



# Unmanned Aerial Vehicles as an Instrument of War



A Forces Transformation and Resources Seminar  
Marshall Hall Room 155, Fort Lesley J. McNair, Washington, DC 20319  
December 14 - 15, 2009

## Monday, December 14 – Current UAV Systems and Functions

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- 0900-0915**     **Welcome and Introductory Remarks**  
**Dr. James M. Keagle**, Director, Transforming National Security Seminar Series, Center for Technology and National Security Policy, NDU
- 0915-1000**     **Keynote Speaker: UAVs and the Robotic Revolution**
- 1000-1015**     **Break**
- 1015-1145**     **UAV Roles and Missions**  
*Theme: With over 5,000 different types of unmanned aerial vehicles operating over the skies of Afghanistan, Iraq, and Pakistan, south Asian airspace is becoming increasingly crowded. Not only are the numbers of drones rapidly increasing but the kinds of operators are expanding as well with drones flown and operated by the U.S. Air Force, the U.S. Army, the U.S. Navy, and the Central Intelligence Agency. With departments like U.S. Customs and Border Protection and the U.S. National Park Service operating drones along the borders, some scholars have wondered how soon it will be until unmanned aerial vehicles are flying over domestic airspace. Others argue that these aircraft systems should only be used militarily. As the technology improves, where should the line be drawn? Is it necessary to have so many different systems and who should operate them?*
- 1145-1245**     **Lunch**
- 1245-1400**     **Modern UAVs: Designs, Payloads, and Capabilities**  
*Theme: Initially used for anti-aircraft target practicing in the early 20<sup>th</sup> century, UAVs gained international notoriety once they were transformed to the “hunter-killer” platform we see today. While drone platforms are being created to carry bigger ordnance, there are other designs for unmanned fighter planes, robotic flying ICUs, and bio-inspired nano-autonomous systems. As people become more used to the idea of unmanned vehicles, how far will this technology go? Will platforms become more autonomous or are there certain capabilities that need to maintain a human face?*
- 1400-1415**     **Break**

**1415-1530 The Warfighter's View from the Ground**

*Theme: With IEDs being the weapon of choice for insurgents on the ground in Afghanistan and Iraq, the demand for UAVs has increased exponentially over the last few years. While the policy of "more" is not really a strategy, one cannot deny the importance of unmanned reconnaissance to the troops on the ground. UAVs provide a real-time assessment of what lies on the road ahead for U.S. personnel in theater but they also provide a level of comfort for these troops as well. As "guardian angels," these systems give soldiers a sense of security that no matter what, there is always someone watching over them.*

**1530-1545 Closing Remarks**

**Dr. James M. Keagle**, Director, Transforming National Security Seminar Series Center for Technology and National Security Policy, NDU

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## **Tuesday, December 15 – The of Future of Unmanned Aerial Systems**

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**0900-0915 Welcome and Introductory Remarks**

**Dr. James M. Keagle**, Director, Transforming National Security Seminar Series, Center for Technology and National Security Policy, NDU

**915-1000 Keynote Speaker: The Future of the USAF in an Unmanned Era**

**1000-1015 Break**

**1015-1145 Rise of the Machines: The Autonomous Line in the Sand**

*Theme: While the idea of terminators walking the Earth or robots that go bad seem like Hollywood creations, the reality is that special effects artists have been closer to the mark than most people realize. With some scientists talking about the possibility of creating super soldiers (“Iron Men”) and others developing adaptive artificial intelligences, the melding of men and machines seems almost inevitable. But should it be? Do we really want soldiers who juice up on electricity before charging into battle? Should the fact that the humans who develop these systems make mistakes give us pause? If we create computer systems that have greater computing power than the human brain, is it possible that we could be replaced? Where is the autonomous line in the sand that we shouldn’t cross?*

**1145-1245 Lunch**

**1245-1400 The HALO Postulate: Is War Becoming A Game?**

*Theme: With only 1% of the American population serving in the armed forces and a general aversion to casualties, the U.S. military has increasingly turned to technology to both recruit and supplement its all-volunteer force. The popularity of first-person shooter games like HALO and Call of Duty has some sociologists wondering if today’s youngsters are being inoculated against the horrors of war. Couple this with the fact that many UAV controllers are modeled off game consoles like the Playstation 3 and flying a UAV does seem like using an old version of Atari. Many of these games are played during a soldier’s downtime, blurring the line between reality and fantasy even more. Is the prevalence of these games disconnecting the realities and simulations of war for soldiers? With fewer and fewer politicians that have experienced combat, is technology making it easier to use the military option first instead of last?*

**1400-1415 Break**

**1415-1530    The Ethical and Legal Implications of Using UAVs**

*Theme: Since the bloodshed of the Civil War, but especially after World War I, there has been a uniquely American pursuit of some technological Holy Grail – an innovation that will end wars quicker and save more lives. Despite this obsession with technology, there also seems to be a distinctly American failing for understanding the larger implications of these systems. While UAVs are not necessarily in the same league as nuclear weapons, political, military, and national security analysts need to start considering the larger ethical and legal issues behind these machines. For example, where do these unmanned planes fit in the overall American arsenal? Do we have a strategy for integrating these drones into existing protocols in the United States and abroad? Can we really expect robots to tell the difference between combatants and non-combatants when our own soldiers have difficulty doing so? Do these platforms conflict with the Geneva Conventions and the International Committee of the Red Cross’s regulations for weapons of war?*

**1530-1545    Closing Remarks**

**Dr. James M. Keagle**, Director, Transforming National Security Seminar Series Center for Technology and National Security Policy, NDU