



WESTMINSTER
INTERNATIONAL LTD

Excellence through Service
Protecting your world



fire



safety

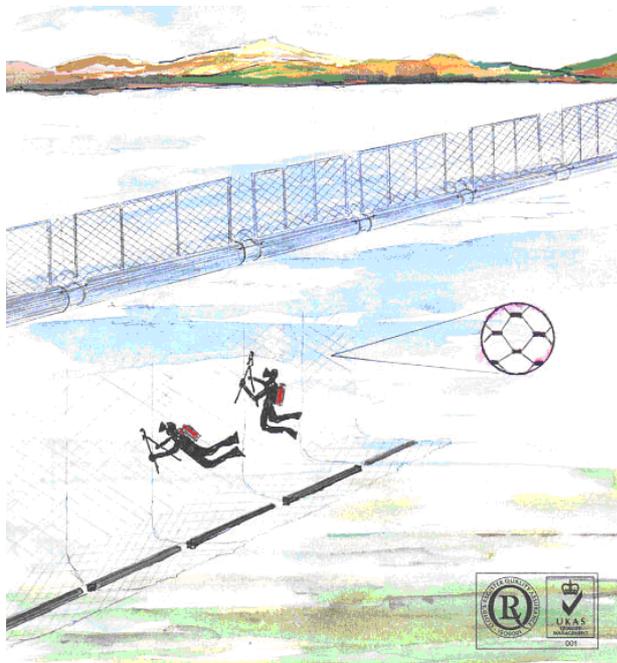


security



defence

Underwater Security Net



Westminster's Underwater Security Net is the ideal solution to provide harbour, oil platform and maritime security. Designed to stop intruders both above and below the water line from penetrating into sensitive areas, the Westminster Security Net is designed for protecting areas from unauthorised access.

Westminster's Underwater Security Net consists of 5mm high-tensile marine grade stainless steel rope that makes up the net, and is held rigidly in place between very strong stainless steel sections. The core of the net includes a fibre optic cable that provides detection in the event of a diver trying to cut through the net with bolt croppers, it is detected and indicates to the command & control the exact location of enemy attack.

The fibre optic alarm net has a 100% effective detection capability and is maintenance-free with a life time of at least 15 years.

Applications

Westminster's Underwater Security Net is the ultimate physical and electronic detection system for:

- ▶ Ports / harbour's;
- ▶ Offshore facilities such as gas & oil platforms;
- ▶ Naval Bases;
- ▶ Special Harbour Areas, i.e. highly protected areas of the harbour during the Olympic Games;
- ▶ Underwater cables and pipelines.

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The Association of
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Underwater Security Net

Specifications

- ▶ **Cable:** Single mode fibre optical cable in a stainless steel wire rope in special construction.
- ▶ **Net Structure:**
The squares of the net are 16cm x 16cm. The cross-points are well connected by stainless steel connecting ferrules. The net is positioned 2 m above the water line. At the bottom the net is secured with heavy concrete blocks.
- ▶ **Floating System:**
The floating system consists of PE tubes, 40 cm in diameter. The connecting parts between the tubes are specially designed stainless steel hangers.
- ▶ **Net Anchor System:**
The net anchor system consists of heavy concrete blocks standing on the lower part of the net at the bottom of the sea.
- ▶ **Gate Entrances:**
Where vessels need to pass into the protected area a vertical gate arrangement can be incorporated in order to raise and lower sections of the fence as authorised ships pass by.
- ▶ **Anti-Ramping System:**
The net can be supplied with an anti-ramping system so that in the even of a small – medium sized marine vessel ramping up to break through the net structure, the system will withstand the impact and prevent the vessel breaching the security net.
- ▶ **Sonar Integration:**
The system can easily be integrated with a Diver Detection Sonar (DDS) system providing a comprehensive solution against underwater attack.
- ▶ **Control and Command System:**
The system will be monitored and controlled via a bespoke control and command system connected to individual fibre optical transceivers. The system can also be interfaced with the port or harbour security system by means at WLAN or other means of communication infrastructure.

