

# CONNECTING THE DOTS

## THE PACE OF IED CLEARANCE SEEN AS KEY FACTOR TO SAFE RETURN OF 1.67 MILLION DISPLACED IRAQIS

By Dr Mark Wilkinson Ph.D., UNMAS (Iraq) Explosive Hazard Management Team Leader

The pace of Improvised Explosive Device Disposal (IEDD), more than any other kind of explosive hazard (EH) clearance, indirectly controls the return of Iraq's more than 1.67 million Internally Displaced Persons (IDPs), including a U.N.- estimated 500,000 still living in camps for two years or more. If we 'connect the dots', the case makes itself:

- **First, access.** According to Iraq's Ministry of Planning, the Daesh conflict destroyed or damaged more than 150,000 homes. All need EH assessment and clearance before repairs can begin and IDPs can return home. The government estimates the cost of repairs at \$15 billion.
- **Second, complexity.** The presence – or not – of victim operated (VO) Improvised Explosive Devices (IEDs) either under piles of rubble or well concealed sometimes in air conditioning units, refrigerators, and even under clothing, add a vertical dimension – and time – to clearance; until cleared of suspicion – including from conventional explosive ordnance – house or building must be presumed unsafe.

- **Third, costs.** The longer the IDPs remain in camps, the more severe the human cost. In Duhok's 12 IDP camps alone, of 40 suicide attempts in 2018, 22 resulted in death. The U.N. estimates the cost of its humanitarian response plan for 2019 alone at \$701 million.
- **Fourth, responsiveness.** Non-technical and technical surveys, in conjunction with on-going rehabilitation, impose a need for tasking flexibility, high operational tempo and quick deployment of clearance assets appropriate for the task.
- **Fifth, scale.** The 'liberated area' (See threat, below) of Iraq, roughly one-third the size of the UK land mass, has yet to be fully surveyed. The amount and extent of EH contamination – based on data from multiple sources to be consolidated by Iraq's Directorate of Mine Action later this year – obviously cannot be less than the nearly 1,884 open hazard locations covering more than the 105 million sq. m with an unknown amount of devices awaiting clearance, including IEDs, ERW and cluster munitions already documented by UNMAS Iraq.<sup>1</sup>

<sup>1</sup> Information Management System for Mine Action (IMSMA) data, shared and synced with the National Mine Action Authority (DMA) database.

- **Sixth, threat.** According to U.N. estimates, as many as 20,000 to 30,000 Daesh insurgents-turned-guerrillas remain active, ready to exploit any public perception of recovery delay and mounting IDP discontent. According to U.N. intelligence reports, Daesh infiltration from Syria continues through sparsely populated western Anbar into sympathetic areas where UNMAS Iraq currently conducts clearance operations. Killing, kidnapping and extortion, as reported in media accounts, remain a daily occurrence.

### **Anbar**

For clearance documentation purposes, UNMAS Iraq classifies areas as confirmed hazard areas (CHA) and suspected hazard areas (SHA). When combined, Anbar Province in western Iraq has the distinction of being the most contaminated area in the country based on 22.5 million sq.m. classified as CHAs and 66.4 million sq.m. as SHAs or 89 million sq. m. with “open hazard locations.”<sup>2</sup>

### **Model**

Given the need for timely clearance, the possible numbers of IEDs present in confirmed and suspected hazards areas, especially, in residential areas of Iraq, the pace of IED removal needs to improve, but how to maintain IED disposal quality standards, conduct high risk search (HRS) while introducing improved level of cost effectiveness at the same time? In 2018, UNMAS Iraq proposed an answer to that question with the introduction of an IED specific adaptation of the two-decade old Rapid Response Team (RRT) focused on humanitarian spot clearance.

### **Capabilities**

The UNMAS Iraq RRT adaptation focuses on small, highly mobile, lightly equipped, self-supported teams able to deploy anywhere in the country within 24 hours of notice, and remain on site, self-contained for 48 hours. RRTs specialize in (1) spot tasks, (2) high risk search and disposal conducted to International

and United Nations IEDD standards. The keys to their success to date: a highly agile posture, high quality search capabilities, and cost-effectiveness of a national-only staff. Between 1 August 2018 and 17 May 2019, two RRTs completed 183 tasks, of which 72 were infrastructure-related such as education, health, power, and water facilities; and 111 humanitarian-related tasks all without a single safety incident.

