

if we had imposed an embargo on oil to Spain, for example, it is probable that we would have driven Franco into the arms of the Axis. It was to our interest to buy from Spain those strategic materials which would otherwise have gone to Germany, and to sell to Spain enough goods, and the right kind of goods, so that her economy could continue to function.

Strategic bombing of the industrial centers of Germany did not occur until relatively late in the war. It took time for the British to assemble a fleet of heavy bombers for nighttime raids deep into Germany, and for the United States to produce heavy bombers and to recruit, equip, and train the crews to fly them. The Eighth Air Force did not conduct large daytime raids into Germany until late in 1942. Thereafter the frequency of raids and the weight of bombs dropped increased progressively until VE-day.

The results of the combined Anglo-American industrial bombing of the German homeland and German-occupied territory were not fully perceived until after the termination of the European war, when prisoner of war interrogation reports and enemy documents became available, and when target teams had a chance to assess at first hand the damage inflicted.

Beginning with the Allied invasion of Normandy, the emphasis was placed not on strategic bombing, which had paved the way for the invasion, but on tactical bombing, in support of our ground forces. Correspondingly the emphasis shifted from strategic to operational intelligence. Following VE-day, the emphasis shifted to long-range strategic intelligence, as target teams raced through Germany in search of topflight scientific personnel, war criminals, technical equipment, and files and records.

Prisoner of war interrogation and exploitation of captured enemy documents provide valuable strategic and operational intelligence while a war is in progress. After the conclusion of hostilities they provide historical material which enables us to learn of the effectiveness of specific weapons and tactics, and strategic intelligence useful in making plans for the future safeguarding of our national interests.

The basic document on the subject of the effectiveness of Allied strategic bombing of Germany

and German-held Europe is the *Over-all Report (European War)* of the United States Strategic Bombing Survey, to which students are referred. Under interrogation, prisoners of war have borne out and elaborated the findings of the Strategic Bombing Survey.

Summed up very briefly, the results were cumulative and interconnected. To meet the bombing threat, the Germans dispersed many industries, and placed some underground. This meant an increased reliance on transportation. Production was slowed down when parts were not available, because the plants which manufactured them had been blown out of existence. Bomb damage to factories caused skilled workers to be diverted from their jobs to rebuild the plants. Fires started by raids were more feared than actual bomb damage, because they were likely to destroy whole blocks of dwellings, while a bomb blast often left some portion of a house habitable.

Workers bombed out of their homes, or those who could not report for work due to interrupted transportation facilities, were temporarily nullified as war producers. Morale of both soldiers and civilians was affected by the news that whole cities had been wiped out.

The German war machine itself was slowed down almost to a crawl not only because transportation and war production were crippled, but because systematic bombing of oil storage tanks, refineries, and synthetic oils plants was progressively drying up the fuel supply. Operations and training programs in the German army, navy, and air force had to be drastically curtailed for this reason.

Economic Intelligence and the Pacific War

Although Japan started in 1928 to orient her economy toward war, and although she built up her industrial capacity with surprising speed during the Manchurian and Chinese campaigns, insufficiency of raw materials such as oil, rubber, bauxite, chrome, nickel, and tungsten, all of which she had to import, was the chief limiting factor on her ability to produce for war. In spite of her apparent progress, she remained with an economy having only 10 percent of the potential of the United States economy.

Japanese economic potential was unequal to the burden imposed upon it by the national grand strategy; accumulated stocks of raw materials were not sufficient for a long war, nor was industrial manpower adequate. Japan itself was desperately vulnerable to attacks on its shipping which carried the essential imports. The economic weaknesses of Japan are summed up in the following quotation from the *Summary Report (Pacific War)*, of the United States Strategic Bombing Survey:

Having a comparatively small, newly developed industry, it had to work without much cushion of underutilized physical plant capacity. Having had little experience with mass production, the country had no opportunity to build up a large force of industrially and mechanically trained personnel. This meant shortages of skills, ingenuity and ability to improvise later on, when the economy was under the stresses and strains of large-scale warfare.

This economic potential could support a short war or a war of limited liabilities. The accumulated stocks of munitions, oil, planes, and ships could be thrown into action and produce a devastating effect on unmobilized enemies. When this initial blow failed to result in peace, Japan, without significant help from Germany, was doomed. Its economy could not support a protracted campaign against an enemy even half as strong as the United States.

The sinking of merchant shipping was instrumental in disrupting the war economy of Japan and bringing about her defeat. The United States Navy played the stellar role in this endeavor. The figures, as given by *Summary Report (Pacific War)*, are as follows:

Eight million nine hundred thousand tons of this shipping were sunk or so seriously damaged as to be out of action at the end of the war. Fifty-four and sevenths percent of this total was attributable to submarines, 16.3 percent to carrier-based planes, 10.2 percent to Army land-based planes and 4.3 percent to Navy and Marine land-based planes, 9.3 percent to mines (largely dropped by B-29's), less than 1 percent to surface gunfire, and the balance of 4 percent to marine accidents.

The decision of the United States Navy to make Japanese merchant shipping a primary objective of our submarine campaign yielded unquestionable and brilliant results. If the Japanese freighter and tanker tonnage in operation could be sufficiently reduced, the far-flung Japanese forces could be slowly strangled by insoluble prob-

lems of logistics. And in fact this did happen. But before the planners could reach their decision, they had to evaluate a multitude of complex factors, each depending on a group of items of strategic intelligence. If the shipyards of Greater East Asia had been capable of much more production than we supposed, for instance, or if Japanese countermeasures against our submarines had proved more effective than we expected, our employment of the forces used might not have been so successful.

Intelligence of shipping is classed in the economic intelligence category of definite naval interest. It was needed, during World War II, by our top strategic planners and by our operating forces in the Pacific. The full story of how it was obtained cannot be told here, but we can outline briefly the main function of Naval Intelligence in China in the prewar years and after Pearl Harbor.

When it became apparent in the early 1930's that Japanese ambitions in the Far East might present a serious threat to world interests, China became increasingly an important center of United States Naval Intelligence activity. Japanese methods of economic infiltration and, finally, military and political annexation, made it imperative for our Navy to have much more strategic intelligence about Asiatic waters and the whole complex of Far Eastern areas. The extensive coastline of China, her great river systems, centers of shipping, shipping lanes, and convoy routes were all of interest to our Navy for planning possible fleet and air operations.

In order to assess thoroughly the intentions and possible future plans of Japan, we had to have a complete strategic intelligence picture of that nation. When the Chinese Government had moved the capital from Nanking to Chungking in 1938, our naval attaché had moved along with it. After we were officially at war with Japan, the staff of the naval attaché was greatly expanded, and it collected and passed on a great deal of information from many sources. This information was sent to Washington where it was processed and tested. If found to be reliable, it became a part of the whole fabric of strategic intelligence for the Far East. Thus we were able to estimate the pattern of Japanese strategy and to plot potential maneuvers.

