4

Keeping the Edge in Intelligence

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The intelligence capabilities of the United States are an important consideration for any future Department of Defense. The projections of modes of military operations for the future that were presented by the Joint Chiefs of Staff in *Joint Vision 2010/2020*, and the outlines of a coming Revolution in Military Affairs, place a high premium on "information dominance."[1] The National Security Strategy advocates global engagement for the United States and is likely to continue to do so. This set of combined concepts places greatly increased demands on information gathering and analysis, and on the integration of these activities into the mission operations they support.

The burden of global engagement brings with it a need for global-scale sensors and the capacity for processing, analysis, reporting, and dissemination of the information they collect. This wide-ranging intelligence apparatus is essential for making national policy and conducting the affairs of state, and to support the deployment and employment of military forces on a global scale. The cost of these capabilities, however, is such that they will have to be shared by all functions and echelons of the national security structure, which creates major organizational challenges. This problem is already with us, and must be solved if the objectives of *Joint Vision 2010/2020* are to be achieved and the Revolution in Military Affairs carried out. Significant deficiencies must be addressed in current intelligence and

1. Joint Staff publication, *Joint Vision 2010* (Washington, D.C.: U.S. Joint Chiefs of Staff, 1996); *Joint Vision 2020* (Washington, D.C.: U.S. Joint Chiefs of Staff, July 2000). These are referred to collectively in this chapter as *Joint Vision 2010/2020*.

related capabilities, the analytic exploitation of these capabilities, and the integration of these systems with military forces.

This chapter begins by outlining the sources of the need for change. It is not intended to be a comprehensive treatment of the whole of U.S. intelligence issues, but to bring to the attention of a new Defense team the handful of most important needs. These are outlined in the next section, and a series of specific recommended actions are outlined in the concluding section of the chapter.

The Need for Change

The need for changes in our intelligence structure is driven by several factors. Chief among them is that, while the environment in which it must operate has changed, the national intelligence structure created in the shadow of World War II and developed during the Cold War has not kept up. Moreover, it is dominated by collection activities, while assessment of the information thus collected is inadequate to present and future needs.

THE ENVIRONMENT HAS PROFOUNDLY CHANGED

The information revolution has brought with it the means of proliferation of information and new technologies that fuel the economic and industrial growth of other nations around the globe. This has stimulated the global economy within which each nation, including ours, must compete for survival and well-being. It has also affected the technological and industrial base from which military systems, intelligence systems, and target information systems are drawn, permitting revolutionary approaches in each of these domains that have not yet been fully exploited.

Military Forces and Military Operations Have Changed

Dramatic advances in technology, particularly information technologies, have provided the basis for major changes in weapons systems, targeting systems, and communications systems. The concepts of *Joint Vision 2010/2020*, intended to exploit these technological changes, are revolutionary in scope; they place new burdens on the intelligence system and its related sensing systems.

One of the premises of *Joint Vision 2010/2020* is that the United States and its allies will establish "information dominance." To achieve this objective, force commanders will need a detailed under-

standing of the situation over the full range of their respective areas of responsibility, as well as of the situations affecting their ability to prosecute their specific missions. This permanent need for "situation awareness" will require that force commanders have access to a mix that includes both those globally capable sensor systems normally associated with "intelligence" and their own organic sensor systems.

Information dominance is also needed to support new weapons systems, which are designed to strike with precision from stand-off ranges and with a rapidity appropriate to a fast-moving conflict situation. Here, too, targeting these weapons and providing damage assessment will often require access to information from globally capable sensors. Their range, precision, and timeliness are appropriate and necessary to this modern mode of warfare, and must be available for this purpose.

The Current U.S. Intelligence Structure Was Established When Conditions Were Very Different

The structure that carries out U.S. intelligence activities is built around a set of agencies that have evolved since World War II, and are no longer well designed for generating a coherent product efficiently. First, the Central Intelligence Agency and its predecessors, which have primary responsibility for the production of national intelligence and the coordination of the U.S. intelligence activities, were initially formed during and shortly after World War II. The position of Director of Central Intelligence (DCI) was also established soon after the war. The National Security Agency (NSA), which has primary responsibility for collecting, analyzing, and disseminating signals intelligence (SIGINT), was first established as the Armed Forces Security Activity in the late 1940s. It was transformed into NSA in 1952 by President Truman, and given broad responsibilities for directing the nation's signals intelligence and communications security activities. These institutions, thus formed at the beginning of the Cold War, were shaped by the lessons of World War II. Both are now in need of modernization in their management and form.

