnerships with suppliers, strictly comply with relevant laws and regulations and the principles of fairness and equity in conducting business transactions	1	
αi	pliers	. arenasing Division		Revised the Green Purchasing Guidelines in February 2012 to step up green procurement efforts		

With Local Communities

Providing Secure Employment and Nurturing Future Generations

Nurturing not only its associates, Akebono strives to help its local communities raise future generations through such unique initiatives as scholarship programs.

Vocational Scholarship Programs: Providing Ongoing Support for Working Students

Since 1964, Akebono has provided students with scholarships through its Vocational Scholarship Program, a scheme that allows them earn wages by working at Akebono while also paying their academic fees. This program has supported a range of students, including those earning college degrees in early childhood education or nutrition to help them acquire qualifications as kindergarten teachers, nursery workers and nutritionists. Although these students may go on to work at places other than Akebono after completing their studies, this program enriches local communities. For example, Akebono Brake Fukushima Manufacturing Co., Ltd. (Fukushima Manufacturing) signed up 24 students at the beginning of fiscal 2013. To date, Akebono has nurtured more than 3,000 scholarship recipients, including some who are the second generation in their family to be so.



Welcome party for new scholarship recipients (April 2013)

Inviting Students on Office and Plant Tours

Akebono is proactively inviting elementary and junior high school students to tour its office and plants across Japan. From September 2012 to January 2013, we invited 608 students from seven elementary schools to participate in tours at Ai-City in support of Saitama Prefecture's elementary school educational programs. After a briefing about the company and the basics of brakes, students saw the miniature brake pad manufacturing line and visited the brake technology education patrol car (see also page 24) as well as the "Ai-Museum" (Brake Museum). Similar tours, welcoming a range of children and students from local communities, are held at production plants at Iwatsuki, Fukushima and other locations.

Akebono Brake, Elizabethtown Plant (ABE), one of Akebono's U.S. locations, also hosts plant tours. In 2012, it



invited Japanese students studying at a supplementary school in Elizabethtown to provide them with opportunities to learn about brakes.

Putting Down Roots in Communities Worldwide with Respect for Human Rights

Since establishing Akebono Brake Astra Vietnam Co., Ltd. (AAVH) and Akebono Brake Mexico S.A. de C.V. in 2011 and in 2012, respectively, we have been proactively recruiting local human resources to work at these two companies. AAVH began operations with a workforce of 55 per-



Ribbon-cutting ceremony at the AAVH opening

sons consisting of 51 local associates, including one manager, and four expatriates, three from Indonesia and one from Japan. In Mexico, we recruited seven local associates while dispatching three expatriates from Japan. Plans call for increasing the number of local associates to around 30 by December 2013. As for the managers in charge of human resources and general affairs, we are proactively appointing local associates, looking to them to provide leadership in the future.

AAVH holds to the traditions of its parent company, PT. Akebono Brake Astra Indonesia (AAIJ), of advocating the highest standards of respect for human rights. Likewise, Akebono Brake Mexico S.A. de C.V. will strive to put down roots, deepening its understanding and respect of local customs, culture and value systems.

Initiatives of Akebono 123—Working Together with People with Disabilities

Akebono 123 Co., Ltd., a special-purpose subsidiary of the Akebono Group that provides employment for people with disabilities, is working to help them achieve personal growth through duties. While strengthening their relationships with society through the provision of employment, Akebono 123 is proactively participating in local events. One of these events



included a vocational skill competition held in July 2012, and two Akebono 123 associates received prizes in the category of building cleaning.

Prize-winning associates displaying medals and prize certifications

Employment Rate of People with Disabilities in the Akebono Group



Plant tour at ABE, the United States

Special Feature

Economic Report

With Local Communities

Interacting with Community

Akebono greatly values the communities where it operates and ensures that each base of operations worldwide is proactively involved and maintains close communications with the local people.

Hosting Local Summer Festivals

As one initiative aimed at contributing to local society, Akebono hosts summer festivals at its major domestic locations. With younger associates operating stalls and managing attractions, these festivals have been enjoyed by many people from local communities, including children as well as associates and their families, providing them with a place for exchange and to have fun. These festivals also give those who sing and dance an audience, helping facilitate interaction



among these and other people.

Akebono will continue holding events aimed at deepening ties between its associates, their families and people in local communities.

Summer festival at Ai-City (August 2012)

Ai-Museum: Helping to Communicate Brake Technology

Established in 2004 to mark the 75th anniversary of Akebono's founding, Ai-Museum is open to the general public to learn about braking technologies and the significance of automobile brake components. The museum presents the mechanisms and functions of brakes using life-size cars as well as actual brake components from bullet trains and other samples. Also, the museum's information corner teaches visi-



tors about the history of brake development.

Going forward, we will enhance the museum's content and further set up a display of brakes from around the world.

Many have visited the museum during summer vacation season

Welfare Vehicle Donated to a Facility for Handicapped People

In December 2012, the Akebono Brake Labor Union donated a large-sized van to a local facility for mentally handicapped people. This donation was made as a part of an initiative led by the Confederation of Japan Automobile Workers Unions involving offering vehicles to social welfare facilities once a year, with the aim of improving accessibility for those who live far from such facilities.



Nissan Caravan van donated to facility for handicapped people

TOPICS

Initiatives at Akebono Brake Astra Indonesia

PT. Akebono Brake Astra Indonesia (AAIJ) was granted "Five Stars," the highest accreditation under the Astra Friendly Company Certificate (AFC) system operated by Astra International, a major company at the head of Indonesia's foremost conglomerates in the automotive and other industries, for its unique initiatives to fulfill corporate social responsibility.

At AAIJ, efforts are now under way to help improve the quality of life in the local community and to nurture young people through the provision of continued support and donation. In this way, AAIJ is striving to win the support of the community.

AAIJ's Main Initiatives

- Donating educational equipment (such as traditional musical instruments)
- •Providing scholarships (to 40 elementary school students, five junior high school students and eight high school students in 2012)
- Donating food, clothing and books for people in poverty
- Donating food for infants
- Providing information on maternal and child health
- Providing on-demand lectures at local schools
- •Blood donation from associates





Donating musical instruments to local junior high school



Cervical cancer prevention campaign



Granting scholarships

With Our Customers

Realizing World-Class Quality That Meets Diverse Customer Needs

Akebono is striving to improve customer satisfaction by delivering world-class products that satisfy diverse customer needs.

Akebono's Quality Management and Development Capability Commended by its Customers Becoming Altrom's Supplier of the Year

In June 2012, Akebono Brake Corporation (ABC), the Akebono Group's U.S.-based subsidiary, received the "Altrom Group 2011 Supplier of the Year" award from the Altrom Group, a major North American dealer handling automobile parts for



vendor among Altrom's 250 suppliers. The award-winning supplier is determined on the basis of Altrom's evaluation of the supplier, which takes end-user satisfaction into consideration. In winning this award, ABC marked one of its most notable achievements since it began selling aftermarket products in North America in 2000.

Altrom Group 2011 Supplier of the Year

Wining Toyota Quality Alliance Gold Award

In October 2012, the Akebono Group's North America-based Aftermarket Sales section received Toyota U.S.A.'s "Golden Award" for the first time. This award is second only to Toyota



U.S.A.'s Platinum Award and was given in recognition of Akebono's many years of ceaseless effort in the manufacture and sale of high-quality brake pads for Toyota cars.

Toyota Quality Alliance Gold Award granted by Toyota U.S.A.

Akebono Commended by Major Automotive Manufacturers for Product Quality

In November 2012, Akebono was presented with a "Letter of Appreciation for Superior Quality" by Nissan Motor Co., Ltd. A presentation ceremony was held at the Nissan Technical Center and Akebono, together with two other suppliers, received a letter commending its efforts. The letter pointed to the Company's annual track record, characterized by a minimal rejection rate, low number of defective products detected after sales and promptness and accuracy of response to customer inquiries with regard to product failures.

In April 2013, Akebono received a "Superior Quality Award" at a general suppliers meeting of Daihatsu Motor Co., Ltd. To

qualify for the award, candidates must do ¥500 million or more per year in business with Daihatsu Motor. The award is given based on the number of defective products delivered and the ratio of after sales product failures.

Akebono was also given the "Excellence in Quality Award" by Honda of America Manufacturing., Inc. in April

"Superior Ouality Award" given by Daihatsu Motor

2013 as well as the "Best in Quality Award" from Isuzu Motors Co., (Thailand) Ltd. in May 2013.

Granted GM's Highest Platinum Award

In November 2012, Akebono's North American Original Equipment Supplier Team, along with the Group's Clarksville and Glasgow plants, received the highest "Platinum Award" from General Motors Company (GM). To date, GM has granted such awards to 508 of its 4,200 suppliers in recognition of a product delivery ratio of 99.5% or greater.



GM's Platinum Award

Brake Technology Education Patrol Car

Akebono has developed a specialized vehicle that introduces its brake technologies by visually displaying the mechanism of drum and disk brakes in an easy to understand way. The "Brake Technology Education Patrol Car" travels across Japan with the aim of assisting automobile repair shops, auto dealers, parts shops and agencies in proposing better brake products that ensure greater safety, thereby contributing to a safe automobile society. In particular, we aim to ensure that automobile mechanics become capable of repairing brakes perfectly.

The vehicle is also utilized in employee training and is exhibited on Open House Event days (see page 26) as well



as at school events and local citizens' festivals (see pages 22 and 23).

Brake Technology Education Car attracting the interest of elementary school students

TOPICS

ISO/TS 16949 and ISO 26262 Quality Management System

The Akebono Group's principal bases nationwide have obtained ISO/TS 16949 quality management system certification with the aim of accelerating global expansion as well as ISO 9001 quality management certification to enhance brand competitiveness.

In addition, with the cooperation of external specialists efforts are now under way to acquire the ISO 26262 certification with regard to automotive electronic and electrical safety-related systems.

Special Feature

With Our Shareholders

Promoting Information Disclosure Using Diverse Channels

Akebono is striving to ensure proactive and easy-to-understand information disclosure

Yamagata Manufacturing Co., Ltd. (Yamagata Manufacturing), while holding corporate briefings at other locations in Japan for individual

through IR events and online media.

General Meeting of Shareholders and Briefings on Financial Results

Akebono holds an annual briefing on financial results at the General Meeting of Shareholders once a year while holding similar briefings for security analysts and institutional investors twice a year. At the General Meeting of Shareholders, our performance forecasts, business strategies and midterm business plans are also disclosed. For shareholders who are unable to attend General Meeting of Shareholders, we introduced the electronic voting system. (Voting rights exercised through this system accounted for 20% at fiscal 2012.)

In addition, in fiscal 2012 Akebono invited security analysts and institutional investors to tour Akebono Brake



Plant tour at Yamagata Manufacturing

With Our Suppliers

Enhancing Information Disclosed Online

Materials used at the aforementioned briefings are posted on our website along with our financial results and fact sheets. We also maintain the "AKEBONO MOTORSPORTS CHALLENGE" and "About Akebono" websites to introduce our initiatives in a visual, easy-to-understand manner. In addition, we utilize our website and the Tokyo Stock Exchange's "TDnet" to ensure timely information disclosure in accordance with related laws and regulations as well as the rules of securities exchanges.



About Akebono AKEBONO MOTORSPORTS CHALLENGE

URL: http://www.akebono-brake.com/sp/corporate/en/ http://www.akebono-brake.com/motorsports/en/

Sharing Information and Our Vision on a Regular Basis

investors.

Toward the realization of global quality, we are sharing our goals and challenges with our suppliers through periodic activities designed to strengthen cooperative ties.

Enhancing Partnerships through the Activities of Seiwa Kai

To enhance its partnerships with suppliers, Akebono has promoted wide-ranging activities in cooperation with "Seiwa Kai," an association comprising Akebono's main suppliers. Activities with Seiwa Kai during fiscal 2012 included study sessions that followed up on fiscal 2011 sessions themed on strengthening the quality assurance structure, and the results were presented in February 2013. Also, in November 2012 we organized an observation trip involving some Seiwa Kai members flying to India to visit local automotive manufacturers and see growing cities.

Ceaseless Efforts toward Quality Enhancement and Cost Reduction

While expressing our expectations to suppliers with regard to such matters as quality and cost reduction targets, we seek to understand the difficulties confronting them and to find solutions together, thereby improving our output at less cost.

In fiscal 2012, we pursued such initiatives in cooperation with 24 of our main suppliers. From fiscal 2013 and beyond, we will strive to accelerate these initiatives and achieve greater improvements by involving not only the Purchasing Division but also other sections, including those related to development, quality assurance and production.



Briefings for Seiwa Kai members on electro-mechanical brakes



A Seiwa Kai members' group participating in a study session



President Hisataka Nobumoto welcoming attendees to the General Meeting of Akebono Suppliers (February 5, 2013)



Addressing difficulties confronting suppliers on-site

With Our Associates

Nurturing Human Resources to Enhance Corporate Value as a Global Company

As it strives to enhance its corporate value, Akebono puts emphasis on human resources in its global operations.

Basic Human Resources Policy

To provide opportunities to all associates and to support them so that they can share in the Company's successes. Akebono believes that the most important factor that guides a company to success is human talent (our associates). Guided by that belief, we adopted a basic human resource policy that states "each associate must be given the opportunity to exert their abilities and be continuously supported to share their successes with the company." We are striving to build our long-term global personnel policy as well as to facilitate associates' ability to establish their individuality and foster mutual respect and trust.

Moreover, we are reinforcing human rights education and enlightenment to support the achievement of an organization with abundant diversity and creativity.

Nurturing Globally Capable Human Resources and Organizations

In fiscal 2011, Akebono began issuing the Akebono Starter Book, a standard educational package for use at all its bases worldwide by newly recruited associates. We also encourage leaders working at Akebono's locations worldwide to interact with each other and younger associates to apply for duties overseas. In this way, we are striving to build a strong organization capable of surviving in global markets.

Overseas Training Plan for Younger Associates

Akebono encourages younger associates to participate in the "Overseas Training Plan," which stations them overseas in their early years with Akebono, helping them understand diverse cultures through the experience of living abroad. From 2012 onward, countries where languages other than English are spoken were additionally specified as destination countries, with the aim of advancing this plan even further.

Global Leadership Forum

We invite global leaders who work at Akebono's overseas locations to participate in the "Global Leadership Forum," a venue for exchanges on issues currently confronting the Company and the proposal of solutions. In fiscal 2012, such sessions were held over four days from August 28, 2012 and attended by 19 associates from all around the world. Divided into four groups, the participants made presentations on issues of concern as well as solutions and engaged in lively discussions that continued even after the forum. Conclusions were presented to board members at the presentation meeting held in January 2013.

Began Holding Global Leader Meeting by Section

In addition to the abovementioned forum, in fiscal 2012 we began holding meetings of global leaders by section, specifically, the Global Sales Meeting (April 2012), Global Safety Meeting (July 2012), Global Quality Meeting (September 2012) and Global Purchasing Meeting (October 2012). Through these and other initiatives, including monthly reports with updates on locations worldwide, we are striving to resolve issues confronting Akebono by rallying the shared expertise of colleagues from across the Group.

Global Meeting of Developers from Five Blocks

To strengthen cooperation between the Akebono Group's R&D bases in regions around the world, in 2012 we began holding Global Meetings of Developers from Five Blocks, which aim to facilitate the exchange of opinions between the global leaders of development sections. With participants from Japan, Europe, North America, China and Indonesia, we held five such meetings during fiscal 2012, discussing priori-

ty development projects and priority issues toward the "akebono New Frontier 30 -2013." We will to continue to facilitate communication among colleagues worldwide to create "One Team."



Discussion was brisk and unconstrained

TOPICS

Open House Event

As one of our corporate brand management activities, we hold "Open House Event" days at each location, inviting families of associates to come to see where their family members are working.

In fiscal 2012, such visiting days were held at Ai-City headquarters, the Global Head Office in Nihonbashi, Tokyo, and three other domestic locations with 189 people participating. The contents of these visiting days included the tours of office spaces and manufacturing lines, quizzes about the places toured and a class enabling participants to get hands-on experience of manufacturing.

From participants, we heard such comments as "I was impressed that Akebono is making components used in the bullet

trains and automobiles I see every day. After I grow up, I want a job that helps people" and "Being an ex-associate, I recalled my good old days at Akebono as I toured these sites. I was also happy about having my children see where their father is working."

We have also hosted similar events at overseas sites, including the Columbia Plant in the United States.

Through such activities, we strive to win these family members' understanding of the Company to instill pride in Akebono in our associates.



Open House Event held at Ai-City (August 2012)

In December 2012, we completed the construction of our "Ai-Village" global training center in Hanyu City, Saitama Prefecture, a facility created to nurture globally capable human resources.

The Akebono Group took over the North American brake business of Robert Bosch LLC in 2010 and today 60% of the Group's net sales are generated outside Japan and 60% of its associates work outside Japan. In addition to North America, we are striving to strengthen our overseas business networks in Europe and Asia. This will, in turn, further increase the proportions of both overseas sales and associates.

We recognize that to accelerate and expand our overseas operations, it is essential for each organizational unit

Outline of Ai-Village

Ai-Village comprises both training and accommodation facilities and is expected to host a total of around 10,000 associates from around the world every year. At times of emergency, Ai-Village can serve as a disaster response center, converting its training facilities into accommodation for approximately 200 people.

"Ai" has a double meaning. The first is as an acronym for "Akebono Innovation," the second is as a literal reading of the word ai in Japanese, meaning indigo dying, which Hanyu City was traditionally known for. "Village" denotes the location of this facility near the east end of area surrounding Ai-City, and is pronounced in the French manner.



An exterior view of Ai-Village

Striving to Diversify Human Resources

At Akebono, the human resources we recruit are increasingly diverse as we aim to accelerate the expansion of global operations.

Introduction of Regular Recruiting of Fresh Graduates in Autumn In fiscal 2012, we began the regular recruiting of fresh university graduates in autumn, targeting graduates from overseas universities, which differ with regard to the month of graduation by region. On October 1, 2012, for the first time we held a welcome ceremony for newly recruited associates in autumn. On the same day, we also held ceremony for fresh graduates who won the offer of job commencing from April



Associates recruited in October 2012

2013. We are careful to ensure that those recruited in April and October undergo the same training sessions. Looking ahead, we will continue to nurture the human resources who will go on to create new values and lead our global operations.

to achieve true globalization. We are challenged to create a company wherein people with diverse backgrounds and perspectives work together, pooling their knowledge and experience to realize greater organizational capabilities. Ai-Village was established to provide a place for such exchange among associates from across the Group and is expected to facilitate the creation of new value as well as the establishment of "One Team."

Fully utilizing this facility, we will strive to nurture associates who will go on to lead our global operations and solidify our foundation of human resources over mediumand long-terms.

Main Features of the Facility





Presentation room modeled after a university auditorium





exchange through cooking



Lounge areas for enhanced communication

Dedicated language laboratories and study rooms

- · Flexible learning spaces that can be arranged to suit program requirements
- Accommodation for medium-stay and long-term visitors (56 rooms)
- Library facilities to support self-study through e-learning and other means
- Video conferencing functions to strengthen worldwide networking among global facilities

Internship

Akebono is proactively accepting interns from abroad. In fiscal 2012, each section of Ai-City headquarters accepted one or more interns. By facilitating proactive interaction between associates and interns, including exchange events, we are striving to nurture their sense of being part of an international concern.

Number of Interns Accepted



Economic Report

Corporate Information

Special Feature

Social Repor

With Our Associates

Nurturing Associates Who Go on to Strengthen Akebono's Onsite Capabilities

Akebono is striving to nurture operators who bolster its production sites while disseminating its know-how across bases worldwide.

Overseas Expansion of Monozukuri Center

To nurture engineers capable of reinforcing the foundation of Akebono's manufacturing strength worldwide, we established the Monozukuri Center, a forum that provides short-term intensive training courses on the principles of manufacturing and is always open to anyone in Akebono. Such training courses comprise: "Monozukuri Dojo," which provides associates with hands-on experience to gain manufacturing knowhow that is immediately applicable in their own worksites; "Fundamental Skills Training Schools" aimed at teaching and disseminating optimal operation procedures; and "Model Line Courses," which demonstrate production line ideals. Educational materials are prepared in-house and tailored for each class while internal experts present lectures.

In addition to teaching Akebono's unique approach to manufacturing, the Monozukuri Center serves as an information hub, playing an essential role in disseminating our manufacturing approach to bases all around the world.

Specifically, we started a new project in February 2012 to open Fundamental Skills Training Schools at overseas locations. We began by instructing trainer candidates from the United States and Asian countries. Currently, some 20 candidates have completed their instruction and gained qualification as Fundamental Skills Training School trainers capable of teaching other local associates at their own bases.

As a result, in June 2012 Akebono was able to open a Fundamental Skills Training School at its Clarksville Plant for the first time in the United States. This was followed by another at the Elizabethtown Plant in December 2012, followed by ones at the Glasgow Plant and Columbia Plant in February 2013. All associates working at these four plants are encouraged to undergo training at these schools. In Asia, PT. Akebono Brake Astra Indonesia (AAIJ) opened such a school in September 2012 and a number of associates have completed the course. Expanding our sights, plans call for offering these courses at Akebono Europe S.A.S. (Arras, France) and Akebono Brake Mexico S.A. de C.V. (Mexico). Also, during fiscal 2012, 240 associates in bases across Japan who had been in Akebono less than 10 years attended Fundamental Skills Training School courses.

Looking ahead, we will continue to nurture engineers who will go on to strengthen Akebono's onsite capabilities while striving to develop training programs tailored to the needs of each production site.

Fundamental Skills Training Schools opened

Date	Location	Country
Apr. 2010	Akebono Brake Iwatsuki Manufacturing Co., Ltd.	Japan
Sept. 2011	Akebono Brake Yamagata Manufacturing Co., Ltd.	Japan
June 2012	Akebono Brake Sanyo Manufacturing Co., Ltd.	Japan
Oct. 2012	Akebono Brake Fukushima Manufacturing Co., Ltd.	Japan
June 2012	Clarksville Plant (ABCT)	U.S.
Sept. 2012	PT. Akebono Brake Astra Indonesia (AAIJ)	Indonesia
Dec. 2012	Elizabethtown Plant (ABE)	U.S.
Feb. 2013	Glasgow Plant (ABG)	U.S.
Feb. 2013	Columbia Plant (ABCS)	U.S.
Scheduled	Akebono Europe S.A.S. (Arras)	France
Scheduled	Akebono Brake Mexico S.A. de C.V.	Mexico



Trainees who attended a Fundamental Skills Training School at AAIJ



Fundamental Skills Training School at the Glasgow Plant



Opening ceremony for a Fundamental Skills Training School at the Clarksville Plant



Fundamental Skills Training School trainer candidates receiving instruction at Ai-City Monozukuri Center

TOPICS

Voice of a Trainer



"Disseminating Akebono's unique manufacturing approach to countries worldwide"

Hideki Niitsu

Monozukuri Center, Manufacturing Division

At the Monozukuri Center, the utmost emphasis is put on imparting our way of looking at manufacturing, specifically, an approach to manufacturing only Akebono is capable of. We believe that this approach has long bolstered our manufacturing traditions and skills. Through the provision of training programs, we want to disseminate this approach among Akebono associates worldwide. As we teach overseas associates this manufacturing approach, in addition to confronting language gaps, we are facing the challenge of making tacit knowledge explicit. This requires patience. I have visited Akebono's North American sites three times to give lectures at Fundamental Skills Training Schools and experienced the difficulty of communicating our approach in a way that is comprehended by all trainees.

I believe that our communication capabilities will be key to establishing a global production structure and to pursuing "Commonization and Standardization" (C&S)*. While deepening mutual understanding with colleagues working at production sites worldwide, I will strive to disseminate Akebono's unique manufacturing approach among them.

*See pages 4-9.

Special Feature

Economic Report

With Our Associates

Personnel Administration Responsive to Diversity

To keep up with globalization, Akebono is working to establish a personnel system that is responsive to the diversity of human resources.

Diversity Management

To become a truly global company that helps each associate to fully realize their potential, Akebono is implementing diversity management centered on three key initiatives: diversity promotion; work-life balance promotion; and career development assistance. In line with these initiatives, in 2012 we established the Diversity Working Group, consisting of non-Japanese associates and Japanese associates who have long experience as expatriates, and charged it with gathering associates' opinions on diversity promotion and presenting proposals to management.

Initiatives Aimed at Maintaining a High Retention Rate

In recent years, growing numbers of new graduates have been resigning within a few years of being hired, a trend that is breeding increasing social anxiety. In response, Akebono is striving to maintain and improve its associate retention rate. Thanks to these efforts, as of the beginning of fiscal 2013, 98% of the associates hired in fiscal 2010 remained in the Company.







Work-Life Balance

We are developing a working environment that allows associates to choose their own work styles, enabling them to strike a balance between their vocational and private lives. In addition to preparing various programs aimed at assisting associates raising children and those nursing their family members, we are aiding associates' career development in ways that suit their individual needs and offer opportunities to participate in self-improvement activities, including community work and foreign language training.

Childcare Leave Plan

We have a childcare leave plan that exceeds legal standards. For example, eligible associates can apply for childcare leave until the child's third birthday. Eligible associates can shorten their working hours by two hours per day until the child's enrollment in junior high-school. Moreover, eligible associates can take up to five days per year of leave that is separate from annual paid leave to nurse sick children.

