JULY 2011

Weapons Technical Intelligence (WTI) Improvised Explosive Device (IED) Lexicon Edition 3.1

Weapons Technical Intelligence
Improvised Explosive Device Lexicon

INTRODUCTION

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This publication, the Weapons Technical Intelligence (WTI) Improvised Explosive Device (IED) Lexicon, was produced by the WTI Integrated Product Team (IPT), an interagency technical advisory forum commissioned by the Directors of the Joint Improvised Explosive Device Defeat Organization (JIEDDO) and the Defense Intelligence Agency (DIA). The IPT includes subject-matter experts from the Departments of Defense, Justice, Homeland Security, and the Intelligence Community. The lexicon was developed in coordination with representatives from the Department of Defense (DoD), the Department of Homeland Security (DHS), the Department of Justice (DoJ), as well as representatives from Allied nations.

PURPOSE

The lexicon is intended to provide a coherent conceptual framework and an operational vocabulary to address the IED threat worldwide, encompassing the broad spectrum of IED employment scenarios, the variety of IED devices, and their critical components.

Adoption of this lexicon should improve the collection, reporting, and exploitation of WTI IED information at the tactical, operational, and strategic levels. The lexicon will:

> Standardize IED reporting and improve database content management

> Enable IED-related education and training

> Support development of WTI IED policy and doctrine.

SCOPE

This lexicon is one of a family of WTI lexicons covering the who, what, when, where, how, and why of IED related incidents. The "where," "what," and "why" are covered by the WTI IED Lexicon. The "who" is covered by the WTI Biometrics Lexicon. The "when" and "how" are covered by the WTI IED Task List Lexicon.

This lexicon defines the five components common to most IEDs (switch, initiator, main charge, power source, and container). The main charge component of this lexicon is supported by three additional subordinate lexicons: the WTI Commercial Explosives Lexicon, the WTI Munitions Lexicon, and the WTI Homemade Explosives Lexicon.

The Family of Lexicons will be published in the summer of 2011.

APPROACH

The WTI IED Lexicon is authored by technical experts from key organizations and agencies engaged in assessing the IED threat and devising operational IED countermeasures. It is a "living" document that is reviewed periodically to ensure its accuracy, relevance, and currency against the constantly-changing IED threat. Recommended changes and updates are accepted continually and will be considered during the review process. Updated versions of the Lexicon will be submitted to, and approved by, the interagency WTI IPT representing the intelligence, operational, and law enforcement communities. A record of all comments received and actions taken is maintained to provide an audit trail and reference for the review process.

Comments or requests for copies (printed or electronic) of the most current version of the WTI IED Lexicon can be submitted to:

WTI_Section@dia.mil
WTI_Section@dia.smil.mil

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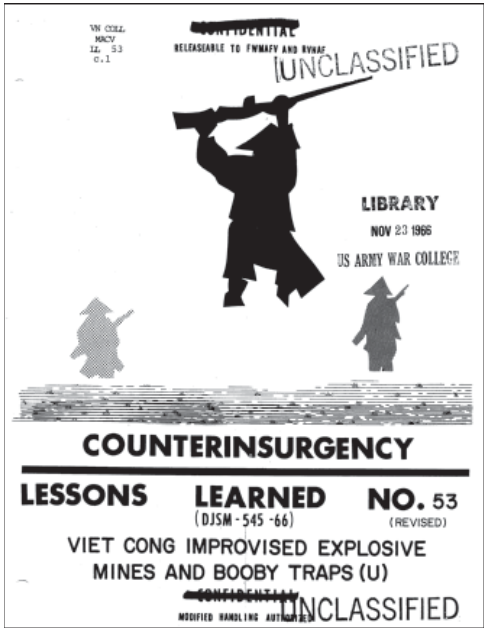

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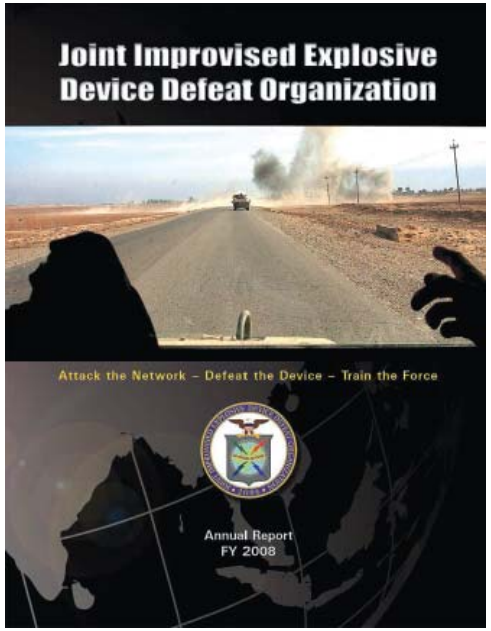

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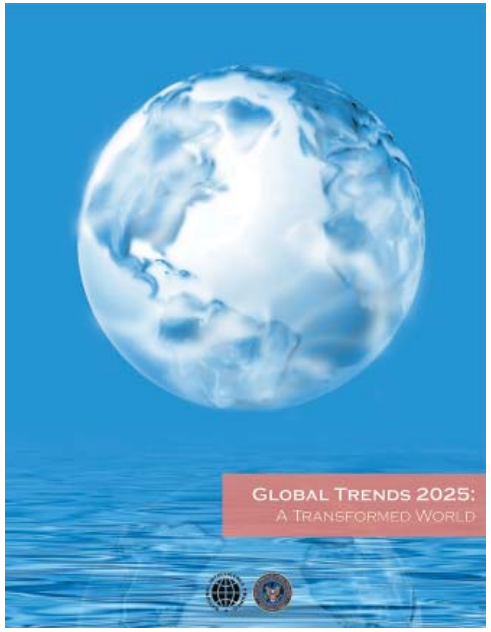

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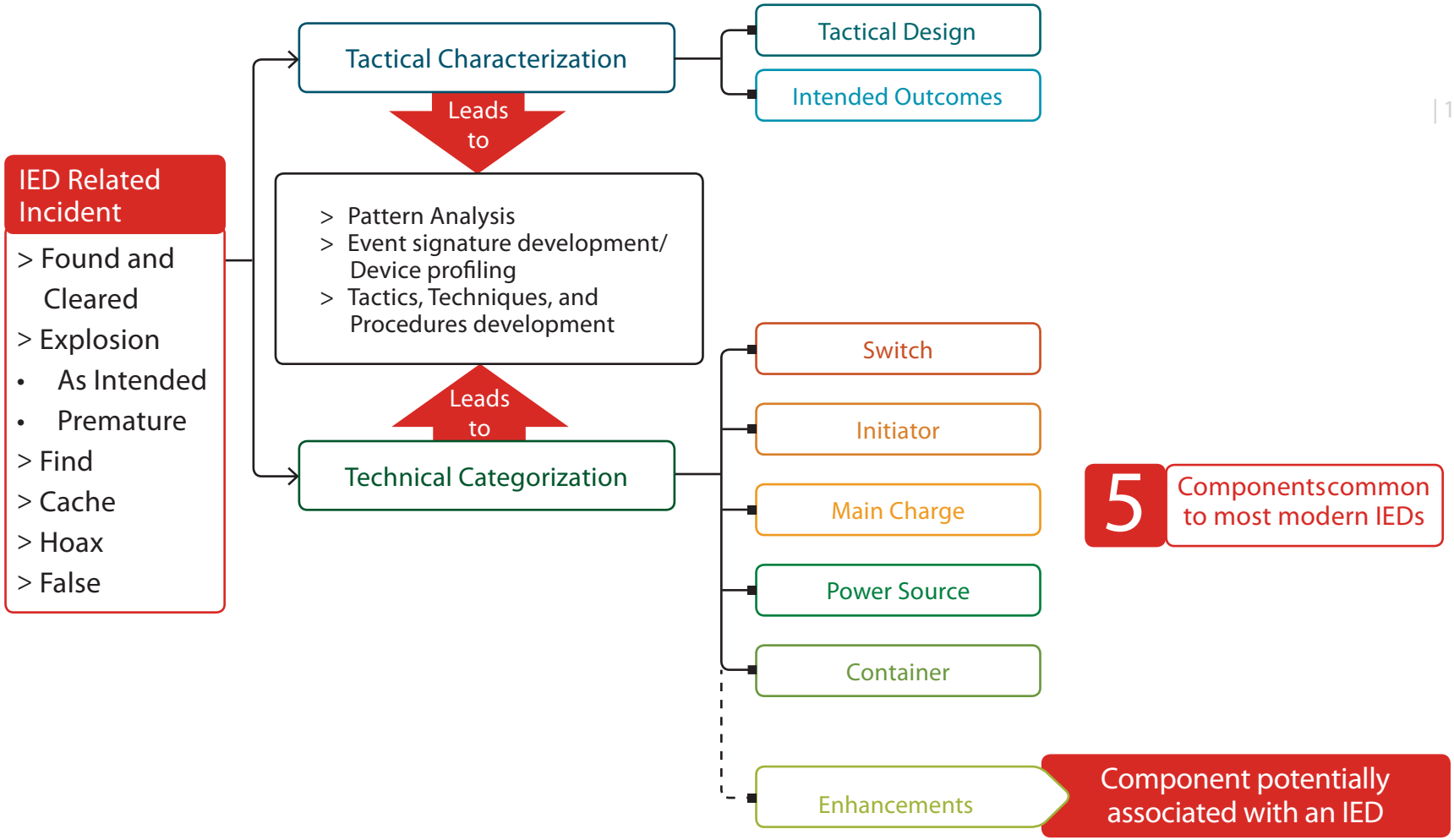
The IED Threat: Yesterday, Today, and Tomorrow

WTI IED Lexicon: CONSTRUCT



GENERAL TERMS

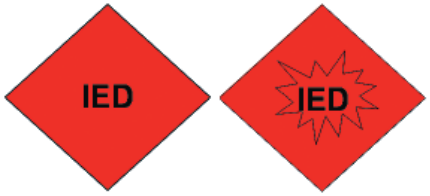
Weapons Technical Intelligence (WTI)
A category of intelligence and process derived from the forensic and technical collection and exploitation of improvised explosive devices (IEDs), associated components, improvised weapons, and other weapon systems.

Associated Components
Components which are 1) part of an IED or improvised weapon system, 2) the tools required to produce the components, or 3) precursors to the manufacture of IED components to include explosives.

Improvised Weapons
A non-explosive device placed in an improvised manner designed to destroy, incapacitate, harass or distract. It may incorporate military stores, but is normally devised from non-military parts.

Other Weapons Systems
Military weapons associated with a terrorist or insurgent group's method of operations that involve IEDs or improvised weapons.

IED Related Incident
An event that involves one or more of the following types of IED-related actions/activities: IED, Explosion, Find, Cache, Hoax, or False.



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Military Map Symbols for IED Related Incidents: The symbols for IED, and IED Explosion are approved and included in MIL-STD 2525. Additional modifications are not approved.

GENERAL TERMS (cont.)

IED
An IED incident that involves a device placed or fabricated in an improvised manner incorporating destructive, lethal, noxious, pyrotechnic, or incendiary chemicals and designed to destroy, incapacitate, harass, or distract. It may incorporate military stores, but is normally devised from nonmilitary components. Refers to a type of IED incident that involves a complete, functioning device.

Found and Cleared
An IED incident that involves an armed and emplaced IED that has been discovered and rendered safe by Explosive Ordnance Disposal (EOD), or has been discovered and blown in place.

Explosion
Occurs when gaseous products are rapidly produced from a single substance (high explosives or low explosives with a fuel and oxidant).

As Intended
An IED that has detonated against the intended target.

Premature
An IED that has detonated unintentionally during construction, transport, or emplacement. Does not refer to an ineffective detonation against an intended target due to inaccurate timing or placement.

Find
An IED incident that involves the discovery or turn in of devices or IED components in a temporary and/or transitory location.

Cache
An IED incident that involves the discovery and/or recovery of concealed unarmed devices, IED components, IED paraphernalia, or explosive ordnance that involves long term storage in a permanent, fixed location.

Hoax
An IED incident that involves a device fabricated to look like an IED and is intended to purposely simulate one in order to elicit a response.

False
An incident that is incorrectly identified though reported in good faith as a false alarm after positive action.

GENERAL TERMS (cont.)

Tactical Characterization
A description of how it is believed an IED incident was conducted or planned to be conducted (the tactical design) and/or how an IED incident was used or intended to be used (the intended outcome).

Pattern Analysis
Using prior actions and activities to identify trends in activities or behaviors. Once identified these patterns can be used to predict future enemy actions and plan intelligence surveillance, and reconnaissance (ISR) activities.

Event Signature Development/Device Profiling
The process of analyzing the tactical and technical identifiers of an IED incident to support force protection, targeting, prosecution, and sourcing.