The intelligence structure also includes the National Reconnaissance Office (NRO). Formed in response to Eisenhower's frustration after the U-2 shoot-down incident, the NRO became the vehicle for exploiting U.S. technological superiority in space. The NRO is not a complete mission agency: it has no substantive intelligence responsi-

bility at the "front end" of the process where requirements are specified. It is charged with acquiring and operating space systems in response to requirements specified by the DCI; it is not expected to interpret these requirements, because it has no substantive analytic capability from which to draw independent substantive judgment. It also has no "back-end" role: it is not responsible for the processing, analysis, or dissemination of the output of its collection activities.

Processing, analysis, and dissemination of signals intelligence, including that collected by the NRO, is the responsibility of NSA. Over several decades, the NRO and NSA have worked out cooperative procedures for tasking and controlling satellites, processing the collected signals, analyzing the results, integrating this analysis with other SIGINT sources, and disseminating the results. However, investment in satellite collection systems is systematically given more emphasis than investing in processing, analysis, and dissemination. The director of the NRO, in response to the substantial requirements pressure for more coverage, more kinds of coverage (radar, infrared, imagery, etc.), more resolution, more precision, and more speed in delivery, proposes programs that are compelling and gain support in both the executive and legislative branches. Conversely, the director of the NSA must deal with the output of many other sources of material in addition to the satellites. In formulating NSA investment priorities, balance with the NRO is not the only criterion. Moreover, at this stage of the intelligence process, processing, analysis, and dissemination have an "infrastructure" connotation and are thus often not perceived as compelling as the systems "closer to the target."

The National Imagery and Mapping Agency (NIMA) was formed in the 1990s, with NSA as its model. It is responsible for coordinating all imagery collection as well as the processing, analysis, and dissemination of all imagery products. It was created by consolidating an earlier Central Imagery Office, the Defense Mapping Agency, CIA's Image Interpretation Center, and the DCI's Committee for Coordinating Image Exploitation (COMIREX). The difficulty of integrating an intelligence activity with a mapping agency, a CIA workforce, and a defense agency has hampered its effectiveness: it is not yet mature, and is having difficulty coping with its responsibilities.

Finally, the Central MASINT Organization (CMO), which has responsibility for measurement and signature intelligence (MASINT), is a very small coordinating group attached to the Defense Intelligence

Agency. Because of its small size and weak charter, it is unable to exploit the potential of this domain of activity.

These separate enterprises, formed in response to Cold War demands and built around Cold War–era technology, vary in their capability and execution. Moreover, each generates a fundamentally separate set of products relating to the same set of situations. This places the burden on their customers of creating a coherent picture, but often the customers do not do so either. In any case, the infrastructure of people and facilities needed in the customer domain to cope with these separate streams of information is duplicative and wasteful; such duplication also makes it harder to derive quality results.

THE SYSTEM UNDULY FAVORS COLLECTION AT THE EXPENSE OF ANALYSIS

Military commands are unanimous in their expressed need for more analytic support. The access provided by the current set of global and organic sensors has improved and does a better job at meeting the needs of operational commands; the shortfall is in the analysis of the data coming from these systems. The global reach of U.S. forces and the variety of threats and problem-sets they must address require at least as broad a set of analytic skills, languages, and specialized knowledge as were required during the Cold War, but since its end, the resources for this realm have been substantially reduced.

Most intelligence dollars are spent to acquire collection and processing systems, rather than analysis. While some imbalance might be natural, it is exaggerated in part by bureaucratic factors: the collection systems are championed by major collection providers such as the NRO, the Air Force, and the Navy, while the champions of analysis wield much less bureaucratic power.