Career Partner Plan

For those who leave the company due to family duties such as childcare, care giving, accompanying a spouse on a regional assignment or for other reasons, we offer a Career Partner Plan that provides them with opportunities to later rejoin Akebono. This plan is also intended to provide associates with diverse and flexible work styles. To date, five people have rejoined Akebono through this plan.

Overseas Labor Management

We recognize that maintaining stable labor-management relationships at overseas locations is important, and therefore, position it as an ongoing management issue. We are striving to build cooperative relationships with labor unions through mutual consultations and frank communications under the basic policy of "harmonious labor relations."

For example, efforts are now under way at our Chinese subsidiaries to improve their personnel systems based on the revision made in fiscal 2012. While integrating the personnel systems of subsidiaries in Guangzhou and Suzhou, we are working to develop fine adjustments to suit regional characteristics, incorporating such features as regionally specific allowance programs. We are also promoting branding activities through the provision of educational programs aimed at nurturing a strong sense of loyalty among local associates. In addition, in fiscal 2012 we began providing local associates working at these two subsidiaries with English-language training programs.

In Thailand, we have striven to recruit senior staff from local candidates while helping our local subsidiary raise brand awareness among people in universities and other educational institutions. In Mexico, our involvement in the establishment of local production base included hiring managers locally and helping them formulate company rules.

With the aim of sharing information on labor relations and personnel administration in each country, we hold "Global Personnel Administration Meetings" on a regular basis. At these meetings, we compare the personnel evaluation index adopted at bases worldwide to aid in the improvement of administration.

Looking ahead, we will continue to offer overseas operations labor management support that respects and understands the national character and labor practices of individual countries.

With Our Associates

Worksite Safety and Health

While striving to eliminate occupational accidents, Akebono seeks to ensure a comfortable workplace where associates will be happy to work for many years.

Occupational Safety and Health Management

The Akebono Group's Occupational Safety and Health Management Structure is headed by the Central Safety Environment Committee. Under this structure, we ensure the safety and health of our associates and thoroughly address various risks related to our operations, including disasters, accidents and other emergencies.

Specifically, we pay utmost attention to the safety of our personnel. Unless they have received the prescribed safety education, no newly recruited associate or contract worker is allowed to engage in actual operations. Safety seminars are held regularly and the booklet *Need-to-Know about Safety* is distributed to all associates, reminding them of the appropriate gear/protective clothing, the order of operation, how to anticipate danger and safe driving techniques.

Akebono's Safety and Health Management Structure



Response to the Problem of Asbestos

Well ahead of other domestic companies, Akebono began the development of asbestos-free products in the 1970s. Not only did we complete the transition to asbestos-free products for new cars by 1994, we have not manufactured service parts containing asbestos since 2000.

In July 2005, Akebono launched the "Asbestos Special Committee" and established a "Health Consultation Room" within each group company, implementing health checks for neighbors, ex-associates and their family members (the costs were borne by Akebono). In total, 609 people underwent health checks as of March 31, 2013. We plan to continue the health checks.

On November 28, 2012, a lawsuit was filed against Akebono by ex-associates and bereaved families of ex-associates, demanding compensation for health damage allegedly attributable to asbestos contained in its products. We will respond to their claims for such damage with sincerity.

Breakdown of Number of Examinees (from August 2005 to March 2013	5)
Figures in parentheses represent increases from the previous year	

	Ex-associates	Families of ex-associates	Neighbors	Total
Asbestosis found	41	0	0	41
Pneumoconiosis found	15	0	0	15
No findings	404 (+7)	37	112	553 (+7)
Total	460 (+7)	37	112	609 (+7)



Safety Records at Overseas Locations

As a result of initiatives aimed at reducing occupational accidents, the frequency of lost work time due to occupational accidents in fiscal 2012 was 0.4, marking a record-low figure for the second consecutive year.



Graph data is based on calculation methods adopted by the Occupational Safety and Health Administration Office of each country.

U.S. national average is based on the U.S. Department of Labor data. However, figures for 2012 do not contain average data for all Akebono U.S. plants as such data has not been publically disclosed as of June 11, 2013.

Data from 2003 to 2009 included ABG and ABE; ABCS and ABCT were added from 2010. AAIJ (Indonesia) was included from 2011. Please see page 67 for the official names of overseas locations.

Safety Seminars

Striving to raise safety awareness among associates, "Safety Seminars" are regularly held as reminders about appropriate gear/protective clothing, orders of operation, how to anticipate danger and safe driving techniques, with trainers dispatched from the Manufacturing Division giving lectures at bases all across Japan.

Safety Promotion Convention

Every year, we hold an "Safety Promotion Convention" during what Japan's Ministry of Health, Labour and Welfare has designated "safety week" (July 1 to 7). At this convention, prizes are given to associates and teams those have made significant contributions to safety promotion over the past fiscal year, while safety slogans with regard to safety are selected and commended.

Economic Report

With Our Associates

Health Promotion Initiatives at Worksites

Along with maintaining a healthy working environment, Akebono is striving to develop a better health management structure responsive to current needs.

Our Basic Policy of Health Management

Akebono recognizes that maintaining associates' health is indispensable not only for its ongoing business operations but also for the society in which it operates. With this in mind, we are pursuing health promotion initiatives from the following viewpoints.

- 1. Enhancing the quality of life of associates
 - Promoting physical and mental health while helping associates maintain favorable family relationships and good human relationships at worksites
- 2. Maintaining a healthy working environment that ensures a long working life
 - a. Addressing the problem of increasing medical expenses $% \left(f_{i}, f$
 - b. Preventing the occurrence of health problems that may result in long-term absence or a decline in job performance and productivity
- 3. Exercising risk control
 - a. Addressing health problems that may increase occupational and commuting accidents or product defects
 - b. Infectious disease prevention

Currently, we are striving to reinforce countermeasures against mental health problems as well as our health management structure as a whole, with the recognition that these are pressing issues.

In addition, the Health Management Office has been separated from the Human Resource Department in line with organizational changes made in January 2013. While strengthening the protections on personal information, the Health Management Office will work to identify obstacles to health promotion and strive to overcome them.

Strengthening Countermeasures against Mental Health Problems

In fiscal 2012, we launched an investigative commission to tackle the root causes of mental health issues, with the human resource department and representatives from a labor union and health insurance association participating. Among its achievements, the commission has introduced an improved survey method for identifying mental health problems, developing a tally sheet that can be sorted by age and has entries for job designation and personal circumstances.

Members of this commission also contacted such external organizations as the Japan Auto Parts Industries Association (JAPIA) and examined case studies of other companies in the same industry. Based on these inputs, they prepared the standard mental healthcare educational program and began teaching newly appointed managers how to deal with mental health problems that

TOPICS

Global Safety Meeting

To share safety awareness with colleagues worldwide, on July 26, 2012, the first Global Safety Meeting was held at Ai-City and attended by 54 associates, including the heads of major domestic operations as well as persons in charge of safety from bases all around the world. At the meeting, we reconfirmed Akebono's global safety policies while discussing how to apply the concept of the "Commonization and Standardization (C&S) plus topping (t)" (C&S+t)* initiative to safety operations. Also, the attendees joined training programs in the Monozukuri Center that included the pracmay arise among their staff. As a result, the number of associates who voluntarily consult a physician about their mental health is growing. While continuously reinforcing countermeasures against these problems, we will strive to raise associates' awareness of mental health to help them help themselves.

Stepping Up Health Promotion Initiatives

Mental Health

At Akebono, the Health Management Office is in charge of addressing individual mental health problems and related complaints from associates received by in-house physicians. Ensuring that information is shared within the Company on a regular basis, the Health Management Office strives to bring about the smooth resolution of such problems and complaints.

Also, efforts are now under way to improve the capability of each organizational unit to manage mental health problems at through streamlined assessment and formulation of countermeasures.

Number of Interviews Held in the Doctor's Room at Ai-City Headquarters



Reinforcing Health Management Structure

As we expand our business operations globally, we are striving to remain apprised of the status of health management at overseas locations to ensure that all people are receiving necessary health care. In cooperation with a health insurance association, we are working to have more associates and their spouses participate in "Kenko Akebono 21," a health promotion program that encourages participants to set exercise targets and to identify and treat health problems at their early stages.



tice of "pointing and calling" (a correct procedure confirmation technique) and realistic accident simulations, such as

a worker being caught in a machine. This was followed by a tour of the model manufacturing line at Akebono Brake lwatsuki Manufacturing Co., Ltd.

*See pages 4-9.



Training session using an accident simulation machine

With Our Associates

Highlights: Associates' Data

Index of Diversity and Work-Life Balance













Average Amount of Paid Leave Utilized (Japan)





Shorter working hours due to family care



Social Report

Economic Report

Environmental Management

Environmental Management System

Based on our Environmental Declaration and Basic Environmental Policies, we are promoting environmental and CSR management under the leadership of the Global Environment Committee.

Our Environmental Vision

Akebono recognizes that responding to the environmental problems is an issue of the utmost importance and seeks to protect the environment on a global scale as part of efforts to fulfill its CSR. Based on this recognition, Akebono maintains a strong commitment to undertaking environmental preservation activities in a comprehensive manner and with a global perspective.

In line with this commitment, the Recycling Committee and the Global Environment Committee were established in 1991 and 1994, respectively, followed by the formulation of the Company's Environmental Declaration and Basic Environmental Policies in 2001. Rallying the strength of entire Group, Akebono is striving to achieve both sustainable business operations and sustainable society.

Strengthening Cooperation between the Global Environment Committee and Task Forces

Guided by akebono's Corporate Mission and akebono's Declaration for the 21st Century (please see the opening page), the Company established environmental and CSR management systems based on its Environmental Declaration and Basic Environmental Policies. To prevent air pollution and mitigate environmental risk, Akebono is developing highly eco-efficient operations, taking into account CO_2 emissions, industrial waste recycling, energy saving and resource saving.

Looking ahead, Akebono is accelerating its environmental activities at the initiative of the Global Environment Committee and with strengthened cooperation between Sectional Committees and task forces. With global perspective, its initiatives are further broadening and incorporating various new activities, such as preventing loss of biodiversity.

Environmental Declaration

Based on our Corporate Mission and Declaration for the 21st Century, we will continue to create new value in the new millennium, contributing to both the Company and the environment. As a global corporate citizen, we will also strive to protect the environment on a global scale and implement ongoing voluntary activities aimed at creating a safe, vibrant society that co-exists in harmony with the environment.

Basic Environmental Policies

- 1. From the early development and design stages, we will actively pursue initiatives that give consideration to both safety and the environment. We will promote the development of technologies and products that minimize environmental impact.
- 2. Each and every associate will make ongoing efforts to reduce environmental impact and promote a recycling-oriented society by conserving energy and resources, recycling and reducing waste.
- 3. In addition to complying with environmental laws, regulations and agreements, we will endeavor to enhance our environmental management by establishing voluntary management standards both in Japan and overseas.
- 4. We will actively disclose information to increase understanding of our environmental initiatives and encourage positive relationships with communities with the aim of creating a better living environment.

.....

Established 2001



- *1 SOC (Substance of Concern): Environmentally hazardous substances, including mercury, cadmium, lead and hexavalent chromium
- *2 VOC (Volatile Organic Compound): Toluene and xylene are representative of this group's compounds, which are suspected of involvement in the development of substances that cause health concerns, including oxidant and airborne particulate matters
- *3 LCA (Life Cycle Assessment): A technique for analyzing and assessing the environmental impact associated with the entire life cycle of a product (mining of materials, manufacturing, use, recycling and disposal)
- *4 PRTR (Pollutant Release and Transfer Register): Japan's Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR Act) was passed into law in 1999 and enforced in 2001. Under the law, business operators which handle more than a certain amount of specified chemical substances are required to submit reports to the competent minister annually.
- *5 3R: Acronym for reduce, reuse and recycling of resources, activities that contribute to a recycling society

- Established in 2001
- *6 Zero-emissions: Proposed by the United Nations University in 1994, a system wherein companies aim to emit no waste, engaging rather in resource recycling and the effective utilization of waste
- *7 Green purchasing: Affirmative selection and acquisition of products that impose less negative environmental impact; scope includes materials used in products as well as secondary materials used in the course of manufacturing. The manufacture of "Green Products" requires the practice of green purchasing.

Environmental Management

Targets and Results

Under the leadership of the Global Environment Committee, we establish medium- and long-term targets for each section as guidance for our efforts to achieve annual environmental targets.

Environmental Targets for Fiscal 2012 and Results Achieved

	Initiatives	Medium- and long-term targets	Targets for fiscal 2012
R&D	Promotion of products containing no substances of concern (SOCs)	Complete the conversion to lead- free sintered material by 2020 (for local and bullet train lines)	Develop lead-free sintered material by 2013 (for local and bullet train lines)
on	Reduction of total CO ₂ emissions at five production plant in Japan	 Reduce CO₂ emissions an annualized average of 7% in the fiscal 2008–2012 period (compared with fiscal 1990) Improve CO₂ intensity more than 1% every year until 2020 	Reduce CO_2 emissions more than 7% compared with fiscal 1990
Produci	Continue ISO 14001-related activities and improve environ- mental management system	Continue to enhance environmental activities	Firmly root ISO 14001 in operations and steadily renew certifications
	Promotion of zero-emission activi- ties at production sites: eliminate direct landfill disposal	Maintain zero emissions	Maintain zero emissions
Environmental education	Environmental Dojo (training center)	Nurture human resources to dis- seminate environmental preserva- tion methods to locations nationwide through training pro- grams implemented at Environmental Dojo	Get feedback from the trainees and reflect it in the program
Logistics	Response to revised Energy Conservation Law (energy saving obligation of cargo owners)	Reduce unit energy consumption 1% on a year-on-year basis	Continue efforts to reduce unit energy con- sumption 1% on a year-on-year basis
Purchasing	Promotion of green purchasing	Establish structure that ensures purchasing activities in line with the Green Purchasing Guidelines	 Continue survey of substances of very high concern (SVHC) to be listed for REACH* Study and propose alternative materials for SOCs
Production engineering	Promotion of resource-saving design	Develop manufacturing facilities that are reusable, achieving a great- er yield ratio, energy saving and eco-friendly operations, thereby real- izing environment-friendly manufac- turing	Further enhance energy-saving and resource- saving technologies

Note: Matters regarding safety and crisis management (business continuity plan) are presented on page 21 in a chart labeled "Status of CSR Promotion" *REACH: Registration, Evaluation, Authorization and Restriction of Chemicals **IMDS: International Material Data System
Evaluations: A 100% accomplished / B not accomplished

Results achieved in fiscal 2012	Evaluations	Plans for fiscal 2013 and after	Related pages
Reduced lead usage 30% during fiscal 2012. Regarding new friction materials for rolling stock, the Company has already completely eliminated lead usage.	В	Complete the development of lead-free sin- tered material in fiscal 2013	41
Reduced CO_2 emissions 16% compared with fiscal 1990 and 18% per year on average between 2008 and 2012. Our efforts included waste heat recovery from in-house power generation and the introduction of energy-saving compressors.	A	Improve CO_2 intensity more than 1% compared with fiscal 2012	38
ISO 14001 certifications were renewed at six locations, including AKBT (Thailand).	A	Continue to firmly root ISO 14001 in opera- tions and steadily renew certifications	36
Maintained zero emissions.	A	Continue to maintain zero emissions; gener- ate no direct landfill disposal	40
In response to comments that the program was overly tech- nical, we introduced simpler experiments and began offering a greater degree of choice to the trainees.	A	Consider introducing the online education pro- gram implemented at ABCT (United States) to Japan	36
 Improved unit energy consumption 1.6% compared with fiscal 2011 (from 0.257 to 0.253). <improvements></improvements> Introduced vehicles meeting fiscal 2015 energy-efficiency standards. Revised the driving route between Saitama and Okayama. Eco-friendly driving activities and seminars. 	A	Continue efforts to reduce unit energy con- sumption 1% or more on a year-on-year basis	46
Continued study of alternative materials for the rubber addi- tive included in the REACH SVHC candidate list. We cooper- ated with our suppliers to study and propose alternative materials for reducing the energy usage and environmental load.	A	 Encourage suppliers to upgrade their environmental management systems Continue supply chain survey using IMDS** 	44
Introduced a next-generation processing machine for friction materials that reduces energy usage 50% during the thermo-forming stage.	A	Further enhance energy-saving and resource- saving technologies	45

Special Feature

Social Report

ISO Certifications, Environmental Audits and Education

In tandem with the renewal of ISO certifications and environmental audits, we are continually upgrading our environmental education program.

Renewal of ISO Certifications

In 1999, the former Akebono Brake Miharu Manufacturing Co., Ltd. obtained ISO 14001 certification, becoming the first Akebono Group member to garner ISO certification. Since then, each Group member in Japan has obtained the certification, extending the scope of coverage to include back-office sections. Group members overseas were also certified, with ABCS in North America in the lead. All of these Group members maintain their certifications through audits and renewals. The latest renewals were completed in 2012. Moreover, Akebono encourages suppliers to get involved in its environmental activities.



- Notes:

 1. 00/03
 means "certified in March 2000."

 2. Please see page 66 to 67 for the official names of Group members and operations.

 3. Operations marked by a single asterisk (*) were certified as part of lwatsuki Manufacturing.

 4. Operations marked by double asterisks (**) were certified as part of Ai-City Headquarters.

 5. Operations marked by triple asterisks (**) were certified accompanying an expansion in the scope of certification to encompass the Production Engineering Division in July 2007 and were included in Iwatsuki Manufacturing in March 2010.

 6
 Tatehavashi Foundry was certified accompanying an expansion in the scope of
- 6. Tatebayashi Foundry was certified accompanying an expansion in the scope of certification for Ai-City Headquarters.

Reflecting the Results of Audits in the Environmental Management System

Our environmental management system receives annual external audits in addition to once every three year external audits for the renewal of certification. Also, in-house auditors conduct internal audits at least once a year.

In the latest external audit held in fiscal 2012, observations* included the need for separate disposal of NiCd batteries.** There was also a request for us to enhance supplier training and inspections as opportunities to find further improvement points.

On the other hand, our environmental management system was evaluated as appropriately established and operated, greatly contributing to the mitigation of the environmental load through proactive initiatives for improvement, such as the improvement of painting booths.

In response to these comments, we implemented improvement measures, including the introduction of a special disposal box for NiCd batteries. We will continue our efforts to reduce the environmental load.

*Observations: Events identified by audits that are at present not deemed to be in "non-conformance," that is, failing to meet customer requirements and/or in-house rules, but have potential to be in non-conformance in the future. ** Although nickel-cadmium (Ni-Cd) batteries are widely used for motors due to their high power capacity, the cadmium contained in such batteries is toxic and contaminates the environment without proper disposal

Online Education Program for Environmental, Safety and HR* Training Akebono has set up an education system to raise environmental awareness through educational activities for new recruits and all other associates.

The Akebono Brake, Clarksville Plant (ABCT) has developed an online education system for environmental, safety and HR training that allows associates to take courses not only on site, but also at home. The system is designed so that all associates are able to master the knowledge they need through a combination of online education and on-site training and tests. Of the 52 courses currently offered, 34 are mandatory for all employees and others are mandatory for new recruits.

ABCT's environmental engineer Zachary Keeton, who is in charge of the online education program, remarked, "The system has been extremely useful in improving associates' awareness of health, sanitation and the environment. The site's Green Certification (see page 48) was also thanks to education through this system. I hope we can continue to improve the program, using the advantages of both online and on-site activities.'

*Abbreviation for "human resources"



Zachery Keeton, environmental engineer, ABCT



Training using the online education program

Number of Staff Holding Major Environment-Related Qualifications

is of IV	larch 31, 2013	5)						
	Name of	qualification	Numbe	er* of staff				
	Internal enviror	nmental auditor	210	.				
	Pollution contro	ol manager	33					
		Water quality	13	8888				
		Atmosphere	11	88		2		
		Noise and vibration	9	888888888	100	10	1	
	Energy manage	er	6	*****				
	Specially contro waste administ	olled industrial trator	6	*****				
* Tota	I for six operation	ns Totobovoski luo	taului Cu	anua and AiCity Llaad	lauartara	,		

(Yamagata, Fukushima, Tatebayashi, Iwatsuki, Sanyo and Ai-City Headquarters)

Environmental Accounting and Eco-Efficiency

Using environmental accounting data, we are continually revising our operations to achieve better eco-efficiency.

Using Environmental Accounting as a Tool for Improvement

In accordance with the "Environmental Accounting Guidelines 2005" formulated by the Ministry of the Environment of Japan. Akebono has calculated the costs and effects of its environmental preservation activities in fiscal 2012. The economic effects of environmental preservation measures are calculated based on concrete evidence. The environmental preservation cost for 11 domestic operations in fiscal 2012 amounted to ¥822 million, down 6.0% year on year, and represented 0.9% of domestic net sales on a consolidated basis.

Eco-efficiency in fiscal 2012 decreased compared with fiscal 2011 in terms of the three indicators as shown in the graph. This is due to the increase in the proportion of net sales accounted for by brake pads from 19% to 20%, up 1 percentage point or 5%, from fiscal 2011 to fiscal 2012 (see page 53). Brake pads contain more than dozen chemical substances, and are sintered under high pressure and temperature conditions to ensure a high degree of reliability and durability in demanding situations.

To improve eco-efficiency, Akebono is developing products (see page 41) and production process (see page 45) that result in lower CO₂ emissions.

Eco-efficiency: An indicator that integrates economic performance and environmental performance. It is defined as the net sales per unit environmental load imposed by business activities. For this evaluation, Akebono has adopted measurements of industrial waste, CO2 emissions and PRTR substances (emission volume) as indica tors of environmental load

Environmental Accounting Guidelines: Guidelines for accounting management formulated by the Ministry of the Environment of Japan aimed at providing a method for defining the costs of environmental load reduction activities to elucidate their effectiveness and performance. The latest version was issued in February 2005.



*From fiscal 2009, the scope of calculation includes the following seven production plants: Yamagata, Fukushima, Miharu, Iwaki, Tatebayashi, Iwatsuki and Sanyo. ** The decrease in the eco-efficiency base on net sales per unit CO₂ emissions and the eco-efficiency of net sales per unit waste generation recorded in fiscal 2009 was due to the inclusion of Tatebayashi Foundry in the scope of calculation

PRTR (Pollutant Release and Transfer Register): Japan's PRTR system legally obliges business operators handling certain chemical substances to collect and publically disclose information on said substances, including with regard to the volume generated, emitted and transported off premises. This information must be appropriately gathered, verified and reported by those operators

Environmental Preservation Costs

LINNUUI	lientai Fieseivat	1011 00313					(mil	lions of yen)
	Er	nvironmental preservation costs	FY2	010	FY2	011	FY2	012
	Category	Major initiatives	Investment	Costs	Investment	Costs	Investment	Costs
	Pollution prevention	Prevention of air, water and noise pollution	41	376	36	352	37	241
Main business	Global environmental preservation	Prevention of global warming and ozone depletion	0	56	0	66	145	84
Segment	Resource recycling	Reduction, disposition and recycle of industrial waste	0	163	0	174	0	186
Upstrea	m and downstream	Recycling and reuse of products and their packing materials	0	-5	0	3	0	-3
A	dministrative	Environmental education and environmental management system (EMS) related activities, including the acquiring of EMS certification	0	74	0	63	0	46
	R&D	R&D of eco-friendly products	0	141	0	120	0	78
S	ocial activities	Initiatives to improve the environment, including nature pres- ervation, planting and cleaning activities	0	11	0	11	0	8
	Recovery	Soil remediation and natural disaster recovery measures	0	0	0	0	0	0
		Subtotal	41	817	36	791	182	640
		Total	85	58	82	27	82	2

Notes:

1. The scope of calculation for environmental preservation costs includes the following 11 bases: Yamagata, Fukushima, Miharu, Tatebayashi, Iwatsuki, Sanyo, ACW (including pur chasing), R&D sections (including Ai-Ring), production engineering sections, Alocs and the R&D Centre. 2. Environmental preservation costs are the amount spent for such activities as operation and maintenance of environment preservation facilities.

Value of investment is amount invested on introduction of environment preservation facilities

4. Values indicated in subtotal of environmental preservation costs in fiscal 2010 and 2011 differ from the actual sum of costs for the respective years due to rounding.

Major Quantitative Effects

						(1111	nons or yen)	
Quantitative effects (reduction f	rom the prev	vious year)		Economic effects of environmental preservation				
Major items	FY2010	FY2011	FY2012	Effect	FY2010	FY2011	FY2012	
Global warming prevention ($\rm CO_2$ reduction) t- $\rm CO_2$	-4,000	-900	-1,900	Income from recycling and others	75	69	68	
Reduction of industrial waste generated t	-2,151	-1,800	-3,100	Cost reduction through energy saving, VA* and VE**	126	317	162	
Reduction of industrial waste disposed of in landfills t	0	0	0	Decrease of waste disposal costs	177	98	71	
Reduction of water usage level 1,000m ³	30	20	0	Total	378	484	302	

*Value Analysis *Value Engineering

(millions of yon)

. The scope of calculation of quantitative effects and economic effects is the same as that used for environmental preservation costs and includes 11 operations. . Values with a plus sign indicate a reduction. In addition, values have been retroactively adjusted accompanying the change in scope of calculation.

3. Figures indicating economic effects for fiscal 2012 do not add up to 302 due to rounding.

Special Feature

Global Warming-Related Initiatives

To help prevent global warming, we are continuing our efforts to reduce CO_2 emissions and water usage, mitigating the environmental footprint of our operations.