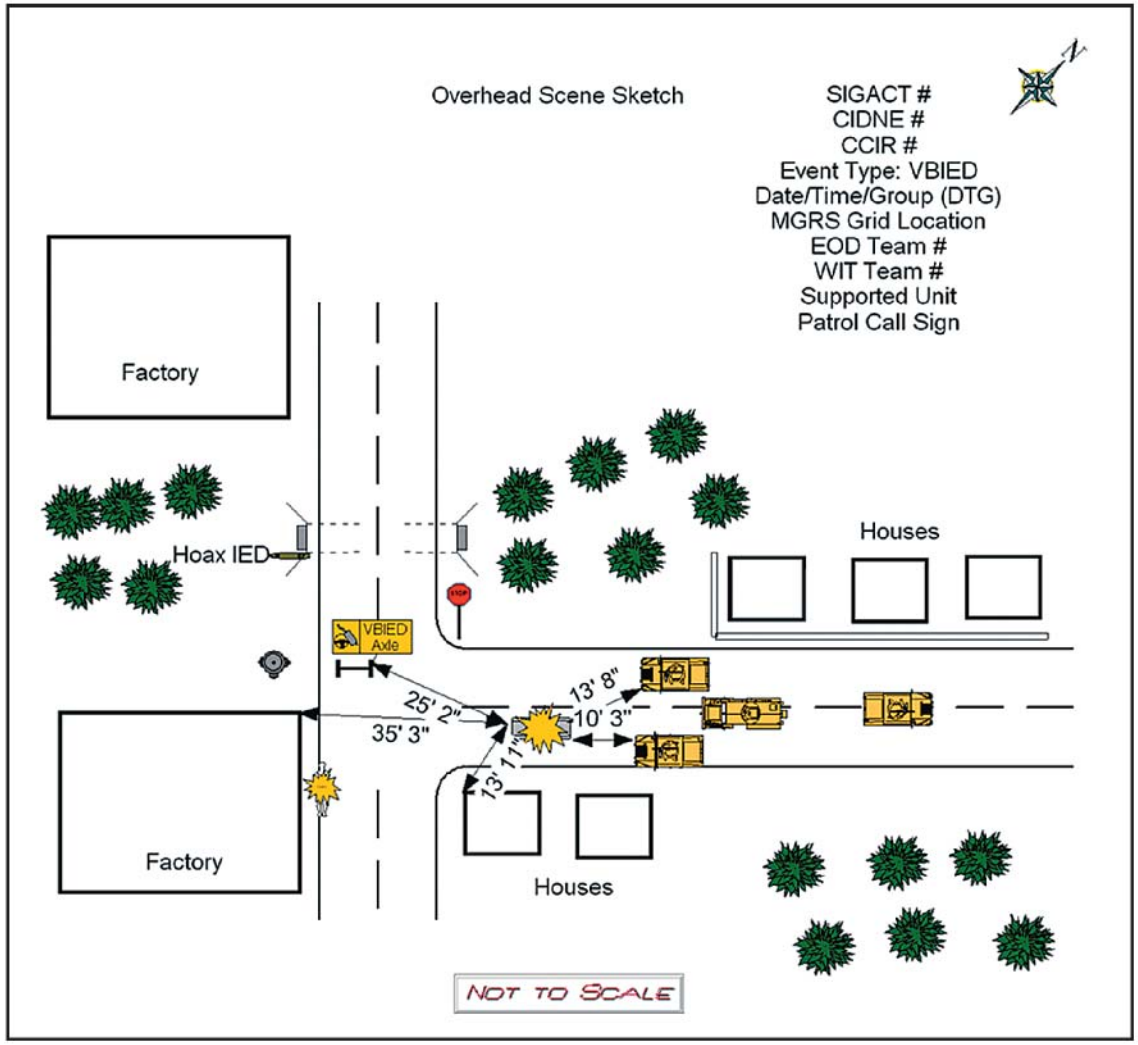
Tactics, Techniques and Procedures Development
Using the lessons learned from an IED attack to refine and improve the tools and methods used during all missions in which an IED may occur (e.g. convoys, tactical suppression efforts, ISR, Counter-IED (C-IED) missions, etc.).

Force Protection
Preventive measures taken to mitigate hostile actions against Department of Defense personnel (to include family members), resources, facilities, and critical information.

Targeting
The process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities.

Prosecution
The process of associating IED-related people, places, devices, or equipment to an individual for evidentiary purposes in a recognized court of law.

Sourcing
The process of determining the origination point (such as a production facility or person, a geographic location, or a specific country of origin) for IED components.



Use of the ATTAC software to create a sketch for a "Story Board" after a VBIED attack.

GENERAL TERMS (cont.)

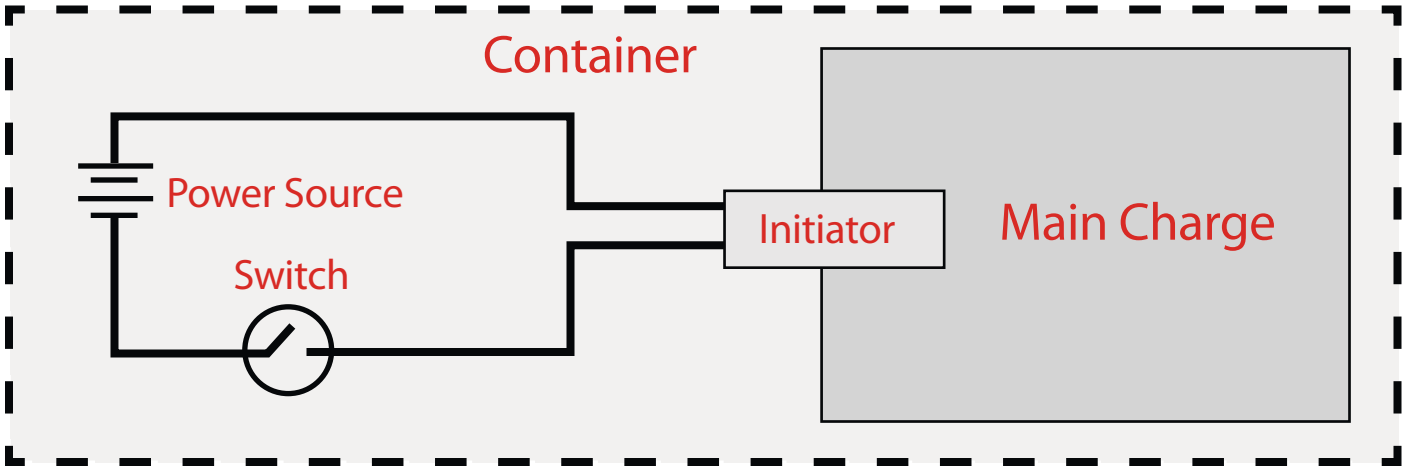
Technical Categorization
A description of an IED using a hierarchical construct to identify its key components. The components identified in this categorization are the elements from which technical and forensic information is recovered and exploited.

Explosive Train
A train of combustible and explosive elements arranged in an order of decreasing sensitivity. Its function is to accomplish the controlled augmentation of a small impulse into one of suitable energy to cause the main charge to function.

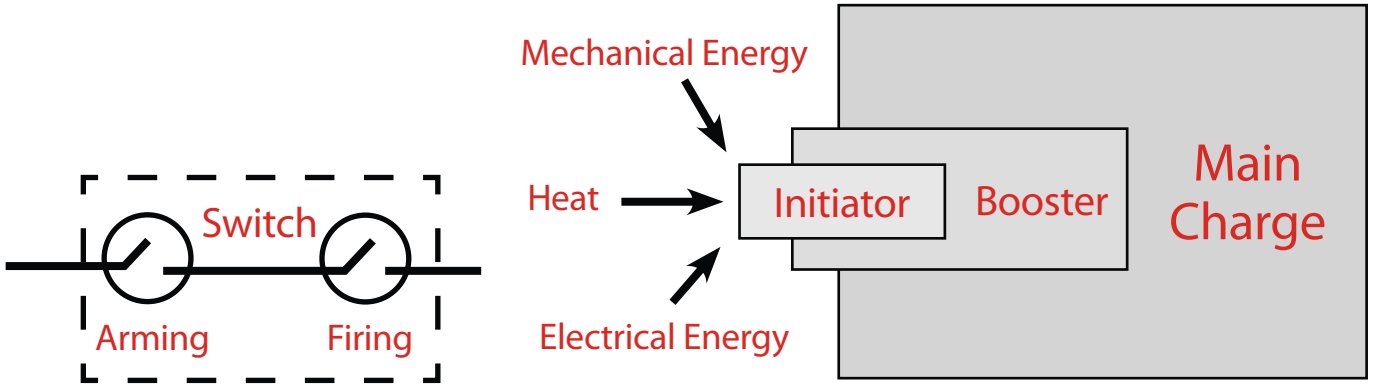
Render Safe Procedure (RSP)
The portion of the EOD procedures involving the application of special EOD methods and tools to provide for the interruption of functions or separation of essential components of unexploded explosive ordnance to prevent an unacceptable detonation.

Blown in Place (BIP)
Actions taken at the discretion of the tactical commander to clear an IED by detonating it where discovered.

U.S. Marine engineers prepare to destroy artillery shells found in an old ammunition supply point near Hit, Iraq, on Jan. 23, 2006. Destroying the ordnance will deny their use in improvised explosive devices by insurgents. The Marines are assigned to Golf Battery, Battalion Landing Team 1st Battalion, 2nd Marine Regiment.



The five components common to most modern IEDs



Multiple switches are sometimes present and connected together

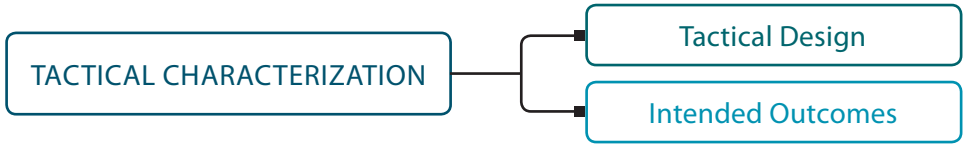
A booster is sometimes present in the IED explosive train

Two aspects for understanding an IED incident:

1. TACTICAL CHARACTERIZATION
2. TECHNICAL CATEGORIZATION

1 TACTICAL CHARACTERIZATION

A characterization of how it is believed an IED incident was conducted or planned to be conducted (the tactical design) and/or how an IED incident was used or intended to be used (the intended outcome).

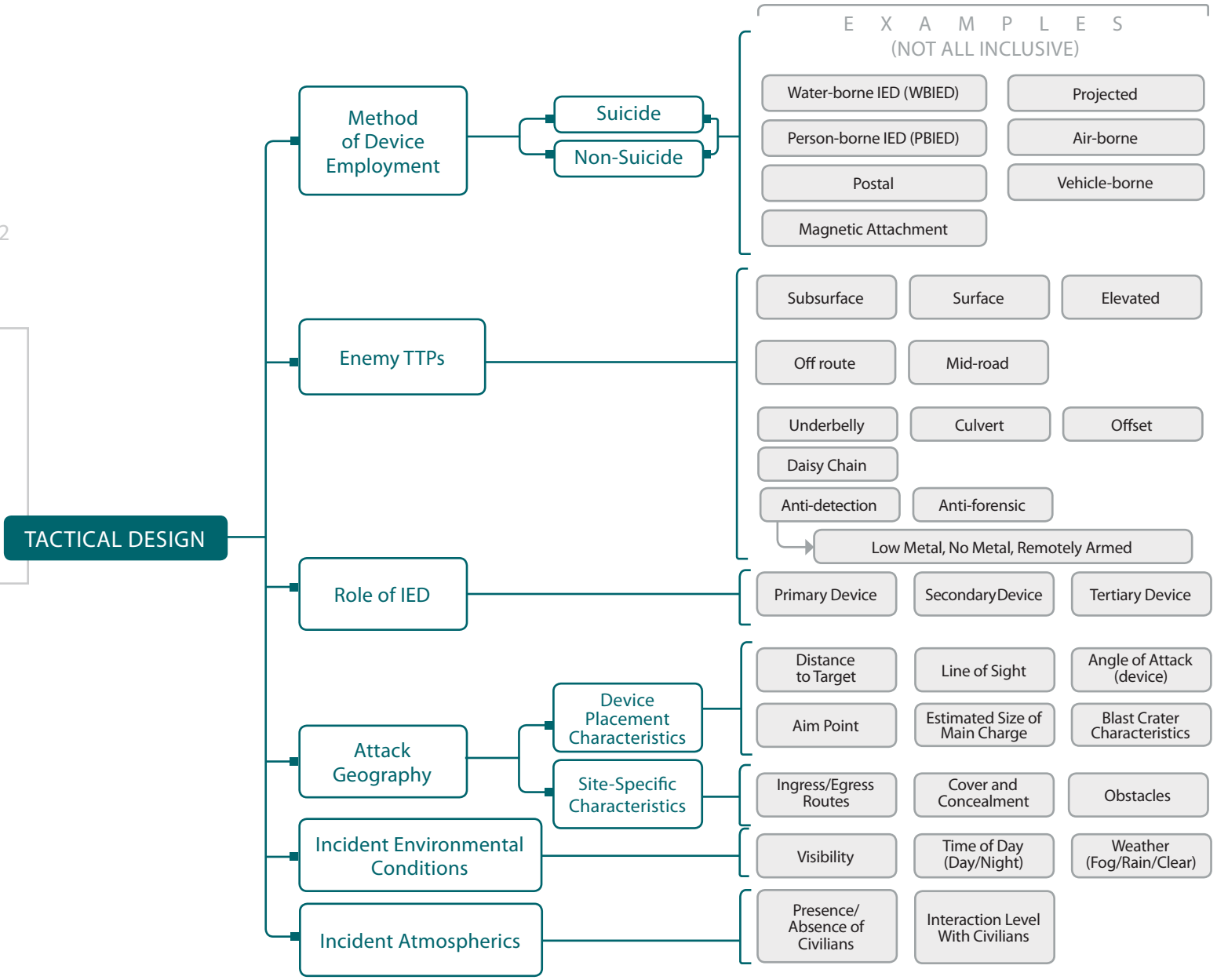


U.S. Marine Corps Lance Cpl. Zachariah G. Dean, attached to Lima Company, 3rd Battalion, 7th Marine Regiment, searches for improvised explosive devices in Washir, Afghanistan, May 22, 2010. Marines with the 3rd Battalion, 7th Marine Regiment were deployed in support of the International Security Assistance Force.

TACTICAL DESIGN

The specific design of an IED attack – including but not limited to: position of the IED, the type of IED, method of actuation, type of road segment used, concealment technique, use of secondary devices, the time of day, etc. Tactical design addresses the questions of "why here, why now, and why in this way." Terms used to describe a specific type of device or component of a device (e.g., VBIED) are often used to describe all or part of the tactical design.

