

Intelligence Support of Military Operations



Global Hawk reconnaissance aircraft.

DOD

By IKE SKELTON



Examining tactical air reconnaissance photography.

U.S. Navy (Joe Hendricks)

Some have described the 20th century as an epoch of total war for the American people. The assertion has considerable justification. Two world wars and the conflicts in Korea, Vietnam, and the Persian Gulf have marked decisive points in our history. In addition to hot wars, we have seen the peaceful conclusion of the Cold War, which required a massive investment in defense and the establishment of large military forces.

Combined, these conflicts—hot and cold—resulted in millions of deaths, countless injuries, endless destruction, warped economies, disrupted families, and other misery. Yet this Nation and its allies survived. The Armed

Forces have redeemed the Wilsonian ideal of making the world safe for democracy. Taking a long view, America and its allies did not for the most part go to war in vain. U.S. security interests have been protected and American ideals have set a global standard even in countries that fail to live up to them. American shortcomings are real, but they pale in contrast with those of powers which have met with defeat—Nazi Germany, imperial Japan, the Soviet Union, and Saddam Hussein's Iraq.

Given the decisive impact of war in this century, no one should be foolish enough to resort to combat unless it is unavoidable. Even the young have seen enough—via television if in no other form—to know about limited war. Most believe, however, that to avoid war or avert defeat should war break out we must be prepared to fight effectively.

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We can't predict the nature of warfare in the next century. But we do know that we must prepare for an array of new contingencies. Technology is changing so rapidly that some observers refer to an emerging military

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technical revolution (MTR). Many regard capabilities based around air-launched precision-guided munitions (PGMs) and information systems as key to the American way of warfare in the coming decades. PGMs were used with considerable effect in the Gulf War and have become a focus of strategic planning. Although expensive and not a panacea, they can do extensive damage and minimize the loss of non-combatant lives.

Precision munitions, however, require reliable information: good intelligence. PGMs must be targeted exactly. The urgent need for precise intelligence to conduct operations—information superiority—underscores the need to grasp the evolution of military intelligence. Notwithstanding public fascination with covert operations mounted by the Central Intelligence Agency, most of the Nation's intelligence effort is concentrated in the Department of Defense. Aside from bureaucratic distinctions between the national and the tactical level, intelligence support has become increasingly important for military operations in the post-Cold War world.

Because of its growing importance and the absence of debate on the subject, it is useful to review the course of military intelligence from a peripheral concern of headquarters staffs to an integral component of every combatant command down to the lowest tactical echelon. That evolution reflects, in particular, the close relationship between intelligence capabilities and the effectiveness of aerial bombardment.

The Two World Wars

The intelligence arms of the Army and the Navy date back to the last century, and Air Force intelligence was

part of that service since its inception in 1947. Much of the early intelligence work by the services focused on gathering basic intelligence—order of battle, terrain, ports, and foreign defense industries. It came from reports by attachés whose major qualification for assignment abroad was an independent income. Except during World War I, much of the military intelligence effort could charitably be described as superficial. Even the excellent analysis done by a handful of cryptographers did not prevent the Japanese attack on Pearl Harbor.

But intelligence did not initially occupy a significant role in one particular military technical revolution earlier in this century. Following the lead of the Italian airpower theorist Giulio Douhet, military aviators sought victory by attacking enemy industrial and political centers. These assaults aimed at destroying the economy of a sophisticated nation without defeating its forces in the field. But airmen did not seriously analyze the nature and location of key enemy facilities. Photographic surveillance was often an orphan; the emphasis was on acquiring and training to use bombers.