Another issue is the increasing availability of valuable information in the public domain. During the Cold War years, the period during which many of the organizations, processes, and habits of the intelligence community were developed, most strategic intelligence information was derived from secret sources. The primary targets of intelligence activities were closed societies, and the questions needing answers required secret sources and methods. To analyze the data from these sources, a high premium was placed on people and organizations that were especially knowledgeable about the closed societies, the secret sources, and the special methods. These circum-

stances gave rise to extensive government organizations dedicated to analysis of secrets. Although public-domain data was used by these organizations, the problems were not amenable to solution through open sources, and the skills and knowledge needed to exploit the information were not generally available in the private sector.

In our current world, by contrast, many of the most important uncertainties for the United States are not so dominantly defined by secret data from closed societies. While estimating the future trajectory of Russia, China, India, Indonesia, or other foreign societies may require some access to secret sources and methods, the dominant prerequisite is knowledge of the society and familiarity with its public behavior. It is important for the United States to have access to the most knowledgeable scholars of these issues and to give them incentives to help the United States make the best estimates of the future. The organizations dedicated and staffed to address our Cold War adversaries are not likely to be the best ones for these purposes.

The regional military commands are now increasingly involved in many potential situations other than conventional military conflict. Peacekeeping, humanitarian, and other operations other than war require understanding of the substantial information available from open sources. The analytic activities supporting these commands need to make use of regional experts as well as classified information, in order to provide a complete and comprehensive picture.

Changes in assignment of analytic responsibilities, based on the discussion in the next section, would help facilitate these improvements. Ways to improve on the quality of the current system include improvements in linkages between collection activities and policy consumers, in support to military operations, and in covert and clandestine operations; greater use of open-source information; reduction of the number of organizations; establishment of a more realistic requirements process; and creation of a systematic assessment process.

Intelligence Strategy

Changes are necessary to support the strategic objectives of maintaining national dominance in intelligence, improving integration of intelligence into operational capabilities, and expanding international cooperation in intelligence.

RETAIN NATIONAL DOMINANCE IN INTELLIGENCE, RECONNAISSANCE, AND SURVEILLANCE

Support of U.S. policy decisions and support to military operations needed for U.S. leadership will require a superior intelligence, reconnaissance, and surveillance capability. Dominance in global awareness and in ability to apply military force intelligently is a primary national capability with a geopolitical impact in its own right. The United States currently has dominant capabilities in operational systems, systems integration, and industrial base. Ensuring that this strategic position is not lost over the next ten to twenty years will require continued investment in intelligence, structural changes, and initiatives in international cooperation.

IMPROVE THE INTEGRATION OF INTELLIGENCE INTO MILITARY OPERATIONS

One of the most difficult management challenges for the Secretary of Defense and the Director of Central Intelligence, both now and in the future, is how to share the extremely capable sensor, processing, and analysis systems that are now available under the rubrics of intelligence, reconnaissance, and surveillance.

A military commander must have a good picture of his or her area of interest. This "situation awareness" is derived from a wide variety of information sources, only a few of which are labeled "intelligence." Others, nominally "reconnaissance" or "surveillance," include air traffic control radars, warning radars, and command and control radar systems such as the Joint Surveillance and Target Acquisition Radar System (JSTARS) and the Airborne Warning and Control System (AWACS). The commander in the field has organic systems such as EW (electronic warfare) and ESM (electronic support measures) that have a substantial capability to sense and display information on the local situation. The commander also needs weather information, mapping and geodetic information, and locally derived information observable by the commander's own forces about enemy, friends, neutrals, and the terrain.

The integration of these various streams of information can only be done by the local commander: the only one with access to them all, and the only one whose organization can weigh the importance and relevance of each with respect to the capability of the commander's forces and with respect to the commander's operational

intentions. It is very important, therefore, that the local commanders have the capability to perform their own assessments of the situation from all potentially useful sources of data. It follows that they must have the necessary information systems integrated in their units.

