

ACOUSTIC SOLUTIONS FOR THE GLOBAL MARKETPLACE

Ocean Data Equipment Corporation

Ocean Data Equipment Corporation (ODEC) of Providence, Rhode Island USA, has over 30 years experience in the design, manufacturing, and technical support of high quality, precision echo sounding and acoustic remote sensing instrumentation. The company's products include an integrated suite of hydrographic and geophysical sonar equipment, as well as all associated components like transducers, thermal hard copy recorders, data processing software, and associated engineering services.

ODEC was founded in 1969 by several engineers formerly employed by the Raytheon Company. In the early years, the company focused on oceanographic instrumentation which included sound velocimeters, multiplexers, and tide gauges. These products were primarily custom-designed and manufactured for use by the US Navy. ODEC had gone through several changes in ownership when in 1987, the company acquired the rights to Raytheon Company's Ocean Systems Division line of established commercial sonar products. ODEC seized this opportunity to broaden its product base, and immediately began to improve these systems via engineering research and development efforts.

Channel Technologies, Inc, of Santa Barbara, California, acquired ODEC in 1992 and is comprised of seven wholly-owned operating subsidiaries with approximately 450 employees and composite annual sales of US\$ 60 million. Channel Technologies has a network of five companies involved in the development and manufacture of marine products and services. Three are based in Santa Barbara - International Transducer Corporation (ITC) manufactures specialised acoustic transducers; Channel Industries, makes piezoelectric ceramic used in acoustic transducers; and Sonatech, Inc, manufactures military sonar systems. Another company in the group, Harris Acoustic Products Group of East Walpole, Massachusetts, is a manufacturer of transducers and underwater telephones for the US Navy, and hand-held sonar for worldwide distribution.

Although an independent operating entity, ODEC has the advantage of unlimited access to resources from its sister companies. ODEC operates from its own modern, 19,000 square foot engineering and production facility. It has a team of well-trained employees and a distribution network in place which covers almost all parts of the globe. A support team consisting of dedicated technical sales and service personnel co-ordinates the activities of distributors and company technicians responding to customer needs.

Adapting to a Changing Marketplace

To respond to a changing marketplace, ODEC has changed its mission statement. Today the company is focused on providing "acoustic solutions for a global marketplace". Rather than to be solely focused on products, the company has become much more involved in providing complete integrated solutions. A portion of this is done during the product design cycle, and other parts of this process are accomplished via the development of technical relationships with distributors and customers. Combining research, engineering, and market analysis has helped to create more value for the customer. The company has searched for needs in the marketplace, and has taken the initiative to provide solutions.

As one example, researchers, scientists, dredging companies, and others have increasingly looked for a cost-efficient means of profiling the seafloor and sub-seafloor. These efforts are conducted for sedimentary assessment; for the location of pipes, mines, and other buried, man-made objects; and for the search and analysis of environmental pollutants. ODEC products and services are increasingly being called upon to provide this analysis capability - from coastal surveys to the deepest depths of the Arctic Ocean.

Three years ago, in response to the market needs in this area, ODEC formed a new business segment when it acquired the intellectual property assets of one of the foremost firms in acoustic science, Caulfield Engineering Services of Alberta, Canada. Under the leadership of David Caulfield, this acquisition has enabled the company to provide customers with Acoustic Core engineering solutions.

Acoustic Core is a suite of proprietary acoustic signal processing tools based on classification algorithms and patented processes. These tools are capable of extracting significantly enhanced geophysical and environmental seafloor properties from commonly available marine seismic sensors.

New Development Efforts

The company believes that growth in the marketplace can be achieved by creating solutions for the customer that fit price/performance categories not being addressed by other suppliers. Developing products tuned to the needs of the marketplace requires market analysis and focus.

