



Employees of HTii, a company that provides advanced information technology and professional engineering services, talk with George Lucas, Professor of Ethics at the Naval War College.

Text: Egon Frech

Privacy, Ethics and UAVs Was George Orwell a Prophet? The 11th Annual Patuxent Defense Forum 2016



Rear Admiral (ret.) Matthew Klunder

The drones are coming. Some of them are already here. There will be many more, and the societal challenges they will pose were discussed in detail at the 2016 Patuxent Defense Forum, a joint effort at St. Mary's College of Maryland on June 5 sponsored by the Patuxent Partnership and the Center for the Study of Democracy.

Three learned panels discussed the issues of privacy, transparency, and accountability; the commercial and personal uses of drones; and the ethics of war involving the use of drones. Rear Admiral (retired) Matthew Klunder, in his opening remarks, said drones, or Unmanned Aerial Systems (UAS), will find their place doing “dull, dirty, and dangerous” work such as detailed mapping (dull), inspecting damage at risky accident sites such as nuclear or chemical facilities (dirty), and helping law enforcement and military personnel peek into areas where they might potentially be harmed if they went in person (dangerous). RADM Klunder is the Vice-president of DOD strategy for Harris Corporation's government communications systems division.

“They're already here,” he said. “There's a lot, and they're going to get bigger.” He showed charts indicating the U.S. military is already spending about \$6.5 billion a year on a fleet of about 9,000 drones, most of which are small units that weigh less than 20 pounds. On the commercial and civil side, projections are for 140,000 units to be operational by 2022, he said.

While the Federal Aviation Administration (FAA) has designated drones over 0.55 pounds to be aircraft, thus falling under FAA jurisdiction, the agency is “way behind” on its proposal to integrate them into the national airspace system. Progress so far has been to require them to be registered and to prohibit them from flying in controlled

airspace except by special exemption granted to only a few commercial operators and research projects. The military is not bound by this requirement.

The problem, RADM Klunder indicated, is how to control the drones and keep them from going into areas where they should not be. One technology is “see and avoid,” where the drone and its operator are responsible for avoiding other air traffic. Another is “geofencing,” where the drone is programmed to avoid prohibited areas or stay within a confined area defined by its GPS position, and a third would be to have the drone broadcast a signal that could be plotted on radar screens.

“But even if you could track them all and make sure they are where they’re supposed to be, if one is out of place, what could you do about it?”, he asked.

Drones and Reasonable Expectation of Privacy

The morning panel, convened to discuss the questions of privacy, transparency, and accountability, concluded that there are many more questions in this area than answers. Moderated by Ann McDaniel, a consultant at Graham Holdings Co., the panel comprised Baltimore lawyer Jack Gohn; Drew Mitnick, policy counsel for Access Now, an organization that fights for open and secure communications worldwide; and Gail Goettehrer, a partner in Axinn, Veltrop & Harkrider LLP.



Ann McDaniel, Graham Holdings Co.

Mr. Gohn set the stage by exploring the legal questions that pertain to drones. He noted that all commercial drones have cameras, and that there is no point in taking those cameras by drone to a place where it was easy to get access with a camera before. “Drones today are mainly about invasion of privacy and surveillance,” he said. “They are machines for destroying privacy.”



Jack Gohn, J.D. Partner, Gohn Hankey Stichel & Berlage LLP

He introduced the legal concept of “curtilage,” which delineates the boundary within which a home owner can have a reasonable expectation of privacy. “It is an important legal concept, for the understanding of search and seizure, conveyancing of property, burglary, trespass, and land use planning,” he explained. Up to now, this area was generally defined by the land that an owner could surround with a fence, and extended to at least 500 feet above ground, which is the lowest altitude that manned aircraft are allowed to fly over sparsely settled areas. He noted that we do not know how the law would affect the flying of drones below 500 feet over the area normally protected by curtilage. A Florida statute, he noted, forbids all snooping uses of drones but it has many permitted uses and does not forbid physical intrusion into a property for those uses or for purposes not forbidden by the law.

In Kentucky, a home owner shot a drone out of the sky above his property. The owner of the drone sued, but the case has not yet been adjudicated. The home owner was also charged with a criminal offence, but was cleared. “The bottom line is that we don’t know what the civil or criminal law will have to say about self-help,” said Mr. Gohn. “There would be obvious safety problems with such action in urban areas. And what rule would allow a homeowner to shoot down a drone and not give similar rights against a news helicopter?”

He wondered whether, if a home owner invited Amazon to deliver a package to his property by drone, he would waive his curtilage rights and allow police to look at it without a warrant. He raised several other issues, concluding that the future with drones may be more dystopian than Orwellian, resulting in cluttered skies and the destruction of curtilage as a meaningful concept.



Gail L. Gottehrer, Partner at Axinn Veltrop & Harkrider LLP

Attorney Gail L. Gottehrer, who is a partner at Axinn Veltrop & Harkrider LLP and specializes in privacy and technology-related litigation, expressed concern for the storage of data that drones may collect. “The questions we should ask are: could the stored data be subpoenaed? and how long should the owner be able to keep it? “Businesses will end up with a lot of data they don’t want,” she said. “They don’t want the risk if the data get out and they get sued. The person who sends out a drone to do a job is not thinking about the data accidentally collected. We need a federal law that clearly sets out the rules and the limits.”