### **Validation**

As if to validate the need for RRTs, a Residential Area Clearance (RAC) Programme, a priority for the United Nations Development Programme (UNDP) since 2018 beginning in Mosul, serves as a pilot for the type of spot clearance expected throughout the contaminated ‘liberated area’ including Anbar Province. According to UNDP, of 6,900 RAC properties, 113 were found with EH contamination. If the EH total seems ‘low’, the obvious point of such clearance is that, while it is impossible to know contamination beforehand, once detected, rapid deployment of assets to the site becomes an obvious next step.

### **Criteria**

Such indicators arguably understate the RRTs ‘value added’ to donors and beneficiaries for whom areas surveyed and sites cleared and released, rebuilding and IDPs returned home count for more than numbers of IEDs rendered safe and removed. The value of the search arguably is properties cleared to an IMAS standard rather than the tally of EH found. Consequently, the UNMAS IED experience in Iraq argues for an expanded, still-to-be-developed set of criteria/indicators to measure RRT performance in ways meaningful for those funding clearance work: for example, time-to-task, time-on-task, completed tasks, and so on, plus other new measures which reflect the clearance environment, particularly IEDs. Currently, no model exists to calculate the outcome value of quickly conducted, cost-effective, high risk search as a function of economic and social factors such as, for example, IDP camp days saved, IDP employment days

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2 Ibid.

gained, and so on. UNMAS is currently continuing to develop conceptual models to test against 'real' tasks. These include toolsets to assess the complexity of environments and devices as well as the relative threat and lethality of EH that may be present at clearance task locations.

### Techniques

Humanitarian (residential) clearance, for reasons of building dimensions and need for team leader command-and-control, favours small teams, usually four persons, conducting high risk spot search in confined areas using manual and semi-remote techniques, a completely different environment from conventional minefields or even large urban buildings and/or debris sites appropriate for large teams of as many as 20 persons often supported by mechanical assets conducting high risk planned search. Contrary to what might be a popular view of robots as all-purpose, effective tools for any application, they have extremely limited utility for residential clearance where operators typically work in confined, debris strewn spaces where well concealed VO IEDs, often hidden in walls and other cavities, are all but inaccessible to robots operating on a level surface. The high risk of detonating a VO IED while remotely manipulating a device – especially in areas without a cordon or benefit of an enforced evacuation – makes their use ill-advised as well as impractical. In reality, semi-remote actions are also much quicker, albeit requiring an operator with a high level of training for safe device disposal.

### Success

The concept has proven effective based on nine months of performance data<sup>3</sup> for two RRTs which together:

- Cleared 183,906 sq. m
- Surveyed 3,314,092 sq. m
- Removed 102 Unexploded Ordnance (UXO) items
- Neutralized 187 IEDs (complete and viable)
- Recovered 786 IED components
- Recovered 295 main charges
- Recovered 2,950 kg. explosive weight (approximated)

### Environment

UNMAS Iraq analysis of the current EH threat environments of the key characteristics of urban and rural contamination based on research in Fallujah and Mosul allowed for the definition of 'simple'<sup>4</sup> and 'complex' EH threat environments. For the RRT, possible concerns relating to competence of Iraqi clearance teams to operate safely could be effectively managed by training them to operate in, then deploying them to, areas where 'simple' threats were present. A new conceptual framework to match EH threat to capability was therefore used to ensure that the RRTs were trained to the appropriate standards allowing them to operate within carefully defined constraints via a concept of operations (CONOPS) document.

### Rationale

The RRTs fielded by UNMAS Iraq provide a 'light' alternative to standard international 'heavy' EH clearance teams. These 'heavy' teams at times have been severely constrained for reason of security requirements and restrictions associated with their international staff and mission time can be lost to delays encountered when moving through checkpoints. The logic was therefore simple: develop and field test a concept and capability that could improve cost-effectiveness of future EH clearance activities across Iraq.

<sup>3</sup> Consolidated data compiled from field reports.

<sup>4</sup> Environments for explosive hazard clearance may be evaluated based on a combination of factors including: (1) design and technical complexity of device; (2) detonation mechanisms; (3) distribution; (4) density; (5) dimension (vertical as well as horizontal surfaces); (6) access; (7) biologic threat; and (8) security environment. For example, in west Mosul, IEDs have been found in partially destroyed buildings (access), hidden under garments (vertical dimension), triggered by an infrared device (technical complexity, detonation mechanism), as suicide belts still attached to deceased fighters and/or hostages (biologic) buried in rubble (access) by the hundreds (density) over a wide urban area (distribution).