Reduction of CO₂ Emissions

Since 2007, Akebono has engaged in energy conservation and CO_2 reduction projects, upgrading equipment and reducing energy usage at all our facilities.

Akebono's CO₂ emission volume in fiscal 2012 (total of

per ¥100 Million in Net Sales The increase in the CO₂ emission volume per \pm 100 million in net sales recorded in fiscal 2009 was attributable to the inclusion of Tatebayashi Foundry in the scope of calculation. (1,000 tons) (tons/¥100 million) 80 Five-year average 80 74 60 70 66 65 64 63 63 62 61 59 60 56 70 0. 50 69.3 37.4 66.5 40 30 60 30.5 <mark>59.1 59.1</mark> 20 10 0 50 Target '12 (FY) '90 '05 '06 '07 '08 '09 '10 '11 Total CO₂ Target (reduce an average 7% compared with fiscal 1990) emission volume per unit sales

Total CO₂ Emission Volume and Emission Volume





Change in Water Resource Usage Volume



main production sites in Japan) was 62,000 tons down 3% compared with fiscal 2011. Between fiscal 2008 and fiscal 2012, we managed to reduce the emission volume 18% on average compared with the 1990 baseline, surpassing Japan's Kyoto Protocol target of 6%.

CO₂ Emission Volume in Fiscal 2012



Transition of CO₂ Emissions of the Akebono Group Worldwide



Water Resource Usage Volume of the Akebono Group Worldwide



Special Feature

Environmental Management

Fiscal 2012 Emission Volume of PRTR Designated Chemical Substances

Through the monitoring, reduction and proper management of hazardous chemical substances, we strive to minimize their emissions to the environment.

Reduction of Hazardous Chemical Substances

The PRTR (Pollutant Release and Transfer Register) is the legal system obliging business operators who handle potentially hazardous chemical substances to identify, collate and disclose information on such substances, including data on where the substances are generated and emitted and whether the substances are transported off premises mixed with waste.

The Pollutant Release and Transfer Law (PRTR Law) for the Promotion of Chemical Management, which is the basis of the above system, requires such business operators to record the amount of such substances they handle, emit and transport. In April 2001, 354 substances were listed as Class I Designated Chemical Substances requiring surveys and reports to business operators. A revision of the law enacted in October 2009 further extended the scope of listed substances to 462, and established 100 Class II Designated Chemical Substances. Business operators handling or manufacturing designated chemical substances must monitor the amount of such substances that are emitted into the environment as well as the amount transported off premises in waste or sewage water for disposal. Also, these matters must be annually reported to the competent authorities.

To reduce emissions of such chemical substances, Akebono has been introducing powdered paints as well as paints that contain lower amounts of organic solvents. As a result, the Company's emission volume of PRTR designated substances decreased 45% to 9.8 tons in fiscal 2012, compared with 17.7 tons in fiscal 2002, the year PRTR law was enforced. In addition, Akebono completely abolished the use of hexavalent chromium at all its bases in 2007.



Fiscal 2012 Emission Volume of PRTR Designated Chemical Substances

	Amount	bondlod		Amount	emitted			Amount ti	ransported	I	Amount removed		ount removed Amount consu		
Name of substance*	Amoun	nandied	Atmos	sphere	Riv	/ers	Lar	ndfill	Recy	/cled	removal	removal methods		(attached to products)	
	FY11	FY12	FY11	FY12	FY11	FY12	FY11	FY12	FY11	FY12	FY11	FY12	FY11	FY12	
Antimony and its compounds	89.1	36.8	0.0	0.0	0.0	0.0	0.0	0.0	6.0	4.4	0.0	0.0	83.1	32.4	
Xylene	_	—	—	—		—	—	—	—	—	_	—	_	_	
Trivalent chromium compounds	25.8	26.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	4.1	0.0	0.0	23.7	21.9	
Chlorobenzene	3.2	2.7	3.2	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Triethylamine	1.3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	1.1	1.2	0.0	0.0	
Hexamethylene tetramine	82.5	113.5	0.0	0.0	0.0	0.0	0.0	0.0	8.6	10.5	73.9	103.0	0.0	0.0	
Toluene	6.4	7.1	6.4	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Nickel compounds**	19.5	18.8	0.0	_	0.0	0.0	0.0	0.0	3.8	5.1	0.0	_	15.7	13.7	
Phenol	22.4	32.7	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2.9	20.1	29.8	0.0	0.0	
Manganese and its compounds	6.3	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.0	0.0	5.5	5.8	
Molybdenum and its compounds	4.6	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0	0.0	4.3	5.7	
Boron compounds	_	2.1		0.0		0.0		0.0		0.4		0.0	_	1.7	
Total	261.1	254.5	9.6	9.8	0.0	0.0	0.0	0.0	24.1	29.5	95.1	134.0	132.3	81.2	

* The scope of calculation covers all of Akebono's domestic production plants. In principle, substances for which the amount handled is less than one ton per year are not included; however, substances marked by double asterisks (**) have been included in the chart and amounts exceeding 0.5 ton per year are indicated.

Unit: Tons/Year

Product Life Cycles and Environmental Impact Mass Balance*

With an eye on product life cycles, we seek to reduce the environmental load at all stages from design and development to the recycling of used products.



Continuation of Zero-Emission Efforts

Akebono achieved zero emissions (zero direct landfill disposal) at all domestic facilities in February 2007 and has since been maintaining that status. In fiscal 2012, the Group's total waste emission volume decreased 3,100 tons, or 9%, from fiscal 2011. We continue to pursue zero emissions through such efforts as recycling waste sand into cement raw materials, which we began outsourcing in 2010.





Since fiscal 2007, we eliminated direct landfill disposal completely.

Change in Total Volume of Waste Generated and Recycling Ratio (major operations in Japan)



Total volume of waste generated includes resources of value, such as metals. Values represent aggregation of eight operations. Tatebayashi Foundry was included in the scope of calculations in fiscal 2009.

AKEBONO REPORT 2013 Akebono Brake Industry Co., Ltd. **41**

Social Report

Environmental Management

Initiatives at the Design and Development Stage

While striving to supply more lightweight and long-lasting products, we are working to develop brake products that are friendly to both people and the environment.

Developing Products Free of Environmental Load Substances

Akebono is developing products that use lower volumes of environmental load substances in accordance with its in-house guidelines, which set forth stricter regulations than required by law either in Japan or overseas.

As for substances restricted by REACH and other global chemical regulations, we are doing our utmost to avoid using them. Moreover, we try to avoid even substances that are not restricted by these regulations when we believe that they may possibly have adverse effects on human health or the environment. In light of the tightening of regulations on environmental load substances in recent years, before adopting any candidate materials we painstakingly examine their possible impact on the environment and work environment safety. If an environmental load substance is deemed to be present in a class of materials, we confirm the amount contained therein, however small it may be, and select the variant that contains the least amount of such substances. Also, in anticipation of expected future regulation on certain substances, we are proactively developing alternatives before such regulation comes into effect.

Moreover, we are developing new technologies for minimizing the emission of brake dust generated by the abrasion of brake pads.



R&D for Environment-Friendly Materials and Products

Phenolic resin, which is used to bind friction materials, is traditionally produced from petroleum and natural gas. The CO_2 released when burning materials from these resources and soaring prices due to resource depletion are causes for concern. To address these issues, we are researching inedible plant-based biomass as a carbon neutral alternative. We have so far succeeded in creating a thermosetting biomass resin from such plant materials as wood and straw, but it is less heat-resistant than conventional phenolic resin. We are now advancing research to improve its heat resistance so that it can be used in friction materials.

Powder Coatings to Improve Working Environments and Save Resources

Akebono uses metal plating to prevent rust on disk brakes. However, conventional plating using a solution bath results in a large amount of waste fluid and ammonia gas. To solve these problems, Akebono is advancing the use of powder coatings. Because powder coatings are applied in an enclosed space, approximately 90% of excess coating powder can be collected and reused. Even when conventional plating methods are used, Akebono is working to reduce waste by downsizing facilities and creating systems that allow fluid to be reused many times.

Technology to Control Noise and Vibration

When it comes to making brakes, finding ways to control the noise and vibrations that may make the driving experience unpleasant for the end-user is of the utmost importance. Akebono pays particular attention to what it calls NVH (noise, vibration and harshness, or vibrations caused by unevenness in road surfaces), which makes for a less pleasant braking experience. Noise itself refers to the sound generated when vibration caused by the friction between the pads and rotors is transmitted through the calipers and resonates throughout the brake.

Noise and vibration are affected by many factors, including driving conditions, speed, brake temperature, quality of component materials, configuration of the parts and rotor speed. Akebono uses simulations of various conditions to attempt to predict noise and vibration. This enables the Company to predict noise from the design stage and thus allows the number of prototypes needed for testing to be decreased, contributing to both energy and resource savings.



TOPICS

Akebono Engineer Awarded Doctor's Degree in Engineering through Special Selection



Motoki Kuroe of the Akebono Research and Development Centre was admitted by special selection to the doctoral program at Yokohama National University's Graduate School of Engineering, where he

received a doctor's degree in Engineering under the guidance of professor Akio Takahashi.

 Thesis
 High Functionalization of Brake Friction Materials by Novel

 Phenolic Resins

Abstract Two with that

Two new types of phenolic resin are synthesized and tested with friction materials. The results of friction tests showed that benzoxazine resin improved wear resistance and lignin phenolic resin helped to stabilize friction coefficients.

Comment from Dr. Kuroe:

I'm very thankful to have had this opportunity. Preparing my thesis for journal publication in English was extremely tough, but I'll never forget how happy I felt when it was published. I learned a lot outside my field of specialty through interactions with the various people in the lab. I hope in continuing my research I will be able to give back to the Company.

Motor Sports—Exhaustively Pursuing Weight Savings

We contribute to global warming prevention by developing innovative technologies that can significantly cut the energy usage and CO_2 emissions.

Weight Saving at the Level of a Tenth of One Percent



Since 2007, Akebono has been supplying braking systems to the "Vodafone McLaren Mercedes" Grand Prix racing team as an Official Supplier. To meet

McLaren's uncompromising demands, we have been exhaustively pursuing weight savings to the level of a tenth of one percent along with high rigidity, greater cooling capability, high reliability and stable braking performance. We succeeded in realizing a braking system that boasts the highest level of achievement in terms of all these considerations by utilizing our originally developed mechanisms, materials and surface-finishing methods.

The know-how we obtain from the development of braking systems for racing cars is reflected in our designs for mass production. In fact, the fuel efficiency of mass-production automobiles could be improved upon by adopting some weight-saving technology initially developed for a racing-oriented braking system, where such savings are pursued to the one-gram level. This will eventually facilitate energy savings for regular automobiles. Moreover, endurance race car technology aimed at improving abrasion resistance and the ability to withstand high loads can be used to enhance the durability of conventional products.

Moving forward, with the adoption of our braking systems for the McLaren P1[™], the latest ultra-high performance road car, we will be supplying carbon ceramic brake discs in addition to high-end calipers and brake pads. Carbon ceramic brake discs are considerably lighter than those containing ferrous materials and can be made smaller due to high heat dissipation and endurance performance. They also last longer, meaning they consume fewer natural resources.

Akebono is also developing lead-free brake pads for high-end commercial cars. By developing products that achieve high environmental performance without sacrificing driving performance, we are striving to provide eco-friendly products even in the high-end car segment.

Through these efforts, we seek to contribute to resource saving and enhance the environmental efficiency of products.

TOPICS

Akebono to Supply Braking Systems to McLaren P1™

On February 26, 2013, Akebono announced plans to supply braking systems, including brake calipers, pads and disk components, for the McLaren $P1^{TM}$.

Based on technologies cultivated in motorsports, the McLaren P1[™] braking system features a new type of carbon ceramic disc never used on a road car before, as well as specially developed pads mounted in Akebono's aluminum monoblock opposed piston type calipers.* With extreme care paid to every aspect—including materials, structure and surface processing—to ensure optimal performance, the resulting braking system achieves a high degree of reliability and efficiency in terms of significantly reduced weight, exceptional cooling capability and the ability to withstand high temperatures and maintain rigidity. The carbon ceramic brake disc is coated with a silicon carbide layer to produce an attractive mirrored finish.

The latest racing car technology was also utilized to minimize drag in spite of the system's low weight, thereby improving fuel efficiency in tandem with driving performance.

*Opposed piston type calipers apply pressure using pistons on both sides of the rotor, and have speed control superior to that of conventional calipers.



McLaren and Akebono logos are shown on the caliper as an emblem of their partnership



The 83rd International Geneva Motor Show (March 5, 2013)

Social Report

Economic Report

Environmental Management

The Development of New Products and Technologies

Using environmental accounting data, we are continually revising our operations to achieve better eco-efficiency.

Building Miniature Lines to Train Young Technicians

Every year, Akebono has young technicians create a miniature brake or brake component manufacturing line that runs on a single motor as part of their training. A team of young technicians from the Production Engineering Division creates the miniature line from planning and design through fabrication.

In 2010, six young associates who had been with the Company between one and five years built a miniature disc brake manufactur-



ing line. The six members approached the project together, studying the entire manufacturing process and visiting production sites. Their completed miniature line springs into

motion at the touch of a switch, with a voice recording and display screen that explains the manufacturing processes in detail.

In 2011, a miniature brake pad manufacturing line was built by six associates who had been with the Company for between two and five years. The miniature line presented a look into the normally difficult to observe raw material compounding, stirring, pressing, heating, grinding, surface hardening and coating processes, even displaying the pressure plate finishing process. The team managed to make the miniature a third smaller than that of the previous year and also installed a solar power system to save energy. In 2012, seven young associates who had been with the Company for between two and seven years built a miniature drum brake manufacturing line in cooperation with the Karakuri Project (see page 45). The miniature clearly recreates the pressing, plate assembly, coating, and total assembly processes. This miniature was even smaller than the miniature brake pad line of the previous year and displayed the movement of drum brakes from the reverse side as well. The very entertaining miniature also displayed messages like "Congratulations on joining the Company."

Such activities help associates understand how crucial it is that components are versatile and easy to manufacture as well as how important proper maintenance is. The associates' problem-solving skills and overall understanding of production processes also improve. These experiences can be put to use in real production lines to help realize even greater technological improvements.

The miniature lines produced through this program are on display in the entrance hall of Ai-City headquarters and in the "Ai-Museum" (Brake Museum), where visitors are given the chance to see brakes up close.

TOPICS

Interview with Miniature Line Designers

"We want to always be thinking of ideal production processes as we look over the existing processes."

Although this project was begun mainly to educate young technicians, we also hope that it will help people, from children to adults, see, enjoy and understand the appeal and importance of brakes. By building miniature lines, we developed a viewpoint that allowed us to see the entire production process. In doing so, we were also able to understand some of the challenges that will have to be addressed when designing manufacturing facilities in the future.

For example, in the miniature drum brake production line built in 2012, we tried to use a clockwork-type mechanism for the first time. We realized, however, that when applied to a real production line,



the increased burden on the cam would be a problem. Issues connected with maintainability also emerged.

Going forward, we want to develop manufacturing facilities

that require less energy and labor by applying interdisciplinary thinking to optimize our methods.



Hiroshi Kitajima Joined Akebono in 2006 Involved in Miniature Project No. 3 (Drum Brake)



Joined Akebono in 2010 Involved in Miniature Project No. 2 (Brake Pad)



Takashi Akiyama Joined Akebono in 2009 Involved in Miniature Project No. 1 (Disc Brake)

Initiatives at the Purchasing Stage

We aim to deliver greater environmental quality by working together with our suppliers.

Promoting CSR and Green Purchasing Activities

Akebono's consideration for the environment and CSR begins at the material procurement stage. Based on "Green Purchasing* Guidelines" formulated in fiscal 2005 (revised in fiscal 2011), Akebono works with suppliers to selects materials, secondary materials and parts that have lower environmental loads.

Akebono is striving to bring its environmental management to a higher level by encouraging suppliers to obtain ISO 14001 and other external certifications.

Response to the Conflict Minerals** Issue

The U.S. Congress passed the "Conflict Minerals Rule," which aims to cut off sources of funding for armed groups in the Democratic Republic of Congo and neighboring countries. The rule requires public disclosure and reporting related to "conflict minerals" on manufacturers, obliging them to thoroughly track the origins of minerals that suppliers handle.

Akebono is working with the Japan Automobile Manufacturers Association, Inc. (JAMA) and Japan Auto Parts Industries Association (JAPIA) to meet the requirements in a systematic manner. In fiscal 2012, Akebono conducted preliminary research and established a tracking system that does not impose excessive burdens on its suppliers. The system will be implemented step by step from fiscal 2013.

Ranking and Management of Environmental Load Substances under Green Purchasing Guidelines

Targeted chemical substances are categorized into three ranks and controlled as follows:

Rank	Chemical substances	Examples of control measures
Usage prohibited	Substances that are strictly banned from use and produc- tion by law and regulation	Prohibit use/draw up plans for abolishment if there is substance in use
Usage restricted	Substances which are projected to come under legal regulation and substances for which emission regulations are set under existing laws	Conduct research on alter- native materials or reduction methods and draw up reduc- tion plan
Proper management of usage information required	Substances listed in GADSL, ⁺⁺⁺ that is, substances requiring declaration of usage amount	Ensure proper management of usage information and work toward reduction of usage

* Green purchasing

The affirmative selection and acquisition of products that cause less negative environmental impact. Scope of products covers materials, secondary materials, office articles and equipment used in the course of manufacturing. Manufacture of "Green Products" requires the practice of green purchasing.

**Conflict Minerals: The Section 1502 of the Dodd-Frank Act targets minerals containing tungsten, tantalum, gold, tin and other metals produced in the Democratic Republic of Congo and neighboring countries that provide sources of funding for armed groups involved in the conflict.

+++ GADSL (Global Automotive Declarable Substance List)

A list of chemical substances requiring proper management formulated by automobile manufacturers, their parts suppliers and material suppliers in Japan, the United States and Europe. It is an industrywide standard, targeting the following substances, which are possibly contained in parts and materials supplied to automotive manufacturers:

1. Substances that are subject to regulation under the laws of each country 2. Substances that are expected to come under legal regulation

2. Substances that are expected to come under legal regulation 3. Substances with a proven negative impact on health and/or the environment The list contains substances classified into such categories as "Substances prohibited from use in all applications," "Substances prohibited from use in certain applications or that must be declared if used" and "Substances that must be declared if usage exceeds defined threshold limits."



Suppliers' meeting held in Tokyo (February 5, 2013)



Suppliers' meeting held in Jakarta (March 15, 2013)

Global Suppliers' Meetings Held

Akebono holds a suppliers' meeting every year as an effort to strengthen the partnership with its suppliers. During fiscal 2012, in addition to the meeting in Japan, it held similar events in the United States and Indonesia. By sharing our policy on management, quality, R&D and procurement as well as latest industry trends and our new technologies, we seek to achieve greater synergy with our suppliers.

Rooting Our Global Operations in Local Communities

A high regard for human rights is fundamental to our global operations, including the selection of local suppliers. We do not select suppliers based solely on cost; we confirm that they comply with laws and are free of child labor and other human rights violations.

We will be directing our focus more toward social and environmental considerations as we build long-term relationships with our suppliers.

Economic Report

Environmental Management

Initiatives at the Production Stage

Through the improvement of both production processes and production equipment, we seek to achieve a significant reduction in energy usage.

Production Facilities for the Next-Generation Friction Materials

Manufacturing processes for brake pads and other friction materials use heat in each formation process, including pressing and heating. In July 2012, Akebono Brake Yamagata Manufacturing Co., Ltd. introduced a next-generation production facility that cuts energy use by 50% through revolutionary improvements in manufacturing processes.

Conventional friction material production lines are designed to process fixed batches. The energy consumed remains the same no matter what size the batch is because the process itself does not change. In contrast, this next-generation facility has a minimum batch size of just one unit, reducing the amount of energy wasted. Moreover, by making molds and jigs lighter and reducing the number of jigs, we have been able to not only save energy, but also make manufacturing more flexible, facilitating the small-lot production of various friction materials.

We are incorporating the requests of frontline operators in order to advance the development of next-generation facilities, which is vital to the future of Akebono. The facilities are designed in a crossfunctional manner with an eye on minimizing brake dust and noxious vapors. We will continue to adopt such next-generation facilities and further improve the energy efficiency of facilities to reduce manufacturing costs.

Karakuri Project

The Karakuri Project aims to save energy and reduce equipment failure by creating a facility that requires no input energy (uses little or no energy) and enables concurrent motion (multiple motions powered by a single driver). *Karakuri* is a traditional handicraft in Japan involving the creation of mechanically driven (clockwork) automata, such as tea-serving dolls and tools.

Production engineering is a field that requires combinations of different areas of specialization. It is necessary to understand the particular qualities and characteristics of each type of facility when considering design, such as raw materials in the case of compounding facilities or coating materials in the case of coating facilities.

By applying a *karakuri* approach, powering multiple movements with one driving force, manufacturing facilities can be made truly forward-thinking and ground-breaking. The difficulty of the *karakuri* approach is its complexity and the wide variety of similar components involved. The standardization of components is key to addressing this problem as is the standardization and streamlining of processing operations.

Going forward, Akebono will implement energy-saving facilities utilizing *karakuri* technology first in Japan, then globally.



Reviewing a design's energy efficiency

Interview with a Designer



"Realizing large energy savings by reducing processes to the absolute minimum"

Engaging frontline operators in the project

Toji Fujita

Production Engineering Division, Application Engineering Production Engineering Department, Karakuri Project

Since the launch of the Karakuri Project in March 2012, we've been improving our prototypes little by little, but there are still many flaws to be addressed before *karakuri* mechanisms can be employed at actual worksites. The first flaw we need to overcome is that when one function stops because of some irregularity, the other parts also stop mid-motion, and it can take a long time to restore operations.

If we manage to run an entire process with just one actuator, it may be possible to greatly reduce energy use. The need for central control of many mechanisms would be eliminated, and processes could be reduced and simplified. C&S play a part in realizing these goals, and it is essential to carefully examine each operation to see just how many steps can be omitted. It's also necessary to keep the ease of set-up in mind from the product design and development stage onward.

From that perspective, we're continuing to research and develop prototypes to first build up a track record at production sites in Japan, and then expand to sites overseas. **Environmental Report**

Initiatives at the Logistics Stage

With an eye to both environmental preservation and safety, we are continually

striving to streamline our logistics activities and save more energy.

Safe and Environment-Conscious Distribution

The Akebono Group member Alocs Corporation (a freight company) revised the distribution route between Iwatsuki (Saitama) and Okayama from the one via the Chuo Expressway to the one via the Shin-Tomei and Tomei Expressways, as part of its efforts to save energy (see page 40). In fiscal 2012 it achieved a 1.6% reduction in unit energy consumption for logistics activities compared with fiscal 2011, compared with the 1% year-on-year reduction target.



The newly adopted route via the Shin-Tomei Expressway

Ensuring Safe Driving Through Check Up of Drivers' Health Traffic accidents caused by drivers' ill health, including sleep apnea syndrome (SAS), are becoming a social issue in Japan. Against this backdrop, Alocs Corporation conducts SAS screening for drivers, in addition to semiannual health check

ups, to detect early signs of illness and ensure safe driving.

SAS diagnosis (measuring respiration rate and blood oxygen level under a fingernail during sleep)

Energy Consumed and CO₂ Emitted by Logistics Activities

	FY09	FY10	FY11	FY12
Total traffic volume (10,000 ton kilometer)	5,144	5,718	5,291	5,023
Consumed energy (kl crude oil equivalent)	1,310	1,413	1,359	1,270
CO ₂ emission volume (t-CO ₂)	3,393	3,434	3,494	3,268
Unit energy consumption	0.255	0.247	0.257	0.253

Unit energy consumption: A value calculated by dividing the amount of energy consumed in transportation by traffic volume (ton-kilometer). A lower value represents a higher transportation efficiency, which also means imposing less environmental load.

Environmental Management

Initiatives at the Consumption Stage

Working with our customers and suppliers, we are working to expand the use of recycled products.

Recycling of Products

Akebono began marketing reconditioned products before the concept of recycling entered general awareness. As early as 1965, it established a nationwide network in Japan to recycle used drum brake shoes and launched "Eco Shoes" made using recycled products as a major aftermarket products business.

Furthermore, Akebono started selling "Akebono Eco Pads" made using recycled disc brake pads in 2005. The products are being standardized so as to serve global markets. Akebono will continue working to develop and supply eco-friendly products in order to meet the latest environmental needs.

Recovery of Recyclable Products

Used drum shoes and brake pads are recovered from all over Japan with the cooperation of dealers and other business partners. In fiscal 2012, 530,000 used shoes and 920,000 used pads were recovered.

Initiatives to Create a Better Workplace (Japan)

With an eye to recent social trends, we are pursuing our goal to become a company that is both people-friendly and environment-friendly.

Ai-City Certified as Excellent Large-Scale Business Facility

Saitama Prefecture adopted a cap-and-trade emissions trading system* in April 2011 to reduce the greenhouse gas emissions of large-scale business facilities. The system requires target facilities to reduce CO₂ emissions by at least 8% for offices and 6% for plants during the period from fiscal 2011 to fiscal 2014.

Under this system, Ai-City, the Akebono Group headquarters, was certified as an "excellent large-scale business facility" by Saitama Prefecture in August 2012. The certification is given to business facilities with a proven record in achieving considerable reductions in CO₂ emissions. Akebono was one of the first to receive the certification.

Having installed thermal insulation and power-saving facilities, Ai-City will aim to further improve energy efficiency through such efforts as recovering waste heat from backup power facilities, which were installed in-house in 2011.

