TERRORIST AND INSURGENT UNMANNED AERIAL VEHICLES: USE, POTENTIALS, AND MILITARY IMPLICATIONS

Robert J. Bunker

Unmanned aerial vehicles (UAVs) increasingly have been in the news as the cost of these systems continues to drop and their popularity increases. A few million of these systems are now said to exist globally, with the numbers rapidly increasing. Recent stories highlighting UAVs have caused quite a bit of sensationalism and have been focused on increasing concerns over their terrorism potentials. Interestingly, serious concerns over terrorist use of UAVs, and later insurgent use of UAVs (that includes terrorism as an insurgent tactic), have existed for roughly over a decade, but such concerns had not been widely disseminated until recently by the media.

The U.S. Army and the rest of the U.S. governmental defense community have a vested interest in better understanding this area of threat concerns and potentials. While terrorist and insurgent use (and projected use) of UAVs is important for its homeland defense and defense support of civil authorities (DSCA) implications, it is also—and quite possibly more importantly—likely to have great influence on the conduct of future forms of conventional warfighting. The reason for this contention is because, ultimately, UAVs represent artifacts belonging to the ongoing informational and robotics revolutions that have been taking place for decades. The significance of advances in information systems and robotics and what this will mean to future warfighting have not been lost on the Strategic Studies Institute of the U.S. Army War College or on other U.S. defense policy institutions.

With these thoughts in mind, this monograph will provide context related to a short UAV overview and their present use by the U.S. military, a section on terrorist and insurgent use (and attempted use) of UAVs, UAV baselines and trending analysis, potentials based on projected UAV threat scenarios, what this may mean in terms of U.S. military implications, and finally suggested forms of policy response at the tactical, operational, and strategic levels.

The first military use of UAVs dates back to World War I when early tests were carried out—one in 1917 by the United Kingdom involved a radio-controlled Sopwith Camel biplane loaded with dynamite. In World War II, about 15,000 UAVs were built in one Southern California plant alone for anti-aircraft targeting purposes. U.S. military interest and use of UAVs waxed and waned during the Cold War. UAV use then drastically increased due to Section 220 of the National Defense Authorization Act, fiscal year (FY) 2001 (from 2000), which mandated the fielding of unmanned air and ground vehicles, combined with the September 11, 2001, attacks on the World Trade Towers and the Pentagon, resulting in the use of armed drones in increasing numbers in the global war against al-Qaida.

Terrorist and insurgent use (and attempted use) of UAVs spans the 1994 Aum Shinrikyo cult's attempt to use weaponized drones through the 2015 Islamic State (IS) use of these craft for reconnaissance and propaganda video purposes. Such groups are still very much in an experimental phase of using these craft and possess relatively few of them, and—when they do have them in their inventories—they tend to be inferior commercial models (as opposed to military grade UAVs). Still, their drone use is now increasing, as are the capabilities of the systems being deployed. During that time span, al-Qaida, the Revolutionary

Armed Forces of Colombia—People's Army, Fatah, Hizbollah, Lashkar-e-Taiba, and Hamas have all been involved in actual or attempted UAV use. The purpose of this use has included reconnaissance and surveillance, messaging, improvised explosive device (IED) delivery, weapons of mass destruction delivery, and as a weapons platform. Other UAV capabilities that exist—yet have not been tied to terrorist or insurgent use so far—are smuggling, limited electronic intelligence capability, logistical resupply, and surrender of opposing force personnel. Recent technology trends that may influence future nonstate threat potentials are smart glasses and virtual reality goggles, apps and modular payloads, expert systems and artificial intelligence, and 3D printing.

Transitioning from present baselines of terrorist and insurgent use of UAVs, along with technology trends influencing their potential uses, three red teaming threat scenarios have been created for early warning purposes: 1) Single UAV—human controlled with drone-up shooting (like a walk-up shooting), IED crowd targets, and aircraft takedown variants; 2) Groups of UAVs—human controlled or semi-autonomous with squad-sized virtual martyr units and semi-autonomous drone squadron variants; and 3) Swarms of UAVs—considered as autonomous to highlight the projected evolution of this weaponry use with drone swarm and micro-drone swarm variants.

These three threat scenarios result in three corresponding levels of impact found at the tactical, operational, and strategic levels of military significance. For the U.S. Army, the tactical implications of such UAV use will fall within force protection, counterterrorism, and defense support of civil authorities' missions. It will focus on UAV detection, countermeasures, and tactical response and is an immediate concern. The operational level of impact is insurgency environment focused and most likely a near futures issue. It pertains to the use of groups of human controlled and semi-autonomous UAVs and represents an expeditionary concern bridging the tactical into the operational level of impact. This means that experimentation and red teaming is warranted related to threat forces' use of UAVs in insurgency type environments. The strategic level of concern, on the other hand, may still be a few decades out, and possibly even beyond the capacity of terrorist and insurgent forces to field on their own without state sponsorship. Still, its autonomous and semi-sentient drone swarm potentials are viewed as having an immense impact on the future conduct of war. Considerations need to be made concerning arms control regimes related to such autonomous, intelligent, and lethal robotic systems as well as their integration with human soldiers into future force structures, if that Army unit composition is elected to be followed—which presently appears to be the national trajectory.

*****

More information about the programs of the Strategic Studies Institute (SSI) and U.S. Army War College (USAWC) Press may be found on the Institute's homepage at *www.StrategicStudiesInstitute.army.mil.*

*****

Organizations interested in reprinting this or other SSI and USAWC Press executive summaries should contact the Editor for Production via e-mail at *SSI_Publishing@conus. army.mil.* All organizations granted this right must include the following statement: "Reprinted with permission of the Strategic Studies Institute and U.S. Army War College Press, U.S. Army War College."

This Publication   **SSI Website**   **USAWC Website**