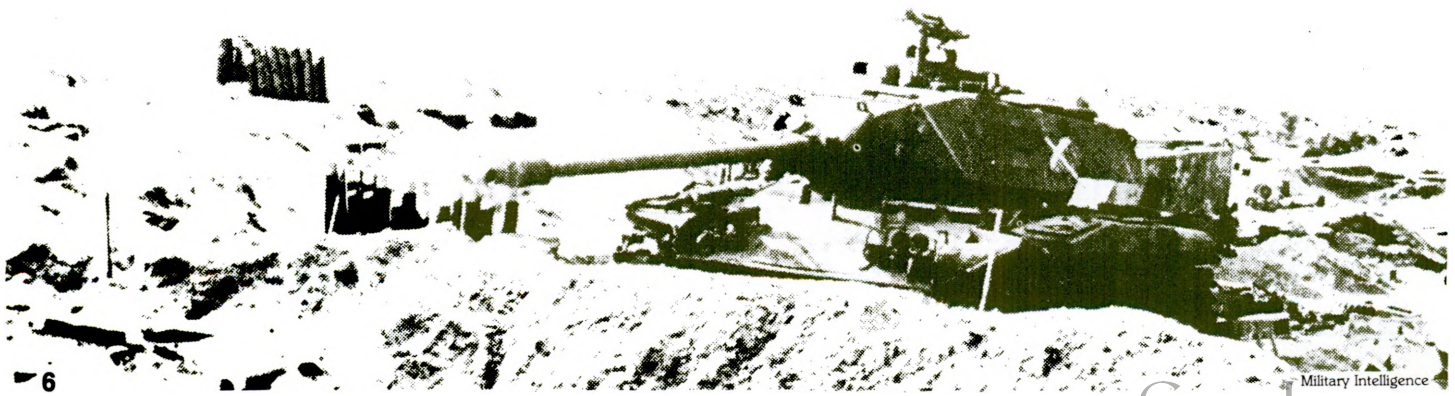
Technical Intelligence:
The Critical Gap

by Lt. Col. William L. Howard

In the Southeast Asian Conflict, the 1972 North Vietnamese offensive marked the first large-scale use of tanks. Because of inaccurate intelligence assessments, South Vietnamese forces were inadequately prepared to stem the progress of the North Vietnamese armored columns. The surprise appearance of armored fighting vehicles on the battlefield demonstrated the devastating psychological effect they can have on an unprepared force.

The North Vietnamese also unleashed two miniature weapons with considerable success. The Soviet AT-3 Sagger guided antitank missile was used against South Vietnamese armored vehicles, communications bunkers, and even small outposts. In addition, the SA-7 heat seeking surface-to-air missile was employed and became an even more serious threat because it could disrupt allied control of the air over the battlefield. While samples of these weapons undoubtedly fell into the hands of the South Vietnamese, nothing was done with them because in September 1969 technical intelligence units in Vietnam had been inactivated, and by October 1971 the 55th Military Intelligence Detachment, a corps support unit with a technical intelligence capability, had also been inactivated.

Two years later, the Middle East erupted in another war. The October 1973 war between the Arabs and the Israelis represented the first time that modern Soviet vehicles were employed against modern free-world vehicles. The surprise appearance of the Soviet AT-3 Sagger missile had devastating effects upon the Israeli forces. A massive amount of American aid was needed to sustain the Israeli armed forces. Once again, the element of the surprise introduction of a weapon on the battlefield caused great confusion until the capabilities of the weapon were understood.



Until recently, the words "foreign technology," when used by the military, generally applied to fielded foreign weapons systems. Intelligence assessments were limited to comments such as: a Soviet weapons system is a marked improvement over its predecessor or it appears that X-nation is about to field a new system. Policy decisions were then made to ignore the system, develop an American version, or develop a countermeasure. To discuss every system, its origin, its history, and its foreign ancestors would require many volumes and serve little purpose. There is, however, a value in discussing the technical intelligence organizations and procedures in use and their impact on doctrine, training and weapons development.

Briefly reviewing the origins of our technical intelligence operations, during World War II there were field collection teams which sent captured materiel to the rear where a reverse engineering analysis was performed and the results incorporated in intelligence assessments of enemy forces. At the same time, and almost completely isolated, were other engineers and scientists working to develop new items of military equipment. Throughout three complete war-peace-war cycles, there has been a lack of trained technical intelligence people in the initial phases of the conflict, and once the conflict was over, a mass exodus of people from both the areas of field support and basic weapons research and development.

