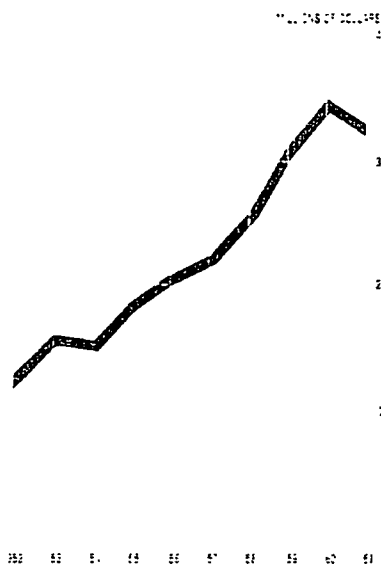


Research and Development Costs



Research Activity at High Level

The company's expenditures for research exceeded \$3,300,000 in 1961. Over half of this amount was spent in the areas of hydraulic and electro-hydraulic products and systems for aerospace and industrial uses.

Denison Division is redesigning its hydraulic pumps to improve quality and performance while, at the same time, reducing manufacturing costs. This division is also developing hydraulic systems with advanced sensitive electronic controls for industrial applications.

Raymond Atchley Division has developed advanced design hydraulic servo-valves for missiles and aircraft. Also, servo-valves developed for use in Denison Division's industrial hydraulic systems are now being produced. This division is also currently working on the development of modular electronic control systems which promise great versatility and consequent lower cost.

The Kellogg Division designed a hydraulic pump and motor package which contributed to the successful firing of the Nike Zeus anti-missile missile.

The research activities of the hydraulics divisions are integrated and coordinated with the over-all objective of increasing the company's capabilities in the field of sophisticated systems and controls.

In the field of metallurgy further development of the ceramic molding process, coupled with a broadening of the applications of high strength steel castings in defense requirements, will increase the degree of the company's foundry specialization. Under sponsorship of the Air Force, additional castings research is under way which is aimed at improving the mechanical properties of alloys by chemical and process modifications.

Several new abrasion-resistant alloys have reached the field test stage. These may lead to proprietary alloys with enhanced wearing characteristics for crusher and ball mill applications.

Work on improved precision forging techniques is centered around high energy impact type extrusions of sintered powder compacts and billets of vacuum cast refractory materials.

Employee Relations

The success of Brake Shoe is attributable to the efforts and contributions of many people. In 1961, relations with employees were generally satisfactory. Only one work stoppage of any consequence occurred and it involved a small number of employees in one plant.

An average of 9,832 men and women were employed by Brake Shoe throughout North America and Europe. Payrolls and employee benefit costs totaled \$60,495,000.

Brake Shoe employees have many benefits other than wages which help to make jobs with the company attractive. The following programs are in effect in American Brake Shoe and Dominion Brake Shoe companies.

Pension programs provide monthly retirement benefits for eligible employees who have reached retirement age or have become totally and permanently disabled. At the end of the year, 1,310 retired employees were receiving monthly retirement benefits.

A group insurance plan provides employees with life insurance commensurate with their level of wages or salaries. The plan also provides broad sickness and accident coverage for hospital, surgical and medical expenses. Benefits of approximately \$2,200,000 were paid to employees or their beneficiaries during 1961. Benefits paid under the group insurance plan since its inception amount to approximately \$20,000,000.