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WG Enforcer - Underwater Communication & Diver Disruption System

The WG Enforcer - Underwater Communication & Diver Disruption System is an acoustic marine defence application that is designed to work in conjunction with other diver detection systems such as sonar etc. Enforcer is both an underwater communications system, and a high powered acoustic disruption system which can be used to 'warn off' or if necessary, 'disrupt' any unauthorised divers detected approaching or in a restricted area.



The threat of terrorist attack on ports, harbours, offshore platforms, oil & gas installations, shipping and coastal facilities is today sadly, a real and growing concern to all maritime countries and one which could severely affect their economic stability, not to mention the catastrophic loss of life and damage to infrastructure a serious terrorist attack could lead to.

It is an acknowledged fact that terrorist organisations are now training operatives in diving techniques and the risk of attack on facilities from diver teams is now very real and the need for an integrated marine defence programme has never therefore, been greater.

A wide range of defence solutions can be deployed to detect and respond to such threats including radar, sonar and anti-diver nets etc. but in addition to these measures it is important to be able to provide a means of communication and if necessary, disruption to any divers detected in the area.

The system can be deployed as a permanent installation for the protection of coastal and maritime facilities or supplied as a rapid deployment version for the temporary protection of shipping whilst anchored etc.



WG Enforcer Server

Note: The Supply of this system is subject to an Export Licence being granted by the UK HMRC authorities

System Operation

Diver(s) detected by sonar or other means

- **Initial warning** – The Enforcer system is used to by the operator to communicate with the diver(s) approaching a restricted area, either by the use of a microphone or automatically by pre-recorded security announcements.

If the Diver(s) continue to approach restricted area

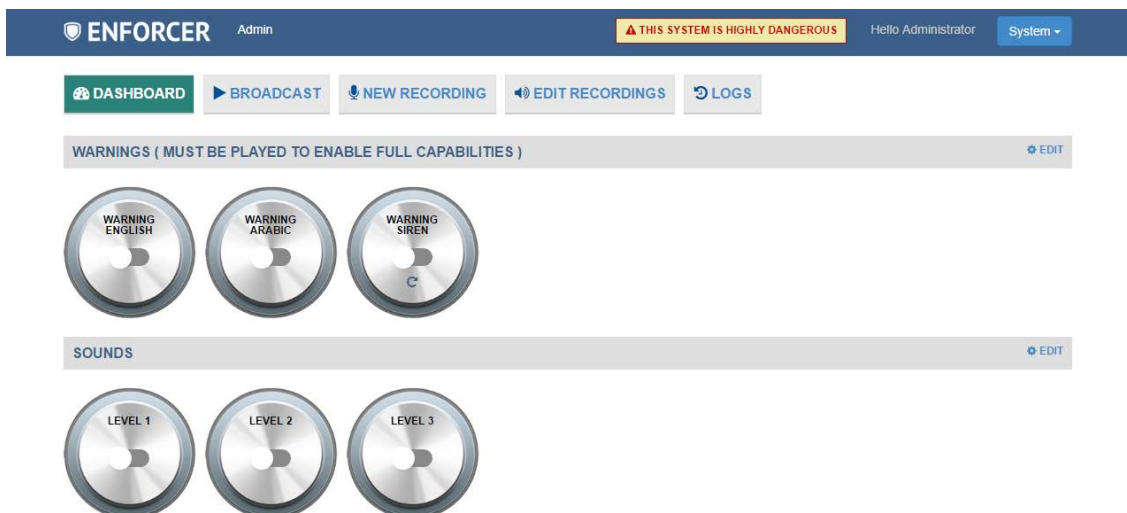
- **2nd warning** – The Enforcer system is used by the operator to broadcast a loud warning siren sound. This is then followed by a warning message from the operator either by the use of a microphone or automatically by pre-recorded security announcements.

If the Diver(s) continues to approach restricted area

- The operator activates the Enforcer system to broadcast disruptive frequencies.

Disruptive frequencies – The Enforcer system is programmed with three levels of high powered disruptive frequencies, these are sent to the speaker array sets, which broadcast powerful 'disruption' signals in to the water.

The frequencies are designed to have a maximum disorientation effect on the diver, which are likely induce a sense of discomfort or panic causing them to leave the area or surface for interception.



WG Enforcer Control System

Dependant on sea conditions the system will typically provide clear messages up to a distance of 800 metres.

Transmission System

The Enforcer control server is available in a rapid deployable ruggedised configuration or rack mounted to meet your specific requirements. The system sends warnings and disruptive frequencies through a high powered amplifier and 2 arrays of 3 underwater speakers.

Operation of Enforcer is carried out on a PC or Laptop, a desk mounted microphone is supplied to provide underwater communication to a diver.

Installation

Under water permanent installations, each of the two speaker arrays are suspended from a flotation buoys, the flotation buoys are anchored to the sea bottom or a sonar system. For over the side ship rapid deployment the speaker arrays are suspended from the ships side.

Speaker Cable – Specialist underwater cable is run from the speaker arrays to the amplifier on the surface. The control system can be installed remote from the amplifier system using standard or armoured cabling.

Technical Specification

Speaker Quantity:	2 arrays with 3 speakers per array
Impedance:	4 ohm
Output	100 Volt
Audio Output:	Front and back of speakers



Speaker Specification

- Acoustic power, high efficiency
- Completely passive, non-powered device. (UL, CSA and CE not required)
- Construction long life design using pvc and epoxy
- Depth capability 40 metres.
- Dimensions 21.6 cm diameter, 5.6 cm axial length
- Each speaker weighs 2 Kg in air, 3 speaker array weight approximately 7 kgs
- Frequency range: 200 Hz to 32 KHz, directional at higher frequencies.
- Impedance varies with frequency, can be used with 4 / 8 Ohm amplifier output
- Input power rating: 400 watts maximum
- No Galvanic corrosion, non-magnetic materials
- No metal exposed to the water, reducing the potential for electric shock.
- Omni-directional beam pattern at 2 KHz
- 100 Volt transformers
- State of the art piezoelectric flexural disk technology
- Underwater Speaker Input Impedance: 4000 ohms
- Uses readily available Neutrik or Amphenol ECO-MATE connectors.
- Will not rust or corrode in saltwater

Speaker Cable Specification

- Suprene 105, 18 AWG, 3/C SE00W, (UL) 600V, -60C to 105C, CSA LL39753 ST00W (TPE) 600 V, water resistant FT2.

Restricted Issue – Further information available to bona fide organisations

Westminster designed and manufactured.

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