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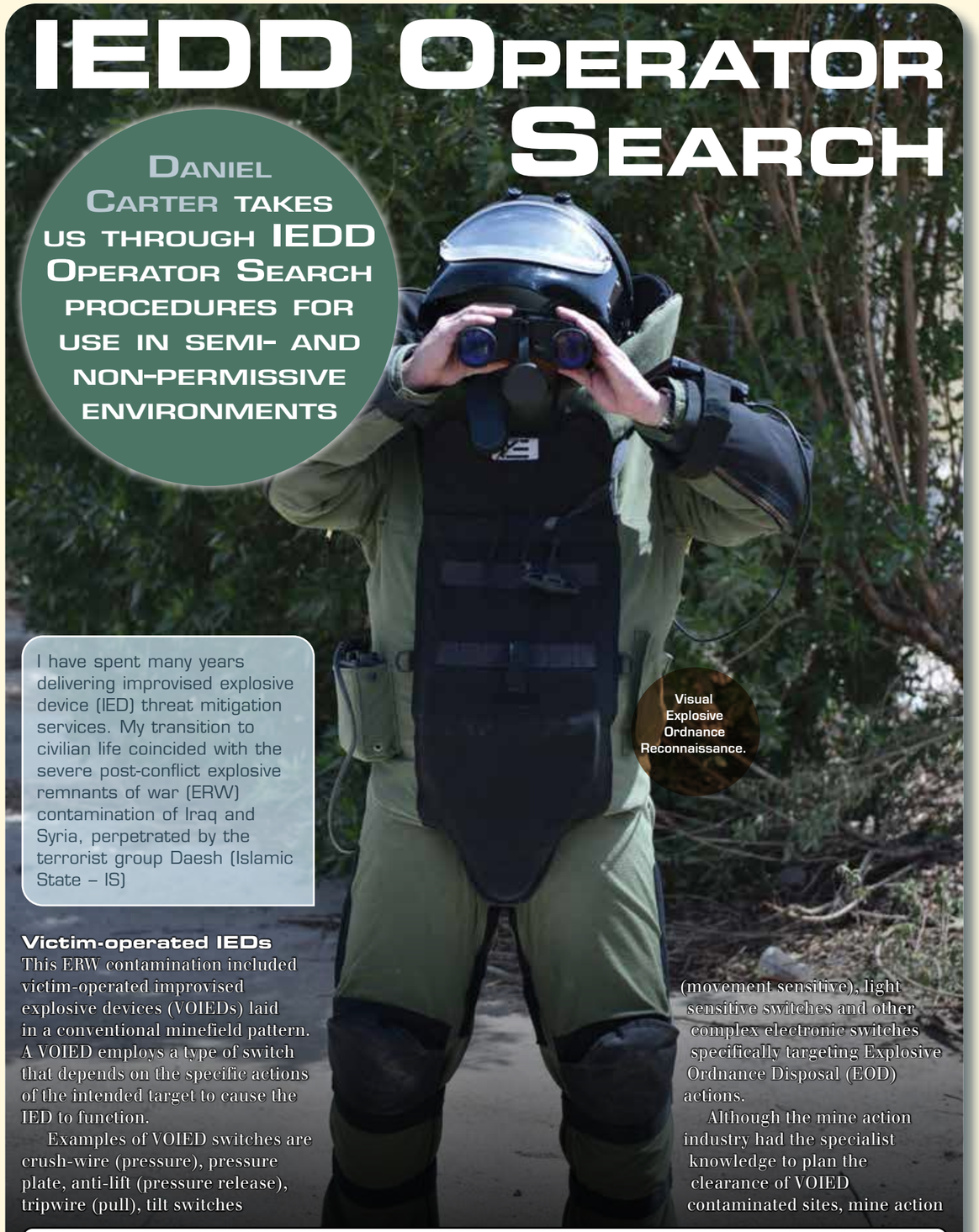
# Improvised Explosive Device Disposal (IEDD) Operator Search

Daniel Carter

# IEDD Operator Search



**Daniel Carter takes us through IEDD Operator Search procedures for use in semi- and non-permissive environments**

I have spent many years delivering improvised explosive device (IED) threat mitigation services. My transition to civilian life coincided with the severe post-conflict explosive remnants of war (ERW) contamination of Iraq and Syria, perpetrated by the terrorist group Daesh (Islamic State – IS)

## Victim-operated IEDs

This ERW contamination included victim-operated improvised explosive devices (VOIEDs) laid in a conventional minefield pattern. A VOIED employs a type of switch that depends on the specific actions of the intended target to cause the IED to function.

