

REMOTELY OPERATED VEHICLE OVERVIEW



Robert L. Wernli
Engineer
Naval Ocean Systems Center
San Diego, California

ABSTRACT

During the last two decades a technological assault has been made on the world's oceans. Advances in technology extended man's reach to the greatest ocean depths while he was enclosed in the protective shell of a submersible vehicle. However, manned submersibles are costly, and the ultimate safety of the operators can never be totally guaranteed. This is even more evident in the offshore oil industry where divers are used to perform many of the more routine inspection and work operations. Diver safety is important and the acquisition and operation of dive systems is quite costly. Thus, the new challenge: to get man back out of the sea, but keep his ability there. The technology for this challenge has been addressed for more than a decade by the United States Navy. Unmanned vehicles and work systems have been developed to perform undersea tasks, while the operator was positioned topside in a safe, comfortable environment. During the last several years, the application of this technology has appeared in the offshore oil industry, with the use of unmanned systems growing from less than 10 to over 200. By using the unmanned systems to perform those tasks previously restricted to "manned" systems, the doors have been opened to apply today's "robotics" technology to the problem. The future development of undersea robots will draw heavily on existing industrial robotics technology. It will supply the technology base required to advance the state-of-the-art, so that future systems will be able to autonomously perform entire work scenarios, with minimal supervisory control from a topside operator. This presentation will present an overview of unmanned undersea vehicles presently being used by the Navy and industry, and those areas where major strides can be achieved through the application of robotics technology.