- > Method of Device Employment
- > Enemy TTPs
- > Role of IED
- > Attack Geography
- > Incident Environmental Conditions
- > Incident Atmospherics


TACTICAL DESIGN
Method of Device Employment
Suicide
Non-Suicide
E X A M P L E S
(NOT ALL INCLUSIVE)
Water-borne IED (WBIED)
Projected
Person-borne IED (PBIED)
Air-borne
Postal
Vehicle-borne
Magnetic Attachment
Enemy TTPs
Subsurface
Surface
Elevated
Off route
Mid-road
Underbelly
Culvert
Offset
Daisy Chain
Anti-detection
Anti-forensic
Low Metal, No Metal, Remotely Armed
Role of IED
Primary Device
SecondaryDevice
Tertiary Device
Attack Geography
Device Placement Characteristics
Distance to Target
Line of Sight
Angle of Attack (device)
Aim Point
Estimated Size of Main Charge
Blast Crater Characteristics
Site-Specific Characteristics
Ingress/Egress Routes
Cover and Concealment
Obstacles
Incident Environmental Conditions
Visibility
Time of Day (Day/Night)
Weather (Fog/Rain/Clear)
Incident Atmospherics
Presence/ Absence of Civilians
Interaction Level With Civilians

TACTICAL DESIGN

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A destroyed petrol tanker sits on a road while U.S. Soldiers and Afghan troops secure the area in the background after a vehicle-born improvised explosive device attack near the German Embassy and Camp Eggers in Kabul, Afghanistan, Jan. 17, 2009. The attack killed five people and wounded 20 others.

Method of Device Employment

A description of how the device was delivered to the target.

Suicide

An IED initiated by an insurgent/terrorist at a time of his/her choosing in which the operator intentionally kills himself/herself as part of the attack, or to deny his/her capture.

Non-Suicide

An IED in which the insurgent/terrorist does not intentionally kill himself/herself as part of the attack.

Water-borne IED (WBIED)

An IED delivered by floating, drifting, anchored, or propelled on or below the water.

Person-borne IED (PBIED)

An IED worn or carried by a person either willing or unwillingly, such as a vest, belt, backpack, box, briefcase, etc., in which the person houses the whole IED or principal IED components and/or serves as the delivery or concealment means for explosives with an initiating device. A PBIED is often initiated by the person wearing the IED (suicide) – however, not all PBIEDs are triggered by the person wearing the IED (Proxy).

Postal

An IED introduced or delivered through a postal system.

Magnetic Attachment

A type of IED employment in which the device is attached to the target using magnets.

Projected

An improvised weapons system that delivers the main charge through the air to its target.

TACTICAL DESIGN (cont.)

Air-borne
An IED held aloft by aerodynamic means or buoyancy and/or serves as concealment means for explosives with an initiating device.

Vehicle-borne
An IED delivered by any small ground-based vehicle (e.g., passenger vehicle, motorcycle, moped, bicycle, etc.) and/or serves as the concealment means for explosives with an initiating device.

Large Vehicle-borne
An IED built into any large ground-based vehicle (e.g., dump truck, panel truck, bongo truck, commercial bus, tanker, etc.) and/or serves as the concealment means for explosives with an initiating device.

Enemy TTPs
A description of where the device was put to await the arrival of the intended target.

Subsurface
IED emplaced under the surface or below the intended target, (i.e., buried, in a culvert, under water).

Surface
IED emplaced directly on the ground.

Elevated
IED emplaced above the surface: hanging from an overpass, on a roof, etc.

Underbelly
A type of IED emplacement in which the device is intended to target the underside of a vehicle, using large amounts of explosives buried to deliberately defeat armor (can include conventional land mines).

Role of IED
Identifying enemy use of IEDs as a primary, secondary, or tertiary form of attack.

Primary Device
An IED emplaced to attack an initial target.

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U.S. Marine Corps Sgt. Andy Lee, with Combined Anti-Armor Team, 1st Battalion, 5th Marine Regiment, uses a metal detector to search for possible improvised explosive devices during a security patrol through the Nawa district of Helmand province, Afghanistan, Oct. 26, 2009.

Secondary Device
An additional IED emplaced in the target area to attack individuals or vehicles after the initial attack.

Tertiary Device
An additional IED emplaced in the target area to attack individuals or vehicles after the initial and secondary attacks.

TACTICAL DESIGN (cont.)

Attack Geography
A description of the road segment, buildings, foliage, etc. Understanding the geography indicates enemy use of landscape to channel tactical response, slow friendly movement, or prevent pursuit of enemy forces.

Estimated Size of Main Charge
A reference to the estimated weight of the main charge derived from observations of the blast effects and crater characteristics.

Blast Crater Characteristics
Observations and measurements of the blast crater itself to include depth, diameter, debris field size, and surface description (soil, sand, concrete, etc.).

Incident Environmental Conditions
A description of the ambient surrounding conditions to include weather conditions such as temperature, precipitation, fog, dust, etc.

Incident Atmospherics
A description of the demeanor of the civilian population at an IED event to include mood, absence or presence, changes in previously experienced interactions, etc.

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U.S. Army Paratroopers with 1st Squadron, 40th Cavalry Regiment (1/40th CAV) 4th Brigade Combat Team (Airborne), 25th Infantry Division, walk past a crater made by a roadside bomb, during a reconnaissance patrol in Adwaniya, Iraq, April 7, 2007.

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Khobar Towers, struck by a VBIED 25 June 1996 killing 19 U.S. Servicemen and one Saudi national.

INTENDED OUTCOMES

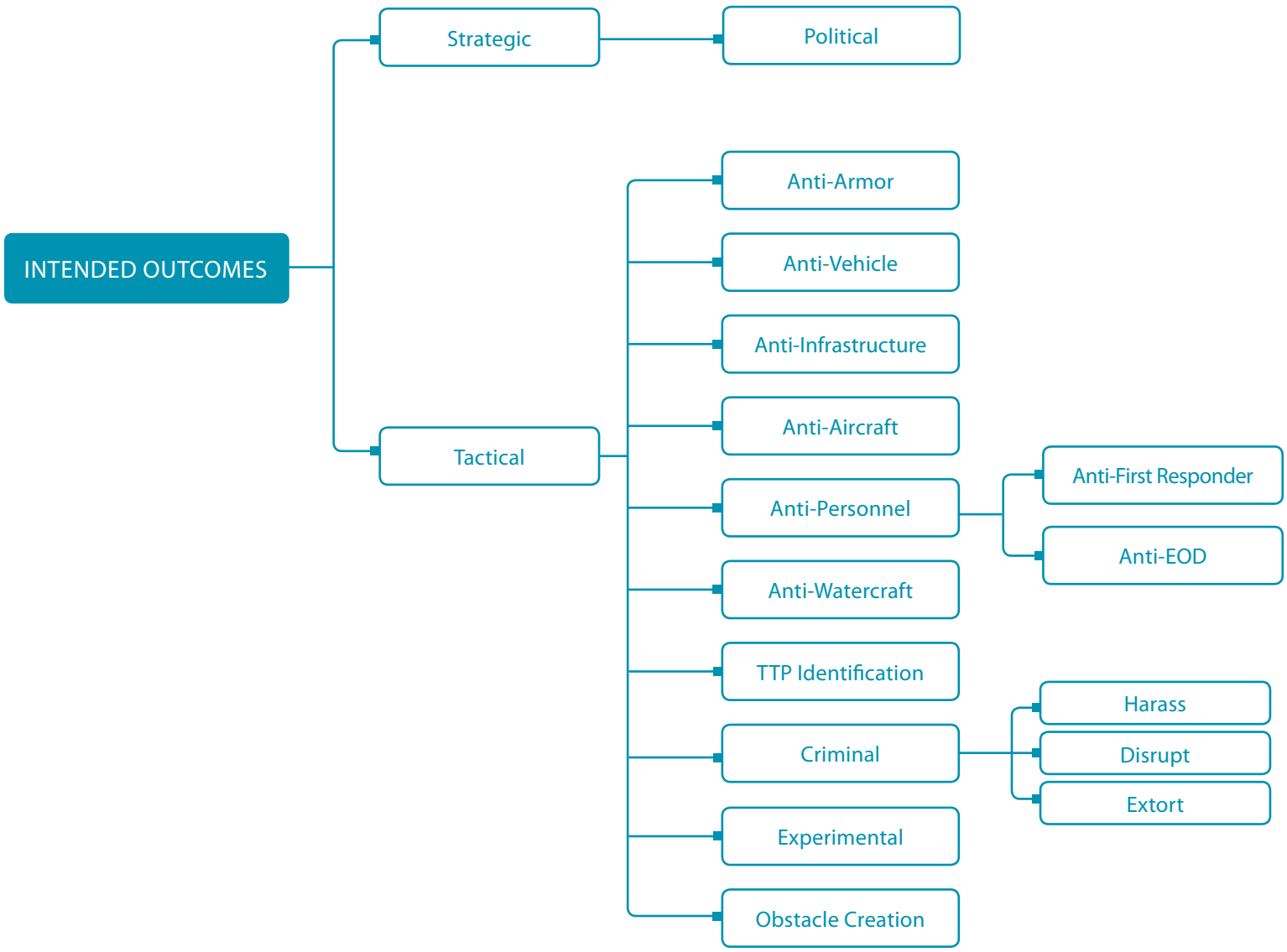
Longer-term strategic and immediate or direct tactical intentions of the IED incident to include the making of political statements at the strategic level and/or more-immediate objectives such as disruption of normal activities, anti-material, anti-personnel, criminal, TTP identification, experimentation and obstacle creation at the tactical level. IEDs can have multiple intended outcomes.

Strategic

- Political

Tactical

- Anti-Armor
- Anti-Vehicle
- Anti-Infrastructure
- Anti-Aircraft
- Anti-Personnel
- Anti-Watercraft
- TTP Identification
- Criminal
- Experimental
- Obstacle Creation


INTENDED OUTCOMES
Strategic
Political
Tactical
Anti-Armor
Anti-Vehicle
Anti-Infrastructure
Anti-Aircraft
Anti-Personnel
Anti-First Responder
Anti-EOD
Anti-Watercraft
TTP Identification
Criminal
Harass
Disrupt
Extort
Experimental
Obstacle Creation

INTENDED OUTCOMES

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U.S. Army Soldiers from the 978th Military Police Company based out of Fort Bliss, Texas, assist Iraqi firefighters and policemen at the sight of a bus destroyed by a suicide vehicle born improvised explosive device in BAQUBAH, Iraq, Jan 2, 2006.

Political

An IED primarily intended to make a political statement in addition to their more immediate tactical outcome.

Anti-Armor

An IED primarily intended to penetrate armored vehicles and/or to kill or wound individuals inside armored vehicles.

Anti-Vehicle

An IED primarily intended to damage or destroy vehicles – excluding armored vehicles – and/or their cargo as well as to kill or wound individuals inside such vehicles.

Anti-Infrastructure

An IED primarily intended to damage or destroy physical infrastructure such as pipelines, communications towers, bridges, buildings, utility lines and/or facilities such as electrical transformers or water pump houses.

INTENDED OUTCOMES (cont.)

Anti-Aircraft
An IED primarily intended to damage or destroy aircraft and/or their payload as well as to kill or wound individuals inside the aircraft.

Anti-Personnel
An IED primarily intended to kill or wound people.

Anti-First Responder
An IED primarily intended to kill or wound first responders such as medics, firefighters, etc.

Anti-EOD
An IED primarily intended to kill or wound EOD personnel, or to impede Render Safe Procedures.

Anti-Watercraft
An IED primarily intended to damage or destroy watercraft and/or their payload as well as to kill or wound individuals inside the watercraft.

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U.S.S. Cole, struck by a WBIED 12 October 2000 in the port of Aden, killing 17 U.S. Sailors.

INTENDED OUTCOMES (cont.)

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Harvey's Casino, struck by bomb with sophisticated Anti-Tamper switches 26 August 1980, killing no one.

TTP Identification

An IED primarily intended to cause a reaction by forces in an effort to learn and understand employed tactics. This knowledge is then used by the attacker to plan new attacks incorporating the lessons learned to inflict additional casualties or to avoid countermeasures. The IED need not function to serve this purpose. A Hoax IED can have TTP Identification as its intended outcome.

Criminal

An IED primarily intended to harass, disrupt, or extort as part of criminal activity.

Experimental

An IED primarily intended to increase the effectiveness of a subsequent device with respect to its intended outcome.

Obstacle Creation

An IED primarily intended to create an obstacle to impede movement or channel movement into a desired location, possibly as part of a complex attack or ambush.