RRT pre-operational briefing prior to tasking. *Photo credit: UNMAS Iraq.*

### **Capability**

Thus, the RRTs were conceived as cost-effective teams, quickly trained for HRS, EOD and IEDD as well as risk education and community liaison, capable of delivering technical and non-technical survey, able to respond to requests for EH support within 24 hours across the entire liberated area of Iraq. The teams included integral medical support. International oversight was limited to one technical advisor on call who would not deploy with the team, leading to a quick transition from a supervising to a mentoring role. Reporting and GIS services were also included in the RRT concept with Iraqi staff providing a full range of support services.

### **Mobilisation**

RRTs were recruited during an 8-week mobilisation period, primarily from a pool of former Iraqi military operators based on their search, EOD and IEDD qualifications and experience. Training competencies were carefully aligned to international UN IEDD

standards as well as the realities of the Iraqi operating environment where a broad range of device types of differing technical complexity can often be located within close proximity to one another. Training was comprised of four core components: IEDD Operator training (seven weeks), HRS team leaders and team members (four weeks), Community Liaison and Risk Education (two weeks) and Medics (already qualified). A CONOPS document linking operational requirements with the specific capabilities of the teams served as a reference throughout the mobilisation phase. The final two weeks of mobilisation training focussed entirely on integration of these capabilities into a single RRT.

### **Deployment**

Following completion of a two-day UNMAS operational review, RRTs were deployed initially to conduct EH clearance in Fallujah. Technical Advisors supervised the teams during the early stages of their operational deployment, decreasing time spent 'on site' once

teams had demonstrated their adherence to well-defined parameters for what the HRS and IEDD components were allowed to do unsupervised, leading to a quick transition to full independence backed up by telephone based 'referral' system for any tasks where the HRS or IEDD team leaders considered the threat present to fall outside their allowable unsupervised actions as defined in CONOPS so as to support RRT decision making while integrating and aligning safe systems of work with standard operating procedures.