For example, it was important for our naval planners to know about the shifting of vital war industries from the Empire to Manchuria and Korea. Such an assumption had to be bolstered with facts—specific data giving the exact location, size, productive capacity, and effect of such a move on transportation and communications systems between the islands and the mainland. To study this thoroughly, it was necessary to have knowledge of political and military leaders in puppet states and those Chinese who were loyal to the enemy, as well as an intimate picture of economic and social conditions. Such documentation was eventually employed to disrupt virtually all shipping between Honshu and Korea by our submarine and mining operations, and was a source for establishing priorities and pin-pointing targets for carrier strikes.

NavGroup China Intelligence began work in 1942, and up to the end of the war added a great deal to the strategic picture of enemy activity. Its primary sources included Chinese Intelligence, Fourteenth United States Army Air Force reports, and radio intelligence networks. From the start, one of its most valuable contributions was the chain of weather stations in northern China which were so necessary in providing essential aerological data for fleet operations in the western Pacific.

Along with aerology, Naval Intelligence in China was at first concerned with communications, transportation, port construction, and docking facilities. Later in the war, at the end of 1944, coast watchers were placed in the vicinity of Chinese ports; locations varied, but, by the end of the war, these agents were stationed from Shanghai to Hainan. They proved to be a valuable source of information on harbor activity, convoy methods and movements, as well as on the location and movement of Japanese fleet units. From the operation of 25,000 guerillas, trained by NavGroup, and from agents trained in counter-espionage work, other extremely important intelligence was developed. Coastal surveys, reports on the strength, disposition, and concentration of Japanese forces, and evasion and escape networks for downed airmen were produced in conjunction with NavGroup.

Photographic reconnaissance also furnished intelligence of strategic value. It was necessary to

obtain an accurate estimate of the damage inflicted by bombing, in order to plan future operations. Evaluating the effect of strategic bombing was a complex process, and required experts at each successive stage of analysis. The first indication as to the success of a bombing mission came from the pilots and aircrewmembers who had participated in the raid. Positive evidence was not available, however, until the pictures taken by the photo reconnaissance flights had been developed.

Photo interpretation reports were studied and checked in conjunction with accounts of prisoners of war, captured enemy documents, eyewitness reports of travellers from neutral countries, and secret agents. Radio broadcasts were monitored for relevant information, and enemy newspapers and periodicals were read when they were available. Finally, as enemy territory was captured, it was possible to examine the actual results and check with all previous estimates. This final assessment was made by the United States Strategic Bombing Survey in both Germany and Japan.

Long range strategic bombing of the Japanese home islands was conducted by the B-29's of the Twentieth Air Force after the Navy had captured bases in the Marianas. While the Navy waged a war of attrition on Japanese fleet units and merchant shipping, the Twentieth Air Force pulverized the centers of population and war production. As the *Summary Report (Pacific War)* points out, the economy of Japan, in the later stages of the war, was in large measure being destroyed twice over, once by cutting off of imports, and secondly by air attacks.

These two broad divisions of United States grand strategy overlapped in the B-29 mining operations in Shimoseki Straits in the spring of 1945, when Army Air Force planes accomplished naval objectives. The mining of these Straits also provided a striking example of an operation which was simultaneously strategic and operational in significance: Strategic inasmuch as any ship sunk by a mine diminished the war potential of the enemy, and tactical because it temporarily closed the Straits and forced the major units of the Japanese Fleet, attempting to reinforce Okinawa, to proceed through the Inland Sea and the Bungo Suido where detection by our forces was more likely.

In Japan, as in Germany, declining war production, brought about by operations which were based on strategic intelligence, led directly to defeat. When asked, under POW interrogation, his opinion as to the chief causes of the inability of Japan to carry out her war aims, Admiral Toyoda replied:

On the material side, the fact that our country was woefully weak, lacking resources. On the spiritual side, I should say that the biggest hindrance was the fact that people were not told what this war was actually for, and for that reason they were unable to really put themselves into the war effort * * *. It is difficult to point to any one thing as the reason for failure in production because there are many and each, I think, operates to affect the others in more or less of a vicious circle, but if I have to name one, I would point out lack of raw materials and natural resources * * *. Beginning this year (1945), I think the biggest cause of fall in production, especially in aircraft and air material, was the effect of your bombing on the domestic plants—factories—in Japan proper; but as regards the effect on our war strength as a whole, I think the greatest effect was felt after all by the lack of ships and consequent inability to bring material from the south.

—Interrogations of Japanese Officials (Volume II).

If war industry assumed new importance in World War II due to the greatly accelerated development of many types of arms and equipment, it must be expected to be even more important in any future war. Consequently the economic category of strategic intelligence is of definitely rising importance at the present time.

The long-range bomber opened up the industrial front to direct attack in World War II. New and improved bombers and guided missiles carrying atomic explosives can be expected to attack war-production centers with even more devastating effect in the next major conflict. It will be more logical to destroy the arsenals than the armies in the field, for without the products of the arsenals the armies will be powerless. Economic intelligence obtained now enables us to pinpoint and keep abreast of shifting and growing industrial targets in other countries.

Geographic Intelligence

The third of the eight general categories of strategic intelligence is the geographic category. This part of chapter VI will be divided into the following subsections:

1. Definitions.
2. Geographic intelligence in World War II.

3. New horizons of geographic intelligence.

We have seen how political intelligence aims at disclosing the intentions of foreign powers which may collide with United States interests in pursuit of their own interests, and how economic intelligence aims at disclosing the war potential or capabilities, strength and weaknesses of foreign powers, including finance, industry, commerce, agriculture, and transportation. Geographic intelligence deals not with man-made institutions and commodities but rather with the environment in which man lives.

Definitions

The following terms will be defined below; prior to a limited and nontechnical discussion of a highly technical subject, geographical intelligence:

- | | |
|-----------------------------|-----------------|
| 1. Geography. | 3. Topography. |
| 2. Geographic intelligence. | 4. Hydrography. |
| | 5. Meteorology. |

Geography is defined by Webster as "the science of the earth and its life; especially, the description of land, sea, air, and the distribution of plant and animal life, including man and his industries."

Geographic intelligence may be defined as that category of strategic intelligence which aims at disclosing information on the topography, hydrography, and meteorology of foreign territories.

Topography in the sense in which it is used here is defined by Webster as "the configuration of a surface, including its relief, the position of its streams, lakes, roads, cities, etc." Relief, streams, and lakes are natural features; roads and cities are man-made features. Both natural and man-made features are within the province of topography.

Hydrography is defined by Webster as "the description and study of seas, lakes, rivers, and other waters," in the general sense; specifically the word means the measurement and charting of these waters.

Meteorology is defined by Webster as "the branch of physics treating of the atmosphere and its phenomena, especially of its variations of heat and moisture, of its winds, etc."

At first glance these three branches of the geographic category of strategic intelligence would seem to have separate primary significance for the three armed services, Army, Navy, and Air. This, generally speaking, was true in the past, but be-

came far less true in the Second World War, when joint operations required joint intelligence and joint planning. Within the Navy alone, terrain studies were of primary importance to the Marine Corps in conducting amphibious landings, and weather studies were of primary importance in conducting carrier operations. In brief, the three branches of the geographic category are interrelated, just as the eight categories of strategic intelligence are interrelated.