Two aspects for understanding an IED incident:

1 TACTICAL CHARACTERIZATION

2 TECHNICAL CATEGORIZATION

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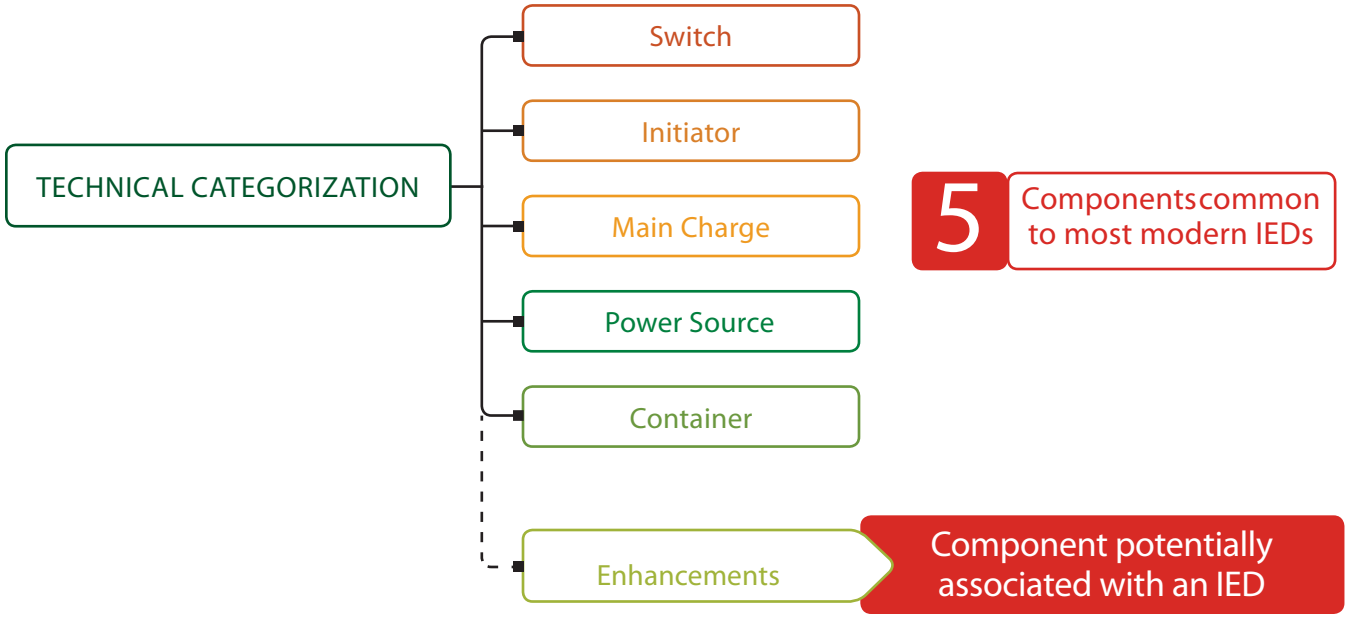
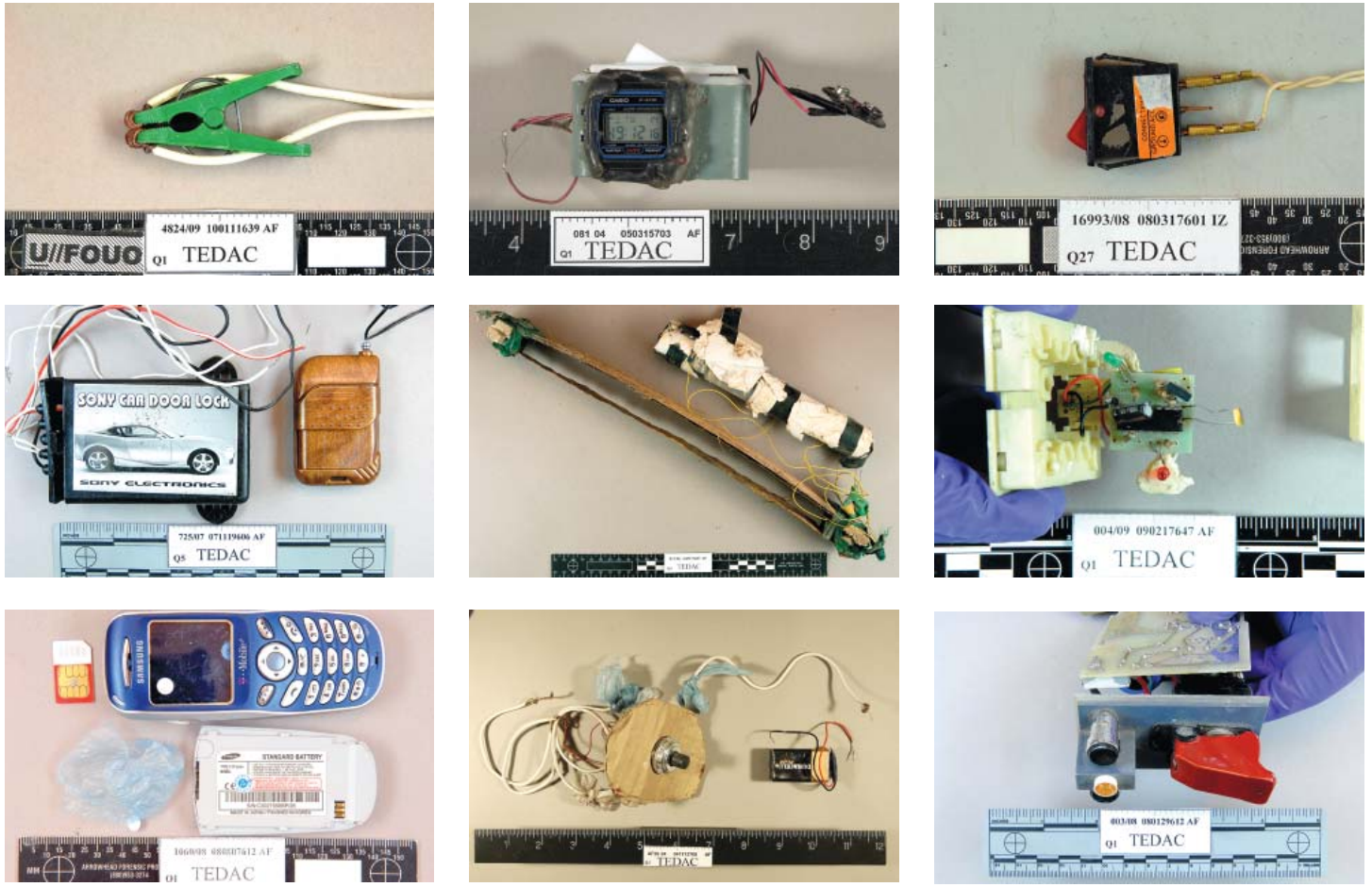
A description of an IED using a hierarchical construct to identify its key components. The components identified in this categorization are the elements from which technical and forensic information is recovered and exploited.





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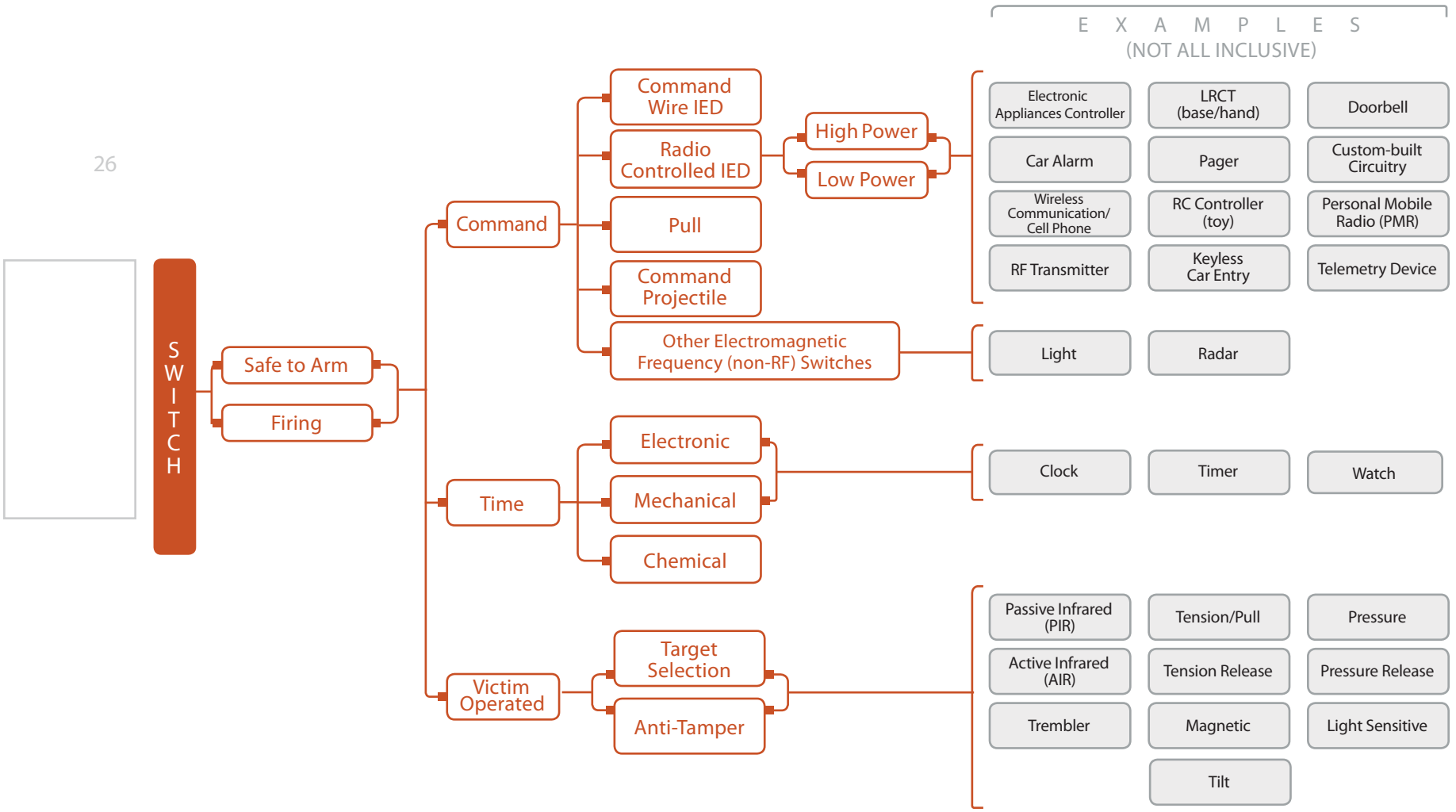
Various IED Switches (Iraq and Afghanistan).

SWITCH

A device for making, breaking, or changing a connection in an IED. A single switch can have multiple functions (i.e., safe to arm, and firing).

- > Safe to Arm
- > Firing
- > Command
- > Time
- > Victim Operated


SWITCH
Safe to Arm
Firing
Command
Command Wire IED
Radio Controlled IED
Pull
Command Projectile
Other Electromagnetic Frequency (non-RF) Switches
High Power
Low Power
Time
Electronic
Mechanical
Chemical
Victim Operated
Target Selection
Anti-Tamper
EXAMPLES
(NOT ALL INCLUSIVE)
Electronic Appliances Controller
LRCT (base/hand)
Doorbell
Car Alarm
Pager
Custom-built Circuitry
Wireless Communication/ Cell Phone
RC Controller (toy)
Personal Mobile Radio (PMR)
RF Transmitter
Keyless Car Entry
Telemetry Device
Light
Radar
Clock
Timer
Watch
Passive Infrared (PIR)
Tension/Pull
Pressure
Active Infrared (AIR)
Tension Release
Pressure Release
Trembler
Magnetic
Light Sensitive
Tilt

SWITCH

18
IED in a cooking oil jug equipped with a Tilt Switch (Afghanistan).

Safe to Arm Switch
A device used to arm the IED to ensure that the emplacer can safely employ or emplace the IED.

Firing Switch
Component that initiates the firing train.

Command Switch
A type of switch that is activated by the attacker in which the attacker controls the device.

Command Wire IED (CWIED)
An IED where the firing point and contact point are separate but joined together by a length of wire.

Radio Controlled IED (RCIED)
An IED initiated electronically in a wireless method consisting of a transmitter and receiver (e.g. personal mobile radio (PMR), cell phone, cordless phone, pager, etc).

High Power Transmitter
An RCIED transmitter with an output power greater than or equal to 0.35 watt.

Low Power Transmitter
An RCIED transmitter with an output power less than 0.35 watt.

Command Projectile Switch
The use of a small arms bullet to close the circuit by penetrating two metal plates. This provides standoff between firing point and contact point.

Pull Switch
An IED initiated by a person using a "command pull" action.

Other Electromagnetic Frequency (non-RF) Switches
Electromagnetically operated command switches that do not operate in the RF Band.

Time Switch
A type of switch that functions after a set time. Used widely against infrastructure targets.

Electronic Time Switch
A timing switch using a commercial or improvised electronic timer or integrated circuit to start the initiation train.

Mechanical Time Switch
A timing switch (e.g., clock, timer, drip timer) constructed or modified so that physical contact between two parts of the timing device complete an electrical circuit initiating the device.

Chemical Switch
A timing switch using the reaction of chemical compounds as a switch to provide a delay before starting the initiation train.

SWITCH (cont.)

Victim Operated Switch (VOIED)
A type of switch that is activated by the actions of an unsuspecting individual. These devices rely on the target for the device carrying out some form of action that will cause the device to function. Can include Target Selection switches or Anti-Tamper switches.

Target Selection Switch
A victim operated switch used to select a particular target based on its particular characteristics such as weight, place in a convoy, etc.

Anti-Tamper Switch
A victim operated switch designed to initiate an IED when it is tampered with or disturbed in a particular manner. Sometimes referred to as an Anti-Handling or Anti-Disturbance switch.

Passive Infrared Sensor Switch
A sensor that detects movement of a heat source. When the change in ambient temperature is detected, the sensor acts as a trigger to initiate the IED.

Active Infrared Sensor Switch
A sensor that emits an infrared beam to a receiver forming an invisible link that, when broken, acts as a trigger to initiate the IED. These sensors act like an electronic version of the trip wire.

Trembler Switch
A device that allows current to flow to output wires after movement causes two metal parts to make contact, completing a circuit.

Tension/Pull Switch
A victim operated device that triggers an explosion when tension is applied to a firing mechanism – such as pulling a trip wire. The tension causes an action that releases a firing pin or activates an electrical or electronic switch.

Tension Release Switch
A victim operated trigger that, when tension is released – such as when a taut wire or cord is cut or broken – releases a spring-loaded firing pin or closes electrical contacts initiating the device.

Magnetic Switch
A type of proximity trigger that senses magnetic alterations in the area around the sensor. When this happens, the sensor causes a circuit to be completed, firing the device.

SWITCH (cont.)

19
Pressure Switch for a VOIED fashioned from a section of tire tread (Afghanistan).

Tilt Switch

A device that allows voltage to flow to the output wires after a conductive material (i.e., mercury or a ball bearing) is moved enough (up/down, left/right) to flow onto the switch contacts, completing the circuit.

