

CONFRONTATION OR COLLABORATION?
CONGRESS AND THE INTELLIGENCE COMMUNITY



OVERHEAD SURVEILLANCE

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One of the primary methods the U.S. uses to gather vital national security information is through air- and space-based platforms, collectively known as “overhead surveillance.”

This memorandum provides an overview of overhead surveillance systems, the agencies involved in gathering and analyzing overhead surveillance, and the costs and benefits of this form of intelligence collection.

What is Overhead Surveillance?

“Overhead surveillance” describes a means to gather information about people and places from above the Earth’s surface. These collection systems gather *imagery intelligence* (IMINT), *signals intelligence* (SIGINT) and *measurement and signature intelligence* (MASINT). Today, overhead surveillance includes:

- Space-based systems, such as satellites.
- Aerial collection platforms that range from large manned aircraft to small unmanned aerial vehicles (UAVs).

A Brief History of Overhead Surveillance

Intelligence, surveillance and reconnaissance platforms, collectively known as *ISR*, date back to the 1790s when the French military used observation balloons to oversee battlefields and gain tactical advantage over their adversaries. Almost all WWI and WWII belligerents used aerial surveillance to gain intelligence on enemy lines, fortifications and troop movements.

Following WWII, the U.S. further refined airborne and space-based reconnaissance platforms for use against the Soviet Union. Manned reconnaissance missions, however, were risky and could lead to potentially embarrassing outcomes; the 1960 U-2 incident was perhaps the most widely publicized case of the risks associated with this form of airborne surveillance.

Since the end of the Cold War, overhead surveillance technology has evolved significantly, greatly expanding the amount of information that the policymaker and the warfighter can use to make critical, time-sensitive decisions. For example, UAVs can remain over a target for hours or days providing pictures and full-motion video directly to the commander on the ground.

Overhead collection systems have been particularly useful in the Iraq and Afghanistan conflicts, as satellite and UAVs have allowed U.S. forces to identify adversaries and achieve greater accuracy in

striking targets.

- UAV use has increased at many levels, from “theater-level” systems to tactical systems flown by infantry battalions and even companies in combat.

Although overhead surveillance primarily supports military and counterterrorism operations abroad, overhead resources also have valuable domestic applications. For example:

- ISR systems have provided real-time support to fight wildfires in California.
- UAVs have been used to detect smugglers coming across U.S. borders.
- Satellites in 2005 provided imagery in Hurricane Katrina’s aftermath, allowing assessments of the overall damage.

Which Agencies Control Overhead Surveillance?

Multiple organizations across the Intelligence Community control various overhead surveillance resources. The main organizations include:

National Reconnaissance Office

The National Reconnaissance Office (NRO) acquires, develops, manages and operates intelligence satellites. Established in 1961 as an agency within the Department of Defense (DoD), NRO’s existence was officially denied until 1992. Although most of its programs and satellite capabilities remain classified, since 1995 NRO has declassified some systems from the 1960s and 1970s.

U.S. Air Force

The U.S. Air Force is responsible for aerial ISR. The USAF is increasingly reliant on UAV technology over manned reconnaissance vehicles because UAVs are cheaper to use and pose fewer risks for specific missions than manned aircraft.

National Geospatial-Intelligence Agency

The National Geospatial-Intelligence Agency (NGA) analyzes intelligence collected by NRO and Air Force assets. The NGA, previously known as the National Imagery and Mapping Agency (NIMA), then develops intelligence products from this information. The NGA is the principal producer of GEOINT, geospatial intelligence gained through the analysis of imagery and geospatial information. This information is used not only for military and policy purposes, but also for other uses such as disaster relief efforts.

Commercial Imagery Use

The Intelligence Community increasingly considers commercial imagery as a practical and less expensive alternative to using classified systems to obtain overhead data.

- Sharing commercial imagery with foreign governments and nongovernmental organizations sometimes allows the government to achieve policy and intelligence goals while still protecting sensitive classified imagery.
- Exploiting data from commercial imagery allows classified satellites to be reserved for sensitive missions.

In this vein, NGA frequently acquires commercial imagery to distribute to local, federal and non-governmental emergency management organizations.

- The NGA Director has publicly stated the Agency's desire to utilize commercial imagery as part of its future business plan, calling it "a fundamental building block" for the organization.

Implementation Challenges

Cost

The cost of overhead surveillance systems vary widely. Press reports estimate some overhead surveillance programs may cost billions of dollars. Recent evidence of the expense of these systems include:

- The Secretary of Defense in July 2007 shifted approximately \$1 billion into ISR programs from other Pentagon accounts, citing the high priority of these systems.
- The Senate Appropriations Defense Subcommittee in September 2008 approved an additional \$750 million in the 2009 defense appropriations bill for ISR efforts.

These costs are sometimes compounded by redundant systems found within the Intelligence Community. For example, the NRO and the Air Force frequently duplicate ISR efforts; as a result, several investigatory commissions have suggested integrating these programs.

- The most recent group to examine overhead surveillance systems, the Allard Commission, recommended changes to the way the U.S. manages overhead surveillance infrastructure.
- A related challenge to managing costs is that these systems are immensely complex, requiring a long lead time in developing not only the actual collection system, but also the processing and exploitation systems as well.

Domestic Surveillance Privacy Issues

The use of overhead surveillance by law enforcement or homeland security remains controversial, despite satellite imagery's utility in certain domestic assessments.

- Using satellites for homeland security and law enforcement purposes may infringe on privacy rights. It might also violate the Posse Comitatus Act that prohibits the use of military personnel and equipment for domestic purposes.

The Future

Overhead surveillance technology, in combination with overall intelligence gathering technologies, has improved drastically over the past decades. Given current national commitments in conflicts like Afghanistan and Iraq, expanding UAV technology will most likely be one of the short- and medium-term goals for the Intelligence Community.

- The small size and ease of use of UAVs have made these aircraft invaluable in tactical intelligence operations in Afghanistan and Iraq. Nevertheless, the Secretary of Defense stated that the technology is still being underutilized and should be expanded.
- The Allard Commission recommended that the NRO be eliminated, and space-related authority that the Air Force currently possesses be transferred into a new National Security Space Authority (NSSA) to enhance the management of national security space operations.

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