

Fluid Power Controls

Fluid power is an efficient and sophisticated method of transferring energy from the source to the point of application. Abex fluid power controls include hydraulic pumps, motors, valves, aircraft wing sweep and flight control actuators, landing gear and many types of hydraulic systems.

Sales of fluid power controls in 1967 amounted to \$71,000,000. A sales increase was registered in this equipment for aerospace, while shipments to other industry held about level in all of our market areas.

There is a large, world-wide demand for all types of both military and commercial aircraft, and this is reflected in the high production rate of the aircraft industry. In addition to the present planes in operation, there is a new generation of jet planes that is in either the early stages of production or advanced engineering.

This market condition brought a record volume of orders for our Aerospace Division during the year. All of our manufacturing facilities in the United States, Canada and West Germany operated at near capacity. Our Canadian operations were expanded during the year.

Sales of equipment for commercial and business aircraft continued to increase as a percentage of our total aerospace sales.

Abex received its first order for landing gear on a commercial airliner, the new Boeing 737, which will go into airline service early in 1968. During the year, our West German plant made delivery of hydraulic pumps for the Concorde, the first supersonic airliner, which is being built on a cooperative basis between French and English manufacturers. It is scheduled for test flight in 1968.

Each year the company increases its capacity for design and manufacture of more sophisticated components and sub-systems for

the aerospace industry, and each application brings desirable follow-on business in spare parts for many years. This segment of our business offers much opportunity for growth and development as the aircraft industry stretches to larger dimensions each year.

Fluid power control equipment is used in a wide variety of industrial applications. Sales reflected the lower level of industrial activity during the year. Shipments to the construction and mobile equipment manufacturers were lower because they produced fewer machines, both in the United States and Europe.

The company obtained a large volume of business from the marine industry, most of which is for delivery in 1968. This equipment, incorporating fluid power systems and electronic controls, is used on machinery that transfers cargo.

The harvesting and processing of foods such as lettuce, tomatoes, cauliflower, apples and walnuts is rapidly being automated. New machines that pick, clean and pack the food with minimal damage are being developed and many of them use hydraulically actuated devices for gentle handling. This opens new markets for our fluid power controls.

Other expanding markets for fluid power controls are flight simulators and ground test equipment for aircraft hydraulic systems, and automated machine tools.

In recent years, the number of manufacturers of hydraulic devices has increased, and consequently, competitive conditions in the industry have intensified. However, the trend toward automation and mechanization develops new uses for fluid power controls, continually expanding the market with each new application.

Friction Controls

Friction is a useful force of resistance that can be controlled for many purposes. Friction