A PC based monitor and control system is connected to individual fibre optical transceivers. In the event of cutting of the net, an alarm may be activated and the exact location of attack is indicated at command & control.

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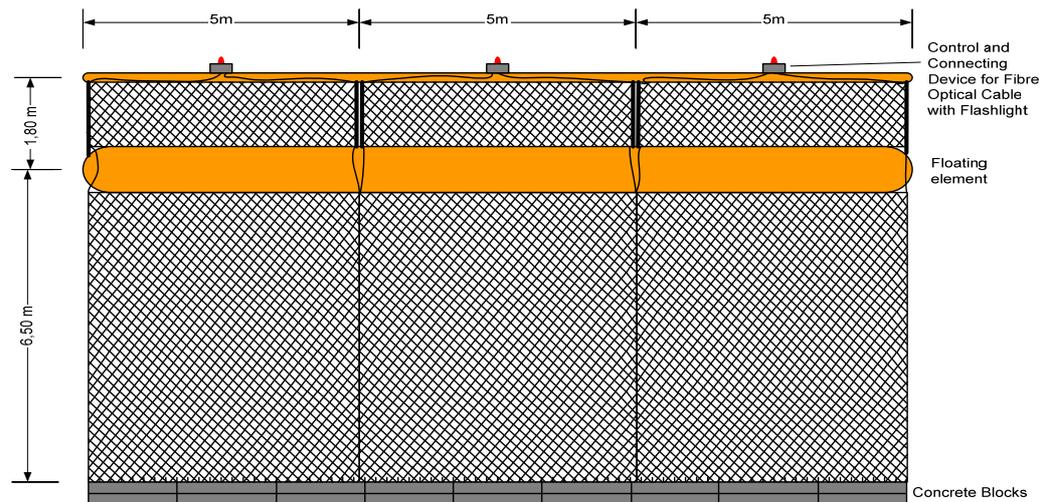
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Underwater Security Net



The net is positioned 2m above the water line to prevent access above the waterline into the protected area. The net continues through the water secured within its high security tensile strength sectional framework. The bottom of the net is secured to the sea bed with heavy duty concrete blocks.

In the event of attack, with damage resulting to the net, modules will require replacement. Replacement modules are available as individual units so as to maintain low replacement costs.

The fibre optical cable running through the net module is connected to one optical transmitter and one optical receiver on the other side. As soon as the signal from the transmitter fails to reach the receiver, the alarm signals appear at the "Alarm Monitor" and the red flashlight in the middle part of the net will be activated.

The Underwater Security Net consists of modules, each with a width of 5 meters. The net is constructed from 5mm gauge stainless steel, with a fibre optic core running through its centre.

The net crosses over to form squares 16cm x 16cm. The cross-points are well connected by stainless steel connecting ferrules.



