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Adversary Weaponry to 2025

Robert J. Bunker⁵⁰

This chapter will provide an overview of adversary weaponry that will be utilized by criminals and opposing forces (OPFORs) which U.S. law enforcement personnel may encounter domestically. The projected time frame will cover the futures period from 2009 through 2025. Criminal weaponry use will be analyzed using a criminal threat continuum that starts with minimal threats and increases in severity. OPFOR weaponry use will be analyzed using a similar continuum. It should be noted that OPFOR threats, like criminal threats, are illicit in nature and derived from individuals and groups that can be designated as engaging in criminal behavior or are criminal organizations. The fundamental difference between these threat continuums (See Fig. 1) are that they are based on the severity of threat derived from intent. Criminals will not typically seek to engage U.S. law enforcement directly or take actions that can be viewed as engaging in private warfare. OPFOR groups intentionally engage in private warfare and actively seek to engage U.S. law enforcement personnel in direct firefights or indirectly by means of ambushes and the use of improvised explosive devices (IEDs) designed to maim and kill them. Prior to this treatment of adversary weaponry use, however, a short overview of weaponry targeting and effects will be provided along with an overview of the weaponry pool available to law enforcement adversaries. This overview of the weaponry pool will incorporate projections concerning the impact advances in the sciences will have on weaponry evolution and its operational use.

Weaponry Targeting and Effects

Depending on the type of weaponry, different target sets can be influenced. This provides different targeting opportunities to law enforcement adversaries. Point targets are represented by individuals, vehicles, and small sections of buildings (doors and windows) and are generally engaged by small arms and infantry support weapons. In civil settings, this may also include fists and feet, weapons of opportunity, weaker lasers, and less lethal weapons. Area targets encompass larger zones which consist of groupings of point targets. These are typically targeted by blast and fragmentation weaponry such as IEDs and military explosive devices (grenades,

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mortars, artillery). Chemical agents, both hazardous industrial materials and military grade, and mid-size radiological weapons can also be utilized to target larger area targets.

Systemic targeting is derived from weaponry that influences the greater system such as a larger city or computer network. Biological agents, computer viruses, electromagnetic pulse (EMP) weaponry, radiological, and nuclear devices fall within this category. Targeting schemes based on anti-personnel, anti-materiel, anti-infrastructure, anti-mobility, and area denial criteria also exist. These distinctions are basically irrelevant to criminals and their weaponry utilization but can be extremely important to OPFORs when they plan their operations against U.S. society and law enforcement response assets.

Weaponry effects are either destructive or disruptive in nature. Industrial age arms such as small arms, IEDs and military explosive devices, rocket propelled grenades (RPGs), and man portable air defense systems (MANPADS), and most WMD are destructive in nature. They complement an approach to warfare and policing that is “thing” targeting based and focused on destruction, killing, and physical seizure of ground and individuals. Exotic and more advanced forms of post-modern weaponry are disruptive in nature because this is the preferred fighting style of network organizational forms. These target the bonds and relationships that hold things, such as societies and computer networks, together. Many times these are systemic in their targeting abilities such as EMP and computer viruses. Of note is that while OPFOR weaponry use may be destructive at the tactical level, such as the use of a suicide bomber in a shopping mall, it ultimately is intended as a disruptive attack. Terrorism is thus a disruptive form of conflict and U.S. law enforcement response will be up against OPFORs with this as their mission end state.

Weaponry Pool

The weaponry pool available to law enforcement adversaries out to 2025 will not be substantially different than that in existence today. While some marginal weaponry advances may be derived from the new sciences, no qualitative firebreaks are envisioned to be crossed within the next decade and a half to two decades. Developments in biotechnology, at best, may influence the efficiency and effect of some biological agents. These are indiscriminate weapons, however, with systemic targeting effects that are just as likely to harm those utilizing them.

While speculation exists that specific ethnic groupings could be targeted due to biotechnical advances, no current scientific proof exists to support such concerns.

