The use of IEDs is steadily increasing and proliferating worldwide for two very simple reasons. First and foremost, the HME Precursors (aka bomb making ingredients) needed to construct IEDs are inexpensive to acquire, easy to obtain, and can be converted into a wide variety of Improvised Explosives Devices. Secondly, once HME precursors are converted into explosives and incorporated into IEDs they are extremely effective. They have been successfully used against the military, police, security forces, civilians or high profile facilities around the globe with devastating results. They have become the Weapon of Choice by Terrorists and groups waging asymmetrical warfare.

The only way to reduce the threat that IEDs pose are proactive Interdiction Missions that aggressively target these HME Bulk materials.

To defeat the IED threat it is important for everyone to first understand its core, the bomb makers and the homemade explosives precursors used to manufacture HME for an IED’s main explosives charge. Even though the techniques being employed to build, conceal and trigger IEDs continue to evolve, the HME precursors used in the main explosives charges have remained relatively constant for decades. Since bomb makers do not clearly identify themselves as a “bomb maker”, interdiction missions worldwide targeting HME precursors need to become a higher priority for any Counter IED strategy to be successful. Fact: Dealing with the problem at source is always more effective than dealing with its aftermath.

In Afghanistan, for instance, it is equally important to understand that trust and confidence building with host nation tribal leaders and civilians must go hand in hand with HME Interdiction Missions. The same remains true for every other country where terrorism has taken a hold of everyday life. Without an ability to earn the trust and confidence of tribal leaders and civilians, their support will likely be extended to the bomb makers as a response to their own fears. Before discrediting such a bold statement, know this, the mere act of saying nothing or turning a blind eye is all the support bomb makers need to maintain a tactical edge.

Nitrate Fertilisers and Potassium Chlorate are common Homemade Explosives (HME) Precursors, aka bomb making ingredients, that comprise the main charge in most Improvised Explosive Devices (IEDs) today. Targeting these bulk materials is required to defeat this proliferating threat and lessen the devastating casualties they inflict.

By Grant Haber, Vice President, American Innovations, Inc.

Photos Above:
Nitrate Fertilisers and Potassium Chlorate represent 93% of the Homemade Explosives (HME) Precursors used in Afghanistan today. Their innocuous appearance makes it hard for law enforcement and military to differentiate from the Non-HME bulk materials also featured in the photos above; yet their effect once converted into HME is exponentially devastating. Effective identification tools are essential to counter the IED threat that has proliferated into 112 countries worldwide.
Defensive countermeasures employed to mitigate the harmful effects of IEDs has proven effective for reducing fatalities; however, these costly investments have done little to slow down IED proliferation. A balance between proactive and reactive countermeasures is required for effective Counter IED strategy.

For the purpose of this article, Afghanistan will be the primary focal point; however, I must reiterate: the recommendations to be conveyed are applicable virtually in any location where IEDs are an enduring threat.

In 2010, approximately 90 per cent of the Afghanistan IEDs utilised Ammonium Nitrate-based fertilisers. Potassium Chlorate use represented a low single digit percentage, though when considering 15,000+ IED events averaged annually in Afghanistan since 2010, a single digit percentage still represented a high number of IED events for Explosives Ordnance Disposal (EOD) to deal with. Needless to say, EOD is working overtime given the scope and magnitude of this enduring threat.

Following the publishing of the Government of the Islamic Republic of Afghanistan (GIRoA) Presidential Decree prohibiting Ammonium Nitrate fertilisers for import, production, transportation, use, sale, and storage due to its use as an explosives precursor, the bomb makers slowly began shifting to an alternative HME precursor to reduce the risk of capture and interdiction of their bomb making materials. In 2010 after this Presidential Decree was published and interdiction missions targeting Ammonium Nitrate fertilisers became a higher priority, bomb makers began using Potassium Chlorate. Less than 3 years later about 60 per cent of the IEDs utilise Chlorates and about 35 per cent are utilising Nitrates in the HME manufacturing process. Given the 15,000+ IED events per year in Afghanistan, regardless of the fact that Potassium Chlorate has taken the lead as the HME precursor of choice, Ammonium Nitrate fertiliser interdiction should not become less of focal point as its use in IEDs is sharply reduced. When focusing on Ammonium Nitrate fertiliser interdiction almost exclusively, Potassium Chlorate use surged. This was by design, not by chance. Interdiction and destruction of both Nitrate fertilisers and Chlorates must become an enduring requirement for Afghan National Security Forces (ANSF) in order to defeat the enduring IED threat in Afghanistan...

Calcium Ammonium Nitrate (CAN) fertiliser, Potassium Chlorate, among other Nitrates and Chlorates (oxidizers) remain the primary HME precursors used in the manufacture of IEDs in Afghanistan today. As long as these ingredients are readily available and easy to convert into powerful explosives, the bomb makers will continue to use them; especially when they are so inexpensive.