Examples of VOIED switches are crush-wire (pressure), pressure plate, anti-lift (pressure release), tripwire (pull), tilt switches (movement sensitive), light sensitive switches and other complex electronic switches specifically targeting Explosive Ordnance Disposal (EOD) actions.

Visual Explosive Ordnance Reconnaissance.

Although the mine action industry had the specialist knowledge to plan the clearance of VOIED contaminated sites, mine action IEDD operators lacked the specialist IEDD skills to neutralise VOIEDs in the safest manner, which caused casualties.

Also, the semi permissive nature of these environments meant that IEDD Operators could be targeted by IEDs during render-safe procedure (RSP) conduct. Although post-conflict, insurgents still lingered and targeted humanitarian actors and security forces. Many IEDD Operators did not carry out RSP actions in such a way to ensure that future actions could not be targeted.

*Disclaimer. The IEDD Operator Search technique discussed in this article is only to be used by personnel who have attained an IEDD Operator qualification from an internationally recognised establishment. Since IEDD tactics and methods are of a sensitive security classification, the details of equipment specifications, metallic signature delineation and fingertip search are not provided in this article. Such information can be utilised by IED aggressors to counter IEDD tactics and methods and exploit this knowledge to design IEDs that will target IEDD organizations and operator personnel.*

## IEDD Operator Search

IEDD Operator Search is required to safely approach an IED target area and conduct RSPs so that the IEDD Operator maintains personal safety and reduces the possibility of being targeted by an observing terrorist.

I have observed many different approaches to IEDD Operator Search by operators from various countries, and unfortunately found most to be lacking in safety considerations in one way or another.

This article aims to familiarise mine action IEDD Operators operating in a VOIED-contaminated environment (permissive/semi-permissive/non-permissive), with the British technique of IEDD Operator Search to increase their safety.

This technique was developed due to many years of British IEDD Operators combating the Provisional Irish Republican Army (PIRA) VOIED threat in Northern Ireland. It is my hope that familiarisation with this technique will help mine action IEDD Operators conduct a safer VOIED RSP – and assist in negating future targeting.

It must be noted that IEDD Operator Search must be employed in combination with IEDD principles and other mitigating actions to ensure the complete safety of an IEDD operator. However, these will not be covered in this article.

The techniques in this article also do not effectively mitigate the low metallic content VOIED threat, and further advice should be sought if this threat presents.

### Safety considerations

The following safety considerations should be considered when planning IEDD Operator (hereafter referred to as just Operator) Search:

***Operator fatigue***. Operators must remain as focused as possible when conducting Operator Search. The scheduling of rest periods should be factored into the plan as the onset of fatigue can occur quickly. The IEDD Assistant communicates to the Operator when a rest period is due. Regularly hydrating is of particular importance, especially when operating in desert conditions when heat injuries can occur.

***Environment***. Operator Search should not be carried out in rain, excessively windy conditions, at night or when visibility is poor.

## Preparation

*Approach route selection*. The Operator selects a route of their own choosing, ensuring it is unpredictable yet not too arduous to search effectively. Operator threat assessment will dictate the most likely approach routes that secondary IEDs may have been laid to target first responders.

Operators should not start searching too far from the target area; this causes early fatigue. If no viable approach route is available, explosive clearance techniques should be used.

*Equipment management*. All Operator search equipment must be checked for serviceability, assembled and detection equipment calibrated prior to making the initial manual approach.