Geographic Intelligence in World War II

In his book, *Politische Geographie*, Friedrich Ratzel propounded certain principles underlying the geographic environment of states. He held the national state to be a living organism subject to birth, growth, stagnation, and decay, and considered that the life history of each state was influenced by its environment, which consisted of location, size and shape, and boundaries. These may be called the position factors.

There are many different types of terrain estimate, but in all of them the position factors must be considered. In the following sample, the position factors comprise the first of three divisions:

1. Position factors.
 - a. Location.
 - b. Shape and size.
 - c. Boundaries.
2. Topographic factors.
 - a. Land forms.
 - (1) Coasts.
 - (2) Land surfaces.
 - b. Drainage.
 - c. Vegetation.
 - d. Climate.
3. Human factors.
 - a. Transportation.
 - b. Economic and political centers.

The physical factors of environment listed above in a typical terrain estimate all influence, to varying degrees, the politics, economy, psychology, and military or naval establishments of a nation. Position factors alone, for example, will be decisive in the question of whether a nation develops into a land or sea power. Topographic factors have a profound influence on what may be called the national characteristics of a people. Human factors, or man-made features, are tan-

gible aspects of such intangibles as politics and economy; they are important as possible targets.

It is essential that a nation collect strategic intelligence in peacetime regarding all other nations which might possibly threaten its interests in the event of war. The geographic category of strategic intelligence provides data concerning potential areas of operations. In wartime the process is speeded up; the fullest and most timely intelligence will be required concerning enemy nations, in spite of vastly increased difficulties of collection. As potential areas of operations become actual areas, the emphasis shifts from strategic to operational intelligence.

The strategic area studies and surveys prepared by United States armed forces in World War II merit special mention here. In the F Branch of ONI, in the naval districts and river commands, and at intelligence centers and joint intelligence collection agencies in operational areas, whole sections of specialists devoted their entire time to the evaluation, compilation, and distribution of reports. Often, like the Joint Army-Navy Intelligence Studies (JANIS), these reports were the result of joint effort. Interested students are referred to JANIS and other publications of a similar nature; these may profitably be examined from the point of view of geographic intelligence.

The surveys drew upon many divergent sources for their material. They contained data collected by aerial photographs over enemy territory, often supplemented by information gained from interviewing engineers who had built or managed the installations photographed. Beach gradients were calculated from photographs taken from war planes, and even from snapshots taken by tourists and missionaries; these pictures were supplemented by the notes of American geologists, naturalists, and conchologists who had worked in the area and by the reports of friendly natives or guerrillas.

The surveys themselves may be divided into four principal categories which, in fact, correspond to the four levels at which strategic intelligence is always processed:

First Phase.—General background information for use by the higher echelons in advance over all planning. This is a preliminary review using materials immediately available and hastily prepared,

generally within a few days after information is first requested by the high echelons.

Second Phase.—An amplification of a first phase report to be used by the higher echelons after a tentative decision has been reached on moves in a given area. The surveys include a large area, but specific and minute details are included, with emphasis on the favorable and unfavorable aspects of the territory in respect to the plans under consideration. They are usually accompanied by photographs, maps, and charts. The preparation of this phase may take several weeks.

Third Phase.—A final compilation of data, as exemplified by JANIS studies. The large area will usually be divided into subareas, each of which is made the subject of an extremely painstaking survey. All available photographs, maps, and charts, carefully plotted, described, corrected, and dated, will be employed. Conditions liable to variation or change will be described in great detail. Facts will be clearly distinguished from surmise, no matter how logical the latter may seem to be. The preparation of this study generally takes from three to six months.

Fourth Phase.—The final compilation of data upon which a specific action is based. In reality it is a survey which supplements a Third phase study with the latest and best information available at the time operation orders are being prepared. From this point on, the forces in the field carry on with a continuing flow of information for their own planning.

There were cases early in the Pacific war of military operations inadequately planned because the plans were based on faulty or incomplete geographic intelligence. The reduction and occupation of Attu and Tarawa are examples. In the former, the training and equipment of troops were not suited to weather and terrain conditions on the island, with the result that there were many casualties due to "immersion foot" and frostbite. As the war progressed, however, experience gained in earlier landings was combined with new and improved techniques and equipment to produce better-planned and better-executed amphibious operations. Rapid strides forward in aerial photographic reconnaissance, including underwater depth determination, to cite but one improvement, led to more comprehensive and accurate geo-

graphic intelligence and hence to more efficient planning. Underwater Demolition Teams were formed, and one of their functions was reconnaissance of beach obstacles.

Geographic intelligence has a definite part to play in the formulation of grand strategy. The Japanese demonstrated an inadequate comprehension of position factors when they over-extended their original perimeter and consequently their lines of communication and supply, as described in an earlier chapter. We made good use of geographical intelligence when we bypassed Kiska to take Attu, thereby forcing the evacuation of Kiska by the Japanese, and when our growing naval might enabled us to adopt an "island-hopping" policy in the central Pacific, bypassing enemy strongholds such as Truk and leaving them to "wither on the vine."

In the European war, Hitler, in spite of the counsel of whole institutes of so-called geopolitical specialists, and in spite of the elaborate theories of Karl Haushofer, committed errors of grand strategy which are at least in part attributable to faulty geographical intelligence. The failure to invade England in 1940 was one such error, and the attack on Russia was another. In the latter instance, Hitler appears to have inadequately comprehended distance and weather factors and their effect on military operations. The failure to seize two bastions of British strength in the Mediterranean, Gibraltar, and Malta, may also be accounted an error of Nazi grand strategy. Due to their location these two minute bases were far more strategically important than areas many times their size.

A comparable "unsinkable aircraft carrier" held by Germany was Helgoland, the Gibraltar of the North Sea, which had been a British possession until 1890, when it was ceded to Germany in exchange for Zanzibar. The British later regretted having made this trade, for Helgoland was heavily fortified by the Germans and became a real thorn in the side of the British in two World Wars. In World War II the Germans constructed 8½ miles of tunnels deep in the island, and built unbelievably massive bomb-proof submarine pens. To the superior location of the island they added superior man-made features which made it virtually impregnable to attack.

If man can reinforce natural features by means of construction, so can he neutralize them by means of destruction. On 18 April 1947 the British Navy set off 3,500 tons of high explosives in the tunnel system of Helgoland, and thus radically changed the topography of the island, in effect rendering it useless as a military and naval base and giving it back to the seagulls and fisherman who were its original inhabitants.

New Horizons of Geographic Intelligence

The horizons of geographic intelligence have been expanded by the rise of air power and the development of the atomic bomb and guided missiles, and by political changes in the postwar world. The atomic bomb might be called "the great equalizer." Its possession by a small State would give that State power commensurate in many respects to that of large neighbors. Time and distance have diminished in proportion as the speed and range of aircraft and guided missiles have increased. Hence radioactive minerals wherever they may be found in the world are of supreme strategic importance, and efforts by one country to adapt atomic energy to military uses are the concern of all other countries.