Nanotechnology advances, which university researchers have claimed already allow for the ability to neutralize some chemical-biological agents, may lead to the emergence of tandem weapons based on conventional (explosive) warheads and follow-on agent neutralizers that could be used against hardened foreign WMD facilities. Such tandem weapons, even if built, would fulfill a nation-state counterforce, rather than, OPFOR offensive targeting role. No other nanotechnology advances for weaponry purposes have been noted at this time, however, continued concerns exist over the eventual creation of self-replicating nanotechnologies and the harm that they could do to the environment if they ever escaped from the lab.

While strides are being made in augmented and virtual realities, these technologies do not as of yet influence weaponry functioning. Still, in the case of virtual reality, the growing importance of online simulations and massive multiplayer games, such as avatar based Second Life, have resulted in the development of new conflict environments which have seen direct action and terrorist acts take place within them. As a result, these provide new venues for hacker and information warfare tools to be utilized.

The new sciences that support continued advanced in robotics may have the most influence on weaponry utilization in the coming years. Robotic advances are already allowing for remotely piloted vehicles (RPVs), both unarmed and armed, to be utilized on a greatly increased scale by nation-states and even by non-state groups such as Hezbollah. Remote weapons platforms, such as tele-operated sniper rifles hooked to computer systems via wireless devices, allow for attacks to be made in which the perpetrators operate the weapons from anywhere in the world and, as a result, remain immune from attack. Other potential advances may result in the fielding of autonomous armed robots that will crawl, walk, and drive through conflict zones.

Even with some of these new advances and capabilities the weaponry pool that will exist through 2025 will remain quite familiar to contemporary readers. This weaponry is as follows:

Fists and Feet: The hands and feet of humans represent the default weapons of unarmed individuals. The effectiveness of these weapons are dependent on an individual's physical health, size, and training but are far inferior to small arms and other more advanced weaponry.

Clubs and Thrown Objects: Tree limbs, boards, rocks, and bricks can all function as improvised weapons. They provide the ability to engage in stand-off attacks and augment unarmed combat capabilities. These objects also serve as a force multiplier for spontaneous attacks on individuals and in riot situations.

Less Lethal: Pepper spray and Tasers are the most common forms of this weaponry class. Blunt force trauma projectiles, such as baton and foam rounds, represent other applications. Improvised substances, such as non-stick cooking spray, can also be used in stairways and train landings in a less lethal role to create hazardous situations. The danger of this class of weapons is that they may partially debilitate police officers leaving them vulnerable to further assaults and injury.

Knives: Edged and sharp pointed objects further improve the lethality of individuals. Knives, and improvised devices such as shanks, are quite commonly used because of their small size and ability to be hidden on the human body. While machetes and swords represent more dangerous weapons, their size makes them far harder to hide and thus far less likely to be encountered.

Small Arms: Firearms run the gamut from semi-automatic to automatic-weapons with varying caliber and intended use ranging from home protection and hunting though dedicated military use. Typically, these can be characterized as lower tier (non-military) and upper tier (military) small arms.

IEDs and Military Explosive Devices: Improvised explosive devices are inferior to military explosives devices (e.g. mines, grenades) in reliability, safety of transport, and killing/wounding potentials, however, they are more than adequate in their functioning to kill individuals and groups of people. Mass killing and infrastructure targeting systems are derived from the use of vehicular borne improvised explosive devices (VBIEDs) which increases explosive payload yield and allows for bomb mobility and direct insertion into or near the designated target. Along with traditional IEDs, the use of suicide bombers has grown dramatically over the last 25 years. Future suicide bomber

employment patterns include projections of body cavity bomb use against high value targets and chemical, biological, radiological, and nuclear (CBRN) variants. Military explosives represent another concern and may be utilized in gray-systems, which are those utilizing some commercial components, and in dedicated military munitions such as anti-personnel mines and fragmentation grenades.

RPGs: Rocket propelled grenades (RPGs) are a sub-class of military explosive devices, however, their effectiveness and proliferation of use warrants their own weaponry category. These stand-off weapons are simple to use, provide devastating effect, and can be used against personnel, material, and infrastructure targets based upon warhead type.