Pressure Switch

A method for activating a device that occurs when an object is used to complete a circuit when pressure is applied in a predetermined direction. Many pressure initiated IEDs explode when pressure plates are compressed under the weight of passing vehicles or foot soldiers.

Pressure Release Switch

A method for activating a device that occurs as a result of reductions in pressure. Such devices may employ mechanical, pneumatic, or hydraulic systems to signal a detonator that a vehicle or individual has released pressure to a pressure plate or similar mechanism. Pressure release triggers are often used in the design of military booby-traps or VOIEDs.

Light Sensitive Switch

A type of proximity trigger that senses changes in the amount of light in the environment near the sensor. When this happens, the sensor causes a circuit to be completed, firing the device.

20

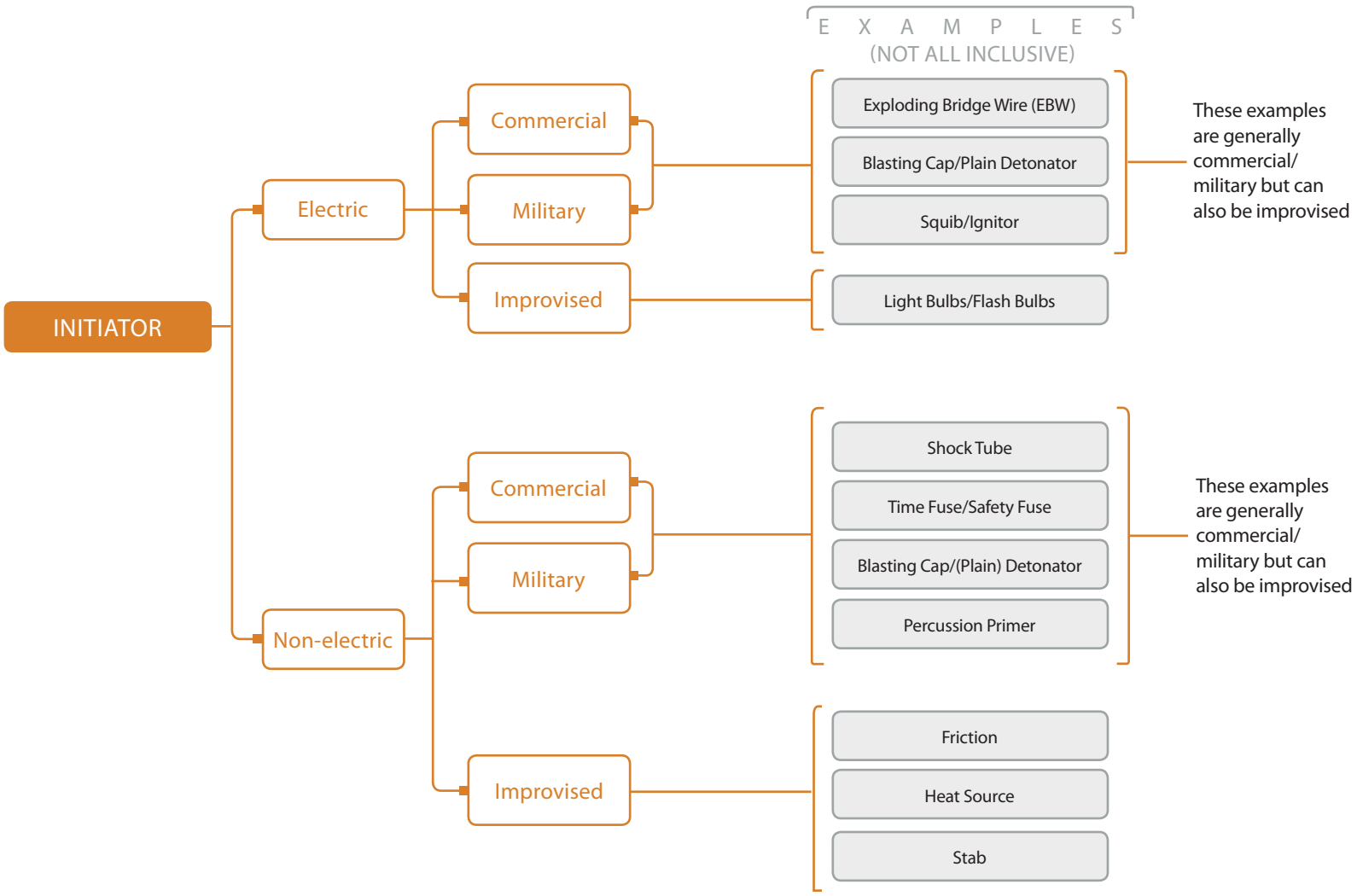
U.S. Air Force explosive ordnance disposal technicians with the 447th Expeditionary Civil Engineer Squadron configure C-4 plastic explosives before a controlled detonation at Forward Operating Base Mahmudiyah, Iraq, Nov. 23, 2009. The purpose of the controlled detonation is to mitigate explosive hazards and limit the enemy's war fighting capabilities in Iraq by destroying captured munitions.

INITIATOR

Any component that may be used to start a detonation or deflagration. May or may not be a detonator.

> Electric

> Non-Electric


INITIATOR
Electric
Non-electric
Commercial
Military
Improvised
Commercial
Military
Improvised
E X A M P L E S
(NOT ALL INCLUSIVE)
Exploding Bridge Wire (EBW)
Blasting Cap/Plain Detonator
Squib/Ignitor
Light Bulbs/Flash Bulbs
Shock Tube
Time Fuse/Safety Fuse
Blasting Cap/(Plain) Detonator
Percussion Primer
Friction
Heat Source
Stab
These examples are generally commercial/ military but can also be improvised
These examples are generally commercial/ military but can also be improvised

INITIATOR

Electric Initiator
An initiator whose functioning is initiated by an electrical impulse that creates heat or a spark.

Exploding Bridge Wire (EBW)
An initiator or system in which a very high-energy electrical impulse is passed through a bridge wire, literally exploding the bridge wire and releasing thermal and shock energy capable of initiating a relatively insensitive explosive in contact with the bridge wire.

Blasting Cap/Plain Detonator
A device containing a sensitive explosive intended to produce a detonation wave. Can be either electric or non-electric (plain).

Squib/Ignitor
A device used to initiate low explosives or high explosives when used in an appropriate firing train. In general any chemical, electrical or mechanical device used to ignite a combustible material.

Light/Flash Bulb Initiator
Devices used as electric initiators that incorporate an improvised use of the bulb to initiate primary or low explosives.

Non-electric Initiator
An initiator whose functioning is initiated by non-electric means.

Shock Tube
A thin, plastic tube of extruded polymer with a layer of high explosive deposited on its interior surface that propagates a detonation wave to the blasting cap.

Time Fuse/Safety Fuse
A pyrotechnic contained in a flexible and weather-proof sheath burning at a timed and constant rate; used to transmit a flame to the detonator or a low explosive charge with a predetermined delay.

Percussion Initiator
An initiator that serves as an igniting element when mechanically struck.

21

Typical Electric Initiators.

Heat Initiator
A type of initiator that serves as an igniting element through the application of heat. This may include direct heat to a sensitive explosive.

22

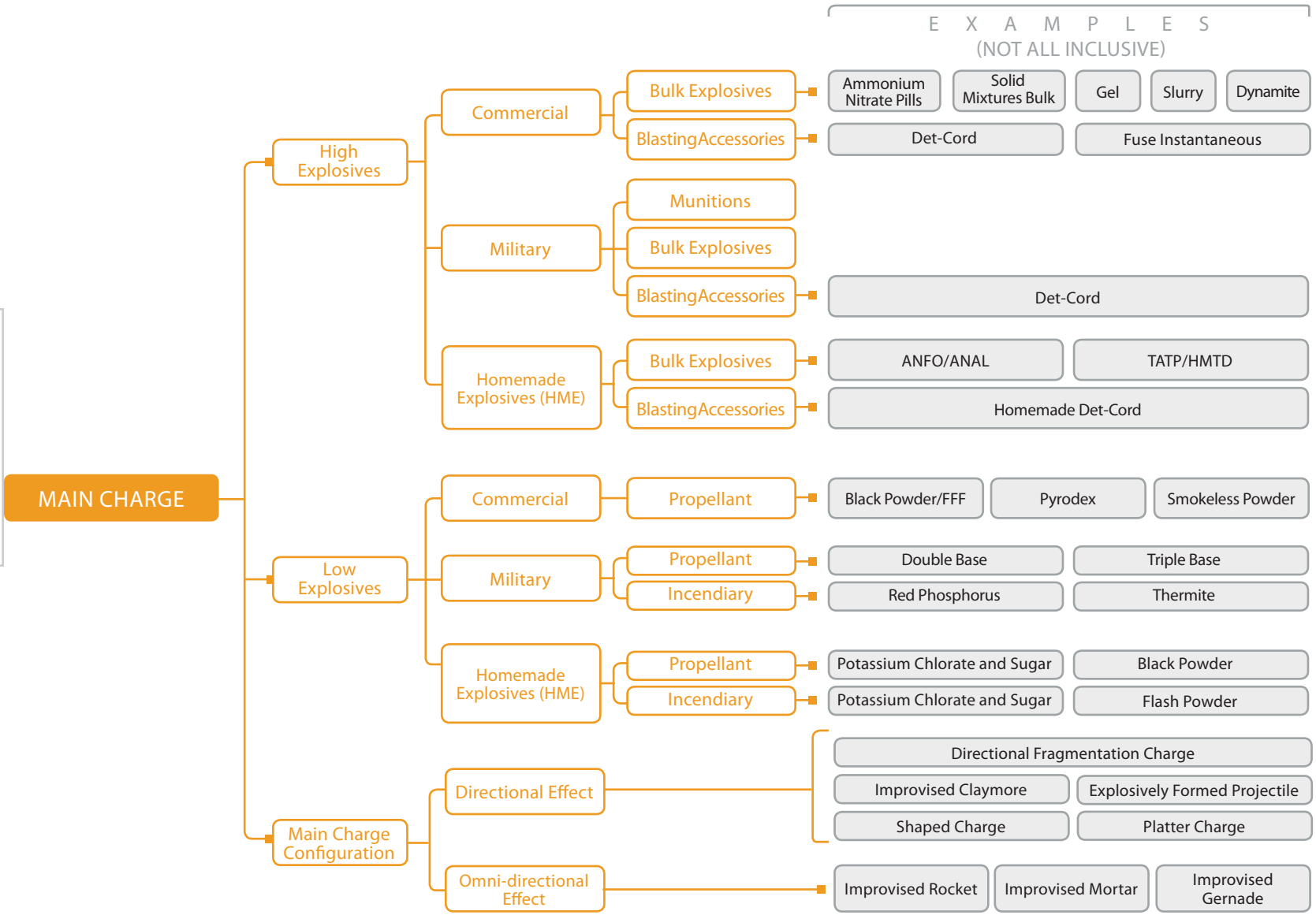
Typical Non-electric Initiators.

Directionally Focused Fragmentation Charge (DFFC) being examined at the Combined Explosives Exploitation Cell (CEXC).

MAIN CHARGE

The explosive charge which is provided to accomplish the end result in a munition. Note: examples for end results are bursting a casing to provide blast and fragmentation, splitting a canister to dispense sub-missiles, or producing other effects for which it may be designed.

- > High Explosives
- > Low Explosives
- > Main Charge Configuration


EXAMPLES
(NOT ALL INCLUSIVE)
MAIN CHARGE
High Explosives
Commercial
Bulk Explosives
Ammonium Nitrate Pills
Solid Mixtures Bulk
Gel
Slurry
Dynamite
BlastingAccessories
Det-Cord
Fuse Instantaneous
Military
Munitions
Bulk Explosives
BlastingAccessories
Det-Cord
Homemade Explosives (HME)
Bulk Explosives
ANFO/ANAL
TATP/HMTD
BlastingAccessories
Homemade Det-Cord
Low Explosives
Commercial
Propellant
Black Powder/FFF
Pyrodex
Smokeless Powder
Military
Propellant
Double Base
Triple Base
Incendiary
Red Phosphorus
Thermite
Homemade Explosives (HME)
Propellant
Potassium Chlorate and Sugar
Black Powder
Incendiary
Potassium Chlorate and Sugar
Flash Powder
Main Charge Configuration
Directional Effect
Directional Fragmentation Charge
Improvised Claymore
Explosively Formed Projectile
Shaped Charge
Platter Charge
Omni-directional Effect
Improvised Rocket
Improvised Mortar
Improvised Gernade

MAIN CHARGE

High Explosives
Materials which detonate; they do not generally require confinement as they react chemically to produce heat, gas, a rapid expansion of matter, and a shock wave in the explosion.

Commercial Explosives
Explosives produced and used for commercial, industrial, or recreational applications.

Bulk Explosives
Manufactured explosive charges in their original packaging or that has been removed from weapons or munitions.

Blasting Accessory
Devices and materials used in blasting, such as, but not limited to, cap crimpers, tamping bags, blasting machines, blasting galvanometers, and detonation cord.

Military Explosives
Explosives manufactured for military use.

Munitions
Ammunition, ordnance, or demolition charges containing explosives, propellants, pyrotechnics, initiating composition, or nuclear, biological, or chemical material for use in military operations.

Improvised Explosives (IE)/ Homemade Explosives (HME)
Non-standard explosive mixtures/ compounds which have been formulated/ synthesized from available ingredients. Most often utilized in the absence of commercial/military explosives. Also referred to as Home Made Explosives (HME).

Low Explosives
Combustible materials which are characterized by deflagration. They do not produce a shock wave, generally requiring confinement to explode.

Propellant
An explosive material that normally functions by deflagration to produce a controlled release of gasses used for propulsion purposes.

Incendiary
Chemical mixtures that are intended and designed to cause fires.