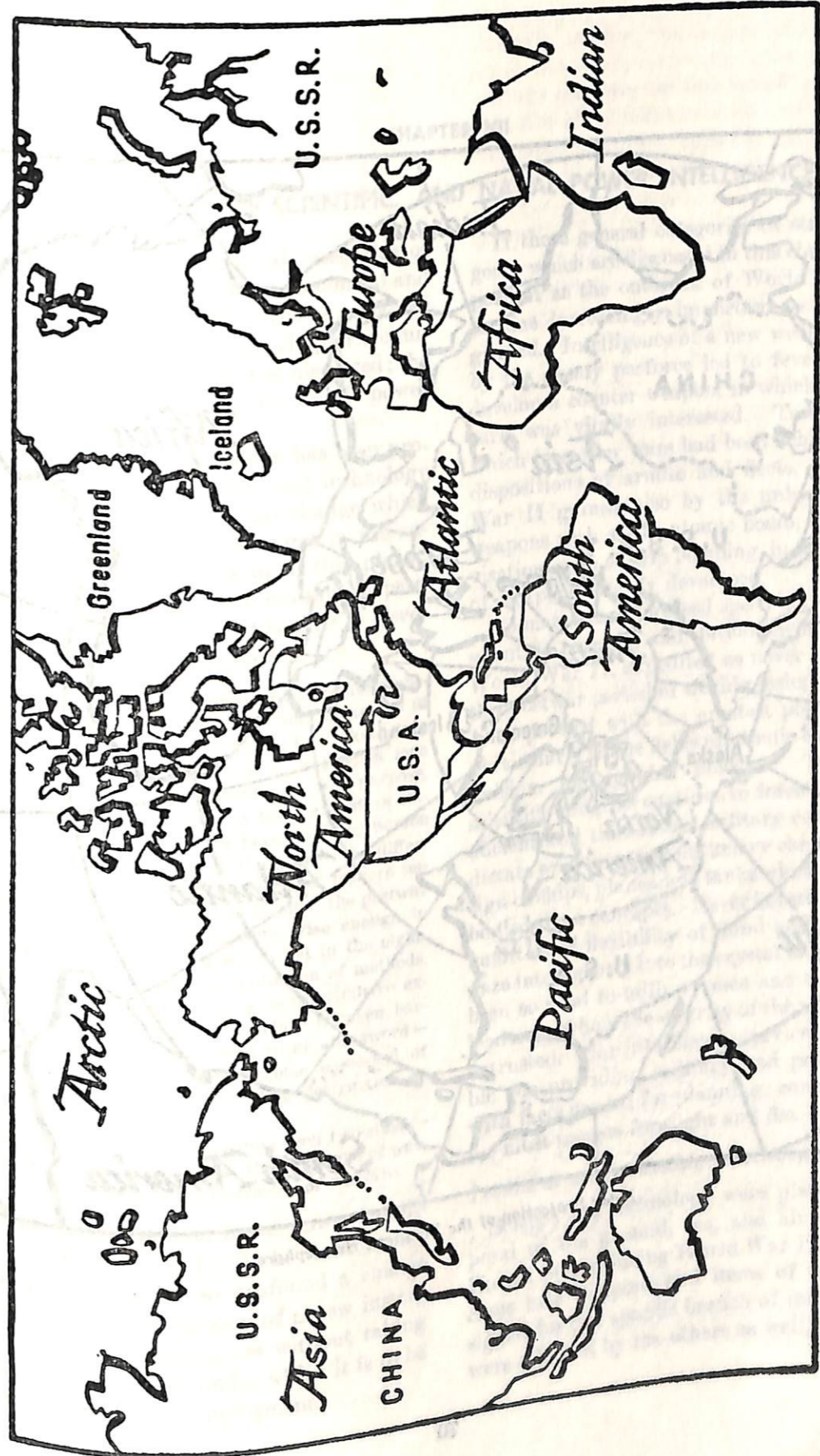
Politically, the cooperation between Great Britain, the United States, and the U. S. S. R. during World War II was never very close; the three major Allied powers were combined into a military coalition for the single expedient of defeating the Axis. One that defeat had been accomplished, basic underlying differences of a political and an ideological nature which existed between the Anglo-American and the Russian peoples began to emerge. In *The Strength We Need*, George Fielding Eliot stated that the interdependence of Great Britain and America in the year 1946 was inherent in their respective geographic positions:

The geostrategic conditions, and therefore the strategic necessity for unity of the English-speaking peoples, remain the same, save that the weapons of the future have even longer range, greater destructive power, and greater speed than those which were available to the enemies we have just defeated. The great Anglo-American strategic unit continues to exist. The interdependence of its parts continues to exist. United, it is by far the strongest military power on earth. Divided, it becomes greatly and perhaps fatally weakened. For the outlying British and Australian areas cannot make

themselves secure without the aid of the resources of North America, and the North American Continent cannot move its power outward from its shores or maintain its exterior communications without the outlying base areas and the intervening points of support * * *. The Anglo-American combination is essentially, from the military point of view, a mobile power. Mobility is inherent in its geographic structure. Today the Anglo-American nations have all the sea power in the world worth speaking of. They have all the long-range air power in the world worth speaking of. They share the knowledge and development of atomic weapons. They are far ahead of anyone else (save the defeated Germans, perhaps) in the development of radio, guided and "homing" missiles, jet propulsion, and other scientific war devices. These are all elements of mobile, quick-acting power.

Since Soviet Russia is the only substantial threat to the Anglo-American strategic combination at the present time, and until smaller nations succeed in producing the atomic bomb, it follows that strategic intelligence regarding the U. S. S. R. takes top priority in the United States, and that not the least important category of intelligence on Russia at the present time is geographic intelligence. Between Russia and North America lie the Polar regions. The hard fact of the matter is that if war should occur between the Anglo-American combination and Soviet Russia, it would in all probability be fought in the Arctic. The Arctic and Antarctic regions are the last geographic frontiers; the former possesses great strategic significance, and the latter, while less strategically important, holds more secrets to be revealed by exploration and science.

The United States Army and Navy separately and jointly, and the United States and Canadian armed forces, have conducted training operations, including Operations Muskox, Frostbite, Icebox, Frigid, and Williwaw, for the purpose of testing performance of personnel and equipment under Arctic conditions. To the knowledge thus gained is added knowledge acquired by the Navy as the result of Operation Highjump at the South Pole. While the Russians are ahead of us in some aspects of Arctic development, there is ample evidence that our military planners are aware of the growing strategic importance of the Arctic specifically in national defense, and in defense of the North American land mass on which the defense of the Anglo-American strategic combination so vitally depends.



Mercator Projection of the Globe.



Polar Projection of the Northern Hemisphere.