This formulation of the issue and solution are identical to the other "born joint" elements of command and control described in Chapter 2 by John Shalikashvili and Chapter 3 by Victor DeMarines, and should be thought of and addressed in the same way. The treatments outlined in Chapter 2 and Chapter 3 apply to the support provided by intelligence to military operations. They recommend ways to strengthen the joint elements of the Department for all aspects of force development, readiness, and investment decision-making. In particular, they recognize and applaud the current intention of the Chairman of the Joint Chiefs of Staff to strengthen the role of the Joint Requirements Oversight Committee (JROC) at the front end of the process. Under this concept, the JROC would concentrate its focus on shaping the requirements against which the armed services and defense agencies construct their program and activities.

They also outline significant new roles for the Joint Forces Command. They envision that this command, which already has a significant role in the joint force development process, will take on the responsibility of establishing a Joint Blueprint Office, to be charged with developing a common, adaptive, and agile command and control infrastructure including the elements of intelligence, reconnaissance, and surveillance. The Blueprint Office would provide an essential framework for the evolution of "born joint" functions. They also support joint demonstration, experimentation, and exercise ("expercise") activities by JFCOM for critical joint capability development, including intelligence. These are all steps in the right direction.

EXPAND INTERNATIONAL PARTNERSHIPS IN INTELLIGENCE, RECONNAISSANCE, AND SURVEILLANCE

Inherent in the current and expected future approach to security by the United States are major dependencies on other nations. This coalition approach to security poses many dilemmas, of which intelligence is one of the most complex. While the United States, as the sole superpower, must be prepared to act alone in some cases with a comprehensive military capability, more often it is likely to act in concert with others. In such cases, the decision to use or not use

military force, as well as the effectiveness of the operation when forces are committed, will require some form of integrated information-sharing with the coalition partners. This requires specific planning before the fact with regard to intelligence and integration of information, just as with regard to use of forces.

The United States is the dominant player in reconnaissance, surveillance, and intelligence and must take the lead, both strategically and tactically, in preparing for shared use of these assets. This is not now a significant part of our preparedness activities, and it needs strengthening.

Recommendations

The foregoing analysis leads to three types of recommendation for the new President and his defense team: consolidation of collection activities; improving the capacity for analysis; and expanding international cooperation.

CONSOLIDATE THE VARIOUS INTELLIGENCE COLLECTION AGENCIES INTO A RESTRUCTURED NSA

The first recommendation is to consolidate the intelligence collection agencies — the NSA, the NRO, the CMO, and NIMA — into a single agency, the NSA. It would serve as the manager of a unified system of technical sensors, processing, reporting, and dissemination. The rest of this section explains why this consolidation makes sense. In brief, first, consolidation would improve the coherence and quality of the products that have been coming out of the separate agencies. Other reasons derive from the technological advances that have changed each of the separate agencies. Such a consolidation also offers opportunities to improve analysis as well as to increase efficiency.

The Technology of Imagery and Other Remote Sensing is Becoming Digital, Electronic, and Near–Real Time

In the early days of airborne and satellite imaging systems when the intelligence collection agencies were first formed, the film-based, batch-process style of conducting the imagery business would not have made it sensible to merge the various intelligence collection agencies, even if political imperatives had permitted it. Now, however, there are very few characteristic differences between a digital stream that represents a picture and one that represents a segment of

multi-channel communications or a fine-grained electronics emission. The technical skills needed for the workforce, the industrial base to be used for these missions, and the information systems upon which the exploitation must be based are becoming identical for most aspects of the systems. This is an argument for consolidation.

The Functions Needed for SIGINT are the Same as for Imagery and Other Remote Sensors

The SIGINT system performs the same basic functions that now apply in all types of imagery and other remote sensing. These comprise needs identification, collection, processing, analysis, dissemination, interpretation, and feedback. SIGINT covers the technically different arts of communications intelligence, electronic intelligence, and foreign instrumentation intelligence. With changes in technology, imagery and the other technical sensor segments can be thought of in terms of the same functions. Moreover, the customer set for SIGINT is identical to the customer set for imagery and other types of intelligence. The current SIGINT system has an extensive doctrine and information system by which its customers can identify their needs for those who collect and produce the information, can exchange information with knowledgeable analysts, and can provide feedback to improve the performance of collection and analysis. An extensive set of cryptologic support groups (comprising 1500 people) work closely with many SIGINT customers to aid in their understanding and use of the signals intelligence that has been tailored to that customer's needs.