*Under this system, business facilities that have consumed 1,500kl or more in crude oil equivalent energy for three consecutive years are obligated to reduce their CO₂ emissions. Facilities that do not meet the specified targets must trade for credits with facilities that have exceeded their reduction targets.

Minister of Health, Labour and Welfare's Excellence Award **Granted to Akebono**

In recognition of its efforts to create a working environment that allows associates to participate in childcare and nursing care, Akebono was awarded the fiscal 2012 excellence award from the Minister of Health, Labour and Welfare in the Family-Friendly Enterprises category of the Equal Opportunity & Work-Life Balance Awards. Akebono's childcare leave plan, which exceeds the required legal standard, reduced working-hours plan to assist with childcare and nursing care and childcare stipend plans were highly evaluated.

At the awards ceremony held on October 9, 2012, at the Ministry of Health, Labour and Welfare (MHLW), President Nobumoto received the award certificate and plaque.

Rooftop water sprinklers

Sprinklers wet rooftops with water drawn from wells, mitigating rises in indoor temperatures

Special Feature

Social Report

Environmental Report

Economic Report

Green curtain

Vines such as bitter melon and loo fah are planted along the wall of the cafeteria, filtering the sunlight and thus helping to reduce the need for air conditioning

Working Environment

2005

Excellent large-scale business facility certification Akebono will continue to pursue greater energy efficiency, aiming for the top level of certification

- 2007 Received Kurumin Mark* from the MHLW for efforts to support associates' child-raising
- 2008 Received Prefectural Labor Bureau Director's Award from the MHLW in the Family Friendly Enterprises category
- 2010 Received the "Child and Youth Support Award" of the "Awards Program for Contributor to Child and Youth Upbringing and Childcare" sponsored by Japan's Cabinet Office

*Certificate of family-friendly enterprises granted by MHLW upon application by an eligible company. To qualify, a company must formulate and implement an action plan with specific targets.

AKEDONO S WI		
Childcare leave	Associates can take paid leave until the March following the child's third bin Status: used by 2 male and 50 female associates in the past three years	thday (the leave can be taken in multiple parts).
Nursing care	Associates can take up to two years paid leave per family member to nurse	
leave plan	Status: used by 2 male associates in fiscal 2012.	
Child nursing	Associates can take up to five days of leave per year (ten days for associate	es with two or more children) to nurse sick or injured children or for chil-
Measures to reduce working hours	Childcare plans • Reduced working-hours plan Associates can use the system multiple times until children graduate from elementary school. Status: used by 3 male and 46 female associates in the past three years • Flex time plan • Childcare stipend plan A fixed monthly stipend until the March after the child's third birthday	Nursing care plans • Reduced working-hours plan Associates can work reduced hours for up to a total of three years. These can be taken in multiple parts. Status: used by 2 male and 2 female associates in the past three years. • Flex time plan
Other plans	 The Career Partner Plan allows associates who left the Company for family leaving. The Company sets up a temporary on-site day care facility for associates w peak electricity demand. 	reasons to rejoin the Company at the same position they held before ho work on weekends during the summer as parts of efforts to shift
Improvements to Company environment	•The Company implements work-life balance workshops for newly appointed •Information about balancing work and private life is provided in pamphlets •Ai-City headquarters implements a lights-out policy at 7 pm every Monday, •During children's summer vacation every year, we hold "Open House Event	managers. and via the Company intranet. Wednesday and Friday. " days, in which the families of associates can visit their workplace.

Initiatives to Create a Better Workplace (Global)

We promote people- and environment-friendly operations at our business sites across the world.

Initiatives at Akebono Brake Astra Indonesia (AAIJ)

Akebono Brake Astra Indonesia (AAIJ) is planting various kinds of trees on the premises of its newly built office as part of its efforts to become a "wonderful company."* Planted in consideration of the local community, the trees absorb such exhaust gases as CO_2 and include Ashoka trees (Saraca asoca), which boast an outstanding noise-absorbing property.

*Since 2007, AAIJ has been promoting the "Wonderful Company Project," a company-wide campaign to become a global player.

Initiatives at Akebono Brake, Elizabeth Plant (ABE)

During fiscal 2012, Akebono Brake, Elizabeth Plant (ABE) managed to recycle 14,000 tons of waste material, consisting of cardboard (300 tons), high-density polyethylene plastic (50 tons), baled plastic film (30 tons), scrap metal (13,957 tons) and electronic scrap materials (7 tons).

ABE is especially mindful with regard to the safe disposal of hazardous waste.

On September 8, 2012, ABE cooperated in collecting 11 tons of hazardous waste, including pesticides, as a co-sponsor of a local community event held as part of national Environmental Week observations.

A banner advertising the waste collection event

Ashoka trees planted around the office premises

Mango, frangipani, and orange jasmine trees planted outside the office along a walkway paved with black-and-white bricks typically seen in Indonesia

[Ashoka tree (mast tree)]

Found commonly in the Indian Subcontinent and the Southeast Asia, the trees grow straight up and were once used for masts of sailing vessels due to their lightness and ease of growing. They are also good at absorbing noise. [Orange jasmine]

Tropical, evergreen plant bearing white scented flowers, from which the common name is derived.

TOPICS

Akebono Brake, Clarksville Plant (ABCT)

Green Business Certificate Awarded by Clarksville-Montgomery

Clarksville-Montgomery County Green Business Certification

Akebono Brake, Clarksville Plant (ABCT) was awarded a Clarksville-Montgomery County Green Certification in April 2013.

ABCT mainly manufactures drum brakes, rotors and corner modules. In addition to obtaining ISO 14001 certification, it has implemented unique initiatives, including the implementation of thorough office waste recycling, the elimination of unnecessary packaging, the installation of an ultra highperformance water filtering system and the introduction of an online education program (see page 36), which led to the latest honor. Mayor of Montgomery County Carolyn Bowers and Mayor of the City of Clarksville Kim McMillan both attended the award ceremony and thanked ABCT for its contribution to meeting the municipal target of reducing the volume of landfill waste.

Green ribbon-cutting ceremony with the mayors of Montgomery and Clarksville

Milestones of Global Development

ighlights Akebono's global expansion

1936 Reorganized as Akebono Sekimen Kogyo Co., Ltd. 1939 Hanyu Manufacturing Plant is constructed and begins operations 1952 Started producing wear-resistant resins for rail cars 1958 The Company's resin brake shoes and disc brake pads are adopted on Japan National Railways' "Kodama" and "Asakaze" express trains 1960 Signed a brake-related technical assistance contract with Bendix Corporation of the United States Changed the company name to Akebono Brake Industry Co., Ltd. 1961 The technical assistance contract with Bendix Corporation of the United States is extended to cover brake limings operations (now Akebono Brake Industry Co., Ltd. 1962 Ivatsuki Manufacturing Plant is constructed and begins operations (now Akebono Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd. 1969 Signed a contract with Bendix Corporation of the United States for anti-skid brakes 1971 Established Hosei Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. 1969 Signed a contract with Bendix Corporation of the United States for anti-skid brakes 1971 Established Anyo Anufacturing Co., Ltd. 1973 Established Sanyo Manufacturing Co., Ltd. 1974 </th
1939Hanyu Manufacturing Plant is constructed and begins operations1952Started producing wear-resistant resins for rail cars The Company's resin brake shoes and disc brake pads are adopted on Japan National Railways' "Kodama" and "Asakaze" express trains1958Signed a brake-related technical assistance contract with Bendix Corporation of the United States Changed the company name to Akebono Brake Industry Co., Ltd.1960The technical assistance contract with Bendix Corporation of the United States is extended to cover brake linings Listed on the Second Section of the Tokyo Stock Exchange1961Watsuki Manufacturing Plant is constructed and begins operations (now Akebono Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd.1965Signed a contract with Bendix Corporation of the United States for anti-skid brakes1971Established Sanyo Hydraulic Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd.1973Signed a contract with Bendix Corporation of the United States for anti-skid brakes1974Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Plant is constructed and begins operations (now Akebono Brake Safety Research Institute Co., Ltd.)1974Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Plant is constructed and begins operations (now Akebono Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Developme
Operations 1952 Started producing wear-resistant resins for rail cars 1958 adopted on Japan National Railways' "Kodama" and "Asakaze" express trains 1958 Signed a brake-related technical assistance contract with Bendix Corporation of the United States Changed the company name to Akebono Brake Industry Co., Ltd. The technical assistance contract with Bendix Corporation of the United States 1961 The technical assistance contract with Bendix Corporation of the United States is extended to cover brake linings 1962 Listed on the Second Section of the Tokyo Stock Exchange watsuki Manufacturing Plant is constructed and begins operations (now Akebono Brake Iwatsuki Manufacturing Co., Ltd.) 1965 Established Sanyo Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.) 1968 Established Hosei Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. 1969 Signed a contract with Bendix Corporation of the United States for anti-skid brakes 1971 Evikushima Manufacturing Plant is constructed and begins operations (now Akebono Brake Fukushima Manufacturing Co., Ltd.) 1973 Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd) 1974 Established Sanyo Hydraulic
1958The Company's resin brake shoes and disc brake pads are adopted on Japan National Railways' "Kodama" and "Asakaze" express trainsImage: The First Phase of TransitionSigned a brake-related technical assistance contract with Bendix Corporation of the United States Changed the company name to Akebono Brake Industry Co., Ltd.1960Signed a brake-related technical assistance contract with Bendix Corporation of the United States Changed the company name to Akebono Brake Industry Co., Ltd.1961The technical assistance contract with Bendix Corporation of the United States is extended to cover brake limings Listed on the Second Section of the Tokyo Stock Exchange1962Watsuki Manufacturing Plant is constructed and begins operations (now Akebono Brake Iwatsuki Manufacturing Co., Ltd.)1963Established Sanyo Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd.1969Signed a contract with Bendix Corporation of the United States for anti-skid brakes1971Ltd.)1973Established Sanyo Manufacturing Plant is constructed and begins operations (now Akebono Brake Fukushima Manufacturing Co., Ltd.)1974Established Sanyo Manufacturing Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.1973Established Sanyo Mydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.1974Established Akebono America, Inc. as a locally-incorporated company in the United States1980Established Akebono Research & Development Centre Ltd.)1974Established Akebono Research & Development
1960 Bedpress trains The First Phase of Transition 1960 Signed a brake-related technical assistance contract with Bendix Corporation of the United States Changed the company name to Akebono Brake Industry Co., Ltd. The technical assistance contract with Bendix Corporation of the United States is extended to cover brake linings 1961 The technical assistance contract with Bendix Corporation of the United States is extended to cover brake linings 1962 Ivatsuki Manufacturing Plant is constructed and begins operations (now Akebono Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.) 1968 Signed a contract with Bendix Corporation of the United States for anti-skid brakes 1969 Signed a contract with Bendix Corporation of the United States for anti-skid brakes 1971 Established Manufacturing Plant is constructed and begins operations (now Akebono Brake Fukushima Manufacturing Co., Ltd.) 1973 Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd) 1974 Established Akebono Research & Development Centre Ltd.) 1976 Miharu Manufacturing Plant is constructed and begins operations 1980 Established Akebono America, Inc. as a locally-incorporated
The First Phase of Transition1960Signed a brake-related technical assistance contract with Bendix Corporation of the United States Changed the company name to Akebono Brake Industry Co., Ltd.1961The technical assistance contract with Bendix Corporation of the United States is extended to cover brake linings Listed on the Second Section of the Tokyo Stock Exchange1962Iwatsuki Manufacturing Plant is constructed and begins operations (now Akebono Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Industry Co., Ltd. as a joint venture operations (now Akebono Brake Sanyo Manufacturing Co., Ltd.)1968Established Hosei Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd.1969Signed a contract with Bendix Corporation of the United States for anti-skid brakes1971Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Plant is constructed and begins operations (now Akebono Brake Fukushima Manufacturing Co., Ltd.)1973Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.1974Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.1976Miharu Manufacturing Plant is constructed and begins operations1980Established Akebono Research & Development Centre Ltd.)1974Established Akebono Engineering Co., Ltd.1981Established Ak
1960Bendix Corporation of the United States Changed the company name to Akebono Brake Industry Co., Ltd.1961The technical assistance contract with Bendix Corporation of the United States is extended to cover brake linings Listed on the Second Section of the Tokyo Stock Exchange1962Iwatsuki Manufacturing Plant is constructed and begins operations (now Akebono Brake Iwatsuki Manufacturing Co., Ltd.)1965Established Sanyo Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.1968Established Hosei Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd.1969Signed a contract with Bendix Corporation of the United States for anti-skid brakes1971Ltd.)1973Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.)1974Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.)1974Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.)1974Established Akebono Research & Development Centre Ltd.)1974Established Akebono America, Inc. as a locally-incorporated company in the United States1980Established Akebono Engineering Co., Ltd.1974Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award1981Listed on the First Section of the Tokyo Stock Exchange1982The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono R
Changed the company name to Akebono Brake Industry Co., Ltd.1961The technical assistance contract with Bendix Corporation of the United States is extended to cover brake linings Listed on the Second Section of the Tokyo Stock Exchange1962Iwatsuki Manufacturing Plant is constructed and begins operations (now Akebono Brake lwatsuki Manufacturing Co., Ltd.)1965Established Sanyo Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.)1968Established Hosei Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd.1969Signed a contract with Bendix Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd.1969Signed a contract with Bendix Corporation of the United States for anti-skid brakes1971Ltd.)1971Construction of the corporate head office is completed (in Nihonbashi, Tokyo)1973Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.)1974Established The Japan Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.)1976Miharu Manufacturing Plant is constructed and begins operations1980Established Akebono America, Inc. as a locally-incorporated company in the United States1981Established Akebono Engineering Co., Ltd.1973Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award1983Listed on the First Section of the Tokyo Stock Exchange1984The Japan Brake Safety Research Institute Co., <br< th=""></br<>
1961The technical assistance contract with Bendix Corporation of the United States is extended to cover brake linings Listed on the Second Section of the Tokyo Stock Exchange1962Iwatsuki Manufacturing Plant is constructed and begins operations (now Akebono Brake lwatsuki Manufacturing Co., Ltd.)1965Established Sanyo Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.)1968Established Hosei Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd.1969Signed a contract with Bendix Corporation of the United States for anti-skid brakes1971Eukushima Manufacturing Plant is constructed and begins operations (now Akebono Brake Fukushima Manufacturing Co., Ltd.)1973Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.1974Established the Japan Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.)1976Miharu Manufacturing Plant is constructed and begins operations1980Established Akebono America, Inc. as a locally-incorporated company in the United States1981Established Akebono Engineering Co., Ltd.1982Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award1983Listed on the First Section of the Tokyo Stock Exchange1984The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd.1984Established Akebono Engineering Co., Ltd. is rename
 Intervention of the Content of the Con
1962Iwatsuki Manufacturing Plant is constructed and begins operations (now Akebono Brake Iwatsuki Manufacturing Co., Ltd.)1965Established Sanyo Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.)1968Established Hosei Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd.1969Signed a contract with Bendix Corporation of the United States for anti-skid brakes1971Ltd.)1971Construction of the corporate head office is completed (in Nihonbashi, Tokyo)1973Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.)1974Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.)1974Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.)1974Established Akebono Research & Development Centre Ltd.)1976Miharu Manufacturing Plant is constructed and begins operations1980Established Akebono America, Inc. as a locally-incorporated company in the United States1981Established Akebono Engineering Co., Ltd.1983Listed on the First Section of the Tokyo Stock Exchange The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd.1984Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A. S. (Gonesse))The Second Phase of TransitionEstablished Ambrake Cor
 1962 Operations (now Akebono Brake Iwatsuki Mahulacturing Co., Ltd.) Established Sanyo Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.) Established Hosei Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd. 1968 Signed a contract with Bendix Corporation of the United States for anti-skid brakes Fukushima Manufacturing Plant is constructed and begins operations (now Akebono Brake Fukushima Manufacturing Co., Ltd.) 1971 Ltd.) Construction of the corporate head office is completed (in Nihonbashi, Tokyo) 1973 Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd) 1974 Established the Japan Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.) 1976 Miharu Manufacturing Plant is constructed and begins operations 1980 Established Akebono America, Inc. as a locally-incorporated company in the United States 1981 Established Akebono Engineering Co., Ltd. 1982 Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award 1983 Listed on the First Section of the Tokyo Stock Exchange The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. Technology is licensed to Automotive Products Inc. in the United Kingdom 1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition
 Established Sanyo Brake Industry Co., Ltd. as a joint venture with Hiruta Kogyo Co., Ltd. and Mitsubishi Heavy Industries Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd.) Established Hosei Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd. Signed a contract with Bendix Corporation of the United States for anti-skid brakes Fukushima Manufacturing Plant is constructed and begins operations (now Akebono Brake Fukushima Manufacturing Co., Ltd.) Construction of the corporate head office is completed (in Nihonbashi, Tokyo) Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.) Kablished Akebono America, Inc. as a locally-incorporated company in the United States Established Akebono Engineering Co., Ltd. Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award Listed on the First Section of the Tokyo Stock Exchange The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. Technology is licensed to Automotive Products Inc. in the United Kingdom Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse))
1960Initial function of the generation of the set of
 Established Hosei Brake Industry Co., Ltd. as a joint venture company with Toyota Motor Corporation, Aisin Seiki Co., Ltd. and Toyoda Iron Works Co., Ltd. Signed a contract with Bendix Corporation of the United States for anti-skid brakes Fukushima Manufacturing Plant is constructed and begins operations (now Akebono Brake Fukushima Manufacturing Co., Ltd.) Construction of the corporate head office is completed (in Nihonbashi, Tokyo) Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd) Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd) Established the Japan Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.) Miharu Manufacturing Plant is constructed and begins operations Established Akebono America, Inc. as a locally-incorporated company in the United States Established Akebono Engineering Co., Ltd. Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award Listed on the First Section of the Tokyo Stock Exchange The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. Technology is licensed to Automotive Products Inc. in the United Kingdom Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse))
and Toyoda Iron Works Co., Ltd.1969Signed a contract with Bendix Corporation of the United States for anti-skid brakes1971Fukushima Manufacturing Plant is constructed and begins operations (now Akebono Brake Fukushima Manufacturing Co., Ltd.) Construction of the corporate head office is completed (in Nihonbashi, Tokyo)1973Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd)1974Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd)1974Established the Japan Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.)1976Miharu Manufacturing Plant is constructed and begins operations1980Established Akebono America, Inc. as a locally-incorporated company in the United States1981Established Akebono Engineering Co., Ltd.1982Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award1983Listed on the First Section of the Tokyo Stock Exchange The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd.)1984Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse))The Second Phase of TransitionEstablished Ambrake Corporation as a joint venture with
 Signed a contract with Bendix Corporation of the United States for anti-skid brakes Fukushima Manufacturing Plant is constructed and begins operations (now Akebono Brake Fukushima Manufacturing Co., Ltd.) Construction of the corporate head office is completed (in Nihonbashi, Tokyo) Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd) Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd) Established the Japan Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.) Miharu Manufacturing Plant is constructed and begins operations Established Akebono America, Inc. as a locally-incorporated company in the United States Established Akebono Engineering Co., Ltd. Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award Listed on the First Section of the Tokyo Stock Exchange The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. Technology is licensed to Automotive Products Inc. in the United Kingdom Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse))
Fukushima Manufacturing Plant is constructed and begins operations (now Akebono Brake Fukushima Manufacturing Co., Ltd.)1971Construction of the corporate head office is completed (in Nihonbashi, Tokyo)1973Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd)1974Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd)1974Established the Japan Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.)1976Miharu Manufacturing Plant is constructed and begins operations1980Established Akebono America, Inc. as a locally-incorporated company in the United States1981Established Akebono Engineering Co., Ltd.1982Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award1983Listed on the First Section of the Tokyo Stock Exchange The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd.)1984Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse))The Second Phase of TransitionEstablished Ambrake Corporation as a joint venture with
 1971 Ltd.) Construction of the corporate head office is completed (in Nihonbashi, Tokyo) 1973 Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd) 1974 Established the Japan Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.) 1976 Miharu Manufacturing Plant is constructed and begins operations 1980 Established Akebono America, Inc. as a locally-incorporated company in the United States 1981 Established Akebono Engineering Co., Ltd. 1982 Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award 1983 Listed on the First Section of the Tokyo Stock Exchange The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. 1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse))
Construction of the corporate head office is completed (in Nihonbashi, Tokyo)1973Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd)1974Established the Japan Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.)1976Miharu Manufacturing Plant is constructed and begins operations1980Established Akebono America, Inc. as a locally-incorporated company in the United States1981Established Akebono Engineering Co., Ltd.1982Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award1983Listed on the First Section of the Tokyo Stock Exchange The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd.1984The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd.1985Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse))The Second Phase of Transition
1973Established Sanyo Hydraulic Industry Co., Ltd. (now Akebono Brake Sanyo Manufacturing Co., Ltd)1974Established the Japan Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.)1976Miharu Manufacturing Plant is constructed and begins operations1980Established Akebono America, Inc. as a locally-incorporated company in the United States1981Established Akebono Engineering Co., Ltd.1982Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award1983Listed on the First Section of the Tokyo Stock Exchange1984The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd.1985Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse))The Second Phase of TransitionEstablished Ambrake Corporation as a joint venture with
1974 Established the Japan Brake Safety Research Institute Co., Ltd. (now the Akebono Research & Development Centre Ltd.) 1976 Miharu Manufacturing Plant is constructed and begins operations 1980 Established Akebono America, Inc. as a locally-incorporated company in the United States 1981 Established Akebono Engineering Co., Ltd. 1982 Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award 1983 Listed on the First Section of the Tokyo Stock Exchange 1984 The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. 1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition Established Ambrake Corporation as a joint venture with
1974 Ltd. (now the Akebono Research & Development Centre Ltd.) 1976 Miharu Manufacturing Plant is constructed and begins operations 1980 Established Akebono America, Inc. as a locally-incorporated company in the United States 1981 Established Akebono Engineering Co., Ltd. 1982 Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award 1983 Listed on the First Section of the Tokyo Stock Exchange 1984 The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. 1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition Established Ambrake Corporation as a joint venture with
 1976 Minirul Wantlacturing Plant is constructed and begins operations 1980 Established Akebono America, Inc. as a locally-incorporated company in the United States 1981 Established Akebono Engineering Co., Ltd. 1982 Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award 1983 Listed on the First Section of the Tokyo Stock Exchange The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. 1984 Technology is licensed to Automotive Products Inc. in the United Kingdom 1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition
1980 Established Akebono America, Inc. as a locally-incorporated company in the United States 1981 Established Akebono Engineering Co., Ltd. 1982 Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award 1983 Listed on the First Section of the Tokyo Stock Exchange 1984 The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. 1985 Technology is licensed to Automotive Products Inc. in the United Kingdom 1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition Established Ambrake Corporation as a joint venture with
1981 Established Akebono Engineering Co., Ltd. 1982 Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award 1983 Listed on the First Section of the Tokyo Stock Exchange 1984 The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. 1984 Technology is licensed to Automotive Products Inc. in the United Kingdom 1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition Established Ambrake Corporation as a joint venture with
1982 Type AD disc brakes win the 1981 Japan Society of Mechanical Engineers Award 1983 Listed on the First Section of the Tokyo Stock Exchange 1984 The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. Technology is licensed to Automotive Products Inc. in the United Kingdom 1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition Established Ambrake Corporation as a joint venture with
1983 Listed on the First Section of the Tokyo Stock Exchange 1984 The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. 1984 Technology is licensed to Automotive Products Inc. in the United Kingdom 1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition Established Ambrake Corporation as a joint venture with
1984 The Japan Brake Safety Research Institute Co., Ltd. is renamed Akebono Research & Development Centre Ltd. Technology is licensed to Automotive Products Inc. in the United Kingdom 1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition Established Ambrake Corporation as a joint venture with
1984 Technology is licensed to Automotive Products Inc. in the United Kingdom 1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition Established Ambrake Corporation as a joint venture with
1985 Akebono Europe S.A. is established as a locally-incorporated company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition Established Ambrake Corporation as a joint venture with
1985 company in France (now Akebono Europe S.A.S. (Gonesse)) The Second Phase of Transition Established Ambrake Corporation as a joint venture with
Established Ambrake Corporation as a joint venture with
General Motors of the United States (now Akebono Brake,
1986 Elizabethtown Plant) Established Akehono Brake Iwaki Manufacturing Co., Ltd. and
began constructing a test course and manufacturing plant
An anti-lock brake system (ABS) that is based on technology unique to Japan is adopted for the first time by automakers
1987 Signed a technical assistance contract relating to friction
materials with Valeo of France
Robert Bosch GmbH of West Germany (at the time)
1988 The "Proving Grounds" test course is completed (Iwaki City, Fukushima Prefecture) (now "Ai-Ring")
1989 Established Akebono B.S.E.C. Inc.
1992 Established Akehana Braka Vamadata Manufacturing Called
1992 Established Akebono Brake Yamagata Manufacturing Co., Ltd. Established AMAK Brake L.L.C. as a locally-incorporated