CHAPTER VII

TECHNICAL AND SCIENTIFIC, AND NAVAL POWER INTELLIGENCE

The fourth of the eight general categories of strategic intelligence is the combined technical and scientific category, and the fifth is the naval power category. In the first part of this chapter technical and scientific intelligence will be discussed; the second part will be devoted to naval power intelligence.

The revolution in warfare which has been produced in recent years by science and technology is but one aspect of the profound change which the industrial revolution has wrought in the environment in which man lives upon this planet. B. H. Liddell Hart, a British military expert, analyzes this subject in his recent book, *The Revolution in Warfare*, in which he writes:

Science and technology have produced a greater transformation of the physical conditions and apparatus of life in the past two hundred years than had taken place in the previous two thousand years. Yet when men turn these tremendous new powers to a war purpose, they employ them as recklessly as their ancestors employed the primitive means of the past, and they pursue the same traditional ends without regard to the difference of effect. Indeed, the governments of modern nations at war have largely ceased to think of the postwar effects which earlier statesmen were wise enough to bear in mind—a consideration which led in the eighteenth century to a self-imposed limitation of methods. Modern nations have reverted to a more primitive extreme—akin to the practices of warfare between barbaric hordes that were armed with spear and sword—at the same time as they have become possessed of science-given instruments for multiple destruction at long range.

The revolution in warfare has thus been two-sided—on the one side, in the instruments, the technique of warfare; on the other side, in the character of warfare.

Technical and scientific and naval power intelligence are directly concerned with the “instruments and techniques” in which so profound a change has taken place. Consideration of a new instrument, or weapon, is meaningless without taking into account the conditions under which it is to be used and the method of its employment.

If those general categories of strategic intelligence which are discussed in this chapter were important at the outbreak of World War II, they became increasingly important as the war progressed. Intelligence of a new weapon originated by the enemy perforce led to feverish efforts to develop a counter-weapon, in which the enemy in turn was vitally interested. Tactical surprise, which in earlier wars had been achieved by novel dispositions of armies and fleets, was in World War II gained also by the unleashing of new weapons such as the atomic bomb, and by improvisation, such as skip bombing, in the employment of weapons already developed.

To match the increased speed and scope of war, scientific research and development were, during World War II, expedited as never before, and in this postwar period of world tension they continue to be pressed with the greatest possible urgency, particularly in the fields of atomic energy, jet propulsion, and guided missiles. Technical and scientific progress continue to force the revision of ancient and time-tested military concepts, and to dictate even more revolutionary changes in the design of ships, planes, and tanks which formerly embodied those concepts. Never before have the twin qualities of flexibility of mind and the ability to gaze intelligently into the crystal ball of the future been so vital to military men and to the political leaders to whom the security of the nation is jointly entrusted. Our intelligence services are responsible for providing military and political leaders with facts needed for planning; consequently they too must possess foresight and flexibility of mind.

Technical and Scientific Intelligence

Science and technology were placed at the disposal of the ground, sea, and air forces of the United States during World War II, and in many cases new weapons and items of equipment designed for one specific branch of the armed forces were adopted by the others as well, or were fitted

to the needs of more than one service. For example, new aircraft went to both Army and Navy to be used for different tactical purposes, and the principle of rocket power was used by the infantry in the form of the bazooka and by the Navy for antisubmarine warfare, and for strafing enemy positions by LC(R)s; both Army and Navy employed rocket-equipped aircraft. The VT fuze was utilized as an antipersonnel weapon by the Army and as an anti-aircraft weapon by the Navy. Therefore it is advisable not to consider the technical and scientific category of strategic intelligence from the specialized viewpoint of but one branch of the armed forces. While the naval power category is concerned primarily with naval strategic intelligence, the technical and scientific category embraces the contributions of research and development to army, navy, and air power.

Definitions

The official Navy definition of the technical and scientific category of strategic intelligence is sufficiently broad to permit a general discussion in this first part of chapter VII. In terms of Naval Intelligence, *technical and scientific intelligence* is defined as:

Disclosing the development of new materials, techniques, and munitions of war.

The words "technology," "science," "research," and "development" are too well known to require definition, as are adjectives derived therefrom. However, it is thought advisable at this point to break down the term "scientific research" into three parts, and to define each of them. These three parts are:

1. Pure research.
2. Background research.
3. Applied research and development.

For definition of these phrases we turn to appendix 3 of *Science: The Endless Frontier*, a report to the President, dated July 1945, by Vannevar Bush, wartime Director of the Office of Scientific Research and Development. The definitions given in that report are, in part, presented below:

1. *Pure research*.—Pure research is research without specific practical ends. It results in general knowledge and understanding of nature and its laws. This general knowledge provides the means of answering

a large number of important practical problems, though it may not give a specific solution to any one of them. * * * The unpredictable nature of pure science makes desirable the provision of rather special circumstances for its pursuit. Pure research demands from its followers the freedom of mind to look at familiar facts from unfamiliar points of view. It does not always lend itself to organized efforts and is refractory to direction from above, in fact, nowhere else is the principle of freedom more important for significant achievement * * *.

2. *Background research*.—The preparation of accurate topographic and geologic maps, the collection of meteorological data, the determination of physical and chemical constants, the description of species of animals, plants, and minerals, the establishment of standards for hormones, drugs, and X-ray therapy; these and similar types of scientific work are here grouped together under the term background research. Such background knowledge provides essential data for advances in both pure and applied science. It is also widely used by the engineer, the physician, and the public at large. In contrast to pure science, the objectives of this type of research and the methods to be used are reasonably clear before an investigation is undertaken. Thus, comprehensive programs may be mapped out and the work carried on by relatively large numbers of trained personnel as a coordinated effort * * *.

3. *Applied research and development*.—Applied research and development differs in several important respects from pure science. Since the objective can often be definitely mapped out beforehand, the work lends itself to organized effort. If successful, the results of applied research are of a definitely practical or commercial value. The very heavy expenses of such work are, therefore, undertaken by private organizations only in the hope of ultimately recovering the funds invested * * *. The distinction between applied and pure research is not a hard and fast one, and industrial scientists may tackle specific problems from broad fundamental viewpoints. But it is important to emphasize that there is a perverse law governing research: Under the pressure for immediate results, and unless deliberate policies are set up to guard against this, *applied research invariably drives out pure*. The moral is clear: It is pure research which deserves and requires special protection and specially assured support.

The Time Element in Research and Development

The importance of scientific progress, which depends on basic scientific research, to our Nation in time of peace and war is summed up by Dr. Bush in his report as follows:

Progress in the war against disease depends upon a flow of new scientific knowledge. New products, new industries, and more jobs require continuous additions

controlled organization with close liaison with the Army and Navy, but with funds direct from Congress, and the clear power to initiate military research which will supplement and strengthen that carried on directly under the control of the Army and Navy.

During peace, the time element in our own scientific research and development is closely related to the time element in obtaining strategic intelligence of scientific progress in other countries, in precisely the same way that the two were related during the war recently concluded. Furthermore, internal security and counter-intelligence, as applied to technology and science, are of continued importance.