24
IED being remotely examined by EOD personnel using a robot.

25
Fertilizer used as a raw ingredient for Homemade Explosives (HME).

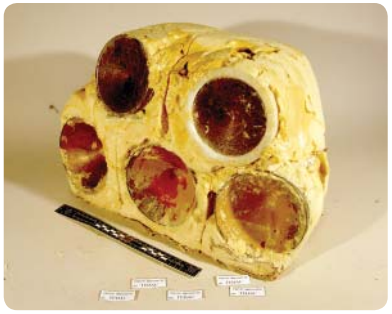
MAIN CHARGE (cont.)

Main Charge Configuration
The arrangement or design of the main charge and other materials (usually metal) to create an effective weapon to attack personnel, vehicles, or structures.

Directional Effect
Type of main charge configuration where the explosive effect is channeled to an intended area.

Improvised Claymore
An improvised weapon, military or home-made, designed to explosively propel a fan shaped pattern of ball bearings or other fragmentation in an aimed direction.

Explosively Formed Projectile (EFP)
Specially designed main charge configuration incorporating an explosive charge with a machined or pressed concave metal which by the force of the charge reshapes the plate into a high velocity metal slug capable of penetrating armored vehicles.



25

Aimed Explosively Formed Projectile (EFP) Array.

MAIN CHARGE (cont.)

Shaped Charge
A main charge configuration incorporating a metal liner shaped so as to concentrate its explosive force in a particular direction in order to cut or penetrate (i.e. a plasma jet).

Platter Charge
The use of an explosive to propel a metal plate toward a target in a manner where the plate remains intact.

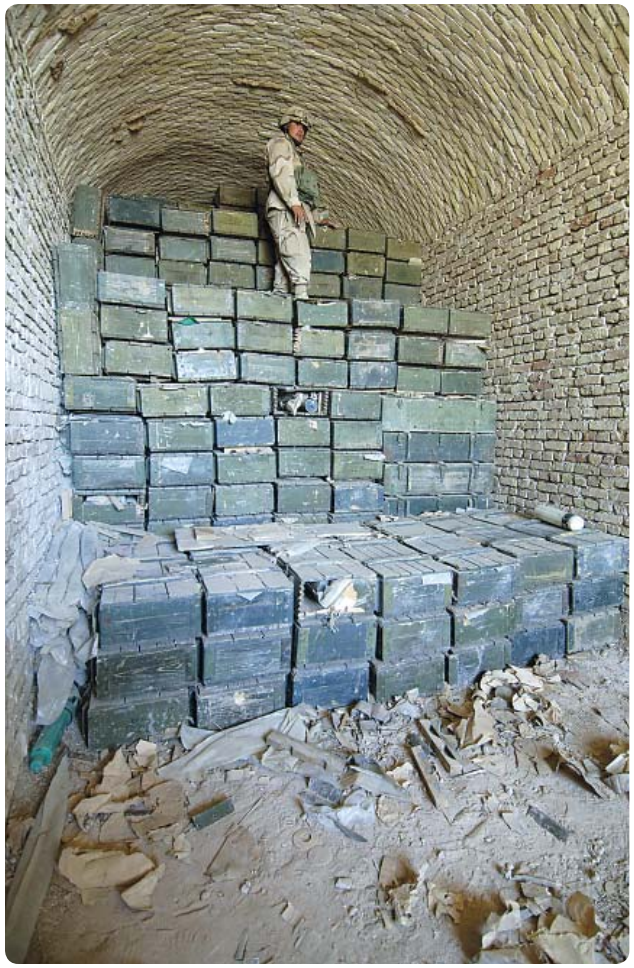
Omnidirectional Effect
An aspect of main charge configuration where the explosion is omni-directional and expands in all directions.

Improvised Rocket
An improvised weapon, military or home-made, designed to propel an explosive charge to the target.

Improvised Mortar
An improvised weapon, military or home-made, designed to launch an explosive charge to the target.

Improvised Grenade
An improvised weapon, military or homemade, designed to explode when a restraint is removed (usually hand held, but can be projected.

Copper plates used to create a directional effect.



28

U.S. Army Sergeant 1st class Victor Fontan from the 789th Explosive Ordnance Disposal, counts in total approximately 900 boxes of Soviet rockets stored at a cave inside an former Soviet Union training camp north of Kandahar City, Afghanistan on October 7, 2005.

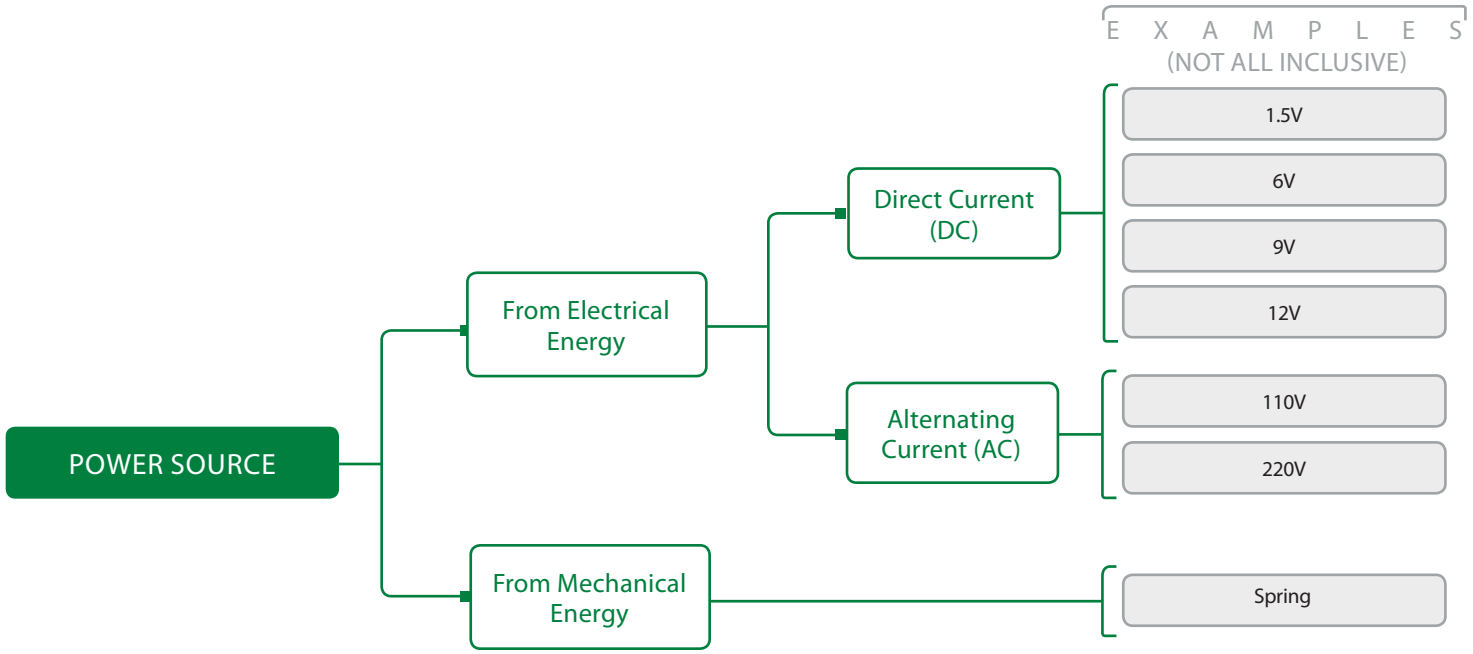
29

A U.S. Soldier with Alpha Company, 1st Battalion, 17th Infantry Regiment covers his ear as a controlled detonation destroys an improvised explosive device during Operation Helmand Spider in Badula Qulp, Afghanistan, Feb. 23, 2010.

POWER SOURCE

A device that either stores or releases electrical or mechanical energy. The key elements of information about a power source are its type/source, number of batteries and their configuration (series or parallel), its voltage (if electrical) and how it is connected to close an IED switch.

- > Direct Current (DC)
- > Alternating Current (AC)
- > Mechanical Energy


E X A M P L E S
(NOT ALL INCLUSIVE)
POWER SOURCE
From Electrical Energy
From Mechanical Energy
Direct Current (DC)
Alternating Current (AC)
1.5V
6V
9V
12V
110V
220V
Spring

POWER SOURCE

30

Battery used as an IED Power Source.

31

Hand cranked generator used as an IED Power Source.

Direct Current (DC)

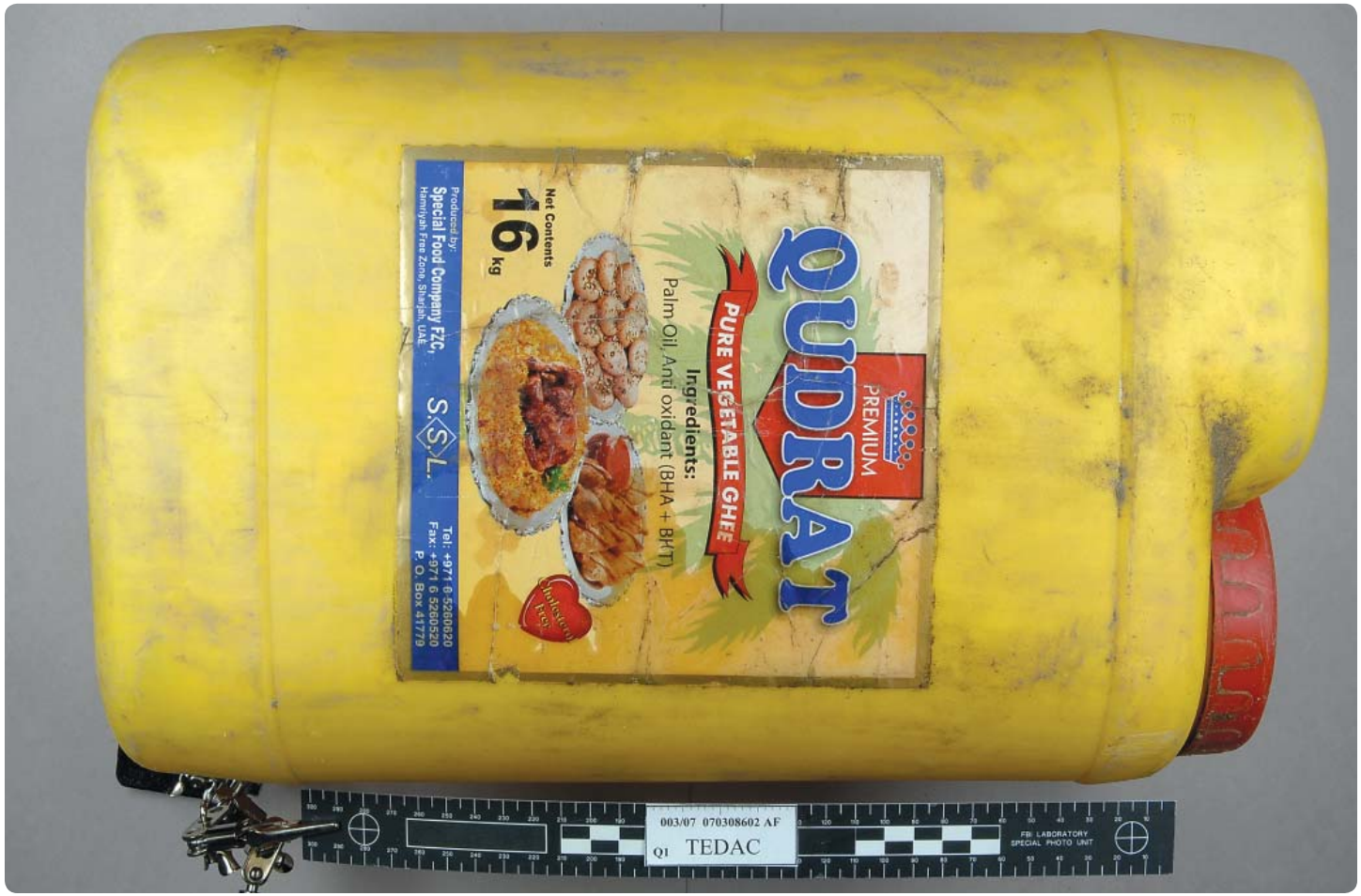
Electric current that flows through a circuit in just one direction.

Mechanical Energy

A retained spring that acts as the energy source.

Alternating Current (AC)

Electric current that flows through a circuit in both directions with the change in direction occurring with a well-defined and specified frequency.



