



Remarks by

**LTG Michael D. Barbero
Director, Joint IED Defeat Organization**

Homemade Explosives Threat

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Good morning and welcome. Thank you for traveling to join us here today. I am Lieutenant General Michael Barbero, the director of the Joint Improvised Explosive Device Defeat Organization. I would like to welcome you to this Homemade Explosives Conference. My organization, JIEDDO, as it is commonly known, was established in 2006 to lead the Department of Defense's counter-IED activities. Our organization is singularly focused on the IED problem and we exist to rapidly field capabilities to reduce the effectiveness of the IED.

So, why are we here today? Well let me provide some background. Improvised explosive devices, commonly known as IEDs, are a global threat that faces us all. The IED is the most significant threat to our troops in Iraq and Afghanistan, and will continue to be a threat in future operations. And, as we have seen, the IED is a real threat to our domestic security.

These IEDs are increasingly comprised of fertilizer-based homemade explosives as their primary explosive component with ammonium nitrate as the most common explosive. Because of this growing threat, we decided to bring you together— academia, U.S. government agencies, both international and domestic industry representatives and our coalition partners — to tackle the difficult issues surrounding the misuse of fertilizer products as an explosive charge.

As many of you know, the IED is a weapon fabricated in an improvised manner incorporating destructive and lethal chemicals designed to destroy or incapacitate people or attack infrastructure. IEDs may incorporate military or commercially available explosives, and they increasingly consist of homemade explosives — also referred to as HME — which is the reason we are gathered here today.

IED's are the weapon of choice because these devices are cheap, readily available — largely “off the shelf” — easy to construct, lethal and accurate.

As you may know, IEDs have been employed with devastating effects around the world. More than 500 IED attacks occur outside of Iraq and Afghanistan on a monthly basis. Let me say that again — more than 500 IED attacks occur outside of Iraq and Afghanistan each month.

Since 2009, the number of worldwide IED events has doubled. Outside of Iraq and Afghanistan, Colombia has seen the greatest number of IED events, followed by Pakistan, India, the United States and Russia.

Globally, IEDs are used to cause casualties, create a perception of insecurity, and influence the will of a nation. Homemade explosives present one of the greatest threats today, and will do so in the future. And as I said, the vast majority of homemade explosives use ammonium nitrate as the main charge.

Over the years, we have seen the growth in IED attacks using HME, both domestically and internationally. In the early 1980s, the Provisional Irish Republican Army used ammonium nitrate-based IEDs in multiple attacks in London. And the U.S. witnessed firsthand just how deadly ammonium nitrate can be in the 1995 Oklahoma City bombing that claimed the lives of 168 American citizens. Most recently, we saw the devastating AN-IED effects in Mumbai, India, and Oslo, Norway, both attacks used ammonium nitrate as an explosive. Throughout the world these devices and the networks that use IEDs will remain a threat for decades to come.

And on the battlefields in Iraq and Afghanistan, these devices are the greatest source of casualties — with 400 to 500 IED events per month in Iraq, and more than 1,500 events per month in Afghanistan.

Increases in our dismounted operations — or foot patrols — pose a new set of challenges for our counter-IED fight in Afghanistan. The number of IED incidents against dismounted troops has increased 98 percent since last year. These devices cause significant traumas —

amputations, traumatic brain injuries — to U.S., Coalition, and Afghan Security Forces — but, also too many more innocent civilians.

The significant growth of homemade explosives in Afghanistan has become our greatest concern. More than 80 percent of the IEDs used against Coalition forces in Afghanistan, which cause 90 percent of the casualties, have HME as the main charge, and the majority is derived from calcium ammonium nitrate fertilizer. Let me repeat, more than 80 percent of the IEDs used against Coalition forces in Afghanistan are CAN-based homemade explosives — which are causing 90 percent of casualties. Dismounted operations and CAN-based IEDs are a lethal combination.

Yet despite a countrywide ban on its importation, calcium ammonium nitrate continues to be used to produce the majority of IEDs in Afghanistan. Explosives can be made from a range of fertilizers, but it is far too easy to turn calcium ammonium nitrate into a bomb and it is the bomb-maker's product of choice — by far. Therefore, we cannot tolerate the continued uncontrolled availability of CAN and other HME precursor material smuggled into Afghanistan. We must act!

As many of you know, calcium ammonium nitrate was developed to be a non-detonable alternative to pure ammonium nitrate. However, this highly valued, and legally produced, fertilizer is easily reprocessed by insurgents and used as the main charge, or explosive element in IEDs. Because of this, it is essential that this conference work to identify and develop alternatives that are less detonable or non-detonable — that cannot be converted into explosives.

The ubiquitous nature of these fertilizers, and their simple and easy processing into an explosive, makes this a dangerous and effective global threat. It is clear to me that every new IED attack — on the battlefield or at home — builds a sense of urgency across our government to act. So, my message to you is, our government is unified on this and the momentum is building.

The IED threat requires whole-of-government and whole-of governments approach as we coordinate with foreign government partners to address this complex issue. No single U.S. Government department or international partner possesses the ability to limit access to precursors. The challenge of interdicting this HME threat requires integrated efforts to leverage the combined authorities and capabilities of many agencies of our government and the active cooperation of our allies.

In recent discussions about the efforts to counter the CAN threat, U.S. Senator Robert P. Casey, a Congressional leader and ally in the fight against IEDs, said, and I quote “Parallel tracks by law enforcement, legislative strategy and educating the general public on this problem will be the basics of this strategy.” End quote.

