

On Methods and Practice of Military Intelligence on Electronic Sciences & Technologies

By Liang Dewen, Number Ten Research Institute of Electronics

The Chinese Defense Science and Technology Information Monthly

Issue 121, the 5th issue of 1998

Editor's Synopsis: Intelligence is a new discipline that has developed in our country only in the last ten years. With his working experience of several years in this field, the author attempts to illustrate one perspective through this article: the correct intelligence theory that comes from field practice is the prerequisite for any good intelligence analysis; a full possession of rich information resources is the foundation for any good intelligence study; the existence of intelligence analysts of high caliber is the key to any good intelligence study.

1. The Characteristics of Military Electronic Intelligence Study

Military electronic intelligence analysis serves our national defense. It especially emphasizes the capability to predict events to come, the timeliness, completeness, objectivity, compactness and rapid response.

(1) The Capability to Predict: It means that we eye the long-term demands of the future and seek to discover the major breakthroughs in military electronic engineering or operational theory in the international arena, to preemptively and scientifically predict these breakthroughs' potential applications in the future in military electronic equipment and its relationship with any future wars and the directions of further development. By so doing, we can occupy the advantage point in technology in a timely fashion; strive to take the initiative in future warfare; provide support for the R&D development in our nation or in our own fields. If we fail to monitor the new technologies and new concepts being developed by foreign military forces, we will be in a disadvantageous position and be under control by others.

(2) Timeliness, or Instantaneity: This means to provide without missing any opportunity the intelligence as demanded by a specific phase of an R&D project. To miss "good timing in combat" not only results in negative impact on the research project, but also reduces the value of the intelligence. (Even if you could provide important intelligence on this project later on.)

(3) Specificity: This means that whatever intelligence we provide must be exactly what the customers want. We must worry about what the customers worry about, desire what the customers desire, which is the reason why a particular piece of

intelligence can have its value. Intelligence without specific purpose can only be a piece of junk that serves to waste the time and energy of the customers.

(4) Thoroughness: This means we provide relatively comprehensive intelligence on a research topic that may be big or small so that we can avoid erroneous conclusions drawn by the customers due to the incompleteness of the intelligence we provide. To reach this goal, we must be good at understanding the reality from a macro perspective, to approach issues strategically and holistically, to know the situation from its entirety; we must be good at placing the small detailed bits of problems in a big trend. If we fail to do so, it will be very difficult for us to produce intelligence of high quality.

(5) Objectivity: This means that we should objectively analyze certain new technology, new systems, new concepts and new theories that may be emerging in our domestic market or from overseas so that our customers (including our leaders at various levels, and engineering technicians) can have a correct understanding of the issues for them to correctly guide their R&D projects. When commenting on the famous Rand Corporation, an American official said: “the most remarkable strongpoint of the Rand Corporation lies in its objectivity in its research,” which enables its research to be correct and be trusted by its customers.

(6) Rapid Response: This means the period of time from receiving the order to gathering the intelligence to delivering the intelligence should be very short. To make this happen, we must possess massive amount of information in reserve, and obtain many sources of information. Slow response will greatly reduce the effect of the intelligence.

One point needs to be further stressed, i.e., the ultimate value of intelligence lies in its being “utilized.” The ability of the customers to digest it and the sensibility with which customers approach it are important factors in determining the effect of the intelligence.

2. Intelligence Study Is a High-level Work of Creativity

Like any scientific research, military electronic intelligence analysis is a creative activity of science. While electronic engineering focuses on the engineering project itself, intelligence study is a soft science with its focus on using new approaches, new concepts and unique technical skills to distill, analyze, compare and synthesize information, based on fully obtaining intelligence materials and investigative research. In other words, military electronic intelligence mainly stresses new technologies (including specific and general technologies), new systems, new concepts and new theories of electronic engineering, focusing on the analysis on the cutting edge development of the most advanced and newest electronic technologies. By studying the four “new’s,” we decide our direction of intelligence gathering and proceed with our intelligence study that will play an important role in future wars, and completely conform with the conditions of our military, our nation, our nation’s comprehensive power and our national strategies and tactical considerations.

Intelligence study is the prelude to any research efforts in military electronic engineering projects. It must serve the needs as demanded by several phases of any military electronic engineering projects, including preliminary research, engineering and manufacturing, and product evaluation. It is an important strategic resource for promoting the further development of the military electronic technologies. The intelligence analysts must deliver what they gather through their senses to their customers, converting the unknown to the known. During this process of conversion, large amount of time will be spent on filtering out junk and useless information and on making vital connections with bits of information. When delivering intelligence, we must try our best to reduce the degree of uncertainty in our assessment of things. Therefore, this is a high-level scientific labor of creativity, with its social, technological and economic benefits closely manifested in the entire process. Now we can see that the basic mission of the military electronic engineering intelligence is to fully obtain the information on and constantly follow the current conditions and development trends of the field, correctly identify the topics for intelligence research and analysis on various levels so that we can provide timely, objective, fair and convincing intelligence reports for our leaders to make plans, set up strategies and leadership decisions. As an intelligence agency, the quality and quantity of its intelligence research reflect the quality of this intelligence agency, and directly influence the progress of our intelligence operations.