Two major events occurred in the 1960s and several events occurred in the 1970s which have gone a long way to rectify those problems. The creation of the Defense Intelligence Agency and the establishment of the U.S. Army Foreign Science and Technology Center were the major events of the 1960s. These organizations provided centralized control of the Defense Department's intelligence gathering operations and means of distribution of foreign scientific and technical data to the arsenals or design bureaus. There was, however, limited distribution to the field and almost no knowledge of foreign weapons systems by those people most likely to encounter them, the combat troops! During the 1970s this began to change. By 1975, a great deal of the technical intelligence information gathered from Vietnam and the Middle East was declassified. The technical intelligence company was expanded to a battalion-sized unit and located at Aberdeen Proving Ground. They travelled about the country providing foreign weapons displays and training throughout the Army. At the same time, the Army established the Red Thrust Detachment at Fort Hood, Texas, with the mission of training field units on the techniques of fielding an effective enemy opposing force for use in training exercises. This force would look like, and operate like, a Soviet-style force. The Maneuver Training Commands, established in 1973, formed the focal point in the Reserve system and various corps headquarters in the United States formed the focal points for the active forces. By 1979, the basic system was providing effective training at the local level and, by 1981, the National Training Center at Fort Irwin saw the merger of both technical intelligence and Opposing Forces with the fielding of two Soviet-style maneuver battalions which provided a more realistic maneuver enemy. Surplus American vehicles had been modified to look like Soviet-designed equipment and a technical intelligence company, detached from its parent unit at Aberdeen Proving Ground, provided static displays of the actual Soviet equipment.

But while some improvements have taken place in the training arena, the weakest point of the system was, and still is, the design and development of new weapons. The U.S. research and development (R & D) establishment has failed to appreciate the value of information and insight gained from the exploitation of foreign technology. The often uncertain and precarious existence (and, at times, nonexistence) of the technical intelligence effort attests to this serious deficiency in the system.

Many intelligence systems were hard hit in the 1970s because of various scandals. There was almost no technical intelligence field collection effort and very little use was made of the wealth of scientific data that was available on weapons design by the Soviets.

By mid-1976, U.S. Air Force Intelligence had prepared an unclassified report on the Soviet military. The chapter on the technological challenge noted that the United States had enjoyed technological supremacy over all nations over the previous 25 years, especially in R & D associated with military power. However, Western Europe and Japan were closing

the technological gap in certain areas: The United Kingdom in VTOL fighters; Sweden with its Mach 2-plus fighters; France, in a series of first-class advanced military aircraft, as well as in nulcear-armed ballistic missiles and submarine-launched ballistic missiles; West Germany, in several modern military aircraft and ground equipment; and Japan, in certain areas of electronics. In a very real sense, the United States was suddenly being challenged in many areas as the technological leader of the Free World.

The United States held, and still holds, a lead in basic military technology over the Soviet Union in most areas important to national security. But the magnitude of that lead, so crucial in maintaining military security and in relieving Western nations of the burden of matching Soviet and Warsaw Pact forces in purely numerical terms, has greatly diminished as the Soviets expanded their technological effort, making substantial improvements in the quality, not just quantity, of their weapons systems. Given their emphasis on steady military production, large numbers of substantially improved weapons systems continue to be deployed throughout the Soviet armed forces.

It is now well-established that the Soviet economy exists as two quite distinct economies, one civil, the other military. And while the civil economy has continued to falter, the quality and quantity of new Soviet weapons being deployed reveals the relative health of the military economy. The most important concern for the West lies in the capabilities that will emerge in future Soviet weapons based on the extensive investment in the military economy.

Behind these overt indications of advanced technology in military systems are a variety of scientific efforts and the development of Soviet foundation technologies which support future military capabilities. The challenge to the West lies in unlocking the

secrets surrounding Soviet military R & D priorities and unmasking Soviet laboratory and design efforts. Without such knowledge, the possibility of a technological surprise will continue to loom as the most dangerous

element of the Soviet challenge. The seeds of technological surprise lie in R & D innovations. The Soviets have learned that a reactive policy in military technology is not enough to give them superiority, and they are working hard to gain the initiative in many areas. Soviet R & D innovations are significant and indicative of efforts to exploit basic research advances and develop new military applications.

