

Pre-deployment view
of defense support
payload.



Space Warfare Meets Information Warfare

By GORDON D. ISSLER

Operation Desert Storm has been proclaimed as the first space war. Because the ability of the United States to operate in space was not challenged, there was no battle for space superiority. However there was a contest for information superiority. Both sides conducted surveillance and reconnaissance operations to gather and exploit information.

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Coalition forces gained an edge with superior intelligence, surveillance, and reconnaissance assets and effective operational security and deception activities. This superiority enabled the coalition to mask its true intentions and convince the Iraqis that an amphibious operation was forthcoming even as forces moved in place for the left hook maneuver that caught the enemy by surprise.

Information warfare has been a central element of military operations for the Armed Forces since the Persian Gulf War. Defensive and offensive information operations are conducted to gain information superiority over an enemy. With the

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13th MEU Combat Camera (Branden P. O'Brien)

Communicating with
USS Tarawa, East
Timor.

increasing importance of achieving information dominance, the role of space has become prominent. As the Secretary of Defense has reported:

The support provided by space forces significantly reduces the fog, friction, and uncertainty of warfare. Joint forces can rapidly see, hear, and exploit the environment when space forces are properly integrated into the joint plan. This results in improved situational awareness, reduced response time, and a considerably more transparent battlespace, which provides the [joint force commander (JFC)] dominant battlespace awareness.

Given the importance of space to information operations, the next conflict may include a space war in the face of efforts to diminish U.S. advantages.

Recent decisions indicate that DOD leaders regard space operations as inextricably linked to information operations. Changes in the unified command plan assigned increasing responsibilities for information operations to U.S. Space Command (SPACECOM). It assumed responsibility for the military computer network defense mission, and command and control of the Joint Information Operations Center (formerly known as the Joint Command and Control Warfare Center) in October 1999 and for the military computer network attack mission in October 2000.

Until legal, political, and technical constraints on the weaponization of space are overcome, operations should be focused on fostering the objective of gaining and maintaining superiority in the information campaign. This article examines the merger of these areas to produce a synergistic effect on the operational level.

Space Operations

The doctrinal void for military space operations should be filled by Joint Publication 3-14, *Tactics, Techniques, and Procedures for Space Operations*. When approved this pub will provide an overview of missions conducted by military space forces, establish procedures for their support to the warfighter, and identify space forces that are deployed in the theater. It covers four primary missions: space support operations, force enhancement, space control, and force application. Two of these areas are well known to warfighters while the other two are not fully developed. Support operations include spacelift, satellite command and control, and surveillance and deconfliction of space systems which provide capabilities to execute space operations. Force enhancement includes reconnaissance and surveillance, environmental monitoring, communications, imagery and global geospatial information and services, and positioning—delivering spacepower to joint forces in the form of battlespace awareness.

Control consists of surveillance, protection, prevention, negation, and ensuring the friendly use of space while denying it to an enemy. This mission area is restrained by earlier decisions not to weaponize space as well as budgetary and technical limits. In addition, a plethora of commercial satellites that provide remote sensing, imagery, and communications services to potential enemies complicates space control negation. The force application mission is focused on weapons that pass through space, such as intercontinental ballistic missiles. Since space control and force application have not matured as warfighting capabilities, efforts must be directed to space support and force enhancement to expand the current U.S. information advantage.

Joint Pub 3-14 offers direction for planning space support to operational level warfare by joint task forces (JTFs). Unfortunately, it adopts a construct that synchronizes forces rather than integrating information throughout JTF.

A supported CINC/JFC/JTF commander should designate a coordinating authority for space operations under the JFC (for example, the [joint force air component commander]). In this position, the designated coordinating authority will coordinate space support on behalf of all commanders in theater in support of the JFC's objectives and act in the capacity

Positioning satellite communications, Kosovo.

55th Signal Company (Eric Hughes)



Combat direction center aboard USS Theodore Roosevelt, Allied Force.

U.S. Navy (Dorrie McKee)

of “supported commander” for space with primary responsibility in theater for joint space operations planning purposes. To ensure prompt and timely support, CINCSpace may authorize direct liaison authorized between the coordinating authority and service components of SPACECOM.

On the operational level, however, space activities differ from those on land, at sea, or in the air because their effects are unique; providing information while not deploying forces in theater that must be synchronized or deconflicted. Space-derived information should be integrated in JTFs across functional lines. Space provides key communications, intelligence, weather, warning, and navigation

information even though it is not the end-all, be-all for any functional area. Although it is a critical battlefield operating system, the Armed Forces fight with a system of systems; it must be integrated with other systems, and not organized separately in order to achieve superiority in command, control, communications, intelligence, navigation, and information processing.

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If a component needs intelligence, it goes to the JTF (J-2), and the intelligence community determines the appropriate system to task for the desired information. If a component needs added communications capacity, it goes to the JTF (J-6), and the communications community determines the appropriate system. There are synergistic effects within these functional communities.