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If President Karzai expanded the Presidential Decree banning Ammonium Nitrate fertilisers to also include Potassium Chlorate, with the help of NATO’s 28 member nations alliance serving in an advisory capacity to help prepare Afghan...
National Security Forces (ANSF) for post 2014 operations, ANSF’s gains against Afghanistan’s Number One Threat, “The IED” would rapidly increase. The Afghanistan Ministry of Defence (MOD) and Ministry of Interior (MOI) should then inform both the International Security Assistance Forces Joint Command (IJC) and NATO Training Mission – Afghanistan (NTM-A) of their requirement to employ standard issue interdiction tools for Nitrates and Chlorates.

Now that you understand which HME precursors make up the core of the IED threat and why targeting these bomb making ingredients must become an enduring requirement, let’s discuss trust and confidence building between host nation security forces (military and police) and local tribal leaders. Without an effective strategy to establish much needed trust and confidence, it is absurd to expect tribal leaders to help ANSF defeat an insurgency who utilises IEDs as their weapon of choice and a weapon of strategic influence. Maintaining this trust and confidence is vital to combatting an enduring IED threat. Local civilian groups are crippled by the fear that is echoed with every terrorist interaction; an effective strategy understands this and strives to provide a balance of justice and safety.

To establish trust, a balance between cultural considerations and an effective screening Concept of Operations (CONOPS) is required to enable ANSF to inspect people and vehicles in a manner that will yield measurable gains without violating trust. The desired outcomes include increases in interdiction and destruction of HME precursors, increases in lawful detentions, increases in freedom of mobility, decreases in IED events, and decreases in IED related fatalities and casualties.

In Islamic cultures making physical contact with an individual using your left hand is offensive and violates trust, as is, having men touching women. What further violates trust is the uneasiness that results when individuals being screened for trace explosives residues do not understand what is being done to them when an Afghan Soldier or Police Officer grabs their wrist with one hand and with the other hand starts swabbing their hands, fingers, clothes, etc. Keep in mind, many of the people being screened are unfamiliar with the capabilities employed in airports or at government buildings for explosives trace detection screening.

Consider: How helpful would you be if someone was doing something to you deemed outright offensive by yourself and everyone around you? How helpful would you be if a tribal leader, family member, or someone you looked up to was detained because a foreign test concluded there was invisible explosives residue on their hands, clothes, or a personal belonging? How long do you think it will take before Afghan tribal leaders and civilians learn that explosives residue can transfer from person to person or surface to person unknowingly in environments contaminated from IED events?

To effectively build trust requires a screening CONOPS that delivers on the desired outcomes without violating trust in the process. By advocating and implementing bulk material identification requirements for primary screening and shifting away from trace detection for primary screening, a foundation for trust becomes easier to establish in an Islamic culture. If you are unfamiliar with the difference between bulk identification and trace detection, this is what it is:

When interdicting Bomb Making Precursors (Oxidizers) that are in the presence of Fuels (Automatic Transmission Fluid, Diesel, Aluminium Powder, etc.) used to convert Homemade Explosives (HME) Precursors into actual HME, Military and Police know they are closing in on Bomb Makers.
When interdicting caches of Improvised Explosive Devices (Suicide Vests, Potassium Chlorate Bombs, etc.) Rocket Propelled Grenades (RPGs), Ammunition, and so forth, Military and Police know they are closing in on the insurgents involved with carrying out the Attacks.

trace focuses on detection of invisible residues, whereas bulk identification focuses on samples of unknown yet visible materials, aka bulk.

A person in possession of a bulk material that tests positive for targeted homemade explosive precursors would then be subject to secondary screening (trace analysis) which includes physical contact with their skin, clothes, personal belongings, etc. This secondary screening would enable Military and Police Officers to determine if the individual they detained for possession of HME precursors also came in contact with explosives. By following a bulk first, trace second HME screening CONOPS, the detained individual will have a hard time pleading innocence or drumming up sympathy support from local tribal leaders and civilians when a non-invasive (non-offensive) screening method was utilised to determine that they were in possession of bomb making precursors.

As IED attack frequency sharply decreases as a result of successful HME interdiction campaigns that reduce the amount of HME precursors reaching the bomb making factories, tribal leaders will slowly begin to advocate support for an ANSF that employs bulk material identification as their primary screening methodology. With tribal leader’s support, comes trust. YES, in the short term bomb makers may gain freedom of mobility if they are not subject to a trace detection analysis. However, as ANSF starts earning the trust of tribal leaders and civilians, bomb makers, facilities used to store bomb making materials, locations where suicide bombers are trained, and the vehicles used to transport these materials will start being exposed.

Trust between ANSF and Afghan Civilians is vital for attacking the core of the IED threat.

Of course, for any interdiction CONOPs to be effective, the capabilities employed must be reliable. Bulk material identification tools must only indicate on targeted HME precursors, not legal fertilisers or other bulk materials not classified as targeted bomb making ingredients. They must also effectively detect the targeted precursors even if they are masked with other ingredients or already converted into HME. The trace detection tools to be employed for secondary screening must reliably detect trace amounts of a broad array of explosives without false alarming on lotions, colognes, perfumes, detergents, fuel, or other common ingredients an individual may apply to their person or clothes, or come in contact with.