Airpower came of age in World War II, but its accomplishments did not

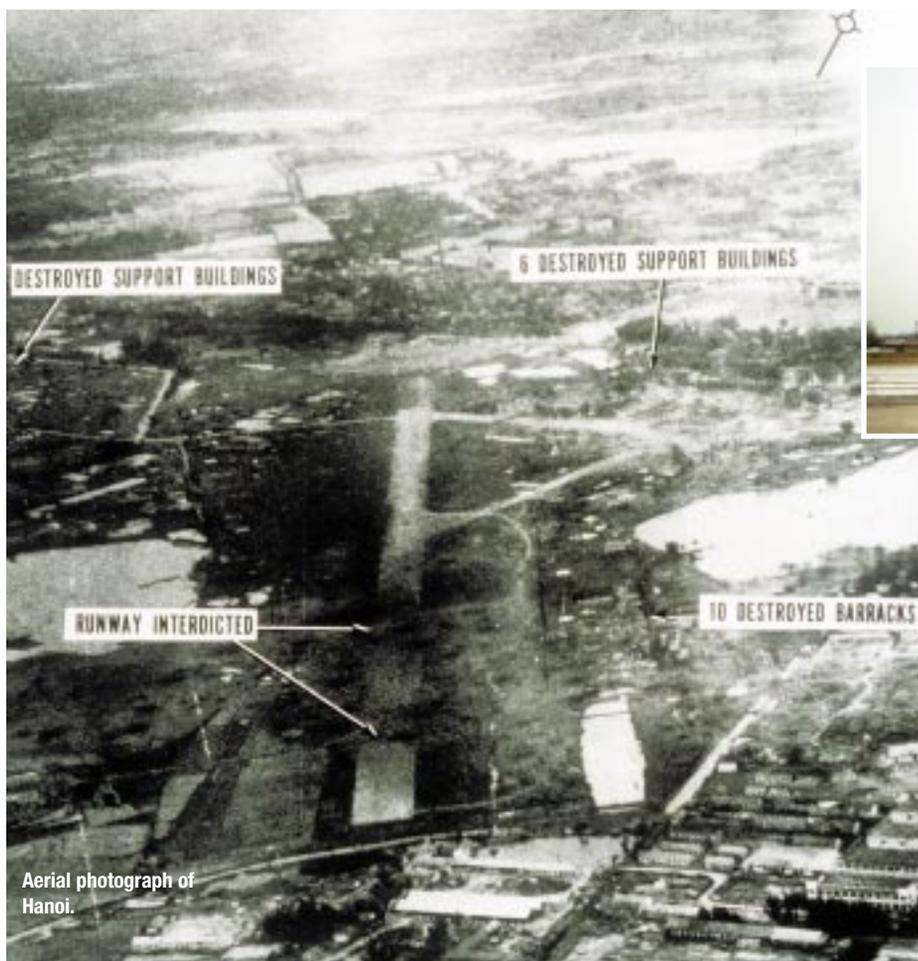
completely validate the strategy favored by its supporters. Despite the emergence of independent air forces, advocates of strategic bombing never demonstrated that it alone could defeat an enemy. It was not precision attacks against German factories and transportation centers that characterized the initial stages of the air campaign in Europe, but massive nighttime area bombardment designed to break enemy morale. It proved frustrating to hit targets with sufficient precision to knock out industries for significant periods. Without adequate fighter protection (especially early in the war), navigational capabilities, and intelligence data, the bombing of Germany was largely directed at its urban population centers. Later, when air superiority was achieved, daylight precision bombing of key targets contributed to the Normandy invasion and the drive into Germany; but it did not preclude bloody ground fighting. Moreover, post-war analyses of Allied bombing suggested that its effects were often inflated.

The success of bombing was limited by both aircraft and bombsight capabilities as well as German opposition, but the availability of intelligence was also a critical factor. It was difficult to take usable photographs at night and reconnaissance by day was hazardous. Analysis of pressure points in



Information Warfare Center, Kelly Air Force Base.

DOD (John K. McDowell)



Aerial photograph of Hanoi.

the enemy economy took time. Damage assessments were largely casual and inaccurate. Intelligence analysts and operators were often at loggerheads on bombing results.

The bombing campaign against Japan presented a somewhat different challenge. Although its economy was highly developed, the Japanese industrial base was generally not concentrated in large, easily identifiable complexes but in small factories or homes. Intelligence clearly indicated that Japan was preparing to counter a possible American landing on its home territory with massive ground forces which would inflict horrendous U.S. casualties. Thus there was a persuasive case for area bombardment, and it was undertaken in 1945 with ruthless efficiency against tinderbox cities such as

Tokyo, Osaka, and Kobe. The campaign reached a climax with atomic bomb attacks on Hiroshima and Nagasaki. Although Japan had been weakened by military defeats and a highly effective economic blockade, airstrikes, especially the atomic bombs, hastened the end of the war. Civilian losses from both conventional and atomic attacks were enormous.

