

## NEWS RELEASE

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### SeaBotix Provides Swedish EOD with Integrated Solution

The relationship between SeaBotix and the Swedish Armed Forces began several years ago when an airplane wreck was discovered. An effort was put forth to conduct a survey of the wreck both externally and internally. Research into small ROVs suitable for internal penetrations led the Swedish government to SeaBotix, where they acquired a LBV150SE system.

Over the years SeaBotix and Swedish Defence Materiel Administration (FMV) collaborated on the design and development of a set of systems that were in need by the Swedish Armed Forces' EOD unit. The requirement for the systems was the need to have a ROV ability to survey underwater environments in order to localize explosive charges on ship hulls, quays, bridge foundations and other areas. Use of a small ROV was deemed preferable to divers from a personal safety point of view and the more enduring method of survey.



There were many requirements set forth in the development of a solution including portability, ease of operation, capability, versatility and integration. SeaBotix already had most of the system as part of the successful LBV line of MiniROVs. The development saw the delivery of several firsts. LBV150SE-5 with Crawler skid, Tritech Micron Nav USBL positioning system, navigation control console and the integrated LYYN video enhancer.

#### LBV150SE-5 with Crawler Skid

Originally the Swedish EOD was interested in the LBV150SE system as it represented the characteristics they were looking for. However, the introduction of the hybrid ROV/Crawler system altered their perception on the ideal system. With ship hull surveys as part of the requirement the Crawler offers the greatest stability, capability and precision of any system on the market. With most

intended use of the systems being traditional ROV operations the easily added crawler skid to the LBV150SE-5 had great appeal for those missions requiring greater precision and stability.

In ROV mode the LBV150SE-5 is highly stable and with the dual vertical thrusters it also offers greater vertical control. Fitted with a host of features the LBV150SE-5 provides the Swedish EOD with a capable and intuitive MiniROV system.



Adding the crawler skid attachment furthers the capability by enabling the LBV150SE-5 to adhere to a ship hull by use of the patented Vortex generator and four-wheel drive mechanism. By attaching to the ship hull the inherent instability found in small ROVs is removed.

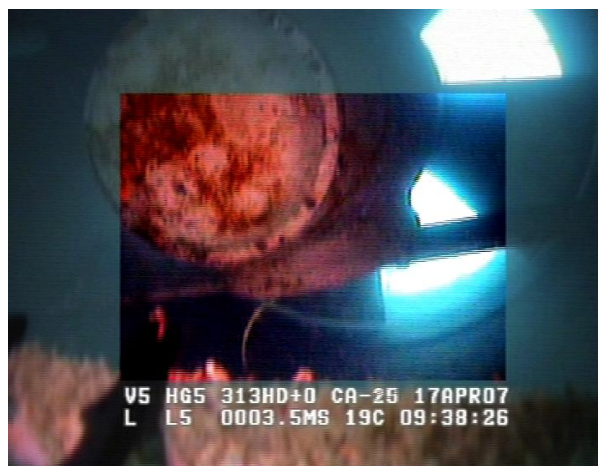
#### **Tritech Micron Nav USBL Positioning**

A requirement of the systems was the ability to accurately track the position of the LBV150SE-5 with a system that is easy to setup, operate and interpret. SeaBotix has a very close relationship with Tritech International and with the LBV150SE-5 systems being already fitted with the impressive little Micron sonar the new system was the perfect fit.

Tritech hinted at their new positioning system as being a simple, intuitive and cost effective solution. The use of the Micron modem that is daisy chained to the Micron sonar acts as a responder. At the surface the dunking transducer is tied to the SeaHub, which in turn is connected to the SeaBotix Navigation Control Console. The tracking, sonar and video are all integrated into the Tritech Seanet Pro software. During operations all data is recorded to the navigation control console hard drive for archive and post review.

#### **LYYN Video Enhancer**

Swedish company LYYN introduced a new device that processes live video and enhances color and contrast. This amazing little device coupled with the LBV150SE-5 and LED lighting helps to provide operators with the best possible picture in the worst possible conditions. Unique technology enables the LYYN to increase visibility in turbid water for close range identification. In the example you can



see the corrected video in the center with vibrant color enabling easier recognition of detailed features. The enhanced area can be sized by a small knob on the integrated console from small to full screen.

The systems delivered to the Swedish EOD were the first in the world to have the LYYN video enhancement device integrated into the control system. Typical systems are offered as a standalone box, but the Swedish EOD requested a more seamless system that is also more prepared for harsh operating conditions.

### **Navigation Control Console (NCC)**

A PC compatible computer is required to process the software for sonar, tracking and video capture.

Rather than use a consumer laptop that is not fit for harsh environments or the expensive and limited rugged laptops SeaBotix developed a ruggedized PC solution. Repackaged into an Underwater Kinetics



case matching that of the LBV integrated control console the NCC is a powerful Intel Duo Core 2 PC. Equipped with the NCC is a video capture device that when coupled with the Tritech Seanet Pro software enables the operator/navigator to record video, sonar, tracking and GPS directly to the hard drive. The included GPS antenna can be mounted on the NCC or remotely if the operator has obstructed sight to satellites.

The complete system for the Swedish EOD is a totally integrated solution that can be rapidly setup, is portable, intuitive, capable and easy to maintain. With the four systems acquired response time around Sweden and other parts of the world is reduced as well as having full redundancy for mission critical operations.

As part of the package the Swedish EOD requested full training to be able to operate, maintain and service the equipment locally. A week long training program was provided on site at the amphibious base outside Stockholm. During the week eight trainees from various parts of Sweden undertook operator pilot training, basic service/maintenance, sonar and tracking



as well as practical tests. In water operations were conducted in the testing facility as well as in the harbor. Trainees learned to pilot the LBV150SE-5 system in both ROV mode and Crawler mode. The fast combat boats provided an excellent trial platform for attaching the crawler to a vessel as well as a barge for flat bottom attachments.

The systems are scheduled for various tasks throughout Sweden as well as those that come up at short notice. With the close working relationship between SeaBotix and the Swedish Armed Forces it is envisaged that more developments are on the horizon as the EOD puts the LBV150SE-5 systems through their real world paces.

For more information on the LBV150SE-5 with crawler skid and Navigation Control Console visit [www.seabotix.com](http://www.seabotix.com). Information on the Trittech Micron range of sensors visit [www.tritech.co.uk](http://www.tritech.co.uk) and for the LYYN video enhancer visit [www.lyyn.com](http://www.lyyn.com).