In contrast, the current Imagery system operating through NIMA has none of these characteristics; there is no reason to accept this shortcoming, now that it is a near–real time process. If these major segments of the intelligence system were not merged, it would be necessary to create a parallel and duplicative system for request, tasking, and dissemination for imagery data as well as for the other technical sensors. Concerns expressed by Congress, the DCI, and the military commands about Tasking, Processing, Exploitation, and Dissemination (TPED) for the imagery function are a manifestation of this issue. The fractionated responsibilities for these functions have produced inadequate investment in the TPED functions, and NIMA has not yet been able to turn this situation around. There is inadequate processing capability for the volumes of imagery that are truly needed; and a capable and practiced system for tasking these im-

agery systems by the users with a responsive feed-back mechanism does not exist. The systems engineering and project management capabilities of NIMA are not adequate to address these problems. The TPED problem needs the kind of project management that the NRO could provide in a consolidated agency (discussed below).

The Scope and Structure of the SIGINT Process is Appropriate for All of the Functions

Even though it has its own current technical challenges and management difficulties, the form of the NSA provides the best basis around which to create a more unified and streamlined approach. The SIGINT function carried out by NSA has proven to be the most robust over the years. The director of the NSA is an accountable executive responsible for using all of the capabilities and facilities of the United States in this functional area to best serve the nation. The director of the NSA is responsible for assuring the appropriate collecting, processing, analysis, reporting, and dissemination of the products of the whole SIGINT enterprise. A very robust set of management tools have been developed over several decades to guide and coordinate this effort. They are the most complete and effective available from any of the four agencies whose consolidation is recommended. Thus, many of the management elements for a single, coherent system of technical sensors already exist in NSA; with consolidation, they would not have to be recreated for each technical sensor area.

The Strong Systems Engineering and Project Management Capabilities of the NRO Should be Applied to this Larger Scope of Activities

The NRO should take over systems engineering and project management functions for the consolidated intelligence collection agency. The NRO is one of the U.S. government's best system acquisition managers, and is far superior in this respect to NSA, CMO, or NIMA. It already bears a significant share of systems management responsibilities for these three agencies. However, the bureaucratic strains created because they are separate entities hinders the creation of more effective whole-system solutions. Vertical consolidation of functions would give NRO full responsibility for systems management for all of the intelligence collection agencies.

Analysis Will be Strengthened and Efficiencies Achieved

By merging these separate functions, the way is open to integrate analytic functions now conducted separately. The analysts in each of the functions of SIGINT, IMINT (image intelligence), and MASINT are now, for the most part, directed at the same set of targets, for the same set of consumers, and with data of similar currency. Each is responsible for creating a product, which varies based on its functional access, about the same set of issues. Already these analysts often find it useful to coordinate their activities so that each can present a more complete picture. These separate sets of products must be integrated to provide a full and coherent picture, a task that now often falls to the user or consumer of these products. The current layered system provides some insurance, in that at least four sets of analysts are assessing the same events. It is, however, wasteful of analytic talent, which is already in short supply. Moreover it introduces, in some cases, time delays for product integration. Integration of these separate analytic functions should strengthen the quality of analysis, and reduce delays in product delivery. Finally, there are many parallel and duplicate sets of management overhead and infrastructure in these four agencies. Substantial reductions and resultant savings should be possible through consolidation.

STRENGTHEN ANALYSIS

The basic objectives of this set of recommendations are, first, to strengthen the analytic and interpretive capabilities of the mission departments and agencies of the government, so that the mission strategies and operations can become more closely linked to the analysis of information affecting these missions; second, to weigh the costs and benefits of information analytic expenditures more rationally; third, to develop a more intensive use of open-source information; and fourth, to strengthen the nation's overall information analysis function by creating a national assessment center that would draw from both classified and unclassified sources to analyze a select set of critical issues.

The Secretary of Defense and the Director of Central Intelligence should decentralize more of the analytic effort to bring the locus of analysis closer to the locus of mission responsibility. The majority of the nation's analytic and assessment efforts should be performed and paid for by the separate departments and agencies that have the pri-

mary executive-branch functions and responsibilities of the government. For the Department of Defense, which already has a significant analytic activity, the primary impact of this conceptual shift would be to strengthen the analytic activities that support its internal mission organizations. One particular need is to add to and strengthen the analytic effort supporting its operational commands.