1005	Established Akebono Corporation (a general holding company) as a locally-incorporated company in the United States
1995	Established the Centre de Recherche Européen Akebono (CREA) in France
1000	Acquired equity interest in PT. Tri Dharma Wisesa in Indonesia (now PT. Akebono Brake Astra Indonesia)
1996	The Tatebayashi manufacturing plant is constructed and begins operations
1997	Acquired ISO 9001 certification companywide for automobile disc brakes
	Established Akebono Arras S.A. as a production site in France (now Akebono Europe S.A.S. (Arras))
	Established Akebono Corporation (North America) as a locally-
1998	in the U.S.) (now Akebono Brake Corporation)
	Signed an exclusive sales agreement with B.E.I. lechnologies, Inc. in the United States for quartz angle rate sensors for automobiles
	Completed construction of the "Akebono Crystal Wing" (ACW)
2001	as the new corporate office in Hanyu City, Saitama Prefecture
2003	Established Akebono Corporation Asia PTE. LTD. in Singapore
	Akebono 123 Co., Ltd. received certification as a special subsidiary company, the first manufacturing site in Saitama
	Prefecture to receive this award
	Completed the "Ai-Museum," which is devoted to brakes, in
2004	Established Akebono Corporation (Guangzhou) as a locally-
	incorporated company in China
	Established Akebono Corporation (Suzhou) as a locally- incorporated company in China
	Established APS Corporation
	Merged Sanyo Brake Industry Co., Ltd. and Sanyo Hydraulic Industry Co., Ltd. to form Akebono Brake Sanyo
2005	Manufacturing Co., Ltd.
	Converted Ambrake Corporation to a wholly owned subsidiary (now Akebono Brake, Elizabethtown Plant)
	Established Akebono Advanced Engineering (UK) Ltd. as a
2006	Established Akebono Brake (Thailand) Co., Ltd. as a locally-
	Established Akebono Brake Europe N.V. as a locally-
	incorporated company in Belgium
2007	Established Akebono Brake Industrial Machinery & Rolling Stock Component Sales Co., Ltd.
	Became an official supplier of the Vodafone McLaren Mercedes team
	Completed the "Akebono Central Pier" (ACP) for the Akebono
2008	Tatebayashi Foundry begins operations
	The "Global Head Office" is completed in Nihonbashi, Tokyo
	as the new corporate head office
2000	Signed a contract with Robert Bosch GmbH to transfer
2009	Bosch's North America brake business
2010	PT. Tri Dharma Wisesa is renamed PT. Akebono Brake Astra Indonesia
	Started supplying disc brake pads for Porche Panamera
	Established Akebono Brake Astra Vietnam Co., Ltd. as a locally-incorporated company in Vietnam
2011	Akebono Corporation (North America) is renamed Akebono Brake Corporation
	Type AD disc brakes are included in the "Registry of Essential
	Historical Materials for Science and Technology (Future Technology Legacy)"
2012	Established Akebono Brake Mexico S.A. de C.V. as a locally- incorporated company in Mexico

Economic Report

Eleven-Year Financial Summary

Akebono Brake Industry Co., Ltd. and Consolidated Subsidiaries Years ended March 31

	Billions of yen				
	2003	2004	2005	2006	
Net sales	¥ 126.6	¥141.4	¥132.8	¥142.3	
Gross profit	25.0	28.4	26.0	30.9	
Ratio of gross profit to sales (%)	19.7	20.1	19.6	21.7	
Selling, general and administrative expenses	16.5	18.4	16.2	19.1	
Ratio of selling, general and administrative expenses to sales (%)	13.0	13.1	12.2	13.5	
Operating income (loss)	8.5	9.9	9.8	11.7	
Ratio of operating income (loss) to sales (%)	6.7	7.0	7.4	8.2	
Net income (loss)	(6.3)	4.6	5.2	5.9	
Ratio of net income (loss) to sales (%)	(5.0)	3.2	3.9	4.1	
Return on assets (ROA) (%)	(4.4)	3.4	4.2	4.3	
Return on equity (ROE) (%)	(35.5)	25.8	21.7	17.2	
Capital investment	7.6	6.3	5.8	8.2	
Depreciation and amortization	6.9	6.3	7.4	7.6	
Cash flow from operating activities	8.0	17.8	14.0	12.2	
Cash flow from investing activities	(4.0)	(4.3)	(3.7)	(11.9)	
Cash flow from financing activities	(2.8)	(13.3)	(9.4)	(3.2)	
	Thousands				
Number of outstanding shares at the end of period (including treasury stock)	94,019	95,508	97,508	110,816	
	Yen				
Net income (loss) per share—basic	¥(67.25)	¥48.50	¥54.29	¥56.60	
Cash dividends per share	1.00	4.00	6.00	6.00	
	Billions of yen				
Total assets	¥ 143.2	¥126.6	¥122.2	¥150.1	
Net interest-bearing debt	57.4	44.9	35.5	40.3	
Net debt-equity ratio	4.0	2.1	1.3	1.0	
Net equity (Equity minus minority interests minus stock subscription rights)	14.5	21.0	27.2	41.0	
Net equity ratio (%)	10.1	16.6	22.3	27.3	

Net Sales

Net Income (Loss)/Ratio of Net Income (Loss) to Sales

Billions of yen						
2013	2012	2011	2010	2009	2008	2007
¥206.0	¥209.6	¥216.6	¥130.6	¥ 159.6	¥184.7	¥173.2
23.5	24.9	30.4	19.8	14.6	36.6	35.1
11.4	11.9	14.0	15.2	9.2	19.8	20.3
19.2	21.1	19.0	15.1	20.9	21.4	21.3
9.3	10.1	8.8	11.6	13.1	11.6	12.3
4.3	3.8	11.4	4.7	(6.3)	15.2	13.9
2.1	1.8	5.3	3.6	(3.9)	8.2	8.0
0.5	(3.2)	5.3	2.1	(16.3)	6.6	6.6
0.3	(1.5)	2.4	1.6	(10.2)	3.6	3.8
0.3	(1.8)	3.0	1.3	(10.2)	4.2	4.3
1.2	(7.1)	11.6	5.8	(42.2)	13.7	15.0
19.8	14.3	5.1	5.4	17.8	14.9	8.9
8.6	9.8	9.8	10.0	11.4	9.9	9.3
7.6	2.9	7.4	3.2	4.2	15.1	10.8
(4.1)	(23.8)	(8.6)	(13.4)	(13.6)	(16.0)	(9.1)
(2.0)	1.4	18.2	(0.0)	38.6	0.1	(3.3)
Thousands						
135,992	135,992	135,992	135,992	110,992	110,992	110,992
Yen						
¥ 3.90	¥(24.25)	¥39.75	¥17.80	¥(151.65)	¥61.85	¥61.86
10.00	10.00	10.00	5.00	5.00	10.00	6.00
Billions of yen						
¥186.6	¥181.0	¥186.0	¥164.1	¥ 155.4	¥163.3	¥155.6
68.1	52.4	36.9	39.5	47.7	40.2	40.2
1.46	1.2	0.8	0.9	1.7	0.8	0.8
46.5	43.3	47.1	43.8	27.4	49.8	47.3

30.4

30.5

26.7

17.6

25.4

Net Interest-Bearing Debt/ Net Debt-Equity Ratio

23.9

24.9

Economic Report

Financial Review for the Fiscal Year Ended March 31, 2013

Akebono Brake Industry Co., Ltd. and Consolidated Subsidiaries Years Ended March 31

Financial Highlights

		2011	2012	2013
Fiscal year (billions of yen):	Net sales	216.6	209.6	206.0
	Operating income	11.4	3.8	4.3
	Net income (loss)	5.3	(3.2)	0.5
	Capital investment	5.1	14.3	19.8
	Depreciation and amortization	9.8	9.8	8.6
	Research and development*	1.3	1.7	2.3
Year-end (billions of yen):	Total assets	186.0	181.0	186.6
	Net assets	54.6	49.8	53.8
	Associates (number)	7,659	7,800	8,279
Per share data (yen):	Net income (loss) per share—basic	39.75	(24.25)	3.90
	Cash dividends per share	10.00	10.00	10.00
Key financial indicator (%):	Return on equity (ROE)	11.6	(7.1)	1.2

*Please see page 57 for total R&D related expenses, including R&D costs and expenses associated with day-to-day improvement activities.

Business Overview

Automotive disc brakes supplied by Akebono have gained the overwhelming support of customers in Japan and around the world owing to their advanced safety features and reliability as well as noise, vibration and harshness (NVH) performance. Customers' safety and peace of mind are also supported by Akebono's other advanced technologies, which include brakes for motorcycles and rolling stock-based transport, such as the bullet train. Furthermore, as a global supplier of brake friction materials, Akebono is expanding its activities in the markets for forklifts and wind power generators. The Company is also making practical use of control analysis technologies for the development of sensors and construction quality certification testing equipment, leveraging its advances made in brake technology.

In line with "akebono's Corporate Mission," the Company contributes to society through unique ideas and approaches based on its Corporate Goals and aims to establish a peerless position with an indispensable presence in a borderless society. Akebono is also promoting fundamental structural reorganization, guided by "akebono's Declaration for the 21st Century," which serves as its stance and code of conduct for realizing the Corporate Mission.

Business Environment and Operating Results

During fiscal 2012,¹ the global economy was supported by recoveries in consumer spending in the United States resulting from lower long-term interest rates as part of the strategy of quantitative monetary easing, but was negatively impacted by the fiscal restraint implemented by various countries in Europe. With regard to Asia, the speed of the expansion in the Chinese economy slowed, but brisk economic growth in other regions within ASEAN continued. Within Japan, the lower long-term interest rates and rapid weakening of the yen resulting from the drastic policy of monetary easing to eliminate deflation implemented by the new Prime Minister Shinzo Abe from the third quarter led to anticipation of an economic recovery. The automobile industry benefitted from favorable sales recorded by vehicle manufacturers in North America, although it was impacted by continued negative growth in the European markets. Within Asia, the ASEAN region saw growth in both vehicle production and sales on the back of economic expansion, despite slower growth in automobile sales in China. In Japan, a rebound from the recovery demand from the Great East Japan Earthquake during the first half and eco-car subsidies and tax reductions from the government contributed to large increases in the number of vehicles produced compared with fiscal 2011, but exports to China and Europe declined during the second half.

Under these circumstances, declines in exports and weaker overseas economies contributed to a 1.7% year-on-year decline in consolidated sales to ¥206.0 billion. With regard to profits, a decline in orders was offset by successful efforts to improve the profitability of North American operations and operating and ordinary incomes rose 12.5% and 62.2% year-on-year to ¥4.3 and ¥3.4 billion, respectively. At the same time, net income recovered from a net loss of ¥3.2 billion in fiscal 2011 to ¥0.5 billion in fiscal 2012.

Number of Vehicles Produced in Japan

Net Sales

Sales Ratio by Region Year Ended March 31, 2013

Segment Results (Net Sales and Operating Income) Japan

While orders trended favorably during the first half of the fiscal year thanks to disaster recovery related demand and Government "eco-car" subsidies, shifts to overseas production by vehicle manufacturers and declines in exports (to China and other regions) caused the service parts business to contract and contributed to a 7.0% year-on-year decline in sales to ¥89.5 billion. In terms of profits, operating income fell 61.2% year-on-year to ¥2.3 billion on the back of declines in orders, increases in research and development (R&D) expenses resulting from a shift of the consolidated operations for global development functions to Japan from fiscal 2012 and an increase in developmental costs for new models to be introduced primarily in overseas markets.

North America

Sales grew 2.2% year-on-year to ¥98.4 billion due to the recovery in orders from Japanese transplants and favorable sales of North American vehicle manufacturers. With regard to profits, successful efforts to improve profitability—identified as a crucial management issue—on the back of major improvements in communications with customers and suppliers allowed an improvement from an operating loss of ¥5.4 billion in fiscal 2011 to operating income of ¥0.1 billion in fiscal 2012. Furthermore, taking into account the ¥1.7 billion "decrease in provision incurred from transfer of business applied to foreign subsidiaries"² recorded in fiscal 2011, the actual margin of improvement in operating profitability was ¥7.2 billion and marks the first time in five years that our North American operations have recorded operating income.³

Europe

Stagnant demand for automobiles within Europe and declines in sales of products for export to China caused sales to decline 1.7% year-on-year to ¥4.9 billion. In terms of profits, declines in sales of highly profitable service parts and delays in efforts to reduce cost of goods and fixed costs led to an operating loss of ¥0.8 billion, which compares with a loss of ¥0.4 billion recorded in fiscal 2011.

China

Despite a large decline in orders resulting from the fall in orders from Japanese car manufacturers operating in China since the end of September, favorable orders from Japanese vehicle manufacturers recorded during the first three quarters (January to September) allowed sales during the full year to rise 14.9% year-on-year to ¥6.1 billion. With regard to profits, increases in labor costs and the large decline in orders during the fourth quarter (October to December) caused profitability to deteriorate and operating income to fall 42.3% year-on-year to ¥0.5 billion.

Thailand

Sales rose 78.2% year-on-year to ¥5.1 billion on the back of increases in orders from Japanese and other local vehicle manufacturers. However, expenses arising from higher labor costs due to hikes in minimum wages, the installment of a new production line for new products (pistons), increases in production capacity for existing products and the launch of new products caused operating income to fall 26.4% year-on-year to ¥0.1 billion.

Indonesia

While orders from Japanese vehicle manufacturers operating locally remained favorable, weak motorcycle sales resulting from tightened government loan policies caused sales and operating income to fall 5.9% and 26.7% year-on-year to ¥13.2 and ¥1.8 billion, respectively.

Notes:

- 1. Fiscal years are defined as follows:
 - (1) North America, China, Thailand and Indonesia: January to December 2012 (2) Japan and Europe: April 2012 to March 2013
- 2. With regard to the transfer of business from Robert Bosch LLC, losses expected to be incurred from the transfer of this business have been booked as "provision incurred from transfer of business applied to foreign subsidiaries" under liabilities on the consolidated balance sheet.
- 3. During fiscal year ended March 2011, we recorded ¥0.4 billion in operating income in our North American business, but this was due in part to the reversal of ¥5.9 billion from "provision incurred from transfer of business applied to foreign subsidiaries." Consequently, the profit recorded during fiscal 2012 reflects the first actual profit recorded since the fiscal year ended March 2008.

Analysis of Financial Position

Consolidated Assets, Liabilities, and Net Assets

Assets

At the end of fiscal 2012, total consolidated assets rose ± 5.5 billion from the end of fiscal 2011 to ± 186.6 billion. Over the same period, current assets declined ± 14.0 billion to ± 76.5 billion due primarily to a ± 13.1 billion fall in short-term investment securities (certificates of deposit). Noncurrent assets grew ± 19.5 billion from the end of fiscal 2011 to ± 110.1 billion at the end of fiscal 2012 due mainly to a ± 14.3 billion increase in tangible fixed assets arising from capital investments in Japan, the United States and Asia and a ± 2.7 billion rise in investment securities.

Liabilities

Total consolidated liabilities increased ¥1.6 billion from the end of fiscal 2011 to ¥132.8 billion at the end of fiscal 2012. Over the same period, current liabilities declined ¥5.2 billion to ¥62.0 billion due primarily to declines of ¥3.7 billion and ¥1.2 billion in short-term loans payable and notes and accounts payable—trade, respectively. Consolidated noncurrent liabilities grew ¥6.8 billion from the end of fiscal 2011 to ¥70.7 billion at the end of fiscal 2012 due mainly to a ¥6.7 billion increase in long-term loans payable. Moreover, net interest-bearing debt amounted to ¥68.1 billion, following the exclusion of cash and equivalents and short-term investment securities (certificates of deposit) from total interest-bearing debt of ¥89.1 billion.

Net Assets

At the end of fiscal 2012, consolidated net assets rose ¥4.0 billion from the end of fiscal 2011 to ¥53.8 billion due mainly to a ¥1.8 billion increase and a ¥2.2 billion improvement in valuation difference on available-for-sale securities and foreign currency translation adjustment, respectively.

Consolidated Cash Flows

Consolidated cash and equivalents increased \pm 1.9 billion from the end of fiscal 2011 to \pm 20.7 billion at the end of fiscal 2012.

Cash Flow from Operating Activities

A net inflow of ¥7.6 billion of cash was seen in operating activities (an increase of ¥4.7 billion from the inflow recorded in fiscal 2011). The main factors influencing this net inflow included ¥2.6 billion and ¥2.9 billion decreases in notes and accounts payable—trade and provision for retirement benefits, along with the realization of ¥3.6 billion in income before income taxes and minority interests and ¥8.6 billion in depreciation and amortization.

Cash Flow from Investing Activities

A net outflow of ¥4.1 billion was recorded in cash from investing activities (a decline of ¥19.8 billion from the net outflow recorded in fiscal 2011). The main factors influencing this outflow were ¥19.8 billion used for purchases of tangible and intangible fixed assets, and proceeds of ¥15.0 billion due to a net reduction in time deposits and short-term investment securities (certificates of deposit).

Cash Flow from Financing Activities

A net outflow of ¥2.0 billion in cash was recorded in financing activities (compared with a ¥3.5 billion net inflow recorded in fiscal 2011). The main factors affecting this outflow included repayments of long term loans payable of ¥15.6 billion, a net decrease in short-term loans payable of ¥4.8 billion and cash dividends paid of ¥1.3 billion, which offset proceeds of ¥20.4 billion from long-term loans payable.

Outlook for Fiscal 2013

During fiscal 2013, the economic environment is expected to benefit from a recovery in corporate earnings resulting from the weakening of the yen. However, the prolonged financial crisis in Europe, economic trends in developing countries and other factors continue to cloud the global economic horizon. In the Japanese automobile industry, while the shift to overseas production is expected to slow along with the weakening of the yen, the contraction in production is expected to continue. In North America, favorable sales of automobiles are expected to accompany an expansion in consumer spending. In China, sales by Japanese vehicle manufacturers are expected to enjoy a gradual recovery. In Thailand, automobile production is expected to increase thanks to an expansion domestic demand driven by favorable economic growth as well as higher exports. In Indonesia, automobile sales are expected to grow along with an expansion in the economy.

Total Assets/Net Equity Ratio

Net Assets/ROE

Cash Dividends per Share

Fiscal 2013	Performance	Forecast by	Region
(billions of yen)		

	Net sales	Operating income		
Japan	88.0	4.5		
North America	112.2	0.6		
Europe	6.2	(0.6)		
China	9.1	1.0		
Thailand	6.4	0.4		
Indonesia	15.5	2.1		
Elimination	(13.0)	0		
Consolidated total	224.4	8.0		

The assumed exchange rates for the current fiscal year ending in March 31, 2014 have been set at \pm 90.0 to US\$, \pm 125.0 to euro, \pm 14.5 to RMB, \pm 3.0 to THB, and \pm 0.009 to IRD.

The Akebono Group's earnings are expected to expand due to the conditions described above. At the same time, while delays in the recovery of automobile sales and production in Europe are anticipated, strategic moves will be taken to grow our business and to establish a stable business foundation.

Although we anticipate some expenses to arise in connection with the launch of the new ordering model scheduled for 2014, we will continue to implement measures outlined in our new midterm business plan, which targets net sales and operating income of ¥250.0 and ¥20.0 billion, respectively, in fiscal 2015.

(Important Measures)

- Facilitating development, manufacture, and distribution functions for high-performance brake system applications (high-performance vehicles for mass production) and customers' global platforms (common platforms used on a worldwide basis)
- Implement "Commonization and Standardization (C&S)"/"C&S plus topping (C&S+t)" in monozukuri (value-added product manufacturing)
- Achieve large improvements in profitability through the optimization of production capacity and human resource allocation

Issues to be Addressed

As part of Akebono's growth targets established in "Global 30" (acquire 30% of the worldwide share of OEM disc brake pads) to be achieved in fiscal 2020, the Company has created the new midterm business plan "akebono New Frontier 30 - 2013" (aNF 30 - 2013) with the target year fiscal 2015, which it announced on November 2, 2012.

This new midterm business plan has three main strategies: "Making a Difference by Creating Next-Generation Technologies," "Continuous Drastic Cost Reduction and Its Global Implementation," and "Acceleration of Globalization: Japan & North America plus Europe and Asia." Our basic strategy established in 2010 remains unchanged, with aNF 30 - 2013 calling for the fortification of our competitive standing by securing a 30% share of the worldwide OEM disc brake pad market in order to expand our business operations and raise our corporate value. An outline of the plan follows.

Making a Difference by Creating Next-Generation Technologies

In addition to increasing our knowledge and expertise in the realm of noise and vibration, Akebono also seeks to achieve "overwhelming cost competitiveness (Commonization and Standardization, low-cost brakes)," "unrivaled production engineering for global environment friendliness (lightweight/electro-mechanical products, responding to electric/hybrid vehicles, development of environment-friendly products)," "development of next-generation production facilities with global environment friendliness and cost competitiveness," "products to be installed in high-performance vehicles," and "advanced technology capable of acquiring a large share of the compact and low-price car market, particularly in emerging countries."

Continuous Drastic Cost Reduction and its Global Implementation

We seek to raise efficiencies by pursuing C&S/C&S+t in all our businesses, and to increase our competitive strength by identifying the characteristics of our customers and adapting products to meet their needs. In addition, we also endeavor to promote reductions in raw material costs through local material product sourcing, and optimized global manufacturing.

Acceleration of Globalization: Japan & North America plus Europe and Asia

The Akebono Group positions its operations within Japan as a base from which technologies and *monozukuri* (value-added product manufacturing) will be transmitted to the rest of the world. In addition, we are taking steps to expand the North American business that was transferred from Robert Bosch LLC, the high performance brake business in Europe, and business operations in developing countries, including growth markets in Asia and other regions. At the same time, we are improving our competitive strength through the fortification of our global development structure and global supply network.

Economic Report

Segment Information

Akebono Brake Industry Co., Ltd. and Consolidated Subsidiaries Years Ended March 31

Year Ended March 31, 2013

[About Segment Information]

Net sales and operating income include intersegment transactions within the Group. In fiscal 2010 and onward, data for Asia is a graphic representation of the aggregate totals for China, Thailand and Indonesia, which are the reporting segments presented in the Notes to Consolidated Financial Statements, Note 4. Segment Information, on page 64.

2009 2010 2011 2012 2013

2009 2010 2011 2012 2013

2009 2010 2011 2012 2013

"Friction and Vibration, their Control and Analysis" is not merely a phrase in "akebono's Corporate Mission," it refers to the basis of the Company's core technologies.

Akebono constantly leverages its competencies to develop new friction materials and next-generation brakes for automobiles and other means of transportation, focusing on core technologies and upgrading the analytic methods essential to product development.

Our product development efforts focus on the three pillars of "environment friendliness," "higher performance" and "lower cost." We have a global R&D structure in place consisting of facilities in Japan, North America, Europe and China.

Details of R&D activities in each region are as follows.

Japan

Akebono is working to develop high-performance, low-cost friction materials for brakes responsive to the entire spectrum of the market and customer needs. In terms of quality, Akebono's focus is on controlling noise and vibration and minimizing brake dust. In addition to using environment-friendly, safe materials that have less environmental impact, we are working on developing new friction materials in response to the recent regulations introduced in Washington and several states in the United States.

At the same time, we are taking steps to reduce costs through the use of both new materials and improved manufacturing processes, without compromising on product performance and environmental considerations. Among our recent achievements in improving both braking and environmental performances, our opposed-type disc brakes, which employ an aluminum alloy developed for high-performance cars, have won solid reputation among customers.

We are also focusing our efforts on the "Commonization and Standardization" (C&S) of parts and production processes and otherwise working to boost our cost competitiveness. Resources saved through these efforts are allocated to the development of new, differentiated products.

In the development of environment-friendly products, we are striving to raise fuel efficiency through innovative weight and drag reductions. We are also developing brakes that apply next-generation technologies, including an electro-mechanical brake and electric parking brakes with an electro-mechanical actuator. Meanwhile, we are continuing our efforts to meet stringent technical and cost benchmarks to reinforce our global supply system and ability to supply builtto-purpose products.

The R&D activities at Akebono Research & Development Centre Ltd. are focused on the following themes: (1) development of new original materials for improved friction coefficients and safety and environmental performances; (2) development of next-generation friction materials to achieve smaller, weight-saving and higher performance products; (3) analysis of friction mechanisms; and (4) improvement of production process.

Through such research, we are striving to establish stand-alone technologies that realize next-generation brakes and friction materials, aiming to differentiate ourselves from competitors.

North America

Based on the domestic and global needs of U.S.-based automotive manufacturers, Akebono is working to develop new friction materials and next-generation foundation brakes that conform with the environmental regulations enacted by several state governments, including Washington State. We support Japanese automotive manufacturers as well with completely local operations, from development to mass production.

Akebono undertakes the development of friction materials for use in a wide range of vehicles, from passenger cars to SUVs to pickup trucks. These materials realize exceptional NVH control and their level of environment-friendliness more than meets the abovementioned regulations. We also develop brake mechanisms for a wide range of vehicles from passenger cars to SUVs to pickup trucks and are proactively engaged in the mass production of lightweight aluminum alloy disc brakes. Furthermore, we mass produce rotors and drums for various vehicle types and market lightweight products with excellent performance with regard to noise and vibration thanks to the development of brake modules.

Europe

In our European operations, we are developing friction materials that reduce judder and realize greater control during high-speed running to meet unique performance demands. Also, we are giving full consideration to vibration characteristics and noise reduction as well as the chemical content of materials to ensure that products meet regional environmental regulations such as REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals). Our R&D activities in Europe aim to respond to a wide range of customer needs, from friction materials designed to meet the above regulations to friction materials intended for auto exports to the Japanese and U.S. markets. Of course, our customers are not limited to Japanese-affiliated companies; we develop, produce and supply friction materials for a wide range of customers in the European market. To reinforce our cost competitiveness in Europe, we are standardizing our materials procurement by purchasing from local markets while introducing a European-style manufacturing process.