Mr. Mitnick from Access Now said his organization is working on a document setting a voluntary standard for what data are collected. He felt legislation will be developed as drones become more common and people start to see the results. He expected that public outrage over unwanted side effects (data breaches) will prompt legal action.

Use of Personal and Commercial UAVs



RADM Scott Sanders, President, Ausley Associates Inc.

In a session following lunch, a panel moderated by Matt Scassero, director of the University of Maryland UAS Test Site, discussed commercial applications of drones. The panel comprised the presidents of three small- and medium size enterprises (SMEs) in the drone business: Rear Admiral (retired) Scott Sanders, president of Ausley Associates, Inc; Shawn Bullard, president of Duetto Group, LLC; and Vincent Bellezza, president of Aviation Systems Engineering Company, Inc.

RADM Sanders painted a picture of a nascent industry that cannot yet envision its own fulfillment, saying that his company is trying to develop a business model for a commercial start-up. About \$2.3 billion will be invested in such start-ups in the U.S. this year, but the U.S. is lagging far behind Europe, which is spending \$8 billion just on research and development.

“Some of the technologies for commercial use haven’t even been invented yet,” he said. His company is “pulling teams together, seeking collaboration, international contacts, and customers.” Ausley also performed an experiment last year at Webster Field to extend the range of the FAA’s proposed limit of keeping the drone within the line of sight of the operator. He reminded the audience that, at the beginning of the automobile industry, laws were passed requiring automobiles to be preceded by a person carrying a red flag, to warn others of the approaching nuisance. “We’re not going to have laws that say where you can fly a drone – just my opinion,” he said. “If we still had red flag laws today, we would not have Ford and General Motors.”

Mr. Bellezza said the question facing the start-ups today is, “What does the customer want? What can you do with the data? It has to be more than just cool pictures.” A drone can cover 1500 acres of agricultural land in a day, collecting near-infrared images for plant analysis, he said. It can cover a 50-acre rail yard, looking for problems, in 15 minutes.



Vincent Bellezza, president of Aviation Systems Engineering Company (ASEC), Inc.

He noted that the FAA can issue an exemption, under Section 333 of the FAA Modernization and Reform Act of 2012, for a drone to operate in the national airspace system, but this requires a licensed pilot and a registered aircraft. “We can get the required permissions and a contract in place in a week,” he said. He warned that the first

drone operator to crash into an airliner will cause a public uproar and result in lots of new regulations. Hobby operators of drones will increase this risk for commercial operators, he said.

Mr. Bullard felt there should be a role for local government in regulating low-altitude overflights by drones. He said the FAA has been very slow to respond to the need for new regulations. "They should have the regulations for the integration of drones into the national airspace system by 2017, and it's not happening," he said. He also noted the invention of the "drone buster," a sort of ray gun that disables a drone's control system and forces it to land. It is now being used to protect sensitive federal sites, and the government has purchased "several hundred" of them.

He commended St. Mary's County's forward-looking attitude toward drones, saying the area has a "deep bench of talent" in this field.

Drones in War: Ethical Dilemmas



Panel III: Drones and the Ethics of War. Professor Avery Plaw, BRIG GEN Bob Dehnert Jr., Professor George Lucas, and Thomas E. Baker

A late afternoon panel, chaired by RADM (retired) Timothy Heely, discussed drones and the ethics of war. The panel comprised Dr. George Lucas, a professor of ethics at the Naval War College; Tom Baker, director of UAS and counter UAS initiatives at 1st Air Force; Brig. Gen. Bob Dehnert Jr., USAF (retired), now the director of the command, control and awareness sub-mission area of Raytheon Intelligence, Information and Services; and Dr. Avery Plaw, professor of political science at the University of Massachusetts Dartmouth.

Dr. Lucas argued that if military action is morally justifiable and legal, it does not become less so "just because you take the pilot out of the cockpit and put him 2,000 miles away from the target instead of 20,000 feet."

The use of drones and other robotic and automated systems has tremendous advantages for military personnel, reducing the risks they face, but at the same time it has a psychological effect because the pilot of a drone can see the damage caused by his attack, while the pilot of the manned aircraft is over the target only momentarily, he said. He viewed the increasing use of robotic systems in military action as inevitable, ranging from human enhancement to medicine to robotic exoskeletons. The French, he said, already have a marginally functional robotic suit.



RADM (retired) Timothy Heely, President, SPARTA Inc.

He warned of the hazard of the enemy being able to hack into drones and other electronically-controlled robotic devices. He also raised the issue of robotics in the ocean, which he said is a “target-rich and ethically questionable environment.” International law is not a good solution to such problems, he said, preferring forums such as the one at St. Mary’s College that could result in codes of conduct.



