

companies and government agencies. Specific practices depend on the policies of the engineering division in charge of the project.

**Government agencies.** There are two basic groups of government agencies – federal (central) and prefectural.

The principal federal agencies are MITI, the Japan Defense Agency, the Ministry of Transport, the Science and Technology Agency, JAMSTEC, and the Coast Guard. Decisions in these agencies are made centrally.

In the prefectures, there are primarily meteorological, fishing-related, police and safety, and other ocean development and research agencies. All are considered to possess a relatively large market potential, but because of the logistical difficulty in contacting each prefectural office to sell equipment, many suppliers have ignored this viable market in the past.

**Kaizoku or Pirates.** These are unofficial companies involved in activities such as the illegal harvesting of coral, treasure hunting and other practices that destroy the undersea environment. They are referred to in the industry as kaizoku or pirates.

These companies are well financed and have substantial purchasing power for ocean industries equipment. However, they do not have a reputation for stability; they will reportedly complete one job, declare bankruptcy and go on to the next job under the auspices of a new corporate entity.

The breakdown of Japan's ocean industries equipment market by principal end uses for the period between 1980 and 1988 is presented in Table 4. Major changes include the steady percentage increase of equipment used domestically. Public sector use rose from approximately 31 per cent in 1985 to 45 per cent in 1988, while government sector use rose from 10 per cent to 18 per cent.

Because of the decrease in overall market value between 1985 and 1988, the actual value of these sectors continued to decrease substantially. The only exception was a rise in government spending in 1987 by 62 per cent to cover increased government research and development activities. The decrease in exports in general is attributed to the strength of the yen and overall decrease in worldwide offshore oil and gas exploration.

## Budget Allocations

Budget allocations for the ocean development divisions of the principal ministries between April 1989 and April 1991 are presented in Tables 5 and 6, which also indicate the main projects of each ministry.

Budget allocations for ocean science and technology for the fiscal year 1990/91 total approximately ¥49 million, an increase of 1 per cent from the previous year. Budget allocations for ocean development for the same period total ¥1 151 billion, a 5 per cent increase over the previous year. A major reason for the increases is the recognition of the need to support research on the use of coastal areas to offset the overcrowding of urban areas.

The ocean industry activities of MITI and the Ministry of Posts and Telecommunications are funded by private investment in forms such as post office money market certificates.

## Domestic Manufacturers

Japan ocean industries equipment companies, much like their Canadian counterparts, are very small and few in number compared to other industries. According to the Japan Machinery Industry Association, there are approximately 126 domestic companies dealing in ocean industries equipment. As shown in Table 7, the majority of sales have been carried out by large companies. However, the size of a company is not proportional to the size of actual production facilities totally dedicated to ocean industries. A very large company may only employ minimal staff to conduct these activities.

## 4 Principal Market Sectors

### Submersibles

The demand for submersibles is growing strongly in both leisure and engineering markets in Japan and overseas. In the latter case, most decisions concerning equipment are made in the head office in Japan.

For leisure submarines, the market is expected to grow steadily in the near future. However, strict government regulations and requirements make it difficult to import and operate such submarines. Therefore, approaching a resort-oriented developer or connected company is the best import route for any leisure-related submersible. Coalitions for the vessels Coral Marine and Moglyn, which are examples of