One example of this philosophy was evident earlier this year, when ODEC introduced a new marine geophysical instrument it is touting as the first truly low cost, portable marine strata profiler. The StrataBox is a high-resolution sediment imaging unit designed for everyday applications and for profiling "on a budget". It is ideal for dredging operations, object location, and other geophysical applications. StrataBox is capable of delivering 6 cm of marine sediment strata resolution, with bottom penetration up to 40 metres. It is simple to

operate and designed exclusively for inshore and coastal geophysical marine surveys of up to 150 metres in water depth. The StrataBox sensor is extremely compact, interfaces directly to a standard laptop PC, and comes complete with a light-weight, efficient acoustic transducer and PC--based data acquisition software. This unit is only 25.4 cm by 6.25 cm by 6.25 cm high, and weighs only 0.9 kg. Features include NMEA / GPS input, zoom modes, and data storage/ playback. According to ODEC, extreme ease of use, portability, and cost efficiency will make this device a serious candidate for all shallow water marine geophysical applications. Again responding to customer needs, ODEC is also working on a dual frequency version of its popular Bathy-500MF hydrographic echo sounder. This product has been widely accepted into the hydrographic market, with more than 1,000 units sold under the ODEC name and other brand names. The Bathy-500DF effort was launched after numerous customers indicated that they would be very eager to purchase additional quantities of this established product if it was made available in a dual frequency version. Engineering efforts presently underway should be concluded in about three months. This type of quick response to customer needs helps ODEC capitalise on market opportunities.

Core Products

ODEC's product line is designed to offer a vertically integrated array of solutions. These offerings include the following: The Bathy-2000P CHIRP Sub-Bottom Profiler and its predecessor, the Bathy-2000, have been installed on more than 50 ships worldwide. These units are currently operational aboard all US Navy TAG-S class survey vessels. The Bathy-2000P was the one of the only systems ever used to profile marine geophysical features in the Arctic Ocean from a submarine. The workhorse of the ODEC product line, it uses an 8 kHz bandwidth FM CHIRP waveform to collect 8 cm resolution of sediment strata, with bottom penetration up to 200 metres. The Bathy-1500 Survey Echosounder is an economical, LCD-based dual frequency instrument. It functions as a complete, integrated echosounding system. It interfaces to an extensive array of external peripheral devices, including a NMEA 0183- compatible position sensor; a heave sensor; an external annotation source; external synchronisation; mass storage device; a digital data logger; remote display; and TDU-850 thermal printers. The Bathy-500MF Multi-Frequency Survey Echosounder is a rugged portable instrument which generates precision thermal chart recordings and digital data output. Low power consumption, rugged portability, ease of use, and built-in communication interfaces for navigation/data logging devices make the Bathy-500MF the ideal choice for demanding shallow water hydrographic applications. Rounding out the ODEC echo sounder line is the IES-10 Echosounder, a universal replacement for all existing navigation echo sounders. It is also a perfect complement for modern, integrated bridges. The unit relies on advanced, microprocessor-based electronics and features a graphical LCD chart display. Operating characteristics include superior shallow water performance, multiple operating frequencies, an internal data logger memory, and multiple interfaces for navigation devices/remote displays. ODEC also manufactures TDU Series Thermal Recorders. These high speed units are available in four models - the TDU-850, with an 8.5 inch printing width; the TDU-1200, with a 12 inch printing width; the TDU-1200F with a 12 inch printing width; and the TDU-2000F with a 20 inch printing width. An option available to TDU thermal recorder users includes ThermalWiz, a 32-bit Windows 95/NT application which provides the ability to manipulate, view, and edit image files of nearly any type and print them to TDU series thermal printers. The TDU-1200F and TDU-2000F flatbed thermal recorder models are now available with EPC Series 9800 digital interface protocol emulation capability. This new feature allows customers who presently own older EPC series 9800 thermal graphic recorders to replace these devices with high performance ODEC TDU-1200F and TDU-2000F series flatbed thermal recorders. These models plug and play with existing customer EPC interface hardware/software. All these products come bundled with technical support and engineering services, creating an integrated solution for the customer.

Conclusion

In a demanding market dominated by tight-fisted customers with high expectations, the formula for survival for marine instrumentation suppliers can be found in common everyday places such as your local consumer electronics store. What works for the Sony's of the world will work for this marketplace. Investment in new products tuned to customer needs -with sensitivity to price, performance, and ease of use- is the key to survival and success. Design cycles need to be shortened, and getting it right the first time needs to be emphasised. Those unwilling to make the investment should be prepared to become irrelevant, as there is no reason that customers should be prepared to accept second best. Dedication to innovation is the approach ODEC has taken to increase its opportunities, and this investment will continue into the future.