3. Intelligence Study Should Have Its Clearly Defined Purpose

Intelligence study cannot be bogged down in details without sense of direction; it cannot be intelligence for the sake of intelligence. It should have its own purpose and clearly stated perspective, especially it must carefully and completely analyze the needs of the customers. The selection of intelligence targets must be motivated by the possible projects our nation will likely launch in the next five, ten, or fifteen years and the demands generated by the intelligence agency's own fields and its preliminary study. The intelligence agency must study closely current and future international situations, the different kinds of characteristics of modern wars, especially the features, effectiveness and problems of the electronic weapons used in certain foreign wars. In the meantime, we should pay particular attention to gathering information on the major breakthroughs of international military electronic science and technologies. We must analyze the far-reaching impact of these new breakthroughs upon weapons systems and future wars, from which to provide constructive recommendations to further strengthen our military electronic system. This is what we mean by the purposefulness of our intelligence work, without which, we will lose the usefulness of our intelligence service. Whether the purpose is correct or incorrect will directly or indirectly determine whether our policies will succeed or fail. This requires that the purposefulness of our intelligence work only come from a solid foundation of comprehensiveness, objectivity and reliability. Especially in times like ours, a new concept of "National Electronic Defense" is being gradually formulated, and gradually accepted by people. The role played by "advanced" and "new" electronic technologies has been clearly demonstrated in the various regional wars in recent years. Military experts in different countries are constantly learning from the lessons of these wars, adjusting their R&D strategies for military electronic

equipment. Our country is no exception in this regard. Our military electronic intelligence study should be able to ground our feet on the current, predict the future, correctly guided in our gathering targets, and actively push for further scientific research, so that we can make our due contribution to the formation of our nation's military equipment development strategies.

4. Knowing The Approach To Gathering Intelligence Is The Foundation For Good Intelligence Study

In recent years, countries such as Russia, the U.S., South Korea and the Great Britain have all published articles revealing various approaches to gathering intelligence. For example, the British publication, the Jane's Defense Weekly, published an article on 17 September 1997 entitled "'Legal' Spies Target American High Tech," warning the American industries to guard against others' legal practice of industrial espionage. The same publication put out another article on 21 May, on the eve of the opening of Paris International Aero-Space Fair (started 6 June) warning the American industries that the French spies may steal intelligence from the American products on display. Based upon the reports mentioned above and upon our own experiences, we generally think the following are the basic ways of obtaining intelligence:

(1) Gathering intelligence from open publications. This is the major and frequent source of intelligence. For example, the British author Charleson published a book in 1990 named "The Modern Stealth Airplane," which was based upon close readings of many international journals on aeronautical technologies and many news reports and articles, and upon the personal data he had collected. The author believes that the American journal "Aeronautics Weekly" is known for its constant leaks of space secrets involving the aerospace industry. While briefing on the development of the Russian anti-aircraft radar, Yuri Alexandrewic Khuznozov, the chief designer of the All-Russia Wireless Engineering Science Research Institute, stated, "We have obtained some intelligence through all kinds of secret channels. But for us, more often than not, we can get enough free information from open publications. The reason for this is that western electronic companies and research institutes, in order to get enormous profits from their products through product promotions, are not afraid of disclosing some secrets." Taiwan has also sought to gather intelligence on the Mainland military electronic industry through reading the promotional materials of the Mainland's exported products. In the United States, after Clinton went in to the White House, an influential organization called the National Economy Council was established. The task of the Council is to conduct industrial espionage, technical monitoring, to centralize and deliver intelligence by selectively scanning foreign journals and databases in special disciplines. The Bulgarian newspaper, "The Opinions," printed an article on 19 May 1996, which revealed that the American designer of the F-117A stealth fighter got his idea from the articles of the Soviet professor Ufuemkov. George Kennan, the Princeton professor emeritus of history, stated in an article published in the New York Times on 18 May 1997 that "95% of what we need to know about things can be acquired through careful and sufficient analysis of the massive legally obtained documents and archives in our

possession—the intelligence from this source is open, ready to be used at any time.” Therefore, to obtain intelligence through open sources has become a major way of gathering intelligence by the intelligence services of various countries.

(2). To steal, intercept and take intelligence by way of international communications networks and the Internet. Last year (1997), by directly visiting the Internet, we learned the advanced features of certain products. We immediately reported our findings to the agencies in charge, thus avoiding a mistake that would have happened. We have also obtained some market analysis intelligence through some (Internet) databases.

In addition, we can also obtain intelligence by taking advantage of work inspection trips, sightseeing, defense conferences and international cooperation projects.