To address the threat posed by HME, we have built an interagency process which is enabling us to take action. We have worked closely with Congress and other federal agencies — including the Departments of State, Justice, Treasury, and Commerce — to develop a whole-of-government approach, which will immediately focus on the ammonium nitrate — threat in Afghanistan. By developing a whole-of-government strategy to counter the flow of CAN and other IED precursor materials into Afghanistan, we are employing the full range of the considerable tools and authorities of the U.S. government.

Nearly every part of our government already contributes to the effort to defeat the IED and attack those networks which distribute IED materials. Our interagency partners bring expertise in:

- Defeating and prosecuting criminal networks;**
- Applying financial pressures by going after the funds and accounts of IED network members, financers, and distributors;**

- Enacting export controls and treaty compliance efforts that lead to the interdiction of IED components;
- Advancing counter-IED objectives through public diplomacy and policy and regulatory changes;
- Advising on legitimate agricultural requirements; and
- Coordinating and executing domestic counter-IED efforts.

This is by no means a comprehensive list of the actions our interagency partners will apply to the counter-IED / counter-HME fight, but it gives you an idea of the collaboration that is taking place at all levels of U.S and coalition governments. We will take action.

The U.S. government and our allies are implementing efforts to identify nefarious actors who are knowingly providing threat networks access to these HME precursors and we will leverage all available tools and authorities of our governments — freezing assets, opening criminal cases, and adding people and business to the denied persons list — to combat this flow of lethal materials.

While the U.S. government and our allied partners are unified in this fight against IEDs, this effort requires the brain trust of academia and the cooperation and expertise of our industry partners to have a positive impact on this threat. We need your help, which is why we have invited you here today.

Over the course of the next few days, you will be working in small groups to tackle some of the critical and difficult issues surrounding fertilizer-based homemade explosives. I urge you to really contribute and think creatively to identify solutions to the following problems:

First, for academia and industry, I need you to explore ways we can change the formulation to either reduce the detonable characteristics of ammonium nitrate-based fertilizer or make it too difficult to or too volatile to convert to HME.

- **How can we make these fertilizers non-detonable, less volatile and more stable?**
- **How can we dilute the compound to an amount that would require either too much fertilizer or too long of a process to yield the amounts that it would take to make explosive impact?**

Developing calcium ammonium nitrate was an important first step – but we need to determine ways to make current fertilizers more difficult to reprocess into a detonable composition. I need you to push the envelope as far as you can. This is imperative to saving lives — both the lives of our troops abroad, and the lives of our citizens at home.

Second, and again for academia and industry as well as our interagency partners, one of the biggest challenges we face is the identification and interdiction of CAN. Coalition forces make every effort to analyze the components of IEDs used against us, but even with the increases in exploitation capabilities, it is difficult to derive a clear understanding of the origins of all HME precursors and the threat networks that move these bomb-making components.

However, I believe there are methods that can be applied, at the point of production, that could make significant positive contributions to our ability to identify the origin, trace the flow, identify the network, and interdict CAN used for illicit purposes. We need this so we can focus on the threat networks and their facilitators, and protect legitimate businesses and assets from targeting.

We have determined one way to aid in the identification of CAN is to add colorants during the manufacturing process. This simple and cost-effective method will pay huge dividends in our ability to understand the supply chain, identify ammonium nitrate on the borders, and interdict it

before it is weaponized. This is essential in minimizing the smuggling of CAN into Afghanistan, where it is killing Coalition forces, Afghan Security forces, and innocent civilians.

However, we can't rely on just one method. I need you to explore and develop other tagging, tracking and locating technologies the industry can institute to simplify the detection and identification of ammonium-nitrate fertilizers.

Third, for industry, academia and government research labs —as fast as we counter our enemy's actions — they adapt. We are in an arms race, but these threat networks counter us in weeks and months rather than years. While finding immediate solutions to the ammonium nitrate challenge is critical, we would be remiss if we did not focus some of our attention on identifying the next likely threat, the alternative materials, and determining ways they can be countered.

- What other “off the shelf” homemade explosives precursors will the enemy use in lieu of calcium ammonium nitrate?
- What are some actions that can be implemented to combat these future HME threats?

I look to you for help in identifying the specific chemical compounds, formulas, and products where threat networks will likely move to if their availability to use CAN-based fertilizer is negated.

And finally, which I fully acknowledge that a very limited amount of the ammonium nitrate produced ends up in enemy hands — that small amount inflicts significant and catastrophic damage. We must identify ways to make it harder and more costly for threat networks. I am looking to the industry representatives here today to find these solutions —

- How can we better control or regulate the use of ammonium nitrate?
- What modifications can be done at the manufacturing process to enhance identification, tagging, tracking, and locating after sales and distribution?

- **What manufacturing and processing measures can you implement that will impact current and future threat?**

As the producers of this fertilizer it is in your best interest to ensure that it doesn't end up as a weapon and I hope that you will commit to doing everything in your power to help us find solutions to this serious threat.

In closing, addressing the threat posed by homemade explosives requires innovative and creative solutions by all of us — military, government, academia and industry. JIEDDO stands ready to partner with you on developing workable, mutually beneficial ways to address this threat.

While we are never going to stop all IEDs, we must act to reduce their effectiveness — we have a moral obligation to take action —especially the industry that produces these materials.

I truly believe by working together to make it more difficult to produce homemade explosives we will mitigate the global impact of IEDs. Again, I want thank you for coming and I look forward to Thursday's out-briefs and hearing your ideas on how to keep fertilizers out of the hands of our enemies. I appreciate your time and attention — now let's get to work!

Thank you.