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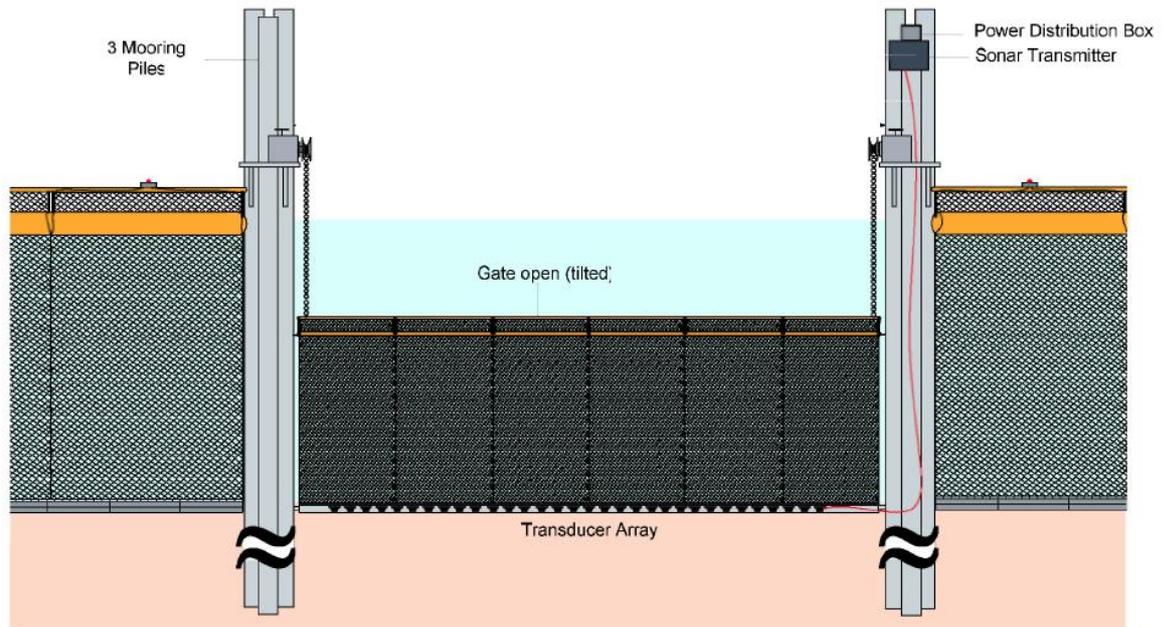
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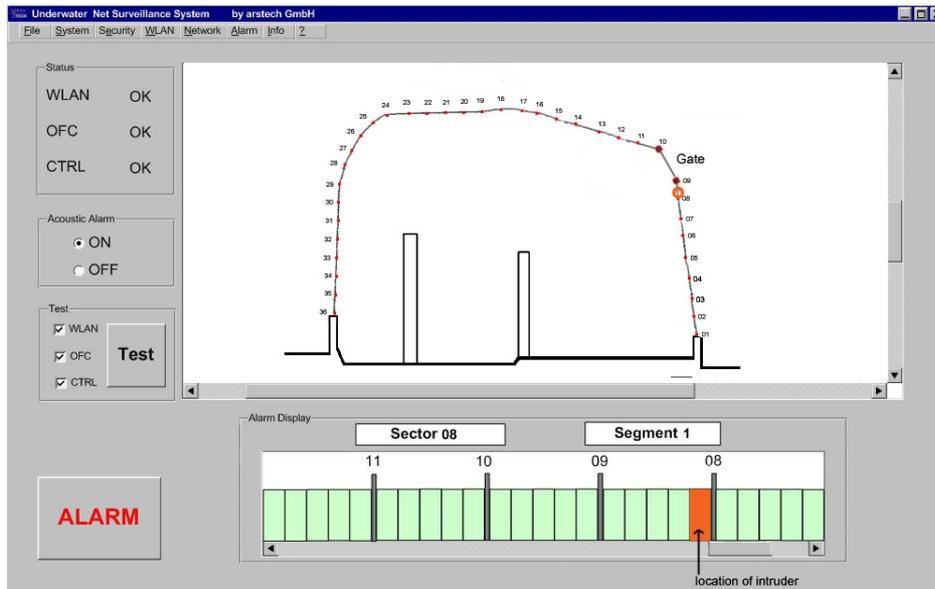
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Gate Entrances



Marine vessels will more than likely require access through in to the protected area. In such circumstances, the net will need to be fitted with a high security vertical gate arrangement. This gate can be operated via the remote command & control, whereby the operator may raise and lower sections of the fence as required to allow vessels access to and from the protected area.



The above image indicates how an alarm is visualized on the monitoring system in the Surveillance Centre. The flashing red dot locates the exact area, which is also to be found on the "alarm display".

As you can see in our example the intruder attacks the fence in "Sector 08" – "Segment 1".



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