MANPADS: Man portable air defense systems are used to target helicopters and fixed wing aircraft. They are a military weapon that is composed of a rocket body and small high explosive warhead guided by heat, infrared, or other sensing capability. These devices have since fallen into the hands of numerous non-state groups and actors.

Lasers: Current laser devices and weapons, a class of directed energy weapons (DEW), rely upon counter-optical (vision disruption) capabilities because of their inherent low energy levels. Of all the weaponry classes, handheld lasers are one of the most likely to see further gains in their effectiveness for illicit attacks. This will mean greater counter-optical effectiveness and stand-off ranges and the potential by 2025 of also inflicting some damage through thermal burns on human skin and against materiel targets. At that point, a true class of “laserarms” would have emerged.

RFW: Radio frequency weapons and high powered microwaves (HPM) represent somewhat exotic forms of directed energy or less lethal weapons. They are also expected to benefit from technology advances over the coming years. These weapons create electromagnetic pulses (spikes) which can burn out computer and electronic equipment. HPM devices can raise human brain temperatures creating seizures and millimeter-wave devices, such as the Active Denial System (ADS), can be used for crowd control purposes by creating a burning sensation just under a targeted individual’s skin.

Hacker and IW Tools: Computer and network hacking attacks represent another weaponry category. These tools and devices of information warfare (IW) can be used to steal data, take control of computers and networks, and, if tied to SCADA programs, can in extreme circumstances result in the takeover of components of the physical infrastructure such as metro trains. Virtual reality and the use of personal avatars have resulted in new conflict arenas within which this weaponry has found new applications.

CBRN: Chemical, biological, radiological, and nuclear weaponry are viewed as mass killing technologies. In the case of radiological devices, however, they serve more in a mass disruption and area denial mode since death is not normally measured in the near term but in the course of years or decades. Some biotech and nanotech influences may be seen during the upcoming time frame but they will likely be marginal at best.

Criminal Threat Continuum

Robberies, burglaries, drug deals, and other illicit economic activities are a major focus of criminals. Criminals engaging in such activities are viewed as being relatively unsophisticated and unorganized and will typically try to avoid direct confrontation with police officers. If cornered, however, such criminals may attempt to punch it out or even shoot it out with the police. Many times those engaging in criminal behavior may be intoxicated or high on illegal substances. Mental illness and extreme emotional duress can also be attributed to some criminal activities such as robbery, rape, and murder. Additionally, the illegal actions of protestors and partygoers during riot situations fall into this continuum. While anarchist protestors have proven to be at times a very organized group, their level of violence threshold is still relatively low and for this reason they do not yet warrant full OPFOR threat status. Trends suggest, however, that some anarchists are now operating in the gray area between the criminal and OPFOR continuums making police response problematic.

Changes to the weaponry pool out to 2025 will have minimal influence on criminals. While small performance gains may be expected in less sophisticated weapons this will not substantially influence their functioning and operations. Criminal weaponry use is projected as follows:

Individual: Expected weaponry use is fists and feet as the first resort for unarmed individuals and as the last resort for disarmed individuals. Weapons of opportunity such as chairs, rocks, and the like must also be considered. Armed individuals will typically carry knives and lower tier (non-military) small arms. Possible weaponry includes less lethals, clubs, and weak laser devices such as red and green pointers.

2 and 3s: The probability of encountering knives and non-military small arms goes up with this grouping. If small arms are not being carried, they may be in the trunk of car, under a seat, in a building, or in some other nearby place. Body armor use is highly improbable but has been encountered in rare instances. Fists and feet, clubs, and weapons of opportunity are still a concern.