Dr. George Lucas, Professor of Ethics at the Naval War College

Mr. Baker said that he developed the standardized procedures for flying military drones in the national airspace system. These procedures involved operations in the terminal area of the drone’s operations, its transition to the area of operations, and its work in the operations area. Factors to be considered included the potential for loss of control and the loss of “sense and avoid” capability.

Brig. Gen. Dehnert from Raytheon wondered whether drones are the precursor of new technology that will operate within existing rules or whether the technology is so revolutionary that we need new rules. Different drones operate differently, he said. The Predator is essentially flown by a pilot who may be 1,000 miles away from the area of operations. If it loses its link, it automatically returns to its base. The Global Hawk, on the other hand, is flown by a computer, can fly autonomous missions, and can even swarm with other Global Hawks.

The tasks performed by these machines are not new, he said. The intelligence that is gathered is not different from data gathered by satellites, and the weaponized drones are no different than a cruise missile. He foresaw a future where unmanned systems will replace manned aircraft.

He argued that attacks from drones are less indiscriminate than the World War II firebombing of Dresden or the nuclear bomb attacks on Japanese cities, where many non-combatant civilians were killed. Drones are far more accurate, he said, having a 50-meter blast zone compared to one kilometer for a 2,000-pound bomb. As to the question of whether the use of drones makes it easier to decide to kill someone, he said the same ethical decisions apply in either case, and in the last six years, about 2,500 people have been killed by U.S. drones. The ethics are the same as sending in Special Forces to assassinate someone, he felt.

Dr. Plaw examined the ethics of using drones outside hot battlefield areas and the claim by Micah Zenko and Amelia Wolf in *Foreign Policy* that drones kill more civilians than manned aircraft do. In particular, the duo said that in Pakistan, Yemen and Somalia, drones killed 35 times as many civilians as conventional weapons did on military battlefields in Iraq, Syria, and Afghanistan. If true, Dr. Plaw said, this would violate the legal principle of precaution, to use the “least harmful means” and the just war theory that the safety of civilians is privileged. However, said Dr. Plaw, the pair’s research is flawed and the claim untrue. He said their study undercounted civilian casualty rates in Iraq and Syria, used minimum casualty counts as average values, used different methods of averaging casualty counts in different areas and compared two different time periods, which influenced the results because drone strikes have become much more precise since the earlier campaigns. In fact, he said, the number of civilians killed by drone strikes is slightly less than the history with manned aircraft.



Professor Avery Plaw, University of Massachusetts

Was George Orwell a Prophet?



RADM Mark Darrah, Program Officer of Unmanned Aviation and Strike Weapons at NAVAIR

“George Orwell is a pen name used by Eric Arthur Blair who wrote a famous novel *Nineteen Eighty-Four* started Rear Admiral Mark Darrah, Program Officer of Unmanned Aviation and Strike Weapons at the Naval Air Systems Command (NAVAIR), his dinner speech at Reconstructed State House. “In his book, Orwell described a fictional state where the government engaged in constant surveillance to exert complete control over its citizens,” Rear Admiral noted. That future is not here yet. “In fact, given the lead of the corporations have taken in the research, development and manufacturing of Unmanned Aircraft Systems, it is the private sector rather than the government that we should be concerned about” he said.

However, the UAS represents a new generation of warfighting systems that will transform how we operate in the future.

Many view UAS as a capability when in fact it should be viewed as a means of employing payloads to achieve particular capabilities, RADM Darrah said. “In simple terms, an unmanned aircraft is quite frankly a ‘truck’ ... simply a platform to host sensors and where necessary,

weapons. In virtually every case, the sensors we will put on these ‘trucks’ are the very same sensors we will put in our manned platforms. The discussions today should have been focused on payloads, not platforms....in my humble opinion.”

One of the unique capabilities of UAS is persistence, the ability to maintain domain awareness, observe pattern of life and continuously deploy across a large area, he said. “Aside from persistence, other unique features of UAS include expendability, scalability, capacity and affordability. Modern warfare continues to be based on integration of information across the battlespace that is immediately converted to knowledge. Our sailors and Marines must base their actions on this knowledge. Without persistent, accurate, and timely data, our knowledge base is compromised. If they continue to rely on individual pieces of information from a single sensor, we will not be able to maintain our warfighting advantage.”



Bonnie Green, Executive Director of The Patuxent Partnership welcomes speakers to the forum



Drew Mitnick, J.D., Policy Counsel at Access Now



RADM Mark Darrah talking with Dr. Maija Harkonen, Executive Director of the Center for the Study of Democracy at SMCM and Roger Budd, Business Development Manager at Raytheon



Professor Avery Plaw and Attorney Jack Gohn



George with Attorneys Gail Gottehrer and Jack Gohn



RADM Matthew Klunder talking with employees of HTii



Professor Helen Daugherty, CSD Advisory Board, Tom Daugherty, SMCM Foundation, and Professor Asif Dowla.



Marcia Greenberg and David Lewis



Harry Weitzel, President SMC Foundation Board and Chair of CSD Advisory Board and Roxanna Summers, CSD Advisory Board