Joint Pub 3-14 goes on to discuss the space forces that deploy in theater to support a JTF. “[SPACECOM] deploys task-organized [joint space support teams (JSSTs)] operational control to the JFC/JTF commander to facilitate tasking and use of joint space forces, provide space-derived information, and ensure space support is provided to the combatant commander.” This appears to duplicate or even contradict earlier identification of a “coordinating authority for space operations.” The draft publication also recognizes the capability of component space support teams that deploy to support service components of JTFs. Additional deployable support teams such as the National Intelligence Support Team (NIST) and the Joint Information Operations Center (JIOC) team are also considered to be complementary to efforts by space support teams. But such teams are only stopgap measures. Current missions and

Titan II lifting off,
Vandenberg Air Force
Base.



U.S. Air Force (Jennifer C. Wallis)

doctrinal guidance are not sufficiently balanced or mature to facilitate the integration of space and information operations.

Information Management

Although space concepts are not well developed, concepts for information operations have matured rapidly. Joint Pub 3-13, *Joint Doctrine for*

CINCSpace should retain combatant command and operational control of military space forces

Information Operations, provides an overview of information missions conducted by joint forces, an organizational construct for JTF information opera-

tions, and a planning methodology to integrate such activities into joint campaigns.

The Armed Forces conduct information operations to maintain superiority and operate inside an enemy observe, orient, decide, and act (OODA) loop. A coherent strategy directs offensive and defensive information operations toward JFC objectives. Offensive operations integrate both assigned and supporting capabilities and activities, supported by intelligence, to affect enemy decisions and promote specific objectives. Actions attempt to degrade, disrupt, or destroy information and information systems through the coordinated employment of operational security

measures, deception activities, psychological operations, electronic warfare, physical destruction, special information operations, and perhaps computer network attack.

Defensive operations integrate and coordinate policies, procedures, operations, people, and technology to protect information and information systems. Activities include counterdeception, counterpropaganda, counterintelligence, electronic warfare, and special operations, employing both lethal and nonlethal means.

For effective integration in a joint force, commanders organize an information operations cell. JFCs typically assign the responsibility to staff members, usually the operations officer (J-3). The composition of the cell is mission dependent, but it retains the central responsibility of crafting a coherent strategy aimed at contributing to JFC objectives. This strategy is developed on the JTF level, then disseminated to components for detailed planning and decentralized execution. The cell chief normally functions as a member of the Joint Target Coordination Board and also participates in developing the joint integrated prioritized target list. Joint Pub 3-13 identifies the joint activities and defense agencies that can support JTFs through the cell, including the Joint Warfare Analysis Center, Joint Communications Security Monitoring Agency, National Security Agency, Defense Intelligence Agency, and Defense Information Systems Agency. Moreover, JTFs are supported by a JIOC support team that deploys in-theater and typically is integrated in the information operations cell. The center is the primary agency for support of combatant commands with joint information operations and assists in planning, coordinating, and executing information operations worldwide.

Integrated Operations

To facilitate information operations, CINCSpace should retain combatant command and operational control of military space forces supporting JTFs that operate in wartime locales (orbits) each day with a global view. Space capabilities must be deployed in a theater or synchronized with other theater assets. They are global and hence, to optimize capabilities, they should be managed on the strategic level by a single functional component commander. In addition, space supremacy is not a viable objective on the operational level, just as the effort to completely deny enemy access to space is prohibitive. Strategic offensive and defensive considerations are beyond the level of the operational commander. Moreover, because the SPACECOM mission includes computer network defense, computer network attack, and JIOC operational control, it is logical to take the integration of

Analysts testing
command post,
Roving Sands '00.



1st Combat Camera Squadron (Jim Vahnegy)

space and information operations to the next level. CINCSpace should merge JIOC support teams and JSST and integrate space support into JTF operations via the information operations cell. Space operations can be organized in this way because it is not necessary to deploy large forces in theater. Their assets are already deployed and providing information from on-orbit locations. The limited space forces that deploy in a theater should integrate into the information operations cells on JTF and component levels and facilitate identification of realistic information requirements. These personnel can communicate JTF needs to SPACECOM, which then plans tailored space operations (as a supporting command) to provide information.

Planning space support for JTFs should be eliminated from annex N (space operations) and integrated into the information operations plan in the basic plan and in annex C (operations). This would provide increased visibility for space operations and ensure that both space and information operations are seen as integral to the joint campaign plan rather than included in a separate annex. Integrating space operations in a joint campaign via the information operations cell can produce synergistic effects that will enable information superiority and dominant battlespace knowledge.

The elements of surveillance, prevention, protection, and negation can be integrated as part of the information operations campaign. The surveillance of space objects identifies enemy space

order of battle to include commercial assets, projects when they will pass over friendly forces, and determines the kind of information provided. Armed with this knowledge, plans can be developed for defensive and offensive information operations to mask JFC intentions. The space control mission of negation is actually an offensive information operation (attack), because current space systems are information systems.

Space support must be integrated into planning for information operations and coordinated through information cells. Establishing a single authority for coordinating support and placing it within a component degrades the synergism of integrating space and information on the operational level. Assigning JIOC and computer network defense and attack missions to SPACECOM should contribute to integrating and merging joint space support teams with JIOC support teams and create joint information superiority teams. These teams should train and exercise to deploy in support of JTFs and provide expertise for the information operations cell. In addition, the separate annex for space operations must be eliminated. Planning for space support to JTFs must be integrated with information operations planning and inserted in the operations annex of the campaign plan.

JFQ