

We are developing new technologies and strengthening our global production system in preparation for the recovery of the automobile market.



Kunio Wada
Member of the Board
Managing Director
Head of Safety Systems Group

Business Overview

Nippon Kayaku operates a global system for the production and sales of automobile safety components.

In the safety systems business, we produce and sell automobile safety components using a global tripartite system based in Japan (Himeji Plant), North America (Lifesparc Inc., California, USA and Kayaku Safety Systems de Mexico S.A. de C.V. (KSM), Monterey, Mexico), and Europe (Indet Safety Systems a.s., Vsetin, Czech Republic and Nippon Kayaku CZ, s.r.o., Jablunka, Czech Republic). In the future, we are planning to also begin production and product shipment in China.

We have continued to manufacture explosives and detonators ever since our founding, and this experience has allowed Nippon Kayaku to develop a long history and great wealth of technologies related to igniters, detonators, and explosive combustion. We have adapted and applied these technologies to develop original products including the inflators that generate the gas that expands airbags, the micro gas generators (MGG) that tighten seatbelts in the event of a collision, and the squibs that ignite these products.

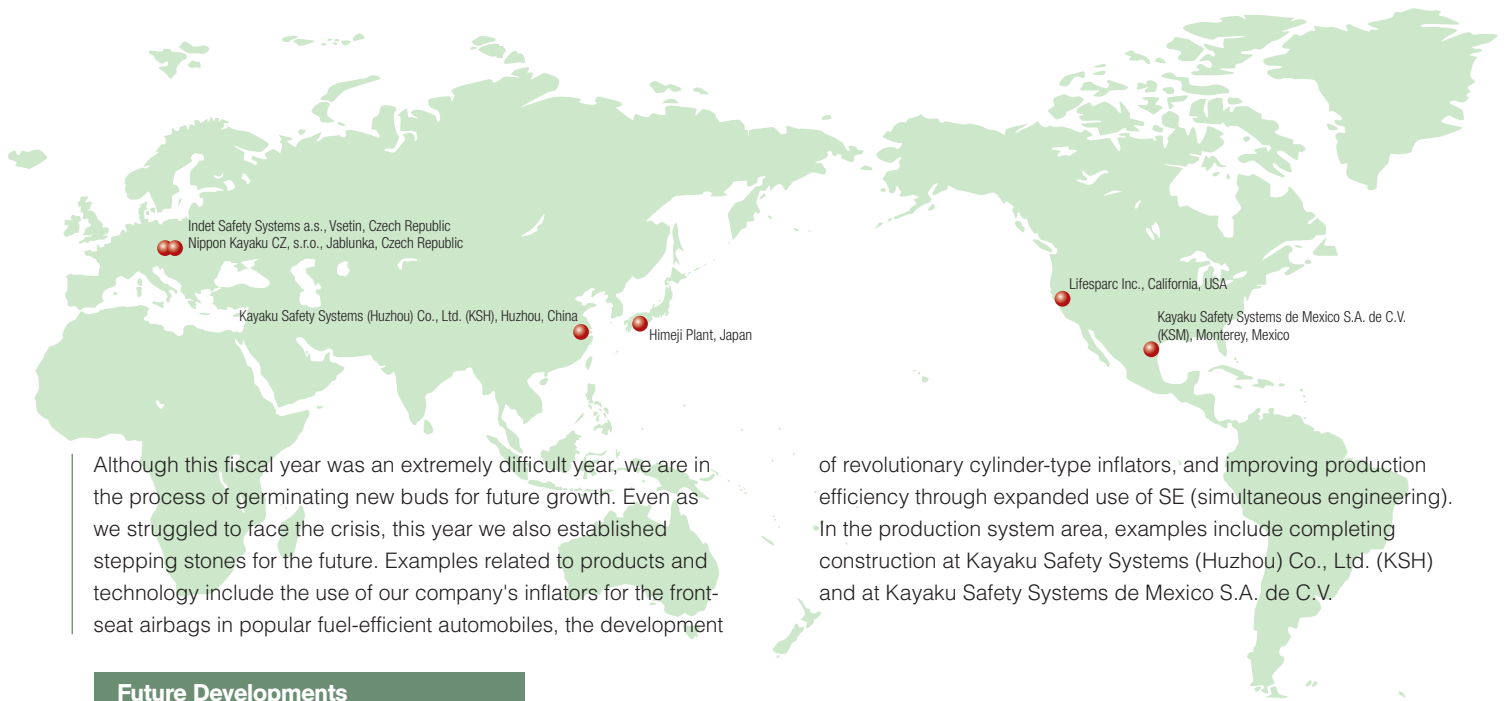
These products are provided to the global market, and at present the inflators are produced in Japan; the squibs are produced in Japan, the U.S., and the Czech Republic; and the MGGs are produced in Japan, Mexico, and the Czech Republic.