In addition to our existing development location in France, we have established local R&D outposts in Germany and the U.K. In Germany our R&D focus is on developing application technologies for disc brakes, while in the U.K. we specialize in developing disc brakes for racing cars and high-end commercial vehicles.

China

We have been promoting the development and design of products that reflect the needs of local customers. While accelerating the local procurement of materials and parts and adopting production methods that are best suited to the local environment, we are developing friction materials with levels of cost competitiveness and performance characteristics that make them suitable for the markets of emerging countries. When developing localized disc brake products, we survey and analyze local customer requirements as well as how they use our products to determine what they need. Based on this, we can develop and propose products that have the required features and performance at a lower cost.

* The above figures include R&D costs and other R&D-related expenditures incurred as part of regular improvements.

Economic Report

Consolidated Balance Sheets

Akebono Brake Industry Co., Ltd. and Consolidated Subsidiaries March 31, 2013 and 2012

	Millions	Thousands of U.S. Dollars (Note 1)*	
	2013	2012	2013
ASSETS			
Cash and deposits	¥ 21,031	¥ 21,015	\$ 223,616
Notes and accounts receivable—trade	35,786	36,326	380,502
Short-term investment securities	—	13,100	—
Merchandise and finished goods	3,366	3,687	35,787
Work in process	2,054	1,821	21,841
Raw materials and supplies	9,036	7,632	96,079
Accounts receivable—other	2,023	4,301	21,505
Deferred tax assets	1,069	1,464	11,367
Other	2,145	1,130	22,807
Allowance for doubtful accounts	(43)	(39)	(454)
Current assets	76,467	90,438	813,051
Buildings and structures, net	19,767	16,632	210,174
Machinery, equipment and vehicles, net	25,753	21,316	273,818
Land	21,781	21,332	231,590
Construction in progress	12,261	6,691	130,371
Other, net	1,942	1,266	20,652
Property, plant and equipment	81,504	67,237	866,605
Intangible assets	3,879	2,844	41,249
Investment securities	17,520	14,799	186,286
Deferred tax assets	2,943	4,022	31,288
Other	4,335	1,777	46,097
Allowance for doubtful accounts	(77)	(86)	(822)
Investments and other assets	24,721	20,512	262,850
Noncurrent assets	110,105	90,592	1,170,704
Total Assets	¥186,572	¥181,030	\$1,983,755

 $\ast \textsc{See}$ accompanying Notes to Consolidated Financial Statements (pages 63 and 64).

	Million	Thousands of U.S. Dollars (Note 1)*	
	2013	2012	2013
LIABILITIES AND NET ASSETS			
Notes and accounts payable—trade	¥ 23,079	¥ 24,326	\$ 245,389
Short-term loans payable	10,369	14,064	110,251
Current portion of long-term loans payable	14,931	15,307	158,757
Income taxes payable	474	874	5,042
Accrued expenses	4,574	5,114	48,629
Deferred tax liabilities	_	1	_
Provision for bonuses	1,767	1,821	18,786
Notes payable—facilities	3,361	1,239	35,734
Other	3,485	4,536	37,053
Current liabilities	62,039	67,282	659,640
Bonds payable	15,000	15,000	159,490
Long-term loans payable	48,767	42,047	518,521
Long-term accounts payable—other	571	583	6,066
Provision for retirement benefits	2,536	2,408	26,970
Provision for director's retirement benefits	34	31	357
Deferred tax liabilities	5	_	51
Deferred tax liabilities for land revaluation	3,761	3,761	39,986
Other	64	103	675
Noncurrent liabilities	70,736	63,933	752,114
Total Liabilities	132,776	131,214	1,411,754
Capital stock	19,939	19,939	212,008
Capital surplus	14,255	14,253	151,564
Retained earnings	7,253	8,062	77,122
Treasury stock	(2,186)	(2,278)	(23,239)
Shareholders' equity	39,262	39,977	417,456
Valuation difference on available-for-sale securities	4,467	2,710	47,494
Revaluation reserve for land	6,389	6,389	67,937
Foreign currency translation adjustment	(3,595)	(5,800)	(38,224)
Accumulated other comprehensive income	7,261	3,299	77,208
Subscription rights to shares	242	316	2,575
Minority interests	7,031	6,223	74,762
Total net assets	53,797	49,815	572,001
Total Liabilities and Net Assets	¥186,572	¥181,030	\$1,983,755

 $\ast \textsc{See}$ accompanying Notes to Consolidated Financial Statements (pages 63 and 64).

Consolidated Statements of Income and Comprehensive Income

Akebono Brake Industry Co., Ltd. and Consolidated Subsidiaries Years Ended March 31, 2013 and 2012

Consolidated Statements of Income			Thousands of U.S. Dollars
	Millior	ns of Yen	(Note 1)*
	2013	2012	2013
Net sales	¥ 206,050	¥ 209,584	\$2,190,855
Cost of sales	182,553	184,666	1,941,026
Gross profit	23,496	24,918	249,829
Selling, general and administrative expenses	19,181	21,083	203,947
Operating income	4,315	3,835	45,882
Interest income	85	83	908
Dividend income	234	175	2,488
Equity in earnings of affiliates	10	15	108
Foreign exchange gains	356	—	3,786
Miscellaneous income	344	177	3,655
Non-operating income	1,029	450	10,945
Interest expenses	1,175	1,267	12,489
Foreign exchange losses	_	153	—
Expenses for product compensation	109	120	1,164
Depreciation	82	157	870
Miscellaneous expenses	577	491	6,136
Non-operating expenses	1,943	2,188	20,658
Ordinary income	3,402	2,097	36,169
Gain on sales of noncurrent assets	14	50	153
Gain on sales of investment securities	374	_	3,981
Subsidy	129	825	1,367
Extraordinary income	517	875	5,501
Loss on sales and retirement of noncurrent assets	139	397	1,482
Impairment loss	34	1,487	367
Contribution for withdrawal from employee's pension fund of subsidiaries	117	_	1,239
Loss on reduction of noncurrent assets	47	775	503
Extraordinary loss	338	2,659	3,590
Income before income taxes and minority interests	3,581	314	38,080
Income taxes—current	1,329	1,747	14,134
Income taxes—deferred	669	561	7,117
Income taxes	1,999	2,308	21,250
Income (loss) before minority interests	1,583	(1,995)	16,830
Minority interests in income	1,065	1,220	11,326
Net income (loss)	¥ 518	¥ (3,215)	\$ 5,504

*See accompanying Notes to Consolidated Financial Statements (pages 63 and 64).

Consolidated Statements of Comprehensi	ive Ind	come Million	s of Yen	L	Th U	ousands of .S. Dollars (Note 1)*
		2013		2012		2013
Income (loss) before minority interests	¥	1,583	¥	(1,995)	\$	16,830
Other comprehensive income						
Valuation difference on available-for-sale securities		1,757		1,171		18,679
Revaluation reserve for land		_		508		_
Foreign currency translation adjustment		2,460		(1,216)		26,153
Total other comprehensive income		4,216		463		44,833
Comprehensive income	¥	5,799	¥	(1,531)	\$	61,663
Comprehensive income attributable to						
Comprehensive income attributable to owners of the parent		4,480	¥	(2,626)		47,631
Comprehensive income attributable to minority interests	¥	1,320		1,094	\$	14,032

 $\ast See$ accompanying Notes to Consolidated Financial Statements (pages 63 and 64).

Economic Report

Consolidated Statements of Changes in Net Assets (Summary)

Akebono Brake Industry Co., Ltd. and Consolidated Subsidiaries Years Ended March 31, 2013 and 2012

	Millions	Millions of Yen		
	2013	2012	2013	
Shareholder's equity				
Capital stock				
Balance at the beginning of period	¥ 19,939	¥ 19,939	\$ 212,008	
Balance at the end of period	19,939	19,939	212,008	
Capital surplus				
Balance at the beginning of period	14,253	14,244	151,543	
Disposal of treasury stock	2	8	22	
Balance at the end of period	14,255	14,253	151,564	
Retained earnings				
Balance at the beginning of period	8,062	12,602	85,724	
Dividends from surplus	(1,327)	(1,325)	(14,107)	
Net income (loss)	518	(3,215)	5,504	
Balance at the end of period	7,253	8,062	77,122	
Treasury stock				
Balance at the beginning of period	(2,278)	(2,348)	(24,218)	
Purchases of treasury stock	(1)	(1)	(12)	
Disposal of treasury stock	93	71	991	
Balance at the end of period	(2,186)	(2,278)	(23,239)	
Total shareholders' equity	39,262	39,977	417,456	
Accumulated other comprehensive income				
Valuation difference on available-for-sale securities				
Balance at the beginning of period	2,710	1,539	28,815	
Total changes of items during the period	1,757	1,171	18,679	
Balance at the end of period	4,467	2,710	47,494	
Revaluation reserve for land				
Balance at the beginning of period	6,389	5,882	67,937	
Total changes of items during the period	0	508	0	
Balance at the end of period	6,389	6,389	67,937	
Foreign currency translation adjustment				
Balance at the beginning of period	(5,800)	(4,710)	(61,671)	
Total changes of items during the period	2,205	(1,090)	23,447	
Balance at the end of period	(3,595)	(5,800)	(38,224)	
Accumulated other comprehensive income				
Balance at the beginning of period	3,299	2,711	35,081	
Total changes of items during the period	3,962	589	42,126	
Balance at the end of period	7,261	3,299	77,208	
Subscription rights to shares				
Balance at the beginning of period	316	283	3,358	
Total changes of items during the period	(74)	33	(783)	
Balance at the end of period	242	316	2,575	
Minority interests				
Balance at the beginning of period	6,223	7,141	66,171	
Total changes of items during the period	808	(918)	8,591	
Balance at the end of period	7,031	6,223	74,762	
Total net assets	¥ 53,797	¥ 49,815	\$ 572,001	

*See accompanying Notes to Consolidated Financial Statements (pages 63 and 64).

Special Feature

Consolidated Statements of Cash Flows

Akebono Brake Industry Co., Ltd. and Consolidated Subsidiaries Years Ended March 31, 2013 and 2012