Despite the limitations of air campaigns, there were advances in military intelligence during World War II, including photographic reconnaissance based on the work of George Goddard and other pioneers who adapted specially-designed cameras for aircraft use. Careful analysis was done by civilian experts brought into the Office of Strategic Services to identify targets vital to German and Japanese war efforts. Combined American and British experts achieved great cryptographic



U-2 landing at Osan.

DOD (John K. McDowell)

successes, setting a pattern for post-war collaboration.

The Cold War

The defense establishment was reorganized after World War II. The National Security Act of 1947 created the post of Secretary of Defense, a separate Air Force, and the Central Intelligence Agency to coordinate all source analysis and human intelligence collection. The late 1940s brought fiscal austerity, and military intelligence atrophied along with other defense capabilities.

As part of the build-up in the wake of the Korean War, military intelligence agencies began to grow and acquire the organizational structure that would make them major components of the Cold War military. New and specialized agencies would emerge to deal with cryptography, photographic interpretation, and satellites; and an intelligence community was organized under the Director of Central Intelligence to ensure collaboration and prevent expensive duplication of effort.

Much defense planning was based on increasing nuclear capabilities. These weapons made it possible to design air campaigns that could realistically destroy an enemy industrial base along with virtually everything else. The logic of nuclear warfare as it evolved, however, did not lead to a widespread acceptance of its practical utility. Once nuclear parity was

Assembling laser
guided bomb.



U.S. Navy (Heather Humphreys)

reached, decisionmakers perceived that the use of nuclear weapons was inherently a worst case scenario and that, short of direct threats to the national

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survival, their military usefulness was strictly limited.

During the Cold War the intelligence community necessarily focused on the Soviet Union together with the Warsaw Pact and Communist China. Concern over the military capabilities and intentions of the communist world, especially after a nuclear strike on American territory became possible, led to the growth and technological sophistication of U.S. intelligence. The requirement for accurate information on a secretive Soviet Union led to overflights by manned aircraft (in the wake of the shoot down of a U-2 in 1960) and the development of satellites that could peer into the deep recesses of communist territory with increasing discrimination beginning in the early 1960s. It became possible to accurately

calculate the number of Moscow's intercontinental missiles and launch platforms and assess Warsaw Pact intentions regarding NATO. Moreover, the intelligence community provided information for arms control agreements and defense planning.

The key recipients of intelligence were Washington decisionmakers—the White House, the Secretaries of State and Defense, and the Joint Chiefs of Staff. Decision cycles were lengthy, and there was opportunity for exhaustive studies and voluminous national intelligence estimates.

Given the danger of nuclear war, intelligence support of military forces engaged in limited wars, even in Southeast Asia, was largely a byproduct of assets designed for superpower targets. Satellites might be redirected for a time, reconnaissance aircraft assigned to tactical missions, and signals from Third World countries exploited; but the emphasis—and the organization and methods of intelligence agencies—remained on the Soviet threat.

Bombing campaigns during the Korean and Vietnam conflicts failed to accomplish all (or even most) of what their proponents predicted. For various reasons it was deemed unwise in both wars to attack the sources of industrial