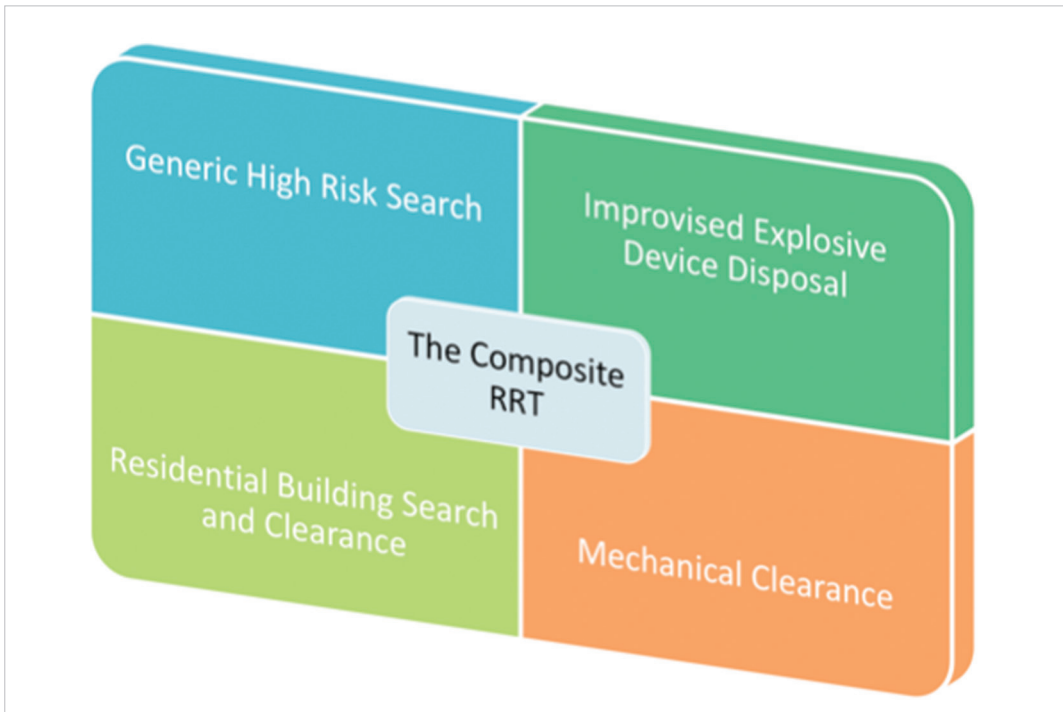
### *Cost-efficiency*

Although RRTs as a concept are decades old, as a prototype adapted for Iraq, they needed validation. UNMAS Iraq found that, while the operational concept proved valid, the RRTs did not deliver the expected level of cost saving largely due to up front the training of staff within the initial contract period. However, much the same as any other investment, if amortized

over a longer period, these costs decline as the initial investment 'pays off.' Arguably, the investment in the first RRTs in Iraq effectively 'primes the pump' for subsequent work by establishing a talent pool for locally managed, national companies as they bid on new work over time.

### *Field efficiency*

Given continuing Daesh threats even as clearance proceeds, the reality is that security checkpoints will likely continue as a 'way of life' for the foreseeable future in Iraq which leads to another RRT benefit and return on investment. Absent international personnel and their associated (and expensive) security teams, RRTs routinely transit through checkpoints known to regularly delay or postpone the work of 'heavy' international led teams, leading to yet another cost advantage when comparing international 'heavy' teams with 'light' RRTs based on 'time on site'.



A Composite RRT Model.

### ***Oversight***

Whilst the RRT concept was driven by operational requirements, the management of quality and safety were integral to the day-to-day work of the teams. International Technical Advisors use a Quality Management System (QMS) specifically developed for RRTs that utilises weekly Internal Quality Assurance (IQA) inspections to evaluate every component of the team within an operational setting against the competencies defined and assessed during the mobilisation phase. This QMS not only integrated the requirements of IMAS with RRT Standard Operating Procedures (SOPs) but was used as the basis for self-critique by RRT personnel and mentoring important for continual professional development. External quality oversight by UNMAS, including a '3-month' operational evaluation also ensured the internal QMS systems was working and effective.

### ***Performance***

During their nine months of operation, RRTs did not suffer a single accident, safety incident or even a 'near-miss'. Without direct supervision, when delivered against carefully structured training standards, local national teams proved they can work effectively in accordance with internationally recognised standards.

### ***Takeaways***

First, RRTs can convert UNMAS Iraq operators, from doers to mentors, aligning them with local national teams and leveraging their experience. As mentors, the operators effectively 'clone' themselves, but this begs a second question, how to best to assure consistency and coherence across all competencies? Consequently, UNMAS Iraq has begun to formalise, develop and/or revise standard guidance and working practices consistent with generic and specialist HRS, EOD and IEDD doctrine. Third, UNMAS Iraq has recruited and teamed highly qualified national IEDD operators to work with its own operators. The combination of local knowledge and experience benefits projects day-to-day while furthering nationalisation of HMA activities within Iraq. Fourth, market forces in the future will favour RRT cost structure and local firms both current

and to be established will be well positioned to leverage this concept both to their business advantage as well as to Iraq's benefit for clearance ahead of continuing stabilization and humanitarian tasks.

### ***Potential***

The initial RRT programme performance data from this project would appear not only to validate the fielding of small, quickly deployable, highly flexible and capable EH clearance teams for survey, search and spot clearance tasks but also, by extension, to 'generic' HRS and IEDD tasks or specialised mechanical clearance and residential area clearance small teams to be composed selectively and quickly deployed on a 'task basis' as needed. ■

## **ABOUT THE AUTHOR**

**Mark Wilkinson**, Ph.D., a UNMAS (Iraq) Explosive Hazard Management Team Leader, has 20 years of professional experience in military and Humanitarian Mine Action (HMA). As a former British Army Ammunition Technical Officer, he worked as a High Threat IEDD Operator in several operational environments before transitioning to HMA. His HMA experience has developed through time spent as an IEDD operator, then a Program Manager, before transitioning to UNMAS. His academic background includes a Master's degree in Global Security and a Doctorate (PhD) in Politics and International Studies. His thesis on Arms Control and Intelligence has been published internationally as the book 'Before Intelligence Failed'. He is also a Visiting Fellow at the University of Nottingham Centre for Conflict, Security and Terrorism where he maintains an active research agenda.