2013 2012 2013 CASH FLOW FROM OPERATING ACTIVITIES: income before income taxes ¥ 3,581 ¥ 314 \$ 38,080 Depreciation and amortization 8,554 9,806 91,380 Impairment loss 34 1,487 367 Increase (decrease) in provision for retirement benefits (2,893) (3,050) (30,756) Increase (decrease) in provision for current method from transfer of busines applied to foreign subsidiaries - (1,660) - Interest and dividend income (319) (258) (3,396) (3,981) Loss (gain) on sales of investment securities (374) - (3,981) Decrease (increase) in notes and accounts receivable—trade (2,440) (4,056) 25,943 Decrease (increase) in notes and accounts payable—trade (2,240) (177) (2,486) Interest expresses paid (1,169) (1,244) (1,243) (1,171) (1,40,85) Subtral 6,220 5,632 87,397 Interest expresses paid (1,169) (1,244) (1,24,33) Increase (decrease) in notes and accounts payable—trade 1		Millions	Thousands of U.S. Dollars (Note 1)*	
CASH FLOW FROM OPERATING ACTIVITIES: Income before income taxes ¥ 3.581 ¥ 3.581 ¥ 314 \$ 38,080 Depreciation and amorization 8,594 9,806 91,380 Increase (decrease) in provision for refirement benefits (2,893) (3,050) (2) Increases (decrease) in provision for refirement benefits (2,893) (3,050) (3,756) Increase (decrease) in provision for refirement benefits (1,15) (1,08) Increases (decrease) in provision for refirement benefits (1,15) (1,08) Interest and dividend income (319) (258) (3,396) Dess (gain) on sales of investment securities (374) - (3,981) Decrease (increase) in inventories (2,376) 1,228 (27,378) Other, net (1,159) (1,24) (1,2,33) Subtotal 8,220 5,632 87,397 Increase (decrease) and counts payable—trade (2,575) 1,924 (27,378) Other, net (1,169) (1,24,41) (14,068) Subtotal 1,963 - 20,870 Increase (decrease) paid (1,674) (1,24,83)		2013	2012	2013
Income before income taxes ¥ 3,681 ¥ 31,84 \$ 38,080 Impairment loss 34 1.487 367 Increase (decrease) in provision for retirement benefits (2.893) (3.050) (30,756) Increase (decrease) in provision for retirement benefits (2.893) (3.050) (30,756) Increase (decrease) in provision for retirement benefits (2.893) (3.050) (30,756) Increase (decrease) in provision for retirement securities (319) (258) (3.396) Equity in (earnings) losses of affiliates (10) (15) (1.080) — Loss (gain) on sales and retirement of noncurrent assets 125 347 1,228 Decrease (increase) in intest and accounts receivable—trade (2,440) (40,056) 25,943 Decrease (increase) in notes and accounts payable—trade (2,575) 1.924 (27,378) Interest sequences paid (1,169) (1,254) (12,433) Increase (decrease) in notes and accounts payable—trade 1,963 — 20,870 Increase (decrease) in ontes and accounts payable 1,175 <t< td=""><td>CASH FLOW FROM OPERATING ACTIVITIES:</td><td></td><td></td><td></td></t<>	CASH FLOW FROM OPERATING ACTIVITIES:			
Depreciation and amortization 8,594 9,806 91,380 Impairment loss 34 1,487 367 Increase (decrease) in provision for retirement benefits (2,893) (3,050) (30,756) Increase (decrease) in provision incurred from transfer of business applied to foreign subsidiaries — (1,660) — Interest and dividend income (110) (15) (106) Loss (gain) on sales and retirement of noncurrent assets 1,175 1,267 1,2489 Loss (gain) on sales and retirement of noncurrent assets 1,217 1,2487 1,2489 Decrease (increase) in notes and accounts receivable—trade (2,344) (-1,77) (2,486) Increase in accounts payable—trade (1,324) (417) (14,083) Subtotal 8,220 5,632 8,7397 Interest and dividend income received 3.19 2,583 3,936 Incoreas (excrease) pid (1,169) (1,747) (1,2,433) Incorease returded 1,963 — 20,670 Net cash provided by operating activities 1,2300 (2,710) (30,8	Income before income taxes	¥ 3,581	¥ 314	\$ 38,080
Impairment loss 34 1.47 367 Increase (decrease) in provision for retirement benefits (2,893) (3,050) (30,756) Increase (decrease) in provision for retirement benefits (2,893) (3,050) (30,756) Increase (decrease) in provision four retirement benefits (2,893) (3,050) (30,756) Interest and dividend income (319) (258) (3,396) Equity in (earnings) losses of affiliates (10) (15) (108) Loss (gain) on sales and retirement of noncurrent assets 125 347 1,328 Loss (gain) on sales of investment securities (374) - (3,881) Decrease (increase) in investment securities (374) - (3,881) Decrease (increase) in investment securities (2,575) 1,924 (27,376) Other, net (1,324) (1,747) (1,720) (18,677) Income taxes paid (1,747) (1,720) (18,677) Income taxes paid (1,747) (1,720) (18,677) Income taxes paid (1,747) (1,720) (18,677)	Depreciation and amortization	8,594	9,806	91,380
Increase (decrease) in provision for retirement benefits (2) (2) Increase (decrease) in provision incurred from transfer of business applied to foreign subsidiaries — (1,660) — Interest and dividend income (319) (258) (3,395) Equity in (earnings) losses of affiliates (10) (15) (106) Loss (gain) on sales and retirement of noncurrent assets 125 347 1,248 Loss (gain) on sales of investment securities (374) — (3,981) Decrease (increase) in notes and accounts receivable—trade (2,440) (4,056) (27,378) Other, net (1,129) (1,254) (14,17) (14,083) Increase (increase) in notes and accounts payable—trade (2,575) 1,924 (27,378) Other, net (1,129) (1,254) (14,243) Income taxes refunded 1,963 — 20,870 Net cash provided by operating activities 7,585 2,916 80,663 CASH FLOW FROM INVESTING ACTIVITIES: Cash provided by operating activities 1,2300 103,366 Purchases of short-term investment securitie	Impairment loss	34	1,487	367
Increase (decrease) in provision for retirement benefits (2,893) (3,050) (30,756) Increase (decrease) in provision incurred from transfer of usiness applied to foreign subsidiaries — (1,660) — Interest and dividend income (319) (258) (3,396) Equity in (earnings) losses of affiliates (10) (15) (108) Loss (gain) on sales of investment securities (177) (1,284) (177) (2,486) Decrease (increase) in investment securities (2374) — (3,896) Decrease (increase) in inventories (234) (77) (2,486) Interest expenses paid (1,169) (1,254) (27,376) Other, net (1,224) (41,71) (1,270) (18,677) Interest and dividend income received 319 258 3,396 (1166) (14,243) (14,120) (12,547) (12,543) (12,700) (13,635) Procease for bortterm investment securities (2,900) (20,100) (30,635) Subtal 8,220 5,632 87,397 Notes and accounts exerelival and accounts exerelival and accounts exerel	Increase (decrease) in allowance for doubtful accounts	(0)	20	(2)
Increase (decrease) in provision incurred from transfer of business applied to foreign subsidiaries (1,660) — Interest and dividend income (319) (258) (3,396) Equity in (earnings) losses of affiliates (10) (15) (108) Interest expenses (177) 1,267 12,489 Loss (gain) on sales of investment securities (374) — (3,981) Decrease (increase) in investment securities (234) (77) (2,486) Increase (decrease) in inventories (234) (27,378) (21,378) Other, net (1,169) (1,254) (12,378) Subtotal 8,220 5,633 87,397 Income taxes paid (1,169) (1,254) (12,438) Income taxes paid (1,169) (1,254) (12,433) Income taxes refunded 1,963 — 20,870 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITES: Purchase of short term investment securities (4,150) (13,300) (144,225) Proceeds f	Increase (decrease) in provision for retirement benefits	(2,893)	(3,050)	(30,756)
Interest and dividend income (319) (258) $(3,396)$ Equity in (earnings) losses of affiliates (10) (15) (108) Interest expenses $1,175$ $1,267$ $12,489$ Loss (gin) on sales of investment securities 374 - $(3,981)$ Decrease (increase) in notes and accounts receivable—trade $2,440$ $(4,056)$ $22,543$ Decrease (increase) in notes and accounts payable—trade $(2,375)$ $1,924$ $(27,378)$ Other, net $(1,324)$ (417) $(14,083)$ Subtotal $8,220$ $5,632$ $87,397$ Increase giance (accrease) and income received 319 258 $3,396$ Increase sequences paid $(1,1747)$ $(1,254)$ $(12,547)$ Income taxes refunded $1,963$ $ 20,870$ Net cash provided by operating activities $7,585$ 2.916 $80,653$ CASH FLOW FROM INVESTING ACTIVITIES: $(2,900)$ $(20,100)$ $(30,835)$ Proceeds from redemption of securities $12,200$ $12,700$ $130,0781$ Payments into time deposits $9,750$ $13,900$ $(144,225)$ Proceeds from sales of property, plant and equipment $(13,822)$ $(12,908)$ $(194,809)$ Proceeds from sales of investment securities $(2,015)$ $(23,810)$ $(43,120)$ Proceeds from sales of property, plant and equipment 83 88 884 Purchases of investment securities 669 $ 9,241$ Proceeds from sales of investment securities 669	Increase (decrease) in provision incurred from transfer of business applied to foreign subsidiaries	-	(1,660)	_
Equity in (earnings) losses of affiliates (10) (15) (100) Interest expenses 1,175 1,267 12,489 Loss (gain) on sales and retirement of noncurrent assets 125 347 1,328 Loss (gain) on sales of investment securities (374) - (3,981) Decrease (increase) in notes and accounts payable—trade (2,575) 1,924 (27,378) Other, net (1,169) (1,254) (1417) (14,083) Subtotal 8,220 5,632 87,397 Increase (decrease) in notes and accounts payable—trade (1,169) (1,254) (12,433) Interest expenses paid (1,169) (1,254) (12,433) Income taxes refunded 1,963 - 20,870 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITIES: Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from state subsidy 492 345 5,227 Proceeds from state subsidy 492 345 5,227 Proceeds from sales of investime securities (2,16)	Interest and dividend income	(319)	(258)	(3,396)
Interest expenses 1,175 1,267 12,489 Loss (gain) on sales and retirement of noncurrent assets 125 347 1,328 Loss (gain) on sales of investment securities (374) - (3,981) Decrease (increase) in notes and accounts receivable—trade 2,440 (4,056) 25,943 Decrease (increase) in notes and accounts payable—trade (2,575) 1,924 (27,378) Other, net (1,324) (417) (14,083) Subtotal 8,220 5,632 87,397 Increase tweenese paid (1,169) (12,574) (12,637) Income taxes refunded 1,963 - 20,870 Net cash provided by operating activities 7,585 2,916 80,653 Proceeds from redemption of securities (2,900) (20,100) (30,835) Proceeds from redemption of securities (1,450) (13,300) (44,125) Purchases of intromated equipment (18,322) (12,908) (194,809) Proceeds from state subsidy 492 345 5,227 Proceeds from state subsidy area	Equity in (earnings) losses of affiliates	(10)	(15)	(108)
Loss (gain) on sales and retirement of noncurrent assets 125 347 1,328 Loss (gain) on sales of investment securities (374) — (3,981) Decrease (increase) in notes and accounts payable—trade (2,34) (77) (2,486) Increase (decrease) in notes and accounts payable—trade (2,575) 1,924 (27,378) Other, net (1,324) (417) (14,083) Subtotal 8,220 5,632 87,397 Interest expenses paid (1,169) (1,254) (12,433) Income taxes refunded 1,963 — 20,870 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITIES: Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from redemption of securities 12,300 12,700 130,781 Payments into time deposits 9,750 13,900 103,668 Purchase of property, plant and equipment (18,322) (12,908) (194,809) Proceeds from sales of property, plant and equipment (18,322)	Interest expenses	1,175	1,267	12,489
Loss (gain) on sales of investment securities (374) — (3,981) Decrease (increase) in notes and accounts receivable—trade 2,440 (77) (2,486) Increase (increase) in notes and accounts payable—trade (2,575) 1,924 (27,378) Other, net (1,122) (417) (14,083) Subtotal 8,220 5,632 87,397 Increase interest expenses paid (1,1747) (1,720) (18,577) Income taxes paid (1,747) (1,720) (18,577) Income taxes refunded 1,963 — 20,870 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITIES: Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from redemption of securities 14,150) (13,300) (44,125) Proceeds from state subsidy 492 345 5,227 Proceeds from state subsidy 492 345 5,227 Proceeds from state subsidy 492 345 5,227 Proceeds	Loss (gain) on sales and retirement of noncurrent assets	125	347	1,328
Decrease (increase) in notes and accounts receivable—trade 2,440 (4,056) 25,943 Decrease (increase) in inventories (234) (77) (2,486) Increase (idcrease) in notes and accounts payable—trade (2,575) 1,924 (417) (14,083) Other, net (1,324) (417) (14,083) Subtotal 8,220 5,632 87,397 Interest and dividend income received 319 258 3,396 11,1699 (1,254) (12,433) Income taxes paid (1,747) (1,720) (18,577) 11.00me taxes refunded 1,963 — 20,870 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITES: Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from redemption of securities 12,300 12,700 130,781 Payments into time deposits 9,750 13,900 103,668 Purchase of property, plant and equipment (18,322) (12,908) (194,809) Proceeds from sales of property, plant and equipment 88 884 <td>Loss (gain) on sales of investment securities</td> <td>(374)</td> <td>_</td> <td>(3,981)</td>	Loss (gain) on sales of investment securities	(374)	_	(3,981)
Decrease (increase) in inventories (234) (77) (2,486) Increase (decrease) in notes and accounts payable—trade (2,575) 1.924 (27,378) Other, net (1,324) (417) (1,4083) Subtotal 8,220 5.632 87,397 Interest and dividend income received 319 258 3,396 Interest expenses paid (1,169) (1,254) (12,433) Income taxes refunded 1,963 – 20,870 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITIES: Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from redemption of securities (1,450) (13,300) (14,412) Payments into time deposits 9,750 13,900 103,668 Purchases of property, plant and equipment (18,322) (12,908) (194,809) Proceeds from sales of property, plant and equipment 88 884 Purchases of investment securities (516) (2,015) (5,491) Pu	Decrease (increase) in notes and accounts receivable-trade	2,440	(4,056)	25,943
Increase (decrease) in notes and accounts payable—trade (2,575) 1.924 (27,378) Other, net (1,324) (417) (14,083) Subtotal 8,220 5,632 87,397 Interest and dividend income received 319 258 3,396 Income taxes paid (1,149) (1,254) (12,433) Income taxes paid (1,747) (1,720) (18,577) Income taxes refunded 1,963 20,870 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITES: Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from redemption of securities (1,300) (14,125) Proceeds from state subsidy 492 345 5,227 Proceeds from sales of property, plant and equipment 83 88 884 Purchases of investment securities (1,458) (1,418) (15,507) Proceeds from sales of subsidiaries and affiliates - (1,265) - Proceeds from sales of investment securities 869	Decrease (increase) in inventories	(234)	(77)	(2,486)
Other, net (1,324) (417) (14,083) Subtotal 8,220 5,632 87,397 Interest and dividend income received 319 258 3,396 Interest expenses paid (1,169) (1,254) (12,2433) Income taxes paid (1,747) (1,720) (18,577) Income taxes paid (1,750) (13,300) (44,125) Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from state subsidy 492 345 5,227 Proceeds from state subsidy 492 345 5,227 Proceeds from sales of investment securities (516) (2,015) (5,491) Purchases of investment securit	Increase (decrease) in notes and accounts payable-trade	(2.575)	1.924	(27.378)
Subtrail (8,220) 5,632 87,397 Interest and dividend income received 319 258 3,396 Interest expenses paid (1,169) (1,254) (12,433) Income taxes prefunded 1,963 — 20,870 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITES: Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from redemption of securities 12,300 12,700 130,781 Payments into time deposits 9,750 13,900 103,668 Purchases of property, plant and equipment (18,322) (12,908) (194,809) Proceeds from state subsidy 492 345 5,227 Proceeds from state subsidy 492 345 5,227 Proceeds from state subsidy 492 345 5,227 Proceeds from state subsidy investment securities 869 — 9,241 Purchase of investment securities 869 — 9,241 Purchase of stocks of subsidiaries an	Other, net	(1.324)	(417)	(14.083)
Interest and dividend income received 319 228 3,396 Interest expenses paid (1,169) (1,254) (12,433) Income taxes paid (1,777) (1,720) (18,577) Income taxes refunded 1,963 20,870 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITIES: Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from redemption of securities 12,300 12,700 130,781 Payments into time deposits 9,750 13,900 103,668 Purchases of property, plant and equipment (18,322) (12,908) (194,809) Proceeds from state subsidy 492 345 5,227 Proceeds from sales of property, plant and equipment 83 88 884 Purchases of stork stemet securities (516) (2,015) (5,491) Proceeds from sales of investment securities - - - - Purchase of stork sof subsidiaries and affiliates - - - -	Subtotal	8.220	5.632	87.397
Interest expenses paid (1,169) (1,254) (12,433) Income taxes paid (1,747) (1,720) (18,577) Income taxes refunded 1,963	Interest and dividend income received	319	258	3.396
Income taxes paid (1,747) (1,720) (18,577) Income taxes refunded 1,963 - 20,870 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITIES: Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from redemption of securities 12,300 12,700 130,781 Payments into time deposits 9,750 13,900 (14,125) Proceeds from withdrawal of time deposits 9,750 13,900 (194,809) Proceeds from state subsidy 492 345 5,227 Proceeds from state subsidy 492 345 5,227 Proceeds from state subsidy 492 345 5,227 Proceeds from sales of property, plant and equipment 83 88 884 Purchases of intragible assets (1,458) (1,418) (15,507) Purchases of stocks of subsidiaries and affiliates - (1,265) - Other, net (203) 163 (2,154) Net cash used in investing	Interest expenses paid	(1.169)	(1.254)	(12,433)
Income taxes refunded 1,963 — 20,870 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITIES: Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from redemption of securities 12,300 12,700 130,781 Payments into time deposits 9,750 13,900 103,668 Purchases of property, plant and equipment (18,322) (12,908) (194,809) Proceeds from state subsidy 492 345 5,227 Proceeds from sales of property, plant and equipment 83 88 884 Purchases of investment securities (516) (2,015) (5,491) Proceeds from sales of investment securities 869 — 9,241 Purchase of stocks of subsidiaries and affiliates — (1,265) — Other, net (203) 163 (2,154) Net cash used in investing activities (4,055) (23,810) (43,120) CASH FLOW FROM FINANCING ACTIVITIES: Net cash used in investing activities (4,05	Income taxes paid	(1.747)	(1,720)	(18.577)
Internet 1000 1000 Net cash provided by operating activities 7,585 2,916 80,653 CASH FLOW FROM INVESTING ACTIVITIES: 2,900 (20,100) (30,835) Proceeds from redemption of securities 12,300 12,700 130,781 Payments into time deposits (4,150) (13,300) (44,125) Proceeds from withdrawal of time deposits 9,750 13,900 103,668 Purchases of property, plant and equipment (18,322) (12,908) (194,809) Proceeds from sates subsidy 492 345 5,227 Proceeds from sates subsidy 492 345 5,227 Proceeds from sates of property, plant and equipment 83 88 884 Purchase of investment securities (516) (2,015) (5,491) Proceeds from sales of investment securities 669 - 9,241 Purchase of stobsidiaries and affiliates - (1,265) - Other, net (203) 163 (2,154) Net cash used in investing activities (4,804) 6,303	Income taxes refunded	1,963	(1,120)	20.870
CASH FLOW FROM INVESTING ACTIVITIES: 1/100 1/100 1/100 Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from redemption of securities 12,300 12,700 130,781 Payments into time deposits (4,150) (13,300) (44,125) Proceeds from withdrawal of time deposits 9,750 13,900 103,668 Purchases of property, plant and equipment (18,322) (12,908) (194,809) Proceeds from state subsidy 492 345 5,227 Proceeds from sales of property, plant and equipment 83 88 884 Purchases of investment securities (516) (2,015) (5,491) Proceeds from sales of investment securities 869 - 9,241 Purchase of stocks of subsidiaries and affiliates - (1,265) - Other, net (203) 163 (2,154) Net cash used in investing activities (4,804) 6,303 (51,083) Proceeds from long-term loans payable (4,804) 6,303 (51,083) <t< td=""><td>Net cash provided by operating activities</td><td>7.585</td><td>2,916</td><td>80.653</td></t<>	Net cash provided by operating activities	7.585	2,916	80.653
Purchase of short-term investment securities (2,900) (20,100) (30,835) Proceeds from redemption of securities 12,300 12,700 130,781 Payments into time deposits (4,150) (13,300) (44,125) Proceeds from withdrawal of time deposits 9,750 13,900 103,668 Purchases of property, plant and equipment (18,322) (12,908) (194,809) Proceeds from sales of property, plant and equipment 83 88 884 Purchases of investment securities (516) (2,015) (5,491) Purchases of subsidiaries and affiliates - (1,265) - Other, net (203) 163 (2,154) Net cash used in investing activities (4,804) 6,303 (51,083) Proceeds from sloes of long-term loans payable (4,804) 6,303 (51,083) Proceeds from long-term loans payable (1,858) (1,479) (165,659) CASH FLOW FROM FINANCING ACTIVITIES: Net increase (decrease) in short-term loans payable (1,325) (1,325) (1,4087) Cash dividends paid (1,325) (1,325) (1,4087) (23,48) (7,162)	CASH FLOW FROM INVESTING ACTIVITIES	.,		
Proceeds from redemption of securities12,30012,700130,781Payments into time deposits(4,150)(13,300)(44,125)Proceeds from withdrawal of time deposits9,75013,900103,668Purchases of property, plant and equipment(18,322)(12,908)(194,809)Proceeds from state subsidy4923455,227Proceeds from sales of property, plant and equipment8388884Purchases of investment securities(516)(2,015)(5,491)Proceeds from sales of investment securities(516)(2,015)(5,491)Purchases of stocks of subsidiaries and affiliates(1,265)Other, net(203)163(2,154)Net cash used in investing activities(4,804)6,303(51,083)Proceeds from long-term loans payable(1,5584)(15,479)(165,699)Cash dividends paid(1,325)(14,087)(166,699)Cash dividends paid(1,325)(1,425)(14,087)Cash dividends paid(1,325)(1,325)(14,087)Cash dividends paid(1)(1)(1)(10)Other, net(31)(27)(334)Net increase (increase) in short-term loans payable(2,037)1,432Proceeds from long-term loans payable(1,325)(1,425)Proceeds from stock issuance to minority shareholders(2,037)1,432Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)	Purchase of short-term investment securities	(2.900)	(20.100)	(30.835)
Payments into time deposits (4,150) (13,300) (44,125) Proceeds from withdrawal of time deposits 9,750 13,900 103,668 Purchases of property, plant and equipment (18,322) (12,908) (194,809) Proceeds from state subsidy 492 345 5,227 Proceeds from sales of property, plant and equipment 83 88 884 Purchases of intangible assets (1,458) (1,418) (15,507) Purchases of investment securities (516) (2,015) (5,491) Proceeds from sales of investment securities 869 - 9,241 Purchase of stocks of subsidiaries and affiliates - (1,265) - Other, net (203) 163 (2,154) Net cash used in investing activities (4,6055) (23,810) (43,120) CASH FLOW FROM FINANCING ACTIVITIES: - - (1,6465) Net increase (decrease) in short-term loans payable (1,325) (1,4087) Cash dividends paid (1,325) (1,4087) (165,699) Cash dividends paid (1,325) (1,4087) (165,699) Cash dividend	Proceeds from redemption of securities	12.300	12,700	130.781
Topinoling third barlie deposits(1,205)(1,120)(1,120)Proceeds from withdrawal of time deposits9,75013,900103,668Purchases of property, plant and equipment(18,322)(12,908)(194,809)Proceeds from sales of property, plant and equipment8388884Purchases of intangible assets(1,458)(1,418)(15,507)Purchases of investment securities(516)(2,015)(5,491)Proceeds from sales of investment securities869-9,241Purchase of stocks of subsidiaries and affiliates-(1,265)-Other, net(203)163(2,154)Net cash used in investing activities(4,055)(23,810)(43,120)CASH FLOW FROM FINANCING ACTIVITIES:(1,265)-Net increase (decrease) in short-term loans payable(20,359)12,425216,465Repayments of long-term loans payable(1,325)(1,325)(14,087)Cash dividends paid(1,325)(1,325)(14,087)(165,699)Cash dividends paid(1,325)(1,325)(14,087)(165,699)Cash dividends paid to minority shareholders(2,037)1,432(21,659)Proceeds from stock issuance to minority shareholders(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents423(184)4,499Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equ	Payments into time deposits	(4,150)	(13,300)	(44 125)
Purchases of property, plant and equipment(18,322)(12,908)(194,809)Proceeds from sate subsidy4923455,227Proceeds from sales of property, plant and equipment8388884Purchases of intragible assets(1,458)(1,418)(15,507)Purchases of investment securities(516)(2,015)(5,491)Proceeds from sales of investment securities869-9,241Purchase of stocks of subsidiaries and affiliates-(1,265)-Other, net(203)163(2,154)Net cash used in investing activities(4,055)(23,810)(43,120)CASH FLOW FROM FINANCING ACTIVITIES:Net increase (decrease) in short-term loans payable(4,804)6,303(51,083)Proceeds from long-term loans payable(15,584)(15,479)(165,699)Cash dividends paid(1,325)(14,087)(165,699)Cash dividends paid to minority shareholders(674)(488)(7,162)Proceeds from stock issuance to minority shareholders2423253Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents1,916(19,646)20,37323,449Cash and cash equivalents1,916(19,	Proceeds from withdrawal of time deposits	9 750	13,900	103 668
Transfer(12,022)(12,003)(12,003)Proceeds from sales of property, plant and equipment8388884Purchases of intagible assets(1,458)(1,418)(15,507)Purchases of investment securities(516)(2,015)(5,491)Proceeds from sales of investment securities869-9,241Purchase of stocks of subsidiaries and affiliates-(1,265)-Other, net(203)163(2,154)Net cash used in investing activities(4,055)(23,810)(43,120)CASH FLOW FROM FINANCING ACTIVITIES:Net increase (decrease) in short-term loans payable(1,325)(1,325)(14,087)Cash dividends paid(1,325)(1,325)(1,4087)(165,699)(2ash dividends paid(1,325)(14,087)Cash dividends paid to minority shareholders2423253253225216,465Proceeds from stock issuance to minority shareholders2423253253Decrease (increase) in treasury stock(1)(1)(10)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents423(184)4,499Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents1,916(19,646)20,37320,3731,4255,2425	Purchases of property, plant and equipment	(18 322)	(12,908)	(194 809)
House in value subsidyHouse in value subsidyHouse in value subsidyProceeds from sales of property, plant and equipment8388Purchases of intangible assets(1,458)(1,418)(15,507)Purchases of investment securities(516)(2,015)(5,491)Proceeds from sales of investment securities869-9,241Purchase of stocks of subsidiaries and affiliates-(1,265)-Other, net(203)163(2,154)Net cash used in investing activities(4,055)(23,810)(43,120)CASH FLOW FROM FINANCING ACTIVITIES:(1,325)(1,325)Net increase (decrease) in short-term loans payable20,35912,425216,465Repayments of long-term loans payable(15,584)(15,479)(165,699)Cash dividends paid(1,325)(1,325)(14,087)Cash dividends paid to minority shareholders(674)(488)(7,162)Proceeds from stock issuance to minority shareholders2423253Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents423(184)4,499Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents1,916(19,646)20,053 <tr <td="">Cash and cash equivalents423<</tr>	Proceeds from state subsidy	492	345	5 227
Purchases of intagible assets(1,458)(1,418)(15,507)Purchases of investment securities(516)(2,015)(5,491)Proceeds from sales of investment securities869-9,241Purchase of stocks of subsidiaries and affiliates-(1,265)-Other, net(203)163(2,154)Net cash used in investing activities(4,055)(23,810)(43,120)CASH FLOW FROM FINANCING ACTIVITIES:-(4,804)6,303(51,083)Proceeds from long-term loans payable20,35912,425216,465Repayments of long-term loans payable(15,584)(15,479)(165,699)Cash dividends paid(1,325)(1,325)(14,087)Cash dividends paid to minority shareholders(674)(488)(7,162)Proceeds from stock issuance to minority shareholders2423253Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents1,916(19,646)20,073Cash and cash equivalents1,916(19,646)20,073Cash and cash equivalents1,916(19,646)20,073	Proceeds from sales of property plant and equipment	83	88	884
Purchases of initialization disacts (1,410) (1,410) (1,410) Purchases of investment securities (516) (2,015) (5,491) Proceeds from sales of investment securities 869 - 9,241 Purchase of stocks of subsidiaries and affiliates - (1,265) - Other, net (203) 163 (2,154) Net cash used in investing activities (4,055) (23,810) (43,120) CASH FLOW FROM FINANCING ACTIVITIES: - - (1,265) - Net increase (decrease) in short-term loans payable (1,325) (1,325) (14,087) Cash dividends paid (1,325) (1,325) (14,087) Cash dividends paid to minority shareholders (674) (488) (7,162) Proceeds from stock issuance to minority shareholders 24 23 253 Decrease (increase) in treasury stock (1) (1) (10) Other, net (31) (27) (334) Net cash provided by (used in) financing activities (2,037) 1,432 (21,659) Effect of exchange rate change on cash and cash equivalents 1,916 (19,646)	Purchases of intangible assets	(1 458)	(1 418)	(15 507)
Proceeds from sales of investment securities869-9,241Purchase of stocks of subsidiaries and affiliates-(1,265)-Other, net(203)163(2,154)Net cash used in investing activities(4,055)(23,810)(43,120)CASH FLOW FROM FINANCING ACTIVITIES:(4,804)6,303(51,083)Proceeds from long-term loans payable20,35912,425216,465Repayments of long-term loans payable(15,584)(15,479)(165,699)Cash dividends paid(1,325)(1,325)(14,087)Cash dividends paid to minority shareholders(674)(488)(7,162)Proceeds from stock issuance to minority shareholders2423253Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities423(184)4,499Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents1,916(19,646)20,373(23,042)Cash and cash equivalents1,916(19,646)20,373(23,042)Cash and cash equivalents1,916(19,845)420,2042)	Purchases of investment securities	(1,100)	(2,015)	(5 491)
Purchase of stocks of subsidiaries and affiliates–(1,265)–Other, net(203)163(2,154)Net cash used in investing activities(4,055)(23,810)(43,120)CASH FLOW FROM FINANCING ACTIVITIES:(4,804)6,303(51,083)Proceeds from long-term loans payable20,35912,425216,465Repayments of long-term loans payable(15,584)(15,479)(165,699)Cash dividends paid(1,325)(1,325)(14,087)Cash dividends paid to minority shareholders(674)(488)(7,162)Proceeds from stock issuance to minority shareholders2423253Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents423(184)4,499Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents1,916(19,646)20,053	Proceeds from sales of investment securities	(010)	(2,010)	9 241
Other, net(203)163(2,154)Net cash used in investing activities(4,055)(23,810)(43,120)CASH FLOW FROM FINANCING ACTIVITIES:(4,804)6,303(51,083)Proceeds from long-term loans payable20,35912,425216,465Repayments of long-term loans payable(15,584)(15,479)(165,699)Cash dividends paid(1,325)(1,325)(14,087)Cash dividends paid to minority shareholders(674)(488)(7,162)Proceeds from stock issuance to minority shareholders2423253Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents1,916(19,646)20,373Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents at beginning of period18,81538,461200,053Cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents at beginning of period18,81538,461200,053	Purchase of stocks of subsidiaries and affiliates		(1 265)	5,241
Outed, net(200)100(2,134)Net cash used in investing activities(4,055)(23,810)(43,120)CASH FLOW FROM FINANCING ACTIVITIES: Net increase (decrease) in short-term loans payable(4,804)6,303(51,083)Proceeds from long-term loans payable20,35912,425216,465Repayments of long-term loans payable(15,584)(15,479)(165,699)Cash dividends paid(1,325)(1,325)(14,087)Cash dividends paid to minority shareholders(674)(488)(7,162)Proceeds from stock issuance to minority shareholders2423253Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents1,916(19,646)20,373Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents at beginning of period18,81538,461200,053	Other net	(203)	(1,203)	(2 154)
Inter cash disch in investing activities(4,03)(23,010)(43,120)CASH FLOW FROM FINANCING ACTIVITIES: Net increase (decrease) in short-term loans payable(4,804)6,303(51,083)Proceeds from long-term loans payable20,35912,425216,465Repayments of long-term loans payable(15,584)(15,479)(165,699)Cash dividends paid(1,325)(1,325)(14,087)Cash dividends paid to minority shareholders(674)(488)(7,162)Proceeds from stock issuance to minority shareholders2423253Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents1,81538,461200,053	Net cash used in investing activities	(4 055)	(23.810)	(43 120)
Net increase (decrease) in short-term loans payable(4,804)6,303(51,083)Proceeds from long-term loans payable20,35912,425216,465Repayments of long-term loans payable(15,584)(15,479)(165,699)Cash dividends paid(1,325)(1,325)(14,087)Cash dividends paid to minority shareholders(674)(488)(7,162)Proceeds from stock issuance to minority shareholders2423253Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents at beginning of period18,81538,461200,053Cash and cash equivalents42.0731¥ 18,815\$20,426		(4,000)	(23,010)	(43,120)
Net increase (decrease) in shorteen hoars payable $(1,004)$ $(0,005)$ Proceeds from long-term loans payable $20,359$ $12,425$ $216,465$ Repayments of long-term loans payable $(15,584)$ $(15,479)$ $(165,699)$ Cash dividends paid $(1,325)$ $(1,325)$ $(14,087)$ Cash dividends paid to minority shareholders (674) (488) $(7,162)$ Proceeds from stock issuance to minority shareholders 24 23 253 Decrease (increase) in treasury stock (1) (1) (1) (10) Other, net (31) (27) (334) Net cash provided by (used in) financing activities 423 (184) $4,499$ Net increase (decrease) in cash and cash equivalents 423 $(19,646)$ $20,373$ Cash and cash equivalents at beginning of period $18,815$ $38,461$ $200,053$ Cash and cash equivalents 423 $418,815$ $420,053$	Net increase (decrease) in short-term loans payable	(4 804)	6 303	(51.083)
Hoceeds from long term loans payable $12,425$ $210,405$ Repayments of long-term loans payable $(15,584)$ $(15,479)$ $(165,699)$ Cash dividends paid $(1,325)$ $(1,325)$ $(14,087)$ Cash dividends paid to minority shareholders (674) (488) $(7,162)$ Proceeds from stock issuance to minority shareholders 24 23 253 Decrease (increase) in treasury stock (1) (1) (1) (10) Other, net (31) (27) (334) Net cash provided by (used in) financing activities $(2,037)$ $1,432$ $(21,659)$ Effect of exchange rate change on cash and cash equivalents 423 (184) $4,499$ Net increase (decrease) in cash and cash equivalents $1,916$ $(19,646)$ $20,373$ Cash and cash equivalents at beginning of period $18,815$ $38,461$ $200,053$ Cash and cash equivalents $420,721$ $¥$ $18,815$ $420,426$	Proceeds from long term loans navable	20 359	12 / 25	216 465
Repayments of long-term loans payable $(13,384)$ $(13,475)$ $(103,475)$ Cash dividends paid $(1,325)$ $(1,325)$ $(14,087)$ Cash dividends paid to minority shareholders (674) (488) $(7,162)$ Proceeds from stock issuance to minority shareholders 24 23 253 Decrease (increase) in treasury stock (1) (1) (1) (10) Other, net (31) (27) (334) Net cash provided by (used in) financing activities $(2,037)$ $1,432$ $(21,659)$ Effect of exchange rate change on cash and cash equivalents 423 (184) $4,499$ Net increase (decrease) in cash and cash equivalents $1,916$ $(19,646)$ $20,373$ Cash and cash equivalents at beginning of period $18,815$ $38,461$ $200,053$ Cash and cash equivalents 423 $418,815$ $420,053$	Ponovments of long term leans payable	(15 594)	(15,470)	(165 600)
Cash dividends paid(1,323)(1,323)(1,023)(14,061)Cash dividends paid to minority shareholders(674)(488)(7,162)Proceeds from stock issuance to minority shareholders2423253Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents423(184)4,499Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents at beginning of period18,81538,461200,053Cash and cash equivalents* 18,81538,461200,053	Cosh dividonde poid	(1,225)	(1, 225)	(103,093)
Cash dividends paid to minority shareholders(674)(488)(7,102)Proceeds from stock issuance to minority shareholders2423253Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents423(184)4,499Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents at beginning of period18,81538,461200,053Cash and cash equivalents* 18,81538,461200,053	Cash dividende paid to minority shareholders	(1,525)	(1,323)	(14,007)
Proceeds from stock issuance to minority shareholders2423233Decrease (increase) in treasury stock(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents423(184)4,499Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents at beginning of period18,81538,461200,053Cash and cash equivalents — end of period (Note 3)*¥ 20,731¥ 18,815\$20,426	Proceeds from stock issuance to minority shareholders	(074)	(400)	(7,102)
Decrease (increase) in dreasing stock(1)(1)(1)(10)Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents423(184)4,499Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents at beginning of period18,81538,461200,053Cash and cash equivalents — end of period (Note 3)*¥ 20,731¥ 18,815\$20,426		(1)	(1)	(10)
Other, net(31)(27)(334)Net cash provided by (used in) financing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents423(184)4,499Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents at beginning of period18,81538,461200,053Cash and cash equivalents — end of period (Note 3)*¥ 20,731¥ 18,815\$20,426	Other not	(±) (21)	(<u>⊥</u>)	(UL)
Inter cash provided by (used iii) inflationing activities(2,037)1,432(21,659)Effect of exchange rate change on cash and cash equivalents423(184)4,499Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents at beginning of period18,81538,461200,053Cash and cash equivalents — end of period (Note 3)*¥ 18,815423423	Not each provided by (used in) financing activities	(J)	(27)	(334)
InterformImage rate change of cash and cash equivalentsImage rate change of cash and cash equivalentsImage rate change of cash and cash equivalentsNet increase (decrease) in cash and cash equivalentsImage rate change of cash and cash equivalentsImage rate change of cash and cash equivalentsImage rate change of cash and cash equivalentsCash and cash equivalents at beginning of periodImage rate change of cash and cash equivalentsImage rate change of cash and cash equivalentsImage rate change of cash and cash equivalentsCash and cash equivalents and of period (Note 3)*Image rate change of cash and cash equivalentsImage rate change of cash and cash equivalentsCash and cash equivalents and of period (Note 3)*Image rate change of cash and cash equivalentsImage rate change of cash and cash equivalents	Effect of exchange rate change on each and each equivalents	(2,037)		(21,039)
Net increase (decrease) in cash and cash equivalents1,916(19,646)20,373Cash and cash equivalents at beginning of period18,815 $38,461$ 200,053Cash and cash equivalents and of period (Note 3)*¥ 20,731¥ 18,815 $420,053$	Energy of exchange rate change of cash and cash equivalents	423	(184)	4,499
Cash and cash equivalents at beginning of period $18,815$ $38,461$ $200,053$ Cash and cash equivalents and of period (Note 3)* $¥$ 20,731 $¥$ 18,815 $$20,053$	Net increase (decrease) in cash and cash equivalents	1,910	(19,040)	20,373
	Cash and cash equivalents at beginning of period	± 20,013	→ 30,401 ¥ 10,015	\$ 220,003

*See accompanying Notes to Consolidated Financial Statements (pages 63 and 64).

Economic Report

Notes to Consolidated Financial Statements

Akebono Brake Industry Co., Ltd. and Consolidated Subsidiaries Years Ended March 31, 2013 and 2012

1. Basis of Presenting Consolidated Financial Statements

The accompanying consolidated financial statements have been prepared in accordance with the provisions set forth in the Japanese Financial Instruments and Exchange Law and its related accounting regulations, and in conformity with accounting principles generally accepted in Japan, which are different in certain respects as to application and disclosure requirements of International Financial Reporting Standards.

The consolidated financial statements are stated in Japanese yen, the currency of the country in which Akebono Brake Industry Co., Ltd. (the "Company") is incorporated and operates. The translations of Japanese yen amounts into U.S. dollars are included solely for the convenience of readers outside Japan and have been made at the rate of ¥94 to \$1 (rounded down to the nearest \$1,000; or rounded down to the nearest cent per share), the approximate rate of exchange at March 31, 2013. Such translations should not be construed as representations that the Japanese yen amounts could be converted into U.S. dollars at that or any other rate.