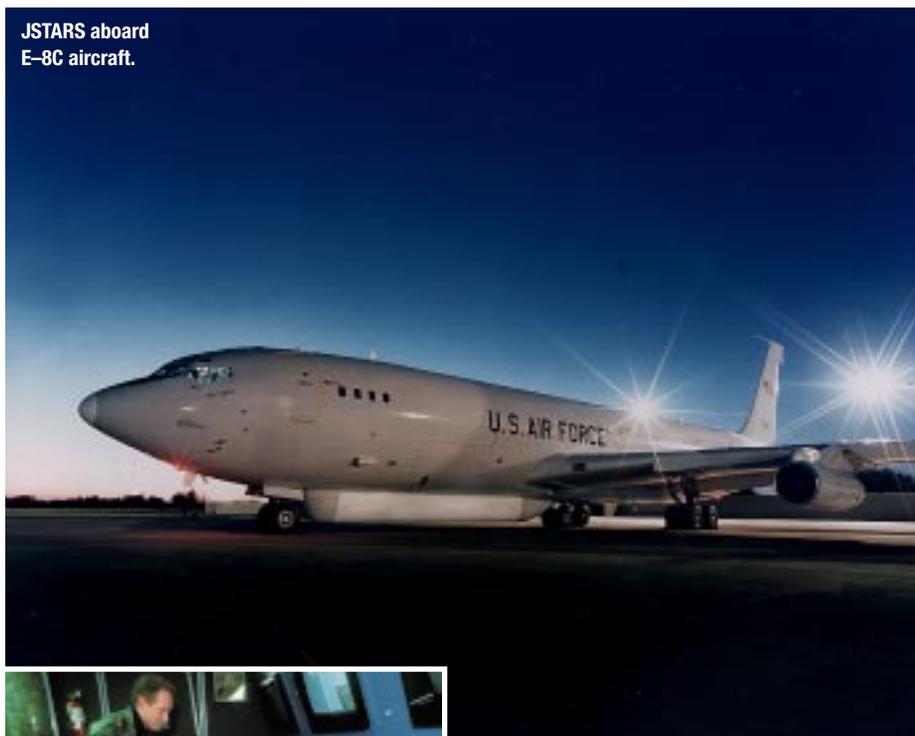
production since they were outside the theaters of operations—in the Soviet Union or China. The primary effort was on interdiction and tactical support to combat units. The outbreak of the Korean War required a frantic effort to rebuild surveillance systems to enable allied forces to target North Korean facilities. While air superiority and the destruction of the few strategic targets were accomplished early in the war, the effort to interdict enemy supplies and reinforcements was limited by inadequate targeting data and weaponry. Although airpower contributed significantly, it did not “isolate the battlefield,” and the war dragged on for three years.

There was enormous debate during the Vietnam conflict over a bombing campaign known as Rolling Thunder. Target selection by political leaders in Washington and political constraints on American strategy hampered prosecution of the war. All sides were concerned that sophisticated and expensive aircraft were being used on minor targets such as individual trucks and small troop concentrations. But locating targets was difficult. Aerial surveillance was hindered by triple canopy jungle and the effects of ground sensors were mixed. The extent to which interdiction actually reduced communist infiltration was widely disputed. Today most observers concede that the costly air campaign did not accomplish its goals, at least until targets in Hanoi were struck in 1972.

The Armed Forces went through a difficult downsizing and readjustment in the years after Vietnam, but those years also saw the start of a technological shift resulting from improvements in electronics and communications. These advances, most related to computerization, were not at the time widely seen as changing the nature of operations. The focus of military planning remained on the threat posed by a Soviet Union whose decline was not immediately apparent.

Since the mid-1980s some of the most notable technological advances have occurred in the field of military intelligence, including lasers, cameras, radars, sensors, miniature television

JSTARS aboard
E-8C aircraft.



Northrop Grumman



DOD (Photo S. Reynolds)

Interpreting imagery
from U-2 sensors.

links, e-mail, networked computers, and new forms of communications equipment.

After the Cold War

The collapse of the Soviet Union revolutionized the geopolitical environment in which the intelligence community operates. Although nuclear forces in the former Soviet Union must not be overlooked, most observers believe the United States is likely to face challenges far different from those of the Cold War. That means intelligence agencies which long focused on the Soviet Union must now provide real-time tactical intelligence on places such as Somalia, Cambodia, Bosnia, and Iraq. This requires new collection and communications

systems as well as organizational flexibility that does not come easily to any bureaucracy. Yet there are interesting continuities between intelligence today and that of the pre-Cold War era. Technological advances make it possible to accomplish missions once considered impractical.

The Iraqi invasion of Kuwait in 1990 was countered by a coalition led by the United States. The dramatic victory in Desert Shield/Desert Storm reflected not only the changed nature of war but the emergence of advanced and arguably revolutionary military technology. Capabilities developed during the Cold War, especially laser-guided PGMs, proved particularly useful against Iraqi forces even though extensive adaptation and jury-rigging were necessary. It was possible to identify and attack military (chiefly air defense), industrial, and communications facilities, largely by crippling combat capabilities. The enemy was blinded by a precision air attack on its command centers, but there was no direct attack on the Iraqi population. Air defense networks were destroyed, columns of tanks were identified and reduced to scrap metal, and Iraqi aircraft fled to

Iran for safety. The air campaign helped ensure enemy resistance to the ground campaign was vastly weakened and allied casualties were light. Despite media claims, airpower alone did not achieve victory; the ground campaign was necessary to drive Iraqi troops out of Kuwait.