In World War II, as stated in an earlier chapter, the principal violation of security which took place in connection with the atomic bomb was the disclosure to the world of the facts that it existed and that it worked. Dr. James P. Baxter 3d, in his book, *Scientists Against Time*, describes how security was relaxed in connection with one of the most important new weapons produced by the Office of Scientific Research and Development, the VT fuze. An important factor here, as in the decision to employ the atomic bomb, was the time element. The VT fuze had been provided only to the Navy, because the enemy might learn the secret if VT-fuzed shells were fired over land. Dr. Baxter writes:

The arrival, in the autumn of 1943, of secret intelligence that the Germans were preparing to use robot bombs against London and the ports of Southern England, where the forces destined to invade Normandy would eventually be gathered, threatened the success of the great cross-Channel operation.

Activity in OSRD reached fever heat. With the cooperation of Allied intelligence services, a section T member brought back from London detailed information concerning the buzz-bomb, 6 months before the first of them was launched at England. A complete mock-up of the robot bomb or V-I was hastily constructed, and was suspended between the two great towers on the section T proving ground operated by the University of New Mexico group near Albuquerque. Full-scale tests proved that the buzz-bombs would trigger the VT-fuzes and indicated which model of proximity fuze would function best against them. Under the compulsion of necessity the Combined Chiefs of Staff relaxed their security restrictions to permit the use of VT-fuzes against the new German menace. Three months before the first buzz-bomb fell on British soil a shipment of VT-fuzes arrived in England.

to knowledge of the laws of nature, and the application of that knowledge to practical purposes. Similarly, our defense against aggression demands new knowledge so that we can develop new and improved weapons. This essential new knowledge can be obtained only through basic scientific research.

Science can be effective in the national welfare only as a member of a team, whether the conditions be peace or war. But without scientific progress no amount of achievement in other directions can insure our health, prosperity, and security as a nation in the modern world.

Dr. Bush, in the above quotation, states that a form of warfare, war against disease, continues in peacetime, and that our security against aggression by other powers is intimately bound up with our prosperity and our national health. Research specialists in the medical field may be said to be intelligence officers of a certain kind, to whom the qualities of alertness, thoroughness, patience, and imagination are as essential as they are to military intelligence specialists. Now more than ever must scientific research specialists coordinate their effort with military intelligence specialists, in view of the susceptibility of all nations to sudden attack directed against centers of population and industry. Developments in aircraft and guided missiles have increased the range and speed of delivery of atomic bombs, poison gas, and bacteriological warfare agents. Thus scientists as well as specialists in strategic intelligence may be said to be today in our first line of defense.

Not only must the state of our own scientific research and development be of interest to us, but we must also disclose, as promptly and completely as possible, the trends and achievements of scientific research and development in potential enemy nations. In his report, Dr. Bush emphasizes the time element in modern war, and the necessity for peacetime scientific preparedness:

The bitter and dangerous battle against the U-boat was a battle of scientific techniques—and our margin of success was dangerously small. The new eyes which radar has supplied can sometimes be blinded by new scientific developments. V-2 was countered only by capture of the launching sites.

We cannot again rely on our Allies to hold off the enemy while we struggle to catch up. There must be more—and more adequate—military research in peacetime. It is essential that the civilian scientists continue in peacetime some portion of those contributions to national security which they have made so effectively during the war. This can best be done through a civilian-

The importance of the time element in the grand strategy of the United Nations in 1942, and the reasons for selecting Germany as the main target for attack instead of Japan, were explained by Secretary of War Patterson in an address before the American Chemical Society, 8 April 1946. In his speech the Secretary gave the following reasons for assigning priority to the European War:

One was to take advantage of the concentration of forces. Russia was fighting Germany, but not Japan. Another was the shorter distance to Germany; the shorter distance meant shorter time in getting into action. But the reason that seemed to me as compelling as any was the danger of the German scientists, the risk that they would come up with new weapons of devastating destructiveness. There was no time to lose in eliminating German science from the war. There was no comparable peril from Japanese science.

The wisdom of this decision is seen now in retrospect when we ponder the remarkable advances made by German research and development in the latter half of World War II, particularly with respect to rockets, jet propulsion, and guided missiles. The race for new weapons and counter-weapons was ultimately won by the Allies, largely because of better mobilization and organization of scientific brainpower and because of greater armed might and industrial capacity, but the margin was close.

The secret of our success in developing many new and improved types of weapons and equipment during World War II, and producing them in quantity and delivering them in time to be effectively employed against the enemy, lies in the coordination of our scientific and industrial potential, in close cooperation with the armed services. Our top strategic planners allocated materials, scientific brainpower, and industrial know-how in accordance with priorities dictated by the over-all grand strategy, and, by means of technical and scientific intelligence, kept abreast of scientific research and development in enemy countries, and assessed the performance of our new weapons in action as they were developed.

The Technical Intelligence Center and Missions

The vital interest of the Office of Naval Intelligence in technological and scientific fields led to the establishment of the Technical Intelligence Center to deal with foreign technical subjects, in-

cluding ordnance in all its phases, electronics, naval vessels and merchant ships and their characteristics and equipment, chemicals, synthetics, medicines, and aircraft (in collaboration with the Technical Air Intelligence Center).

During World War II the Technical Intelligence Center had a dual purpose:

1. To keep the strategic and operation planners and the Navy at sea and in forward areas informed at all times of such technical developments on the part of the enemy as might affect operations, tactics, or planning in any phase of the war.
2. To make available to bureaus of the Navy and other interested technical and scientific activities any information on foreign technology which might lead to development of effective countermeasures on our part, the perfection of Allied weapons, or the evolution of new materials and techniques.

The Technical Intelligence Center profited by constant use of all the normal sources of intelligence within and outside of the country. Of unusual significance was the detailed interrogation of captured personnel, particularly those with scientific or technical background, with the Center itself conducting in examination of some of the most important prisoners.

In maintaining liaison with other technical activities, the Technical Intelligence Center was responsible for directing the collection of specific items in fields of intelligence of extraordinary importance to American scientific research and development, and, to this end, coordinated the activities of our naval representatives abroad, particularly those of naval technical missions in Europe and Japan.

With the successful invasion of the European Continent on 6 June 1944, and the advance of Allied forces into the German homeland, the exploitation of German technical developments for possible use against Japan became a project of urgent importance in the final phase of the European conflict. The determination of the nature and extent of German technical aid to Japan was, in itself, a project of vast significance and one which, if rapidly exploited, with correspondingly efficient development of countermeasures, might affect to a marked degree the duration of the war. The naval technical mission in Europe, working from lists of intelligence targets of prime importance, was assigned the job of investigating and

seizure of intelligence material, its examination and study, the interrogation of personnel, and, finally, the preparation of reports which would appraise the technological status of the Japanese Navy and Japanese industry.

The mission remained in existence from 1 September 1945 until 1 November 1946; its accomplishments were stated to be as follows:

A total of 185 separate reports comprising approximately 10,000 printed pages were prepared and 500 copies of each were printed.

Approximately 3,500 documents were seized and shipped to the Washington Document Center and the technical bureaus of the Navy Department.