Small Groups: This group, typically street and drug gang based, goes up dramatically in weaponry use. Less sophisticated street gangs used to rely upon knives, weapons of opportunity, and cheap and unreliable hand guns. This has changed with their current reliance upon commercial small arms such as semi-automatic pistols, rifles, and shotguns. Drug-selling gangs and drug gangs are an even greater concern because of their need to protect their markets and sizeable takes in illicit revenue. These groups will not only utilize lower tier small arms but also acquire fully automatic military assault rifles and wear body armor. The use of IEDs and sawed-off shotguns as booby traps and pit bulls to protect drug houses is not uncommon. Still, these groups operate under a criminal mentality, lack training and discipline, and will neither seek to directly engage in force-on-force confrontations nor are capable of waging guerrilla campaigns with the police.

Large Groups: This grouping will be encountered in riot control and urban disturbance situations. At the low end, it can be considered a mob of protesters, crime scene spectators, or partygoers who have gotten out of hand. They have the potential to engage in or are engaging in rampaging and looting. Sports riot such as those taking place at soccer stadiums would be found at the medium level. At the high end, full scale community rioting, including mass looting, arson, and selective murder, maybe taking place as was witnessed during the Watts Riot in 1965 and the Los Angeles Riot in 1992.

This large grouping is partially composed of individuals, 2 and 3s, and potentially small groups, with lots of small arms, that add levels of added complexity and threats.

OPFOR Threat Continuum

OPFOR threats are identified by their intent to function as para-military and military-like groups and directly utilize privatized violence against the people, institutions, and structures of American society. In essence, they are waging private warfare upon the state. These threats may have an illicit economic orientation or an illicit political orientation and will utilize terrorism, insurgency, and guerrilla warfare tactics to further their ends. As a result, they are derived from more sophisticated and trained individuals, groups, and organizations. While many law enforcement groups may still currently label these threats as just additional forms of criminal activity, they must instead be given a special opposing force designation and their own threat continuum because of the danger that they ultimately represent at their higher levels of organization to the United States. These non-state soldier threats will actively engage in operations against police officers in order to kill or capture (to ransom or torture) them. This may be done by directly engaging police officers in stand up fire fights, using superior stand-off weaponry, or by employing military-like ambush and evasion tactics.

Changes to the weaponry pool out to 2025 will have a slightly more pronounced influence on OPFOR threats over that of criminal threats. Because of the greater sophistication of this threat class, new capabilities and synergies may be exploited, including the use of tele-operated weapons and the exploitation of virtual worlds, for their operations. OPFOR weaponry use is projected as follows:

Individual: An active shooter, lone sniper, bomb planter, or suicide bomber represent the most basic OPFOR threats. Serial bomber examples would include Ted Kaczynski and Eric Rudolf. Weaponry used is small arms, typically but not always military, and IEDs. Body armor is increasingly being worn by shooters and suicide bombers. In the case of the suicide bomber, a larger team exists to support the bombing attack but many times police officers will only encounter the strike element of the group. Individual hackers and programmers engaging in cyberspace operations or utilizing a tele-operated weapon such as a sniper rifle now represent another type of basic OPFOR threat.

2 and 3s: This threat level is composed of 2 to 3 members operating as a small tactical team. This can include a two-man active shooter or assault element supported by a sniper, a sniper and a spotter, or a MANPADs or RPG operator and a security force. A counter-optical laser weapon utilized against commercial aircraft could also be utilized in this way. A two-man VBIED team with a driver and security member would also fall into this category. The best past domestic examples of this OPFOR threat can be found with the North Hollywood shootout in 1997, Columbine Massacre in 1999, and the Beltway Sniper attacks in 2002. While no instances of a cyberspace capability have been recorded for 2 and 3 attacks, the interplay between dual dimensional— physical world and virtual world— operations can no longer be discounted.