32

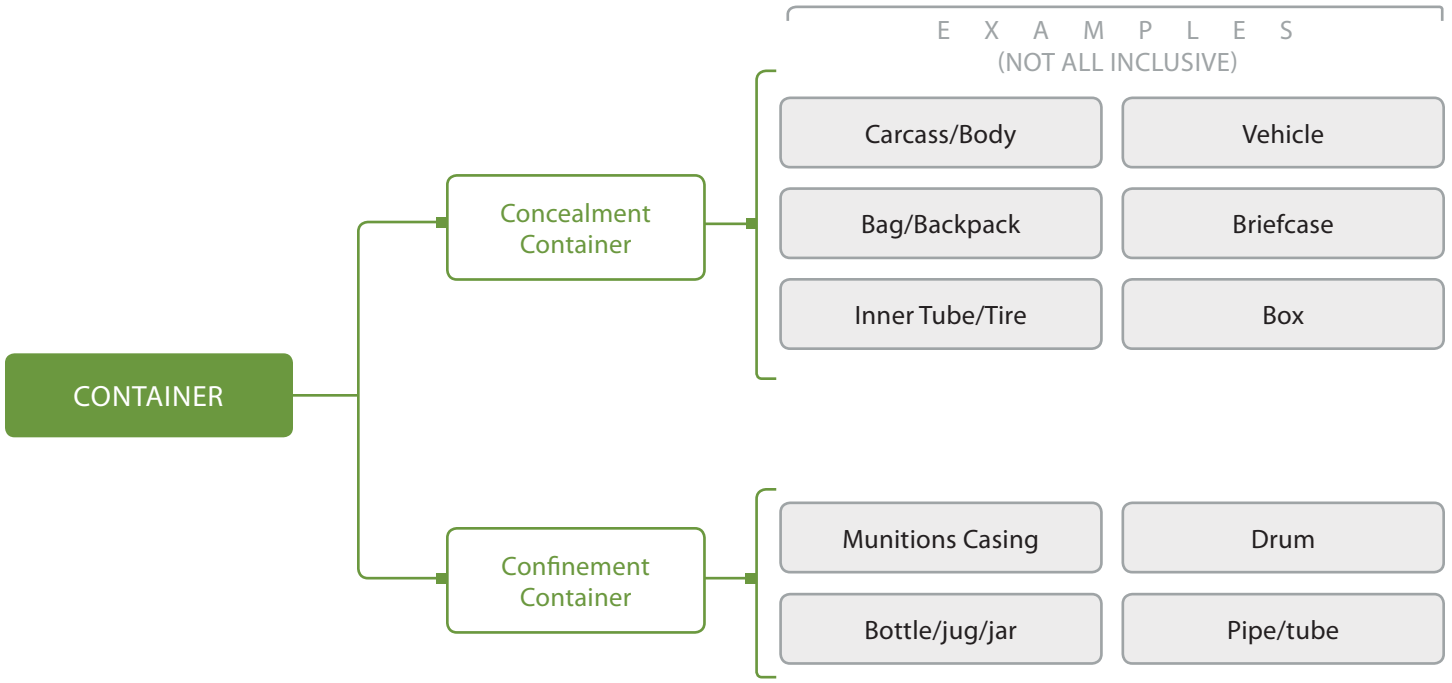
Cooking oil jug typically used as an IED Confinement Container.

CONTAINER

A vessel commonly used to house or conceal the principal components of an IED.

> Concealment Container

> Confinement Container


CONTAINER
Concealment Container
Confinement Container
E X A M P L E S
(NOT ALL INCLUSIVE)
Carcass/Body
Vehicle
Bag/Backpack
Briefcase
Inner Tube/Tire
Box
Munitions Casing
Drum
Bottle/jug/jar
Pipe/tube

CONTAINER

Concealment Container

A vessel commonly used to prevent the discovery of an IED by visual inspection.

Confinement Container

A vessel commonly used to hold the main charge together.

34

Homemade Explosives (HME) rigged for controlled detonation.

33

PBIED used by Umar Farouk Mutallab on 25 December 2009 in an attempt to explode Northwest Flight 253 near Detroit.

35

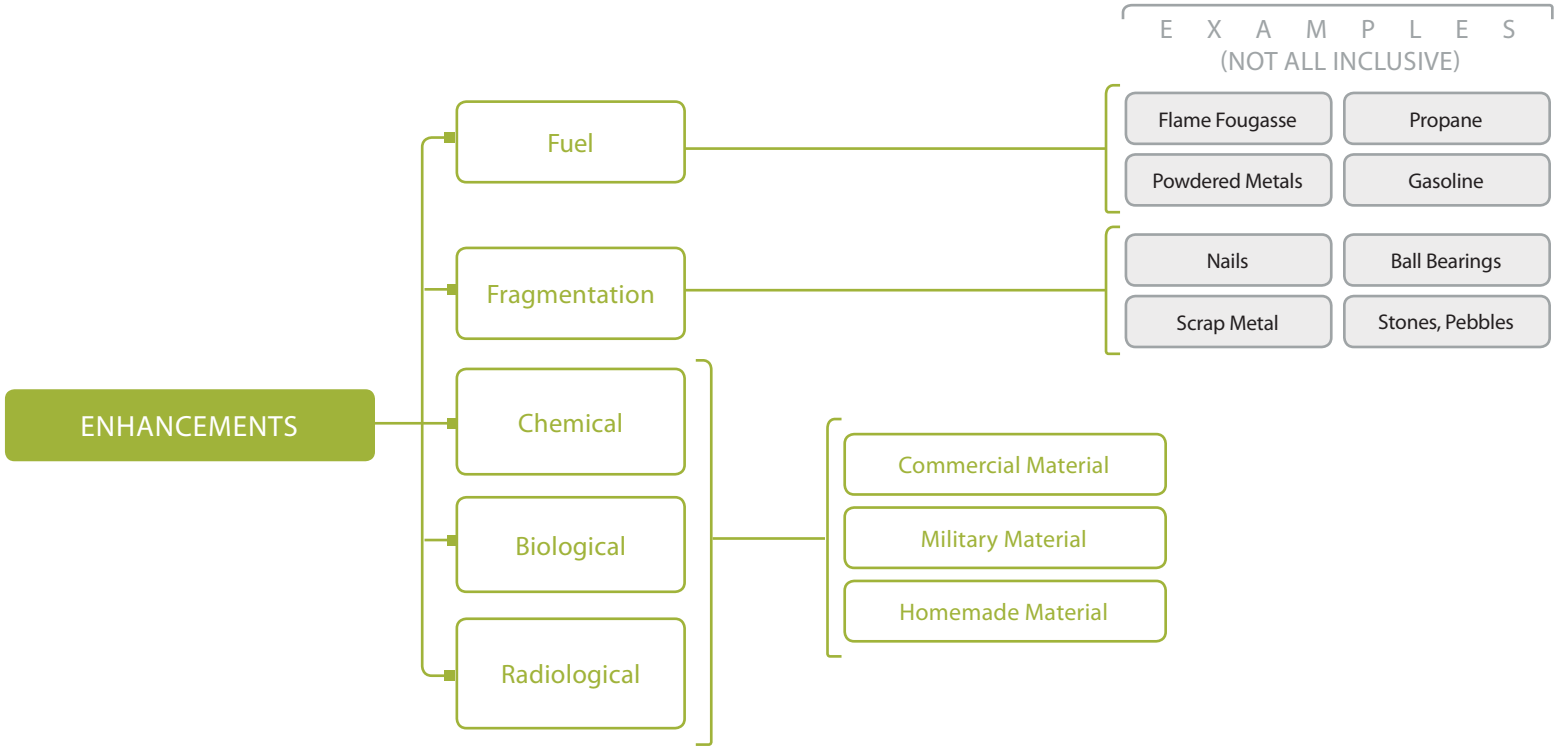
Common pressure cooker used as an IED Confinement Container.

Soldiers from the U.S. Army's 4th Squadron, 14th Cavalry Regiment, line up mortar shells, anti-tank, anti-personnel, and anti-aircraft rounds found in a weapons cache near Rawah, Iraq, on Feb. 20, 2006. The munitions will be destroyed in order to prevent their use by insurgents in improvised explosive devices.

ENHANCEMENTS

An optional additional component deliberately added as opposed to a secondary hazard that modifies the effects of the IED. The IED would be effective, yet produce a different measurable result if this material were not added. The effect can be additional physical destruction, proliferation of dangerous substances (radiation, chemicals, etc.), or other results to enhance the effect of the IED.

- > Fuel
- > Fragmentation
- > Chemical
- > Biological
- > Radiological


E X A M P L E S
(NOT ALL INCLUSIVE)
ENHANCEMENTS
Fuel
Flame Fougasse
Propane
Powdered Metals
Gasoline
Fragmentation
Nails
Ball Bearings
Scrap Metal
Stones, Pebbles
Chemical
Biological
Radiological
Commercial Material
Military Material
Homemade Material

ENHANCEMENTS

Fuel
An incendiary material designed to enhance the burning and visual effect of the device.

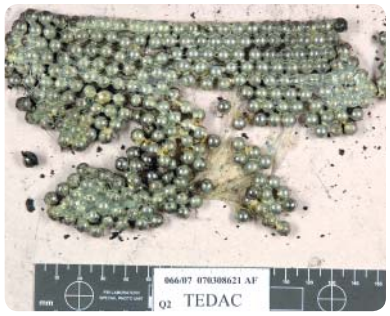
Flame Fougasse
Typically a mixture of petrol (gasoline) and oil in a 40/60 ratio.

Fragmentation
Shrapnel and small objects designed to be accelerated by explosive forces.

Chemical
Chemical agent included in an IED and specifically designed to cause death or other harm through toxic properties.

Biological
A microorganism that causes disease in personnel, plants, or animals or causes the deterioration of material.

Radiological
Radioactive materials that cause casualties or restrict the use of terrain when dispersed by an explosive charge. May also be called Radiological Dispersal Devices (RDD).



37

Ball bearings as a Fragmentation Enhancement.

38

Small arms ammunition used as a Fragmentation Enhancement.

Terms included in this glossary are defined in terms of WTI and IEDs

Term	Acronym	Definition
Active Infrared Sensor Switch	AIR	A sensor that emits an infrared beam to a receiver forming an invisible link that, when broken, acts as a trigger to initiate the IED. These sensors act like an electronic version of the trip wire.
Air-borne	ABIED	An IED held aloft by aerodynamic means or buoyancy and/or serves as concealment means for explosives with an initiating device.
Alternating Current	AC	Electric current that flows through a circuit in both directions with the change in direction occurring with a well-defined and specified frequency.
Anti-Aircraft		An IED primarily intended to damage or destroy aircraft and/or their payload as well as to kill or wound individuals inside the aircraft.
Anti-Armor	AA	An IED primarily intended to penetrate armored vehicles and/or to kill or wound individuals inside armored vehicles.
Anti-EOD		An IED primarily intended to kill or wound EOD personnel, or to impede Render Safe Procedures.
Anti-First Responder		An IED primarily intended to kill or wound first responders such as medics, firefighters, etc.
Anti-Infrastructure		An IED primarily intended to damage or destroy physical infrastructure such as pipelines, communications towers, bridges, buildings, utility lines and/or facilities such as electrical transformers or water pump houses.
Anti-Personnel	AP	An IED primarily intended to kill or wound people.
Anti-Tamper Switch		A victim operated switch designed to initiate an IED when it is tampered with or disturbed in a particular manner. Sometimes referred to as an Anti-Handling or Anti-Disturbance switch.
Anti-Vehicle		An IED primarily intended to damage or destroy vehicles – excluding armored vehicles – and/or their cargo as well as to kill or wound individuals inside such vehicles.

Term	Acronym	Definition
Anti-Watercraft		An IED primarily intended to damage or destroy watercraft and/or their payload as well as to kill or wound individuals inside the watercraft.
As Intended		An IED that has detonated against the intended target.
Associated Components		Components which are 1) part of an IED or improvised weapon system, 2) the tools required to produce the components, or 3) precursors to the manufacture of IED components to include explosives.
Attack Geography		A description of the road segment, buildings, foliage, etc. Understanding the geography indicates enemy use of landscape to channel tactical response, slow friendly movement, or prevent pursuit of enemy forces.
Biological		A microorganism that causes disease in personnel, plants, or animals or causes the deterioration of material.
Blast Crater Characteristic		Observations and measurements of the blast crater itself to include depth, diameter, debris field size, and surface description (soil, sand, concrete, etc.).
Blasting Accessory		Devices and materials used in blasting, such as, but not limited to, cap crimpers, tamping bags, blasting machines, blasting galvanometers, and detonation cord.
Blasting Cap/Plain Detonator		A device containing a sensitive explosive intended to produce a detonation wave. Can be either electric or non-electric (plain).
Blown in Place	BIP	Actions taken at the discretion of the tactical commander to clear an IED by detonating it where discovered.
Bulk Explosives		Manufactured explosive charges in their original packaging or that has been removed from weapons or munitions.
Cache		An IED incident that involves the discovery and/or recovery of concealed unarmed devices, IED components, IED paraphernalia, or explosive ordnance that involves long term storage in a permanent, fixed location.

Term	Acronym	Definition
Chemical		Chemical agent included in an IED and specifically designed to cause death or other harm through toxic properties.
Chemical Switch		A timing switch using the reaction of chemical compounds as a switch to provide a delay before starting the initiation train.
Command Projectile Switch		The use of a small arms bullet to close the circuit by penetrating two metal plates. This provides standoff between firing point and contact point.
Command Switch		A type of switch that is activated by the attacker in which the attacker controls the device.
Command Wire IED	CWIED	An IED where the firing point and contact point are separate but joined together by a length of wire.
Commercial Explosives		Explosives produced and used for commercial, industrial, or recreational applications.
Concealment Container		A vessel commonly used to prevent the discovery of an IED by visual inspection.
Confinement Container		A vessel commonly used to hold the main charge together.
Container		A vessel commonly used to house or conceal the principal components of an IED.
Direct Current	DC	Electric current that flows through a circuit in just one direction
Directional Effect		Type of main charge configuration where the explosive effect is channeled to an intended area.
Electric Initiator		An initiator whose functioning is initiated by an electrical impulse that creates heat or a spark.
Electronic Time Switch		A timing switch using a commercial or improvised electronic timer or integrated circuit to start the initiation train.
Elevated		IED emplaced above the surface: hanging from an overpass, on a roof, etc.

Term	Acronym	Definition
Enemy TTPs		A description of where the device was put to await the arrival of the intended target.
Enhancements		An optional additional component deliberately added as opposed to a secondary hazard that modifies the effects of the IED. The IED would be effective, yet produce a different measurable result if this material were not added. The effect can be additional physical destruction, proliferation of dangerous substances (radiation, chemicals, etc.), or other results to enhance the effect of the IED.
Estimated Size of Main Charge		A reference to the estimated weight of the main charge derived from observations of the blast effects and crater characteristics.
Event Signature Development/ Device Profiling		The process of analyzing the tactical and technical identifiers of an IED incident to support force protection, targeting, prosecution, and sourcing.
Exploding Bridge Wire	EBW	An initiator or system in which a very high-energy electrical impulse is passed through a bridge wire, literally exploding the bridge wire and releasing thermal and shock energy capable of initiating a relatively insensitive explosive in contact with the bridge wire.
Explosion		Occurs when gaseous products are rapidly produced from a single substance (high explosives or low explosives with a fuel and oxidant).
Explosive Train		A train of combustible and explosive elements arranged in an order of decreasing sensitivity. Its function is to accomplish the controlled augmentation of a small impulse into one of suitable energy to cause the main charge to function.
Explosively Formed Projectile	EFP	Specially designed main charge configuration incorporating an explosive charge with a machined or pressed concave metal which by the force of the charge reshapes the plate into a high velocity metal slug capable of penetrating armored vehicles.
False		An incident that is incorrectly identified though reported in good faith as a false alarm after positive action.