Approximately 15,000 pieces of equipment were seized and shipped to the United States for laboratory investigation. The largest items were two 18.1-inch guns shipped from Kure, each 75 feet long and weighing 180 tons.

The shipment to the United States of the 15,000 pieces of enemy equipment by the mission was but a continuation, on a far larger scale, of a procedure established during the war, under which items of equipment captured in the field were forwarded to designated laboratories or test centers in the United States for detailed analysis and testing. In this phase of technical intelligence, the center served as a clearing house for items sent in, and for requests from Washington to forward areas for specific articles. By this means, the connection between reports of new weapons and the pieces themselves was maintained, and adequate exploitation of the information assured.

Another responsibility assigned to the Technical Intelligence Center was that of evaluating and processing information on naval and merchant ships and their characteristics. All possible sources of information were continually scanned for data, comprehensive or fragmentary, on the existence or characteristics of new ships, or for alterations in existing vessels. The collation of this kind of intelligence with a detailed analysis of all types of photographs, including aerial and surface shots, during the war resulted in far greater knowledge of enemy ships than had ever been available before. The size, probable performance, equipment, and appearance of the battleships *Yamato* and *Musashi*, secrets so closely guarded in Japan that even men who had worked aboard the vessels knew little about them, were revealed with amazing accuracy by this method.

reporting on German technology; the Technical Intelligence Center in Washington coordinated the activities of the mission and assured proper distribution of its discoveries and reports. The detailed operation of NavTecMisEu teams in the European theater was an interesting and exciting chapter in the history of Naval Intelligence. The successful examination of German industrial plants, the painstaking and difficult search for records and files which were often partially destroyed or buried in cellars, and the continual and often dangerous hunt for key personnel by teams which travelled by air, train, jeep, and even on foot, resulted in an exceedingly valuable, comprehensive record of German technological efforts.

While the Japanese war ended too quickly thereafter for the United States to put into effect the countermeasures which resulted from this thorough-going investigation, the advantages accruing to the American military, and to private enterprise, from a careful digest of German research, developments, and techniques can hardly be overestimated. An organization similar to NavTecMisEu was created under the title, Naval Technical Mission Japan, with much the same ends in view. For a brief account of the establishment, purpose, and accomplishments of this group, let us turn to the following quotations from *Summary Report, United States Naval Technical Mission to Japan*:

In the summer of 1945 * * * the United States Navy established a mission to determine the position of the Japanese in the field of naval technology.

How did the design and construction of their warships compare with ours? What range and power had their guns? How heavy was their armor and what was its metallurgy? Were they ahead of us in electronics development? The Navy wanted the answers to these and a thousand other technical questions.

To obtain the desired information, investigators had to enter Japan with the occupation forces, before manufacturing plants, equipment, materials, and records could be destroyed and experienced personnel dispersed.

NavTechJap, which became the abbreviated designation for the United States Naval Technical Mission to Japan, was established on 14 August 1945 by directive of Commander in Chief and the Chief of Naval Operations * * *.

The purpose of the Mission was to survey all Japanese scientific and technological developments of interest to the Navy and Marine Corps in the Japanese islands of Kyushu, Shikoku, Honshu, Hokkaido; in China; and in Korea south of latitude 38° N. This involved the

Another instance of the detailed processing of ship data occurred in connection with the conversion of the Japanese battleships *Ise* and *Hyuga* to carry aircraft on a "flight deck" abaft the mainmast. Prisoner-of-war reports were carefully checked with the Preliminary Design Section of the Bureau of Ships, and, without benefit of photographs or sketches, a drawing was prepared of the possible appearance of the two vessels. The close similarity of the drawing to the ships themselves, as revealed in the second battle of the Philippine Sea, is testimony to both the possibilities and value of expert processing of ship information.

Throughout the war, the Technical Intelligence Center made available to strategic planners and to the fleet the latest information on the enemy's naval vessels, including such important factors as the speed, armament, armor, and specialized equipment of each enemy unit.

As a means of assuring the distribution of information on naval and merchant vessels, the Technical Intelligence Center took over the basic work accomplished by the Identification and Characteristics Section in the publication field, and prepared standard reference manuals on the fleets of the world, together with a comprehensive volume on merchant vessels. The ONI 222 series on the naval vessels of Japan, Russia, Britain, and the United States and other countries contains all available information on dimensions, armament, protection, and propulsion of each ship, as well as carefully prepared plan and profile drawings and detailed photographs. These publications serve innumerable uses as basic reference manuals and provide source material for recognition training, naval staff work, and study at the Naval War College. ONI 209, *A Manual of Merchant Ships*, includes statistical information on over 13,000 vessels now afloat, in a convenient, readily available index, and profiles of approximately 8,000 of these ships. Included also is a section originally designed to assist in the recognition of German raiders and blockade runners in the Atlantic, South Pacific, and Indian Oceans. In addition to these standard works, the center distributed other information on weapons and equipment through the medium of special publications, and also in articles in *The ONI Weekly* and its successor, *The ONI Review*.

As a result of the flood of information from the European theater subsequent to the Allied penetration of Germany, an expeditious method had to be promulgated to assure adequate distribution of vital intelligence data to those technical activities best qualified to analyze the information and develop any latent value it might contain. At the same time it was apparent that much of the technical data from abroad was of interest and importance concurrently to a number of widely scattered organizations, and, as mentioned above, to private industry.

A technical library of all reports and related data was therefore established in the Technical Intelligence Center; this library permitted immediate reference by subjects to all available information. A staff of experts was assigned the task of analyzing and briefing each incoming item of information. Members of the staff were required to know the needs of various technical organizations and to be familiar with projects being carried on by them, in order to make immediate accession lists were disseminated, containing brief abstracts of the contents of incoming documents, by means of which interested activities were apprised of the existence of these reports. Processing this type of information, translating, duplicating, and disseminating was a tremendous task, and one in which the entire Office of Naval Intelligence participated, and of which it can be justifiably proud.

Naval Power Intelligence

It is obvious that a close relationship exists between the technical and scientific and the naval power categories of strategic intelligence. Therefore much of the discussion of the wartime activities of the Technical Intelligence Center, and of the naval technical missions, is as pertinent to the second as to the first part of this chapter. For example, NavTecMisEu was particularly interested in obtaining complete data on actual and planned German submarine construction. The submarine, after the entry of the United States into the war, was one of the principal components of German naval power.

In this second part of chapter VII naval power intelligence will be defined and described, the re-

lation of naval power to grand strategy will be discussed, and certain new concepts of naval power which have been arrived at in the postwar period will be presented. The atomic bomb has had a tremendous impact not only on the cities of Japan but on traditional naval thought as well, and hence on naval construction.

Definition and Description

The official Naval Intelligence definition of the naval power category of strategic intelligence is as follows:

Disclosing the organization, strength, disposition, readiness, doctrines, command, policy, strategy, tactics, weapons, ship and aircraft characteristics, procurement of personnel, supplies, and material, training, and bases of the navy of a foreign power; the capability of the power's merchant marine to support or aid the navy, the other armed forces, and the national economy, and the capabilities of the other armed forces, including the air force, to support or assist the navy or interfere with United States naval operations.