Soviet secrecy prevents the United States from obtaining information on many Soviet R & D efforts and especially on Soviet decisions to initiate prototype development. Those decisions typically precede the appearance of a prototype in testing (or in a Moscow May Day parade) by about three or four years. The Free World must be concerned about what is not known—about what the Soviets may be doing with new technologies which would have military potential. The extent of our knowledge is determined by U.S. intelligence capabilities and, as systems become more sophisticated and complex, we must improve our collection of technical intelligence to support the development of countermeasures in our weapons systems.

Consequently, the United States must continue to maintain a reasonable margin of technological superiority in areas important to its military strength, both to offset its incomplete knowledge of Soviet technological progress and to provide hedges against unanticipated new threats or failures in any of its major weapons systems.

The standard hue and cry of the past, that American technology would offset the Soviet advantage in numerical superiority, no longer applies. The importance of technical intelligence cannot be understated as the United States competes with the Soviet Union for weapons technology which will help ensure its national security. Today, when the entire defense procurement process is in question, plagued by scandal from within and among defense contractors, the system itself must be reexamined. The current system must change and it will require a radical change in thinking by the nation's military leaders. There are many problem areas which need to be solved.

The first major problem area is the disjointed organization of the system itself. The Foreign Science and Technology Center belongs to the U.S. Army Materiel Command, but operates under the supervision of the Defense Intelligence Agency. The Threat Analysis Center belongs to the Intelligence and Security Command as does the Technical Intelligence Battalion, but again works under the supervision of the Defense Intelligence Agency. Completely separate from all is the National Security Agency and its analytical elements which, fortunately, are at least colocated with their collection effort. The Central Intelligence Agency is still another completely separate intelligence organization. In theory, the analysis of foreign science and technology is provided by one agency to the other agencies where it is incorporated with each of their collection efforts, from which an analysis emerges. Unfortunately, the theory does not always find its way into practice. In some instances, sensitive intelligence data or procedures are included in reports prepared by the Foreign Science and Technology Center. This restricts the dissemination of the reports to those who are cleared for access and thus many engineers and scientists are eliminated from receiving useful and current information concerning the threat, hence the development of countermeasures is delayed. For the same reason, the information does not get to the troops in the field. The Technical Intelligence Battalion receives some of the information and some of it is passed out at the National Training Center, but this is not fast enough for a large-scale combat operation.

To overcome this deficiency the Army should establish technical intelligence field teams. The size and composition of these teams could vary depending upon the size of the organization they were to support. The smallest practicable team would be four people in light vehicles. This team would provide the initial contact between the field elements and the technical intelligence system. Each team would support a separate brigade.

A ten-man team would be more realistic for a division-sized unit. This team would serve as a collecting point and as a liaison between the field and the division intelligence system. This team would have specialists from each of the technical services represented and would also provide an evacuation capability to corps headquarters.

At corps headquarters, a slightly larger organization would be required. In addition to technical specialists, administrative and logistical elements would be needed. This would be the lowest level at which classified or sensitive information would be kept. In addition to the collection and analysis duties, this team would also be assigned a training mission to provide foreign materiel training to incoming replacements.

At the field army or theater level, a technical intelligence battalion would be the main support of the theater commander and his staff. This unit would have access to both the intelligence community and to the scientific community through direct contact with the Foreign Science and Technology Center and, thus, could provide guidance to the theater intelligence effort.

There should also be a technical intelligence team or detachment at the major arsenals or commodity command. This team would be a duplication of the team at division level and would provide expertise in foreign technology applicable to that command and some expertise across the entire spectrum of military equipment.

The officers assigned to these units would have the opportunity to work in an engineering lab environment as well as a field environment. With this experience factor, they would do a better job after a few assignments. In the event of an armed conflict, there would be a backlog of personnel available who were experienced. At this point, the reader might be asking, isn't this a description of the system which already exists? The answer is yes, in part, in that the organizations exist, but with one notable exception. In the depot organization these positions are filled with Civil Service people who have no real interest or concern over whether or not the equip-

ment works in the field. The prevailing attitude is, "Don't make waves."

The next major problem area is the officer corps itself. The first aspect of the problem is the promotion system, and the second is that there is no career structure for technical intelligence officers. The promotion system places greater emphasis on short-term success in the form of the officer evaluation report. To compete, the officer must constantly change jobs, duty stations, and get to the proper military schools. In the process of changing jobs, each time he must get glowing officer evaluation reports, even if he has done nothing. With lead times for weapons systems anywhere from 5 to 10 years, what could anyone hope to accomplish in 6 months?