Term	Acronym	Definition
Find		An IED incident that involves the discovery or turn in of devices or IED components in a temporary and/or transitory location.
Firing Switch		Component that initiates the firing train.
Flame Fougasse		Typically a mixture of petrol (gasoline) and oil in a 40/60 ratio.
Force Protection		Preventive measures taken to mitigate hostile actions against Department of Defense personnel (to include family members), resources, facilities, and critical information.
Found and Cleared		An IED incident that involves an armed and emplaced IED that has been discovered and rendered safe by Explosive Ordnance Disposal (EOD), or has been discovered and blown in place.
Fragmentation		Shrapnel and small objects designed to be accelerated by explosive forces.
Fuel		An incendiary material designed to enhance the burning and visual effect of the device.
Heat Initiator		A type of initiator that serves as an igniting element through the application of heat. This may include direct heat to a sensitive explosive.
High Explosives	HE	Materials which detonate; they do not generally require confinement as they react chemically to produce heat, gas, a rapid expansion of matter, and a shock wave in the explosion.
High Power Transmitter		An RCIED transmitter with an output power greater than or equal to 0.35 watt.
Hoax		An IED incident that involves a device fabricated to look like an IED and is intended to purposely simulate one in order to elicit a response.

Term	Acronym	Definition
IED		An IED incident that involves a device placed or fabricated in an improvised manner incorporating destructive, lethal, noxious, pyrotechnic, or incendiary chemicals and designed to destroy, incapacitate, harass, or distract. It may incorporate military stores, but is normally devised from nonmilitary components. Refers to a type of IED incident that involves a complete, functioning device.
IED Related Incident		An event that involves one or more of the following types of IED-related actions/activities: IED, Explosion, Find, Cache, Hoax, or False.
Improvised Claymore		An improvised weapon, military or homemade, designed to explosively propel a fan shaped pattern of ball bearings or other fragmentation in an aimed direction.
Improvised Explosives / Homemade Explosives	IE/HME	Non-standard explosive mixtures/compounds which have been formulated/ synthesized from available ingredients. Most often utilized in the absence of commercial/military explosives. Also referred to as Home Made Explosives (HME).
Improvised Grenade		An improvised weapon, military or homemade, designed to explode when a restraint is removed (usually hand held, but can be projected.
Improvised Mortar		An improvised weapon, military or homemade, designed to launch an explosive charge to the target.
Improvised Rocket		An improvised weapon, military or homemade, designed to propel an explosive charge to the target.
Improvised Weapons		A non-explosive device placed in an improvised manner designed to destroy, incapacitate, harass or distract. It may incorporate military stores, but is normally devised from non-military parts.
Incendiary		Chemical mixtures that are intended and designed to cause fires.
Incident Atmospherics		A description of the demeanor of the civilian population at an IED event to include mood, absence or presence, changes in previously experienced interactions, etc.

Term	Acronym	Definition
Incident Environmental Conditions		A description of the ambient surrounding conditions to include weather conditions such as temperature, precipitation, fog, dust, etc.
Initiator		Any component that may be used to start a detonation or deflagration. May or may not be a detonator.
Intended Outcomes		Longer-term strategic and immediate or direct tactical intentions of the IED incident to include the making of political statements at the strategic level and/or more-immediate objectives such as disruption of normal activities, anti-material, anti-personnel, criminal, TTP identification, experimentation and obstacle creation at the tactical level. IEDs can have multiple intended outcomes.
Large vehicle-borne	LVBIED	An IED built into any large ground-based vehicle (e.g., dump truck, panel truck, bongo truck, commercial bus, tanker, etc.) and/or serves as the concealment means for explosives with an initiating device.
Light Sensitive Switch		A type of proximity trigger that senses changes in the amount of light in the environment near the sensor. When this happens, the sensor causes a circuit to be completed, firing the device.
Light/Flash Bulb Initiator		Devices used as electric initiators that incorporate an improvised use of the bulb to initiate primary or low explosives.
Low Explosives		Combustible materials which are characterized by deflagration. They do not produce a shock wave, generally requiring confinement to explode.
Low Power Transmitter		An RCIED transmitter with an output power less than 0.35 watt.
Magnetic Attachment		A type of IED employment in which the device is attached to the target using magnets.
Magnetic Switch		A type of proximity trigger that senses magnetic alterations in the area around the sensor. When this happens, the sensor causes a circuit to be completed, firing the device.

Term	Acronym	Definition
Main Charge		The explosive charge which is provided to accomplish the end result in a munition. Note: examples for end results are bursting a casing to provide blast and fragmentation, splitting a canister to dispense sub-missiles, or producing other effects for which it may be designed.
Main Charge Configuration		The arrangement or design of the main charge and other materials (usually metal) to create an effective weapon to attack personnel, vehicles, or structures.
Mechanical Energy		A retained spring that acts as the energy source.
Mechanical Time Switch		A timing switch (e.g., clock, timer, drip timer) constructed or modified so that physical contact between two parts of the timing device complete an electrical circuit initiating the device.
Method of Device Employment		A description of how the device was delivered to the target.
Military Explosives		Explosives manufactured for military use.
Munitions		Ammunition, ordnance, or demolition charges containing explosives, propellants, pyrotechnics, initiating composition, or nuclear, biological, or chemical material for use in military operations.
Non-electric Initiator		An initiator whose functioning is initiated by non-electric means.
Non-Suicide		An IED in which the insurgent/terrorist does not intentionally kill himself/herself as part of the attack.
Omnidirectional Effect		An aspect of main charge configuration where the explosion is omni-directional and expands in all directions.
Other Electromagnetic (non-RF) Switches		Electromagnetically operated command switches that do not operate in the RF Band.
Other Weapons Systems		Military weapons associated with a terrorist or insurgent group's method of operations that involve IEDs or improvised weapons.

Term	Acronym	Definition
Passive Infrared Sensor Switch	PIR	A sensor that detects movement of a heat source. When the change in ambient temperature is detected, the sensor acts as a trigger to initiate the IED.
Pattern Analysis		Using prior actions and activities to identify trends in activities or behaviors. Once identified these patterns can be used to predict future enemy actions and plan intelligence surveillance, and reconnaissance (ISR) activities.
Percussion Initiator		An initiator that serves as an igniting element when mechanically struck.
Person-borne IED	PBIED	An IED worn or carried by a person either willing or unwillingly, such as a vest, belt, backpack, box, briefcase, etc., in which the person houses the whole IED or principal IED components and/or serves as the delivery or concealment means for explosives with an initiating device. A PBIED is often initiated by the person wearing the IED (suicide) – however, not all PBIEDs are triggered by the person wearing the IED (Proxy).
Platter Charge		The use of an explosive to propel a metal plate toward a target in a manner where the plate remains intact.
Political		An IED primarily intended to make a political statement in addition to their more immediate tactical outcome.
Postal		An IED introduced or delivered through a postal system.
Power Source		A device that either stores or releases electrical or mechanical energy. The key elements of information about a power source are its type/source, number of batteries and their configuration (series or parallel), its voltage (if electrical) and how it is connected to close an IED switch.
Premature		An IED that has detonated unintentionally during construction, transport, or emplacement. Does not refer to an ineffective detonation against an intended target due to inaccurate timing or placement.

Term	Acronym	Definition
Pressure Release Switch		A method for activating a device that occurs as a result of reductions in pressure. Such devices may employ mechanical, pneumatic, or hydraulic systems to signal a detonator that a vehicle or individual has released pressure to a pressure plate or similar mechanism. Pressure release triggers are often used in the design of military booby-traps or VOIEDs.
Pressure Switch		A method for activating a device that occurs when an object is used to complete a circuit when pressure is applied in a predetermined direction. Many pressure initiated IEDs explode when pressure plates are compressed under the weight of passing vehicles or foot soldiers.
Primary Device		An IED emplaced to attack an initial target.
Projected		An improvised weapons system that delivers the main charge through the air to its target.
Propellant		An explosive material that normally functions by deflagration to produce a controlled release of gasses used for propulsion purposes.
Prosecution		The process of associating IED-related people, places, devices, or equipment to an individual for evidentiary purposes in a recognized court of law.
Pull Switch		An IED initiated by a person using a "command pull" action.
Radio Controlled IED	RCIED	An IED initiated electronically in a wireless method consisting of a transmitter and receiver (e.g. personal mobile radio (PMR), cell phone, cordless phone, pager, etc).
Radiological		Radioactive materials that cause casualties or restrict the use of terrain when dispersed by an explosive charge. May also be called Radiological Dispersal Devices (RDD).
Render Safe Procedure	RSP	The portion of the EOD procedures involving the application of special EOD methods and tools to provide for the interruption of functions or separation of essential components of unexploded explosive ordnance to prevent an unacceptable detonation.

Term	Acronym	Definition
Role of IED		Identifying enemy use of IEDs as a primary, secondary, or tertiary form of attack.
Safe to Arm Switch		A device used to arm the IED to ensure that the emplacer can safely employ or emplace the IED.
Secondary Device		An additional IED emplaced in the target area to attack individuals or vehicles after the initial attack.
Shaped Charge		A main charge configuration incorporating a metal liner shaped so as to concentrate its explosive force in a particular direction in order to cut or penetrate (i.e. a plasma jet).
Shock Tube		A thin, plastic tube of extruded polymer with a layer of high explosive deposited on its interior surface that propagates a detonation wave to the blasting cap.
Sourcing		The process of determining the origination point (such as a production facility or person, a geographic location, or a specific country of origin) for IED components.
Squib/Ignitor		A device used to initiate low explosives or high explosives when used in an appropriate firing train. In general any chemical, electrical or mechanical device used to ignite a combustible material.
Subsurface		IED emplaced under the surface or below the intended target, (i.e., buried, in a culvert, under water).
Suicide		An IED initiated by an insurgent/terrorist at a time of his/her choosing in which the operator intentionally kills himself/herself as part of the attack, or to deny his/her capture.
Surface		IED emplaced directly on the ground.
Switch		A device for making, breaking, or changing a connection in an IED. A single switch can have multiple functions (i.e., safe to arm, and firing).
Tactical Characterization		A description of how it is believed an IED incident was conducted or planned to be conducted (the tactical design) and/or how an IED incident was used or intended to be used (the intended outcome).

Term	Acronym	Definition
Tactical Design		The specific design of an IED attack – including but not limited to: position of the IED, the type of IED, method of actuation, type of road segment used, concealment technique, use of secondary devices, the time of day, etc. Tactical design addresses the questions of "why here, why now, and why in this way." Terms used to describe a specific type of device or component of a device (e.g., VBIED) are often used to describe all or part of the tactical design.
Tactics, Techniques and Procedures Development		Using the lessons learned from an IED attack to refine and improve the tools and methods used during all missions in which an IED may occur (e.g. convoys, tactical suppression efforts, ISR, Counter-IED (C-IED) missions, etc.).
Target Selection Switch		A victim operated switch used to select a particular target based on its particular characteristics such as weight, place in a convoy, etc.
Targeting		The process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities.
Technical Categorization		A description of an IED using a hierarchical construct to identify its key components. The components identified in this categorization are the elements from which technical and forensic information is recovered and exploited.
Tension/Pull Switch		A victim operated device that triggers an explosion when tension is applied to a firing mechanism – such as pulling a trip wire. The tension causes an action that releases a firing pin or activates an electrical or electronic switch.
Tension Release Switch		A victim operated trigger that, when tension is released – such as when a taut wire or cord is cut or broken – releases a spring-loaded firing pin or closes electrical contacts initiating the device.
Tertiary Device		An additional IED emplaced in the target area to attack individuals or vehicles after the initial and secondary attacks.
Tilt Switch		A device that allows voltage to flow to the output wires after a conductive material (i.e., mercury or a ball bearing) is moved enough (up/down, left/right) to flow onto the switch contacts, completing the circuit.

Term	Acronym	Definition
Time Fuse/ Safety Fuse		A pyrotechnic contained in a flexible and weather-proof sheath burning at a timed and constant rate; used to transmit a flame to the detonator or a low explosive charge with a predetermined delay.
Time Switch		A type of switch that functions after a set time. Used widely against infrastructure targets.
Trembler Switch		A device that allows current to flow to output wires after movement causes two metal parts to make contact, completing a circuit.
Underbelly		A type of IED emplacement in which the device is intended to target the underside of a vehicle, using large amounts of explosives buried to deliberately defeat armor (can include conventional land mines).
Vehicle-borne	VBIED	An IED delivered by any small ground-based vehicle (e.g., passenger vehicle, motorcycle, moped, bicycle, etc.) and/or serves as the concealment means for explosives with an initiating device.
Victim Operated Switch	VOIED	A type of switch that is activated by the actions of an unsuspecting individual. These devices rely on the target for the device carrying out some form of action that will cause the device to function. Can include Target Selection switches or Anti-Tamper switches.
Water-borne IED	WBIED	An IED delivered by floating, drifting, anchored, or propelled on or below the water.
Weapons Technical Intelligence	WTI	A category of intelligence and process derived from the forensic and technical collection and exploitation of improvised explosive devices (IEDs), associated components, improvised weapons, and other weapon systems.

PHOTO CREDITS

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