Without effective tools to attack the core of the IED threat, TRUST cannot be earned.

Detaining individuals who are not possessing bulk HME precursors because of false alarms will instantly kill trust with tribal leaders and civilians. Destroying legal fertilisers or other non-HME, non-targeted bulk materials because of false alarms will also kill trust with tribal leaders and civilians. It’s that simple.

Confidence on the other hand needs to start from within the Afghan Military and Police forces. Only after confidence is established from within, can it effectively be conveyed outward toward tribal leaders and civilians. In Afghanistan, IEDs are delivering the greatest percentages of fatalities and casualties to ANSF therefore it is understood why ANSF’s confidence in defeating this enduring threat is low. Civilians are being killed and wounded at an alarming high rate; therefore, it is understood why tribal leaders and civilians do not have confidence in ANSF’s ability to defeat the IED threat. Many argue the IED threat is unbeatable; however, it is easy to speak on behalf of ongoing failures when the strategies employed remain primarily
reactive and relatively unchanged for more than a decade. Equipping and training the entire ANSF with a standard issue tool to interdict the bulk HME precursors used in more than 90 per cent of the IEDs is vital for building ANSF’s confidence. With more than 15,000 IED events annually since 2010, it is understood why confidence within ANSF is low. Especially when the United States and Coalition Forces have been unable to defeat or slow down the IED threat for 12 years.

Fortunately, there are now simple to use bulk material identification kits capable of bridging literacy gaps with picture instructions. Detection of the Nitrates and Chlorates (oxidizers) are now possible in seconds without false alarming on legal fertilisers or other non-HME bulk materials. If the Afghan MOD and MOI create requirements to leverage their 352,000 Soldiers and Police Officers to interdict these targeted bomb making ingredients: IED attacks will decrease, fatalities and casualties will decrease, lawful detentions will increase, freedom of mobility will increase, and the long term support needed from both tribal leaders and civilians will increase too.

By aggressively ramping up proactive efforts to interdict HME precursors and detain members of the growing bomb maker’s networks, the enduring IED threat can be defeated. Given ANSF’s size (Soldiers - 195,000, Police 157,000) and knowing their literacy challenges, the primary screening tool selected for bulk material identification must be simple to train and use, effective at detecting and identifying the leading threats in the shortest amount of time, and sustainable over long periods of time (1 or 2 years minimum) by unskilled operators. Fielding tools that target bulk materials beyond the scope of the leading threats creates complexities that prolong learning curves which in turn slows the pace of the desired outcomes that can be achieved. To effectively build confidence from within ANSF requires detection and identification tools that are simple to use, effective, and sustainable.

As interdiction efforts targeting bulk HME precursors become more successful, confidence from within ANSF can quickly and effectively be conveyed outward to tribal leaders and civilians. As the supply of bulk HME materials is choked by an effective interdiction strategy, IED attack frequency will decrease and explosive charge sizes will also decrease. All of which is required for confidence building. As the enemy’s footprint gets smaller, IED attacks will decrease further and faster, and freedom of mobility will increase exponentially. These outcomes are instrumental in reducing fatalities and casualties. Bridging Literacy Gaps and providing ANSF enablers to interdict Nitrate and Chlorate HME Precursors without false alarming on legal fertilisers or other non-targeted bulk materials needs to become a higher priority if defeating the IED threat is a desired outcome for Afghanistan.

In closing, defeating the IED threat ultimately requires Leaders with a desire to win, Leaders with the integrity to accept failures and move on from what is not working, and Leaders with the willingness to ensure what is working is ramped up and employed across the fighting forces. It requires effective communications up and across chain of commands to enable informed and timely decisions. With strong leadership, effective communications, and a Counter IED strategy focused on Attacking the Core of the IED threat (Bomb Makers and Homemade Explosives Precursors), defeating the IED threat is achievable in relatively short order and at minimal expense.

U.S. Troops (Marines, Sailors, and Soldiers) are being equipped and trained in Afghanistan to analyse unknown Bulk Materials. With the featured Ai-HME Bulk Material Identification kit, Nitrates and Chlorates (bomb making precursors and their resulting HME) are detected within 15 seconds. Legal fertilisers and other Non-HME bulk materials are not detected by design.

ABOUT THE AUTHOR
Grant Haber has been involved with explosives detection, blast mitigation, and bomb containment technologies since 1998, and serving the law enforcement/first responder community since 1995. As VP of American Innovations, Inc. (Ai) Mr. Haber works with government and military labs, military EOD, civilian bomb squads, explosives manufacturers, subject matter experts, and elected officials to ensure the materiel solutions and train the trainer programs developed by Ai will effectively Counter current and evolving IED threats.