The lack of a career structure places the technical intelligence officer in a hybrid role, in neither technical service nor intelligence. The technical service career system places greater emphasis on a scientific and technical education and an orientation in repair, supply, and procurement. The intelligence service career places greater emphasis on historical trends, political developments, and education that supports this knowledge with assignments that are closely related to the diplomatic field. The basic aspect of military intelligence, that of combat intelligence, was, in the past, largely ignored and left to the combat arms officers whose education or experience may have had no relation to either technical service or intelligence service. The ideal education for an intelligence officer should consist of a background in history and science with a bit of political science and practical engineering.

Another major problem in the technical intelligence arena is the application of new and emerging scientific and technical processes to the military. In several studies, there have been two terms—the "needs" driver and the "technology" driver. In simple terms, the needs driver is expressed as, "I have a job to do, go get me a tool." The technology driver is expressed as, "I have this marvelous device, now go find a job for it." Gordon Ingram's M10 submachine gun was described as a tool in search of a job, since the world already had similar weapons. The problem in this area is peculiar to the scientific community. The desire to search out the truth of physical phenomena often leads to a device or development with a military application. Wernher Von Braun's desire to build rockets to travel to the stars would have been considered science fiction in the early 1930s; however, when Hitler's military quickly realized the military potential of such rockets, the V1 and V2 rockets were born. In his memoirs, Truman Smith, the U.S. air attache in Berlin in the 1930s, pointed out that one of the failures of his office was the failure to adequately recognize the potential of these weapons. But since American efforts in rocket research were not communicated to the military in a formal manner, Smith probably would not have recognized the input technologies in any case.

Another aspect of this problem is the "will not to believe"; in simple terms, it could be stated as follows: "since I can't conceive of this happening, I therefore choose to ignore all data on the subject." The Defense Advanced Research Projects Agency has done an excellent job of ensuring that new technologies and scientific processes do not get overlooked; however,it does not have an independent intelligence service and thus is forced to rely on the military systems or independent contractors who may or may not have their own intelligence operations and who are often more interested in a sale than in improving a system.

In some cases, the private intelligence operations or market research elements of certain contractors provide information on foreign technology faster than the military system. However, the majority of the major defense contractors do not have anything closely resembling a foreign intelligence office and, of necessity, are forced to rely on whatever the major commodity command supplies them on the threat. In many cases, the current intelligence reports are labeled "non-contractors," which means that design engineers end up working to develop weapons which will only be able to defeat obsolete weapons.

Just from this brief overview of some of the problem areas within the technical intelligence arena, it should be clear that a critical reexamination of this important field is long overdue. Unfortunately, under conditions of peace, and with limited pressure on the military, there is little emphasis to do very much other than "maintain the state of readiness"; however, when a conflict erupts there will be a rush to get technical information to the rear and play catch up. By then, it will be too late. Action must be taken during

peacetime to have the necessary people and organizations in existence and trained for immediate deployment.

In addition, a concerted technical intelligence program would go a long way toward providing more precise direction and purpose within the R & D process and, ultimately, the defense procurement process.

Technical intelligence is too valuable a source to be ignored. Soldiers need to know in advance what they will be facing on the battlefield and, more importantly, how to counter it. Moreover, technical intelligence will continue to be of central importance to the U.S. efforts to apply advanced technology to improving its overall military posture and, consequently, its national security. As the Strategic Defense Initiative unfolds, the United States can ill afford to repeat the mistakes of the past. ★

Lt. Col. William L. Howard was graduated from the Citadel in 1964 and was subsequently commissioned in the Ordnance Corps. He is a graduate of the Tank-automotive Maintenance Officer Course and the Command and General Staff College. Howard served as commander of the 11th Military History Detachment in France and with the Combined Materiel Exploitation Center in Vietnam. He also served as a company and battalion commander at Fort Polk, La. In 1978, he transferred to Armor and was an instructor at the Armor School in all phases of the Armor Officer Advanced Course. As a Reserve officer, Howard has been attached to DIA and INSCOM. Howard has also served as a consultant on Soviet armor and anti-tank weapons at Battelle Memorial Institute and has worked for Leatherwood Industries. He is presently a member of the Individual Ready Reserve.