## IEDD Operator search phases

Each IEDD Operator phase must be carried out in a methodical manner at a slow, yet deliberate pace. Any deviation should be authorised by the in-theatre technical authority.

*Phase 1. Confirm Remote Explosive Ordnance Reconnaissance* (EOR). Prior to conducting Operator search, the Operator must confirm all areas that have undergone remote EOR are clear visually to reduce the threat from the surrounding ground and prevent future targeting.

This includes suspect areas along the manual approach and around the target area. Confirming remote EOR is to be done from safe viewing points and hard standing ground with optics wherever possible.

If no remote EOR has occurred, the Operator must clear suspect areas with semi-remote techniques and visually prior to starting Operator search.

*Phase 2 – Start Point (SP)*. The SP of the Operator search lane is selected during manual approach planning in the control point (CP). Lane markers are placed on the ground to indicate the SP and all areas forward of the SP are to be considered RED (unsafe).

British Operators traditionally use 'pea canes' (which are long garden plant supports) with luminescent taped ends as lane markers. The pea canes are also painted a colour that differentiates from the natural ground colour.

The markers are to be cut to the exact length of the tripwire feeler (see Phase 4). I have seen many marking methods, but none achieve the same safety critical 'lane discipline' as pea canes. The Operator places markers in a line creating a lane wide enough to enable casualty evacuation, a radio-controlled vehicle (RCV) robot to transit, and to permit adequate room for the Operator to work in when wearing personal protective equipment (PPE).

Operator search equipment is laid out in an organised manner that does not constitute a trip hazard and regularly used equipment within arm's reach. EOD weapons are positioned at the rear of the lane and orientated in a safe direction.

*Phase 3 – Visual EOR*. Visual EOR using the naked eye, optics, and a torch (high lumens) is critical. The torch is used to illuminate the ground and to aid eye focus. If wearing an EOD suit helmet, the visor should be lifted. Visual EOR must be conducted methodically, breaking the ground into near, middle, and far, from ground level to above head height.

It is crucial to pay attention to any indicator that is potentially abnormal or could be used as a tripwire anchor point. This includes areas of disturbed earth, areas concealed by dirt, rubble, detritus, trees, posts, etc that may not be withing the intended search area

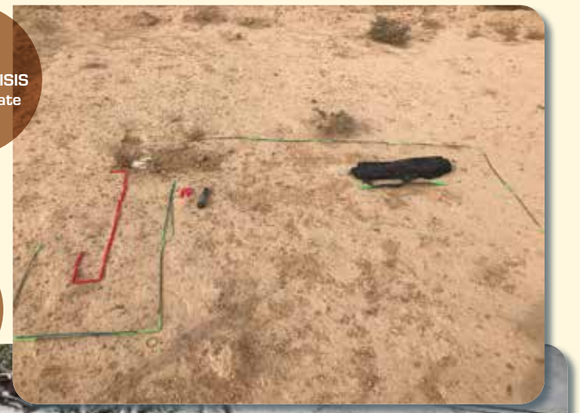
*Phase 4 – Tripwire Feeling*. A braising rod is normally used as a tripwire feeler (due to its lightness and rigidity) with the end taped with luminescent tape or painted. The role of the tripwire feeler is to aid in focusing the eye and to identify the presence of a tripwire before making contact with it.

A tripwire feeler is not used to feel the presence of a tripwire.

Tripwire feeling should be conducted in the following sequence:

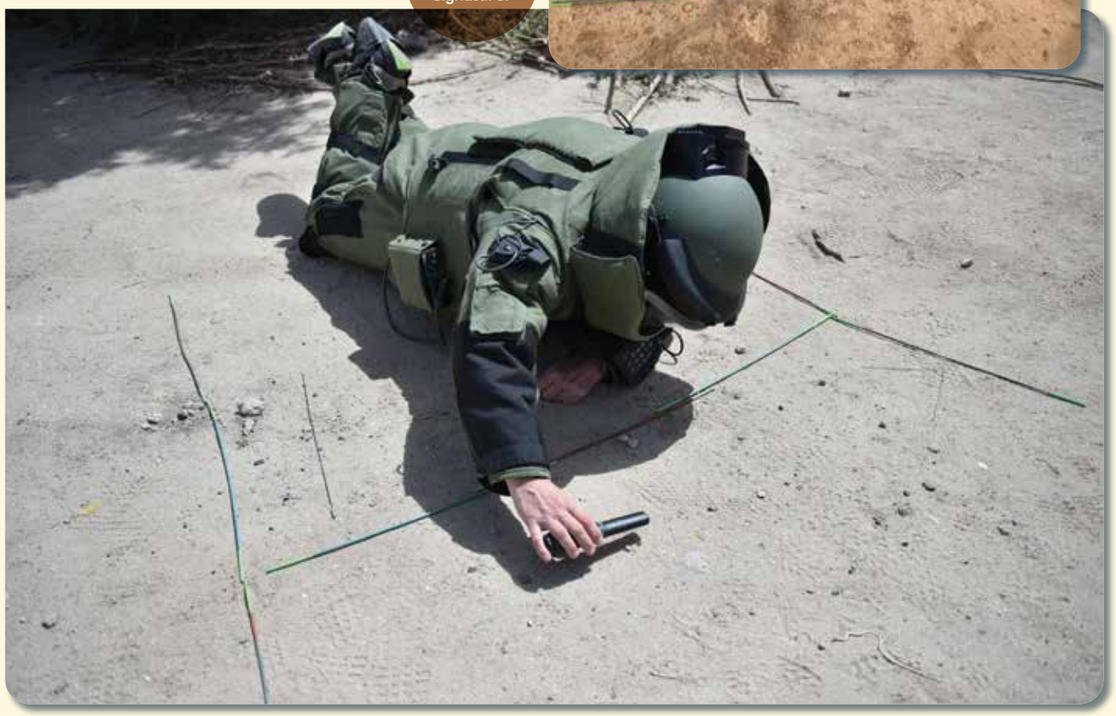
**(a) Ground/Lane Delineation**
The tripwire feeler is fed out from the left-hand side of the SP in near contact with the ground to the extent of its length. If resistance is felt, it is withdrawn, and another attempt made. It is then slowly raised approximately 5 cm to assist in locating loose, ground-laid tripwires. The tripwire feeler is then placed gently on the ground and a lane marker carefully placed out to its full length along the tripwire feeler. The tripwire feeler is then carefully withdrawn. This action is then carried out on the right-hand side of the lane, creating the search lane boundary.

**(b) Waist (Vertical/Horizontal)**
The Operator kneels on both knees in a steady position and the tripwire feeler is fed out from the left edge of the SP (along the lane marker) to its full length and raised vertically to just above head height. This action is then repeated from the right edge of the SP. The Operator can then stand and sweep the tripwire feeler horizontally at waist level across the lane to preclude the presence of a vertically laid tripwire. If an obstacle intersects the search area, a sweep is carried out on either side of the obstacle.