2. Summary of Significant Accounting Policies

The Scope of Consolidation

The consolidated financial statements as of March 31, 2013 include the accounts of the Company and its 23 significant (29 in the fiscal year ended March 31, 2012) subsidiaries (together, the "Group"). Under the controlling company accounting method, companies in which the Company, directly or indirectly, is able to exercise control over operations are fully consolidated, and those companies over which the Group has the ability to exercise significant influence are accounted for by the equity method. During fiscal 2011, seven consolidated subsidiaries of Akebono Brake Industry Co., Ltd. were eliminated through mergers with Akebono Brake Corporation (formerly Akebono Corporation (North America)), including Ambrake Manufacturing, Ltd., Ambrake Corporation, Amak Brake L.L.C., and AMTEC Brake, LLC. Meanwhile, Akebono Brake Mexico S.A. de C.V. was newly established and included in the scope of consolidation.

An investment in one associated company (one in the fiscal year ended March 31, 2012) is accounted for by the equity method. Investments in the remaining two associated companies (two in the fiscal year ended March 31, 2012) are stated at cost, and their impact on the consolidated financial statements is insignificant. The differences between the cost and the underlying net equity (at fair value) of investments in consolidated subsidiaries and associated companies accounted for by the equity method have been amortized over a period of five years. All significant intercompany balances and transactions have been eliminated in consolidation. All material unrealized profit included in assets resulting from transactions within the Group is eliminated.

Changes in Accounting Policies

3 Per Share Information

Change in the Depreciation Method

From fiscal 2012, Akebono Brake Industry Co., Ltd. and its subsidiaries inside Japan have changed the depreciation method for tangible assets purchased on April 1, 2012 and thereafter, to the method based on the revised Corporation Tax Act. Compared to calculations under the previous method, operating income, ordinary income, and net income before tax and adjustments each increased by ¥177 million for fiscal 2012.

Change in the Inventory Valuation Method

From fiscal 2012, Akebono Brake Industry Co., Ltd. and its subsidiaries inside Japan have changed the method of inventory valuation from the last purchase price method to the periodic average method. The change, which entails the stricter management of raw material and stock flows, was made in line with the change of our core management system and was intended for the early finalization of inventory calculation and streamlining of cost accounting. As the impact of this change on the consolidated financial statements is insignificant, no retrospective application is required.

	Yen		
	2013	2012	2013
Per share of common stock:			
Net assets	¥350.52	¥326.39	\$3.73
Basic net income (loss)	3.90	(24.25)	0.04
Diluted net income	3.88	_	0.04
Cash dividends applicable to the year	10.00	10.00	0.11

In the fiscal year ended March 31, 2012, the Company had dilutive common stock outstanding, however, it posted diluted net loss per share. Accordingly, the information has not been disclosed.

4. Segment Information

Akebono Brake Industry Co., Ltd. and its consolidated subsidiaries engage mainly in the production and sale of brake products. A summary of information classified by reporting segment of the Company for the years ended March 31, 2013 and 2012 is as follows:

					Millions of	Yen			
			Segmer	nt			Total	Adjustment	Consolidated
	Japan	North America	Europe	China	Thailand	Indonesia		(Note 1)	(Note 2)
	2013								
Sales to customers	¥ 82,895	¥96,446	¥3,473	¥6,049	¥4,891	¥12,296	¥206,050	¥ —	¥206,050
Intercompany sales/ transactions	6,562	1,982	1,407	9	182	861	11,003	(11,003)	_
Total revenue	¥ 89,456	¥98,427	¥4,880	¥6,058	¥5,073	¥13,158	¥217,053	¥(11,003)	¥206,050
Operating income (loss)	¥ 2,294	¥ 80	¥ (789)	¥ 464	¥ 149	¥ 1,805	¥ 4,003	¥ 312	¥ 4,315
Total assets	¥127,276	¥45,967	¥4,383	¥6,905	¥4,782	¥ 9,259	¥198,573	¥(12,001)	¥186,572

	Thousands of U.S. Dollars (Note 3)									
	Segment Japan North America Europe China Thailand Indonesia				- Total	Adjustment (Note 1)	Consolidated total (Note 2)			
	2013									
Sales to customers	\$	881,388	\$1,025,473	\$36,926	\$64,318	\$52,008	\$130,743	\$2,190,855	\$ —	\$2,190,855
Intercompany sales/ transactions		69,767	21,070	14,961	97	1,935	9,158	116,988	(116,988)	_
Total revenue	\$	951,155	\$1,046,542	\$51,887	\$64,415	\$53,943	\$139,901	\$2,307,843	\$(116,988)	\$2,190,855
Operating income (loss)	\$	24,392	\$ 850	\$ (8,391)	\$ 4,937	\$ 1,586	\$ 19,190	\$ 42,567	\$ 3,315	\$ 45,882
Total assets	\$1	L,353,282	\$ 488,752	\$46,608	\$73,416	\$50,846	\$ 98,452	\$2,111,355	\$(127,600)	\$1,983,755

	Millions of Yen								
	Segment Japan North America Europe China Thailand Indonesia				- Total	Adjustment (Note 1)	Consolidated total (Note 2)		
	2012								
Sales to customers	¥ 88,773	¥95,883	¥3,827	¥5,270	¥2,716	¥13,114	¥209,584	¥ —	¥209,584
Intercompany sales/ transactions	7,381	415	1,136	2	130	867	9,932	(9,932)	_
Total revenue	¥ 96,154	¥96,298	¥4,964	¥5,272	¥2,846	¥13,981	¥219,515	¥(9,932)	¥209,584
Operating income (loss)	¥ 5,912	¥(5,357)	¥ (395)	¥ 804	¥ 203	¥ 2,463	¥ 3,630	¥ 205	¥ 3,835
Total assets	¥128,591	¥39,306	¥3,664	¥5,794	¥2,288	¥ 7,946	¥187,589	¥(6,559)	¥181,030

Notes: 1. Adjustment to operating income (loss) to eliminate intersegment transactions.

2. Operating income (loss) after adjustments to reconcile total with figure presented in the consolidated statements of income.

3. The value of the U.S. dollar is, purely for the sake of convenience, calculated using the approximate exchange rate as at March 31, 2013, which was ¥94 to \$1 (figures are rounded down to the nearest \$1,000).

Corporate Information

Directors and Officers

(As of July 1, 2013)

Directors:

Representative Director & Member of the Board Hisataka Nobumoto

Member of the Board Toshimitsu Nishigaki

Member of the Board Takeshi Saito

Kanji Miyajima

Takuo Tsurushima*

Member of the Board Yoshimasa Ogino

Member of the Board Takashi Kudo

Member of the Board Kazuo Matsumoto

Member of the Board Kunio Ito*

Audit & Supervisory Board:

Audit & Supervisory Board Member (Standing) Audit & Supervisory Board Member (Standing) Audit & Supervisory Board Member Audit & Supervisory Board Member Audit & Supervisory Board Member Takeshi Okumura Satoshi Utsugi Kesao Endo** Michiyoshi Homma** Keizo Tannawa**

Executive Officers:

Chairman, President & CEO Executive Vice President Senior Managing Executive Officer Executive Officer

Hisataka Nobumoto Yoshimasa Ogino Toshimitsu Nishigaki Takashi Kudo Takeshi Saito Kazuo Matsumoto Kanji Miyajima Seiki Takahashi Seiji Onoda Yuji Ando Katsuji Hidaka Masahiro Miyamoto Masaaki Ando Akira Hosoya Toshiyuki Negishi Peter Schmitz Yoichi Shinagawa Seiji Nishimura Jean de Montlaur Hadrian Rori

Advisors:

Executive Advisor
Senior Advisor
Executive Technical Advisor
Executive Technical Advisor
Executive Technical Advisor

J.W. Chai Hidemitsu Kuwano Shunji Yokoo Toshifumi Maehara Koji Kobayashi

- \ast Outside directors in accordance with Article 2-15 of the
- Companies Act
- ** Outside corporate auditors in accordance with Article 2-16 of the Companies Act

Corporate Information

Akebono Locations (Japan)

(As of June 21, 2013)

Akebono Brake Industry Co., Ltd.

Global Head Office

19-5 Nihonbashi Koami-cho, Chuo-ku, Tokyo 103-8534, Japan

Tel: +81 (0) 3-3668-5171 Fax: +81 (0) 3-5695-7391

Ai-City (Headquarters)

5-4-71 Higashi, Hanyu City, Saitama 348-8508, Japan Tel: +81 (0) 48-560-1500 Fax: +81 (0) 48-560-2880

Chubu Office

3-13 Obayashi-cho, Toyota City, Aichi 473-0902, Japan (Aftermarket products) Tel: +81 (0) 565-25-1191 Fax: +81 (0) 565-25-1130 (Passenger vehicle OEM products) Tel: +81 (0) 565-25-1192~3 Fax: +81 (0) 565-25-1130

Sapporo Sales Office

3-2-66 Kitaokadama Sanjo, Higashi-ku, Sapporo City, Hokkaido 007-0883, Japan Tel: +81 (0) 11-780-5031 Fax: +81 (0) 11-787-6297

Sendai Sales Office

3-7-13 Hinode-machi, Miyagino-ku, Sendai City, Miyagi 983-0035, Japan Tel: +81 (0) 22-284-4979 Fax: +81 (0) 22-238-9318

Tel: +81 (0) 22-284-4979 Fax: +81 (0) 22-238-9318

Kanto Sales Office

5-4-71 Higashi, Hanyu City, Saitama 348-8501, Japan Tel: +81 (0) 48-560-1481 Fax: +81 (0) 48-560-1487

Osaka Sales Office

2-17 Enoki-cho, Suita City, Osaka 564-0053, Japan Tel: +81 (0) 6-6385-5803 Fax: +81 (0) 6-6368-2457

Hiroshima Sales Office

4-1-13 Yanonishi, Aki-ku, Hiroshima City, Hiroshima 736-0085, Japan

Tel: +81 (0) 82-888-7293 Fax: +81 (0) 82-820-4393

Fukuoka Sales Office

6-12-41 Itazuke, Hakata-ku, Fukuoka City, Fukuoka 812-0888, Japan Tel: +81 (0) 92-501-0282 Fax: +81 (0) 92-583-1258

Tatebayashi Foundry (Casting of brake components) 6012 Aza-Tobu Kogyo Danchi, Oshima-cho, Tatebayashi City, Gunma 374-0001, Japan Tel: +81 (0) 276-80-6788 Fax: +81 (0) 276-77-1102

Ai-Ring (Testing and evaluation) 41-42 Aza-Osaruda, Uwadaira, Ogawa-machi, Iwaki City, Fukushima 979-3112, Japan Tel: +81 (0) 246-83-1931 Fax: +81 (0) 246-48-4004

Ai-Museum (Brake museum) 5-4-71 Higashi, Hanyu City, Saitama 348-8508, Japan Tel: +81 (0) 48-560-1500 Fax: +81 (0) 48-560-2880

Akebono Affiliates

Akebono Brake Industrial Machinery & Rolling Stock Component Sales Co., Ltd.

(Sales of industrial machinery and rolling stock brakes) 5-4-71 Higashi, Hanyu City, Saitama 348-8508, Japan Tel: +81 (0) 48-560-1555 Fax: +81 (0) 48-560-1556

Akebono Brake Yamagata Manufacturing Co., Ltd.

(Manufacture of disc brake pads and other brake components) 161-3 Chuo Kogyo Danchi, Sagae City, Yamagata 991-0061, Japan Tel: +81 (0) 237-83-1111 Fax: +81 (0) 237-83-1125

Akebono Brake Fukushima Manufacturing Co., Ltd.

(Manufacture of brake linings and other brake components) 10 Aza-Shinjuku, Oaza-Narita, Koori-machi, Date-gun, Fukushima 969-1652, Japan Tel: +81 (0) 24-582-2191 Fax: +81 (0) 24-581-2007

Akebono Brake Iwatsuki Manufacturing Co., Ltd.

(Manufacture of disc brakes, drum brakes and brake components) 1190 Oaza-Kanamuro, Iwatsuki-ku, Saitama City, Saitama 339-8601, Japan Tel: +81 (0) 48-794-4111 Fax: +81 (0) 48-794-4125

Akebono Brake Sanyo Manufacturing Co., Ltd.

(Manufacture of drum brakes and wheel cylinders) 1966-8 Kushiro, Soja City, Okayama 710-1201, Japan Tel: +81 (0) 866-96-2111 Fax: +81 (0) 866-96-2119

Alocs Corporation (Logistics)

255-1 Ainohara, Iwatsuki-ku, Saitama City, Saitama 339-0071, Japan Tel: +81 (0) 48-794-1321 Fax: +81 (0) 48-794-1970

Akebono Research & Development Centre Ltd.

(Brake-related R&D) 5-4-71 Higashi, Hanyu City, Saitama 348-8511, Japan Tel: +81 (0) 48-560-1421 Fax: +81 (0) 48-560-2900

Akebono 123 Co., Ltd. (Special subsidiary company) (Cleaning-related services) 5-4-71 Higashi, Hanyu City, Saitama 348-8508, Japan

Tel: +81 (0) 48-560-1231 Fax: +81 (0) 48-560-2855

APS Co., Ltd.

(Consultancy for business streamlining) 1190 Oaza-Kanamuro, Iwatsuki-ku, Saitama City, Saitama 339-8601, Japan Tel: +81 (0) 48-793-1650 Fax: +81 (0) 48-793-1656

NeoStreet Inc. (Web shop)

5-4-71 Higashi, Hanyu City, Saitama 348-8501, Japan Tel: +81 (0) 48-563-0590 Fax: +81 (0) 48-560-1571

Akebono Locations (Overseas)

(As of June 21, 2013)

North America

Akebono Brake Corporation (ABC)

(North American Head Office, sales and marketing) 310 Ring Road, Elizabethtown, KY 42701, U.S.A. Tel: +1 270-234-5500 Fax: +1 270-234-5504

Akebono Engineering Center (AEC)

(R&D) 34385 W Twelve M

34385 W. Twelve Mile Road, Farmington Hills, MI 48331, U.S.A. Tel: +1 248-489-7400 Fax: +1 248-489-7683

Tel. +1 240-409-7400 Fax. +1 240-409-7005

Akebono Brake, Elizabethtown Plant (ABE)

(Manufacture of disc brakes, drum brakes and disc brake pads) $\label{eq:mass_star}$

300 Ring Road, Elizabethtown, KY 42701, U.S.A. Tel: +1 270-737-4906 Fax: +1 270-737-3044

Akebono Brake, Glasgow Plant (ABG)

(Manufacture of disc brakes and disc brake pads) 1765 Cleveland Avenue, Glasgow, KY 42141-1057, U.S.A. Tel: +1 270-678-1765 Fax: +1 270-678-5659

Akebono Brake, Clarksville Plant (ABCT)

(Manufacture of disc rotors, drum brakes, corner modules and other brake components) 780 International Boulevard Clarksville, TN 37040-5327 U.S.A.

Tel: +1 931-553-6500 Fax: +1 931-553-6570

Akebono Brake, Columbia Plant (ABCS)

(Manufacture of disc brakes, corner modules, castings and other brake components) 201 Metropolitan Drive, West Columbia, SC 29170-2294

U.S.A.

Tel: +1 803-227-1300 Fax: +1 803-822-2010

Akebono Brake Mexico S.A. de C.V.

(Manufacture and sales of drum brakes and other brake components)

Av. Mineral de Valenciana 186 Fracc, Industrial Santa Fe II Guanajuato Puerto Interior, Silao, Guanajuato, 36275, Mexico Tel: +52 472-748-9116 Fax: +52 472-748-9116

Europe

Akebono Brake Europe N.V.

(European Head Office, sales and marketing) Pegasuslaan 5, 1831 Diegem, Belgium Tel: +32 (0) 2-709-2034 Fax: +32 (0) 2-709-2222

Akebono Europe S.A.S. (Gonesse)

(CREA: Centre de Recherche Européen Akebono) (Sales and R&D) 6 Avenue Pierre Salvi BP 90111, 95505 Gonesse Cedex, France Tel: +33 (0) 1-3445-1770 Fax: +33 (0) 1-3445-1771

Akebono Europe S.A.S. (Arras)

(Manufacture of disc brake pads) Site Artoipôle, 244 Allée d'Espagne, 62118 Monchy-le-Preux, France Tel: +33 (0) 3-2124-4800 Fax: +33 (0) 3-2124-4801

Akebono Europe GmbH

(Sales) Auf der Heide 11-13, 65553, Limburg-Dietkirchen, Germany Tel: +49 (0) 6431-7798510 Fax: +49 (0) 6431-7798515

Akebono Advanced Engineering (UK) Ltd. (AAE) (R&D)

415 Wharfedale Road, Winnersh Triangle, Wokingham, Berkshire RG41 5RA, United Kingdom Tel: +44 (0) 1189-445-100 Fax: +44 (0) 1189-445-101

Asia

Akebono Brake (Thailand) Co., Ltd.

(Manufacture and sales of disc brakes) 700/880 Moo 1 Tambol Panthong Amphur Panthong, Chonburi 20160, Thailand Tel: +66 (0) 38-185-082 Fax: +66 (0) 38-185-089

Akebono Corporation (Guangzhou)

(Manufacture and sales of disc brakes and drum brakes) No. 8 Hefeng 1st Street, Yonghe Economic Zone of Guangzhou Development District, Guangzhou, China 511356 Tel: +86 (0) 20-8298-6818 Fax: +86 (0) 20-8298-6820

Akebono Corporation (Suzhou)

(Manufacture and sales of disc brake pads) TingLan Road No. 168 ChangYang Street, Industrial Park, Suzhou, China 215021 Tel: +86 (0) 512-6283-1577 Fax: +86 (0) 512-6283-1580

PT. Akebono Brake Astra Indonesia (AAIJ)

(Manufacture and sales of disc brakes, drum brakes, pads, linings, master cylinders and other brake components) JI. Pegangsaan Dua Blok A1, Km. 1, 6 Kelapa Gading,

Jakarta, 14250, Indonesia Tel: +62 (0) 21-468-30075 Fax: +62 (0) 21-468-26659

Akebono Brake Astra Vietnam Co., Ltd. (AAVH)

(Manufacture and sales of disc brakes and master cylinders for motorcycles) Plot D-10 (Rf-1a) Thang Long Industrial Park II, Yen My district, Hung Yen Province, Vietnam Tel: +84 (0) 321-397-4477 Fax: +84 (0) 321-397-4479

Corporate Information

Company Outline

Company Name
 Akebono Brake Industry Co., Ltd.
 Established
 January 27, 1929

Global Head Office
 19-5 Nihonbashi Koami-cho,
 Chuo-ku, Tokyo 103-8534, Japan
 Ai-City (Headquarters)
 5-4-71 Higashi, Hanyu City,
 Saitama 348-8508, Japan

President and CEO
 Hisataka Nobumoto
 Paid-in Capital
 ¥19.9 billion
 (as of March 31, 2013)

Global Head Office: Akebono Nihonbashi Building (Chuo-ku, Tokyo)

Net Sales
 ¥206.0 billion (fiscal 2012)
 Number of Associates
 8,279 (as of March 31, 2013)

Ai-Museum (brake museum) Opening hours: Every Wed. 14:00-16:00

Ai-City (Headquarters): Akebono Crystal Wing (ACW) (Hanyu City, Saitama, Japan)

Investor Information

(As of March 31, 2013)

Stock Listing

Tokyo Stock Exchange, First Section (Code: 7238)

Common Stock

Authorized: 440,000,000 Shares Issued: 135,992,343 Shares

Principal Shareholders

Shareholders	No. of shares held (1,000 shares)	% of issued common stock
Toyota Motor Corporation	15,495	11.39
Robert Bosch LLC	12,597	9.26
Isuzu Motors Limited	12,111	8.90
ITOCHU Corporation	10,553	7.75
Deutsche Bank AG, Frankfurt Domestic Custody Services	5,900	4.33
BBH Boston for Metzler Investment GmbH, Frankfurt	5,261	3.86
Japan Trustee Services Bank, Ltd. (Trust Account)	3,884	2.85
Aisin Seiki Co., Ltd.	3,133	2.30
Kayaba Industry Co., Ltd.	2,000	1.47
SECOM CO., LTD.	2,000	1.47

Note: The Company's holding of treasury stock is not included in the above list of principal shareholders, but is equivalent to 8th position.

Transfer Agent & Registrar

Mitsubishi UFJ Trust and Banking Corporation

Corporate Agency Department

7-10-11 Higashisuna, Koto-ku, Tokyo 137-8081, Japan

Annual Shareholders' General Meeting

The annual shareholders' general meeting is normally held in June each year.

Independent Auditor

Deloitte Touche Tohmatsu

Shareholders

Category	No. of shareholders	No. of shares held (1,000 shares)	
Japanese individuals & others	11,743	27,515	
Japanese government & municipal corporations	0	0	
Financial institutions (excluding securities firms)	40	22,478	
Securities firms	41	1,073	
Other Japanese Corporations	147	57,334	
Non-Japanese shareholders & others	117	27,477	
TOTAL	12,088	135,879	
No. of shares in less than units of 100	_	113,143 shares	

Note: The number of treasury shares as of March 31, 2013 was 3,245,149. Of these, 3,245,000 shares are included under "Japanese individuals & others," and 49 shares are included under "No. of shares in less than units of 100."

The number of shares in the name of the Japan Securities Depository Center as of March 31, 2013 is 3,500. Of these, 3,500 shares are included under "Other Japanese corporations."

The number of treasury shares indicated in the shareholders' list is 3,245,149, whereas the actual number as of March 31, 2013 was 3,244,149.

Percentage of Shares Held by Shareholder Category (%)

Corporate Information

Editorial Policy

Akebono Brake Industry Co., Ltd. ("the Company") and Group affiliates ("Akebono" or "the Group") have since fiscal 2002 prepared and disclosed an annual *Environmental Report* to increase public understanding of the Group's environmental policy and related activities as well as to report on the results of such activities. Being aware of our accountability with regard to corporate social responsibility, from fiscal 2005 we started reporting on our CSR activities in our *Environmental & Social Report*. In fiscal 2009, we began including financial information, such as results reporting and financial statements—traditionally published in our Annual Report—in this report, aiming to provide a better communication tool with a variety of information for stakeholders. We thus renamed it the *AKEBONO REPORT*.

We aim to present our value creation process to our stakeholders in a more appropriate fashion. The International Integrated Reporting Council (IIRC), which provides an international framework for integrated reporting, has set out the following six guiding principles. Of these, we strive for a presentation that especially considers "strategic focus and future orientation."

- 1. Strategic focus and future orientation 4.
- 4. Materiality and conciseness
- Connectivity of information
 Stakeholder responsiveness
- 5. Reliability and completeness
 6. Consistency and comparability

·

In the 2013 report, as a way to showcase our strategic focus, we feature the new midterm business plan, "akebono New Frontier 30 - 2013" (aNF 30 - 2013), which is aimed at realizing true globalization. In addition, we attempt to explain in detail strengthening governance (p. 18), risk management (p. 19) and diversity (p. 29). As this is a future-oriented report, we also present product development looking ahead to the aNF 30 - 2013 targets and 2020 as well as a detailed overview of management's approach. And from the point of view of future business continuity, we present our risk management policy and the Business Continuity Plan, focusing on action plans to make us more resilient to disasters, based on our experiences with the Great East Japan Earthquake and the flooding in Thailand.

In preparing the content of the AKEBONO REPORT 2013, in addition to the guiding principles of the IIRC, the Environmental Reports Guidelines 2012 issued by the Ministry of the Environment, the 3.1 edition of the Global Reporting Initiative (GRI) Guidelines and ISO 26000 have been referred to with regard to editorial matters. Furthermore, the report has been written in a simple, easy-to-read manner in order to raise the interest of the general public in Akebono. In addition, the report contains specific examples for the purpose of deepening the understanding of readers with regard to Akebono's activities at each facility.

Reporting Scope

Reporting Period

This report covers the annual results data for the 2012 fiscal year (April 1, 2012 to March 31, 2013). In addition, certain information on activities after the latter date is included to provide a better understanding of our ongoing efforts.

Organizations

Activity details and data are provided for Akebono facilities in Japan, North America, Europe, Thailand, China and Indonesia. Official names of some Group facilities have been abbreviated. Please see pages 66 and 67 for a complete listing of Group locations.

Publication date: August 2013 (Last publication: September 2012; Next scheduled publication: August 2014)

Inquiries:

Akebono Brake Industry Co., Ltd. Corporate Communications Office Tel: +81 (0) 3-3668-5183 Fax: +81 (0) 3-5695-7391 URL: http://www.akebono-brake.com E-mail: akebono_pr@akebono-brake.com

Cautionary Statement Concerning Outlook

Current plans, projections, strategies, business performance and other statements reported herein which are not historic facts represent forecasts made under Akebono's assumptions and views based on information available at the time this report was prepared. These statements, therefore, are exposed to risks and uncertainties, including but not limited to those associated with the economic climate surrounding Akebono's business domain, trends in market competition, exchange rates, tax systems and various institutions. Please note that actual business performance may differ significantly from Akebono's forecasts due to various factors.

AKEBONO REPORT 2013

Business & CSR Activities

Issued August 2013

Akebono Brake Industry Co., Ltd.

Corporate Communications Office 19-5 Nihonbashi Koami-cho, Chuo-ku, Tokyo 103-8534, Japan Tel +81 (0) 3-3668-5183 Fax +81 (0) 3-5695-7391 URL http://www.akebono-brake.com E-mail akebono_pr@akebono-brake.com Please send your opinions and impressions to the above office.

This report was printed on Forest Stewardship Council-certified paper, which was sourced from well-managed forests and other controlled sources. In addition, the printing involved no volatile organic compounds (VOCs).