5. The Practice of Intelligence Study Methods

Based upon my experiences at work, I believe that those who are in the business of gathering military electronic engineering intelligence must do the following:

(1) When selecting our intelligence target, we should keep in mind our own military strategies, our combat missions, the level of threat posed by our nemesis, the role the weapons system will play in future wars, and development of defense electronic technologies. We must change the situation in which we only conduct intelligence operations to serve the ongoing engineering projects (but we by no means should exclude the necessity of intelligence agencies serving scientific research), gradually create a situation in which the future needs of our defense stimulate and motivate our intelligence. To be able to do this, we must understand the directions of the development in military technologies, our domestic R&D updates and its needs. In the meantime, we also need to know the future directions of certain specialized disciplines and then decide the specific topics for intelligence operations. Topical intelligence should include three aspects: the first is to conduct long-term, uninterrupted monitoring and analysis on certain technology, the second is to conduct fast analysis on high-priority items or items that are needed in the near future; and the third is to conduct pioneering analysis on items that have potential demands in the future.

(2) An intelligence analyst must possess an out-going thinking mode. On the one hand, he must be a friend with the technicians and engineers, and through constant contact with them he must understand the needs of the technicians and engineers for the current projects at hand and any projects in the future. During these contacts with the technical staff, an intelligence officer can share what he knows with the technicians and engineers, and through a reciprocal relationship with them, the intelligence officer can make his intelligence gathering operations more focused and purposeful. These contacts can also inspire each other to find creative ways to solve problems. On the other hand, through constant contact, understanding and exchange with the outside, the intelligence officer can utilize new technologies in intelligence gathering, especially computer networking technologies, to make these technologies

serve our needs, thus increasing our approaches to gathering intelligence, enhancing the quality of our intelligence.

(3) Intelligence does exist out there whether we know it or not, some can be found between the lines in documents, or in fragmented phrases and sentences. Whether we can discover and use them or not depends on whether the intelligence officer has solid basic training, that is to say, the ability to read foreign languages, to express effectively in Chinese, to master the knowledge in our specialized disciplines and to maintain an active awareness of intelligence operations, especially our “curiosity.” If we have all these, then we can discover and catch our intelligence targets that we really want in the vast ocean of printed documents, and create a high quality database upon which for us to conduct our intelligence analysis. For the senior intelligence analysts, more practiced experiences are needed. They are required to have higher qualities of personal character such as more clarity, more compassion for intelligence, active mindsets and broad views. They are also required to possess the ability to conduct comprehensive analysis with a broad knowledge base. The well-known American intelligence analysis agency, the Rand Corporation, requires its intelligence analysts to be knowledgeable both in natural sciences and in social sciences, to be able to use computers to conduct systematic analysis so that they can produce high-quality intelligence reports. In 1994, the U.S. Department of Defense published “the Defense S&T Strategies” which stated, “It is very important that we have personnel of highest quality to explore the unknown.” Therefore, if an intelligence officer of high quality can attack a topic from multi-disciplinary, multi-perspective angle, he can reach conclusions that are relatively more scientifically accurate. Past experiences have proven that multi-disciplinary approach is the key to victory in intelligence warfare.

(4) High quality intelligence research results are the basis for the survival and development of our intelligence services. In addition to seeking, gathering, and accumulating information, an intelligence officer must be good at analyzing and deconstructing the raw data, willing to gain experience through field work, and ultimately reaching the following goals: the ability to accurately select the targets; to produce new contents in the reports that contain ample documentation, deep analysis, and feasible recommendations; the ability to write reports with clarity and central themes, reports that are well written without any language glitches, with clearly structured presentation.

(5) A qualified intelligence officer should be like a highly sensitive, all-weather surveillance radar, constantly monitoring, within his own range of expertise, the new technologies, new developments, new activities and new trends; he should also be like a multi-functional air wax plane, constantly extending the reach of our senses, constantly broadening our horizon, seeking potential intelligence of use. If we repeat this process many times, we will be able to accumulate many fragmented bits of intelligence and through our analysis and research, we can produce a very attractive, profoundly inspiring and very useful intelligence report.

Facts have proven that intelligence assumes its well-deserved role in military electronic research. The key is how to guarantee its quality and put it in full use. Intelligence study needs certain guidance from modern intelligence theories, but if we are too academic and high-minded, without resorting to practice in the field, there will be no intelligence study to speak of. Only with strong devotion to our profession, with the sense of responsibility we each bear for developing our nation's military electronic technologies, only with a down-to-earth gung-ho spirit with which to attack the most difficult problems, can we make our intelligence work better and better, can we pave the path for the large number of advanced intelligence analysts to emerge. Our time calls for intelligence talents. And intelligence talents can have a bright future only with constant and arduous efforts.

—
<http://210.79.226.16:81/cetin2/qk/gfxx/xx1998/xx980517.htm>