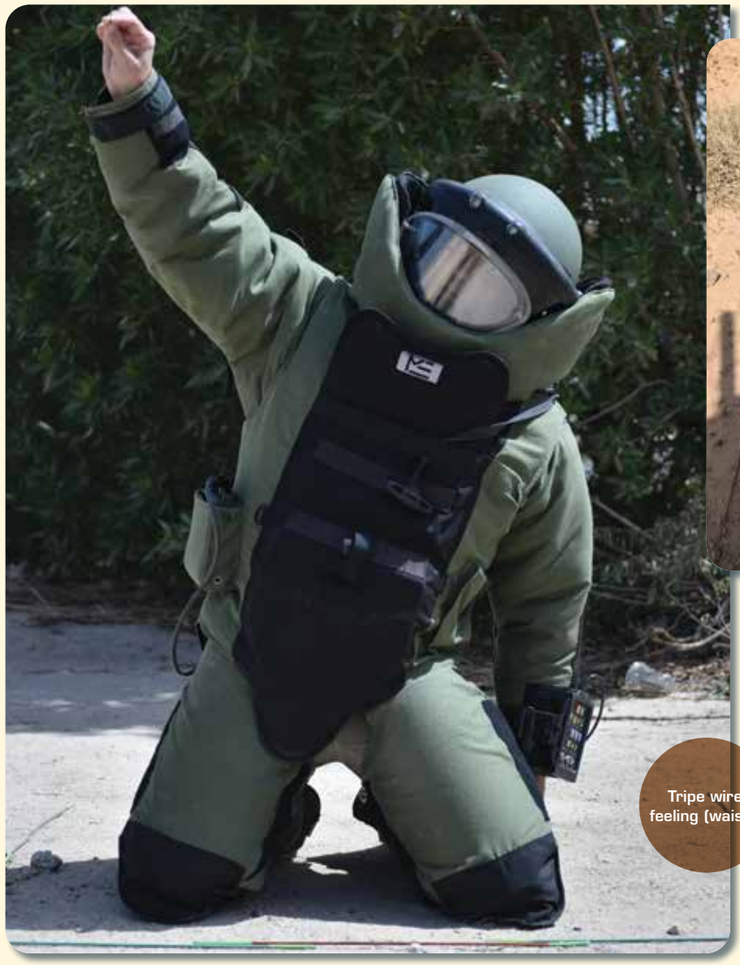
IEDD operator search for a ISIS Pressure Plate in Iraq.

Localising a metallic signature.

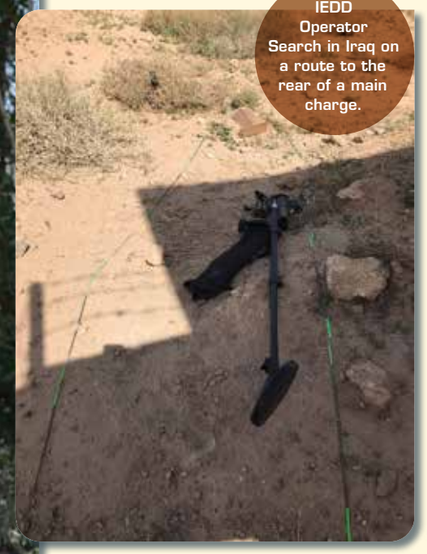








Tripe wire feeling (waist).



IEDD Operator Search in Iraq on a route to the rear of a main charge.

**(c) Above Head Height (Vertical/Horizontal)**
Continuing in the standing position, the tripwire feeler is fed out from the left edge of the SP (overlapping 4b) to its full length and raised vertically to above head height. This action is then repeated from the right edge of the SP. The tripwire feeler is then swept horizontally at above head height level across the lane, to further preclude the presence of a vertically laid tripwire.

*Phase 5 – Metal Detector Search*
**(a) A large, calibrated metal detector** is used to search the ground forward of the SP markers, inside the width of the search lane and to the maximum length of the lane markers. The detector search pattern should work front to back, so that it does not pass over the top of any suspect items. Any alarms with this metal detector are to be investigated with a smaller handheld metal detector to localise the signal. Fingertip search is then carefully used to confirm or discount the presence of a suspect item. Metal detectors must never contact the ground in an area to be searched.

Repeat Phase 3-5. Following Phase 5, the Operator moves the SP markers to the forward limit of the searched area, occupies the area and repeats the process until the target is reached.

## Obstacles

Obstacles in the search area should be treated with suspicion, as they may be attached to or contain a VOIED. A thorough tripwire and metal detector search around all sides and above an object must be carried out before its removal.

Semi-remote techniques must be used to remove obstacles wherever the underside with the ground cannot be proven clear. Any obstacle that, if moved, would impact directly on the surroundings outside the search area, must be left in place and searched around or moved using semi-remote techniques.

I hope this article assists in improving the safety of IEDD Operators wherever they are deployed. Anyone requiring more information on counter IED topics may contact me at SafeLane Global. ✺

***References:***

1. United Nations Improvised Explosive Device Disposal Standards – May 2018
2. United Nations Mine Action Service Improvised Explosive Device Lexicon

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