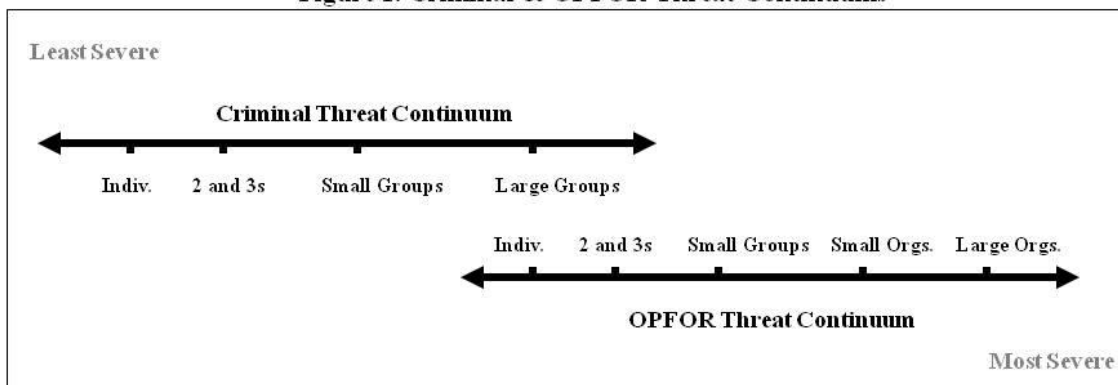
Small Groups: Operational cells of large terrorist organizations, such as Al Qaeda and Hezbollah, and drug cartel mercenaries (Zetas and Kaibiles) are composed of multiple-tactical and support element teams. These include reconnaissance, propaganda, security, quartermaster and transport, and financial functions. Combined arms groups would include suicide bombers, assault infantrymen, snipers, and RPG teams but are way beyond the envisioned Al Qaeda threat presently facing this nation. From South of the border the recent cartel hit in June 2008 in Phoenix Arizona where the perpetrators were dressed as SWAT officers, wore body armor, and carried AR-15s is a prime example of this threat. Recent firefights between cartel operatives and US law enforcement over drug loads dropped at the Mexican-American border are another example of this threat. A cross border laser strike against a US Border Patrol helicopter for area denial purposes, presumably from a Zeta force protecting a drug transshipment house, also took place a few years back.

Small Organizations: Weaker and less developed terrorist groups such as some of the white supremacist groups, Earth Liberation Front (ELF), and Animal Liberation Front (ALF) are the next level of threat concerns. This also includes affinity radical Jihadist terrorist organizations which are emerging in parts of Western Europe and in North America. Weaponry use will center primarily on small arms and IEDs. The remote possibility exists that Jihadist terrorists may also get Al Qaeda central support which

could include military explosives, RPGs, or MANPADs. The Madrid bombing in 2004 and the London bombing in 2005 by Al Qaeda affinity members are examples of this level of threat.

Large Organizations: Bigger terrorist and guerilla entities such as Al Qaeda, Hamas, FARC, and Hezbollah, criminal para-states found in Central and South America and Africa, and drug cartels such as the Gulf cartel, Sinaloa cartel, and Tijuana cartel represent the largest form of OPFOR organizations. These entities may rival the power of some states and utilize almost all forms of weaponry that exist except currently for some CBRN components (nuclear devices, highly contagious pathogens, et al.) and state of the art forms of exotic weaponry such as dedicated military blinding laser systems and military electromagnetic generating munitions. The threats that these groups pose totally outclass police response capabilities and are a homeland security (federal law enforcement) and homeland defense (military services) concern that must be addressed at the national level.

Figure 1. Criminal & OPFOR Threat Continuums



It should be noted that police response may find itself challenged in complex emergencies in which attributes drawn from both the criminal threat continuum and the OPFOR threat continuum are involved. As an example, during the Democratic National Convention (DNC) in 2001, primary concern centered on mass protests and purposeful disruption, spearheaded by Anarchist elements, and focused on large group threat dynamics and their containment by means of crowd and riot control techniques. At the same time, planning and deployments were made to respond to terrorist CBRN potentials by focusing on small organization OPFOR threat dynamics. While no terrorist threat existed, this scenario provides a glimpse into the intersection of the threat continuums that police may be facing in situations where both criminal activity and OPFOR activity is taking place simultaneously. Each requires a very different response orientation and mindset from policing forces.

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