Overview of Operations for the Fiscal Year Ended May 31, 2009

In the midst of the automotive crisis, during this year we launched new products and new companies in order to lay the stepping stones for future growth.

The current financial crisis began in 2007 with the subprime loan bankruptcies in the United States that spread worldwide, and was then closely followed by the automobile crisis, which started with the bursting of the automobile bubble in North America and has since spread around the world, having a large effect on the safety systems business. Sales dropped dramatically, beginning in July in the United States, October in Europe, and December in Japan. Although we immediately took steps in response such as reducing our production lines, we were unable to keep up with falling sales, and in particular during the second half of this fiscal year we faced our most difficult struggle ever.

The automobile crisis hit bottom in February of 2009, and the economic recovery packages enacted by various countries have had an effect, with signs of recovery now becoming visible. However, the future following the conclusion of these various economic recovery packages continues to remain uncertain.



Although this fiscal year was an extremely difficult year, we are in the process of germinating new buds for future growth. Even as we struggled to face the crisis, this year we also established stepping stones for the future. Examples related to products and technology include the use of our company's inflators for the front-seat airbags in popular fuel-efficient automobiles, the development

of revolutionary cylinder-type inflators, and improving production efficiency through expanded use of SE (simultaneous engineering). In the production system area, examples include completing construction at Kayaku Safety Systems (Huzhou) Co., Ltd. (KSH) and at Kayaku Safety Systems de Mexico S.A. de C.V.

Future Developments

Nippon Kayaku is working to strengthen its technological power and reinforce its business through global collaborations. The recovery of automobile sales and production is expected to take different forms in different parts of the world. For this reason, we will construct a flexible production system capable of production to meet the conditions in each region.

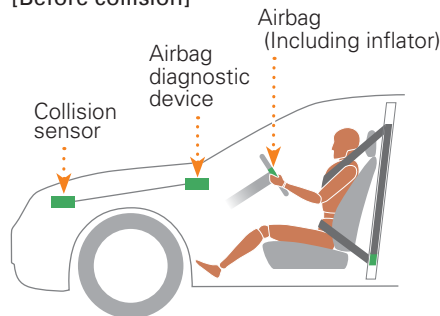
In the area of technical development, our strategy of shifting our main business from micro gas generators (MGG) to inflators has begun to pay off. For this reason, we intend to forcefully pursue the development and fusion of related technologies such as structural design, compositions of gas generating agents, and ignition and flame propagation technologies. We will also

domestically refine the squib and MGG technologies we are particularly skilled in, and further improve them by means of global technical cooperation in order to make them into products far beyond the reach of any other company.

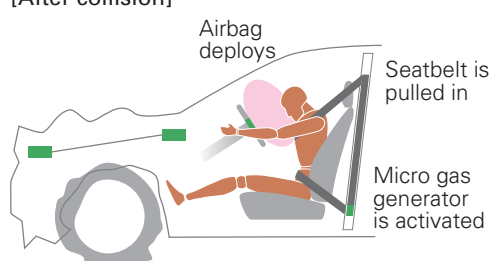
In the area of product supply, production began at KSM in Mexico in June 2009, and at KSH in China in October. Extensive support for these two companies will be provided from Japan and from Lifesparc Inc. (USA), and in cooperation with our global network that also includes Indet Safety Systems a.s. and Nippon Kayaku CZ, s.r.o. (both in the Czech Republic). With their help in the next year we intend to strengthen our global business and improve profit performance.

Mechanisms of Airbag and Seatbelt Pretensioner Operation

[Before collision]



[After collision]



Airbag Inflator Mechanism

An airbag inflator is a device incorporated in safety airbags that generates gas to instantly inflate the bag when a vehicle collision occurs.

[Operating mechanism]

- (1) A sensor detects the collision, and an electrical signal is sent to the inflator.
- (2) The **squib** inside the inflator operates, igniting a gas-generating agent. The generated gas enters the airbag, instantly inflating it.



Micro Gas Generator Mechanism

The micro gas generator generates gas for the seatbelt pretensioner device, which winds up the seatbelt and instantly restrains the occupant's body when a vehicle collision occurs.

[Operating mechanism]

- (1) A sensor detects the collision, and an electrical signal is sent to the micro gas generator.
- (2) The **squib** inside the micro gas generator ignites the gas-generating agent. The generated gas pressure becomes the dynamic force that winds up the seatbelt.