The DCI should establish a "National Assessment Center" (NAC) to be the preeminent center for the U.S. government's analysis of selected issues whose assessment depends on the best possible information from all sources, open as well as classified. The information relevant to certain questions will often include non-secret sources as well as sensitive sources and techniques; the focus must be the integration of these different sources of information into a quality assessment. The premium will be on expertise in the subject domain, scholarship, and the credibility of professional reputation.

However, for the majority of critical issues whose analysis depends on sensitive sources and methods, the DCI should continue to rely upon the Directorate for Intelligence (DI) as the preeminent analytic organization. These include, in particular, many of the worrisome asymmetric threats that are dominated by secretive organizations, and which need increased attention by the DI. The intended relationship between the much larger DI and the small NAC is that of producer and consumer. The DI would be, as now, broadly responsible for intelligence product. The NAC would be selectively tasked to address a limited number of key issues, using its access to scholars on these topics and an organized open-source information collection system, as well as intelligence product.

It is envisioned that the National Assessment Center should be modest in size, perhaps 100–200 people. For the most part, these individuals would be from the private sector, people who have contracted to work for months or years on specific problems on the basis of their specific areas of knowledge. In some cases, substantial problems might be contracted out to eminent universities or private analytic institutions on the basis of their expertise.

The problems assigned to the NAC should be identified by the National Security Council both to limit the number of assignments and to establish their importance. The NAC's reports should be written for the President, the cabinet, and primary staff. The topics assigned should be those that are of strategic importance to the

United States, demand the highest level of scholarship, and require a mix of open source and secret information. For example, questions regarding the location and nature of the North Korean nuclear weapons development program would not be appropriate for the NAC, because the dominant issues are likely to require the understanding of secret sources and methods of closed societies. In contrast, an estimate of the course of Indonesian politics over the next few years would be appropriate, as it could best be accomplished with a mix of open and secret information in the hands of the country's most knowledgeable scholars on Indonesia.

EXPAND INTERNATIONAL COOPERATION IN INTELLIGENCE

The United States should establish itself as the leader of international consortia organized for cooperation in intelligence activities, which would form a collective umbrella under which a pooling of resources could occur when it is in the common interests of the participants. An additional objective is to make it attractive for major nations to join U.S.-led intelligence activities, so that they will not form competing and capable alternative groupings.

To achieve these objectives, the Secretary of Defense and the Director of Central Intelligence should develop a strategy and a plan for international intelligence cooperation. It should focus on a regional approach along the mission lines of the current regional areas of military responsibility, and should exploit the full range of bilateral, multilateral, and regional arrangements.

The consolidated intelligence agency proposed above can contribute to this effort significantly, by building upon the existing international structure and arrangements that the individual agencies have established. In some areas, the United States has for several decades been developing an approach to this strategy that could be used as a model. In the process, it has learned much about how to manage the complexities and has developed many of the management approaches necessary to success.

The Secretary of Defense should also task operational commanders to develop plans for information sharing with potential coalition partners in their areas of responsibility. These commanders will need the full support of the Joint Staff, the Assistant Secretary of Defense for C3I, and the DCI.

Progress in coalition intelligence will be accelerated substantially by the actions recommended by Elizabeth Sherwood-Randall in Chapter 9 with respect to U.S. cooperation within NATO, the United Nations, and with other potential partners. These would strengthen the basic coalition organizations to be served by a coalition approach to intelligence. Intelligence will always be strengthened by the quality of its customers. In addition, improved force planning, standards in security procedures, and the development of coalition command and control capabilities will enable early improvements in the intelligence processes.

Conclusion

The business of knowing what is going on in the world, where things are and what leaders intend to do, is essential for world leadership by the United States and security for the United States. Intelligence activities are an important part of meeting those needs for security strategy, diplomacy, development of economic policies and practices, and support of deployed and employed military forces. The roles of the current intelligence institutions need to change in response to the new environment and new technologies. The recommendations in this chapter are directed at implementing those changes.