For television viewers far from the battlefield, dramatic footage caught laser-guided PGMs delivered exactly on target, occasionally entering specified windows. Leaving aside the possibility that the military released only the best coverage and the fact that PGMs were just a fraction of the ordnance used, precisely striking targets demonstrated that the capabilities propounded by airpower pioneers decades ago was realized on the battlefield. PGMs are costly and wars will still be fought "on the ground and in the mud," as General George C. Marshall commented, but these weapons are nevertheless a major part of future warfare.

Looking Ahead

PGMs depend on precise intelligence. For a bomb to enter a window, detailed information is needed on the use and configuration of the building. Obtaining it is not simple or inexpensive. While satellites, manned reconnaissance aircraft, and unmanned aerial vehicles (UAVs) may offer excellent overhead photography, not all targets are above ground. In addition, photography may not yield information on the interior. Other disciplines are necessary, including signals intelligence and human intelligence. Analysts must combine disparate data from all collection sources and give it to the decision-maker within a definite timeframe. Hard decisions have to be made regarding priorities; mapping the entire earth would be prohibitive even for the world's only superpower.

In an MTR innovations in weapons and equipment lead to new doctrine and organizations. Decades passed before the Air Force became a separate service. Even then many military leaders and civilian strategists failed to fully integrate airpower into planning and operations. Today, new

B-26s after attacking
German fuel dump.



intelligence technologies, organizational structures, and the knowledge and skill to exploit them are being introduced simultaneously. A phenome-

Congress and the Pentagon carefully studied the effectiveness of intelligence during Desert Storm

non of Desert Storm was the way in which informal liaison among various echelons and stateside components supplemented formal command patterns. This situation was especially noticeable when hard-pressed intelligence officers in the Persian Gulf region established direct links to Washington-level analysts by e-mail or secure telephone.

The Gulf War was a decisive victory which provided a host of lessons. Leaving aside the absence of good intelligence on Saddam Hussein's intentions before his invasion of Kuwait, there were unacceptable delays in

transmitting data and aligning various computer links. Reams of paper were hand-carried within the theater because of inadequate transmission capabilities. The accuracy of bomb damage assessments (BDA) was controversial. The nature and extent of Iraq's chemical weapons capabilities and programs were a mystery until long after the end of hostilities.

Congress and the Pentagon carefully studied the effectiveness of intelligence during Desert Storm and incorporated its lessons into subsequent operations, especially Bosnia. Interoperability and the connectivity of communications capabilities reportedly are greatly expanded. Procedures for BDA have been examined. Efforts have been made to bring diverse elements of the intelligence community together to support commanders, and better links have been forged with the intelligence activities of foreign militaries. But anomalies exist. Decades after Goddard's work in configuring aircraft with

special camera systems, naval aviators in combat jets have used hand-held cameras to photograph ground installations in Bosnia.

Mastering the lessons learned during Desert Storm as well as the infrastructure established to support U.S. and NATO forces in Bosnia are only initial steps towards integrating intelligence into the post-Cold War defense establishment. Concepts such as dominant battlefield awareness, information superiority, and full dimensional protection may not adequately describe how forces will fight, but they are evolving in both Congress and the Pentagon. By all accounts the military of the future will demand more effective information and intelligence. This is a necessity unless one plans to fight with obsolete technology, larger numbers of troops, and more civilian casualties.

Careful employment of advanced weaponry based on sophisticated intelligence can permit attacks on military assets, decisionmaking headquarters, and communications networks without the area bombing of cities which characterized World War II and was envisioned in the nuclear strikes of the Cold War. They can launch planes or missiles against vital targets, not jungle trails or empty buildings. But there are unavoidable costs. Increased intelligence may absorb a greater portion of the defense budget. In the sprawling intelligence community, there are undoubtedly cases of waste and duplication. At the same time, increased investments in advanced intelligence technologies is clearly in the national interest. **JFQ**