Let us consider for a moment how the scope of naval power, and hence of naval power intelligence, expanded during World War II. At the beginning of our participation in the war, there existed only the traditional components—ships, naval aircraft, bases, men. As the war progressed, new types of vessels, such as landing craft, attack transports, and communications ships were added to the fleet, armed with new weapons and facilities, including rockets, improved guns, and varieties of radar and communications equipment. Training techniques had to be evolved to prepare personnel to operate the new gear, and new doctrines had to be promulgated relative to operating under changed battle conditions. Naval aircraft were no less static than ships; increased speeds required alterations in design and tactics. The number of aircraft carriers, and their size, was increased, and the concept of the fast carrier task force was originated, leading to changes in traditional fleet disposition. The development of amphibious operations brought forth a new specialty within the framework of Naval Intelligence—amphibious intelligence, in which air intelligence and photographic intelligence had important roles to play, as will be seen in Part Three of this text. These are but a few aspects of the broadening of naval power which took place between 7 December 1941 and VJ-day.

In leading the world in the development of naval aviation, the United States Navy provided the Japanese with a model which they were not slow to copy, as indeed they had copied over a long period many developments in our surface fleet. We were in the ignominious position in the early days of the Pacific war of being attacked by enemy planes based on American models bought freely in this country by Japan, and by ships built of steel smelted from American scrap iron; both ships and planes were quite possibly lubricated and powered by American petroleum products.

The Japanese could learn little more from us than they already knew, in the category of naval power intelligence, at the time of the Pearl Harbor disaster. Their naval intelligence, haphazard as it was, kept the Japanese High Command well informed of American naval organization, strength, disposition, and readiness, to name but a few of the components of the naval power category, in the false calm of the 1930's. It was not until 1942 that American industrial might began to provide our fleet with elements of strength which the enemy failed to counteract and duplicate. Thenceforward the Japanese were on the defensive; their intelligence could not hope to determine where they might be struck next, or with what new weapons and tactics.

The following quotation from the interrogation of Rear Admiral Takeuchi, prisoner of war, and formerly head of what amounted to the United States desk in the Japanese Office of Naval Intelligence, is of interest because of the light it sheds on the collection by Japan of naval power intelligence regarding the United States before and during World War II. It is taken from an article entitled "Japanese Naval Intelligence" in the July 1946 issue of *The ONI Review*. Admiral Takeuchi says:

For a number of years, I gathered together pieces of information on a historical basis from books written on the subject, radio announcements, and similar sources. Secondly, I would combine this with information compiled on a geographical basis, based during the war upon such sources as radio broadcasts, sightings of your task forces and planes, and other pieces of information as they came to my knowledge. For example, from an announcement of your press or radio which stated the date on which a carrier was launched, based on my past historical information with regard to carriers, I could determine that within a certain period of time, say 6

months, this ship would be operating in the Pacific area. Another source that I used was announcements by your side of sinkings and damage to ships and the loss of aircraft. I assumed that these announcements were the very least that you had lost. It then became a problem of determining the status of these ships which were only damaged or which may have been sunk. That could often be determined one way or another by such methods as sub sightings or aircraft sightings. We did not have a world-wide organization to gather this type of information. It was a matter for statistical analysis by the individual officers concerned with the job here in Tokyo.

The inadequacy of Japanese naval intelligence, and the low esteem in which it was held in the fleet, is humorously highlighted at the conclusion of the article cited above, in the following summary:

Many of the officers interrogated commented on the failings of Japanese intelligence. "The main reason for the defeat of Japan was the lack of intelligence information," said one. "The main reason for our failure was the lack of realization, both in headquarters and in the field, of the importance of intelligence," said another.

The negative attitude of many Japanese naval officers toward operational intelligence is summarized by Admiral Takeuchi's reply to a question put by the interrogator.

With regard to Japanese naval intelligence as a whole, the Admiral was asked, "what were the outstanding services of naval intelligence to the Japanese Fleet units?"

"I have never pondered the question before," he replied, "but I feel sure that the intelligence organization of the Navy had no injurious effect on the fleet."

In contrast, American Naval Intelligence acquired during the war the most detailed and accurate information concerning the Japanese Fleet, as indicated in the first part of this chapter. The same careful methods are brought to the study of the navies and merchant fleets of all the major sea powers today.

To illustrate the scope of naval power intelligence, as gathered by United States Naval Intelligence, we turn now to the *Monograph Index Guide*, revision of 1942, published by ONI. This is a systematic key to the classification of foreign intelligence which exists in the form of reports, monographs, and other special studies in ONI, and for the proper classification of such foreign intelligence as may be collected in the future. Monograph information is listed under 11 sections, and is further subdivided under each section into sub-

titles and subheads. It is suggested that students, in order to gain a detailed insight into the scope of naval strategic intelligence, read the entire *Monograph Index Guide* if they are not already familiar with it. That part of it which is germane to the naval category of strategic intelligence is the 900 section, entitled "Navy and Related Organizations, Less Aviation and Communications.

The following subtitles are listed under the 900 section:

1. Organization, Strength, Disposition.
2. National Attitude Toward Navy, and its Influence, Information Policy, General Effectiveness, and Readiness.
3. Personnel.
4. Aviation Provisions and Coordination with Other Services.
5. Coast Defense.
6. Bases, Yards, and Other Shore Facilities, and Procurement and Stocks of Naval Supplies and Material.
7. Naval Operating Doctrines and Methods, Training and Capabilities of Units, and War Plans.
8. Intelligence Service.
9. Development, Testing, and Adoption of New Designs, Tactics, and Devices.
10. Ordnance and Related Matériel: Design, Production, Stocks, Etc.
11. Engineering, Hull, and Miscellaneous Material: Design, Production, Stocks, Etc.
12. Naval Vessels and Vessels of Other Armed Services.
13. War Operations, Historical Current Events, and Miscellaneous Supplement.

Space does not permit a listing of the many detailed subheads to be found under these subtitles. Numerical symbols are provided for all conceivable items of naval power intelligence by the *Monograph Index Guide*.

The Relation of Naval Power to Grand Strategy

The decision of a nation to increase or decrease its naval power, and, if to increase it, the selection of definite elements to be expanded, lies with the grand strategists, who may or may not conform to limitations imposed by treaties. Adolph Hitler was the grand strategist of Nazi Germany. Just as he demonstrated ignorance of the psychological fiber of the English and American peoples in his conduct of the diplomatic war, so, in the shooting war, he demonstrated ignorance of the role of sea power. He was from the beginning predisposed toward the Wehrmacht and the Luftwaffe, and

consequently neglected to allocate sufficient funds and manpower to the German Navy.

In this connection we quote from an essay by Admiral Karl Doenitz entitled "The Conduct of the War at Sea," written after he became a prisoner of war, and published by the Office of Naval Intelligence on 15 January 1946. Admiral Doenitz sums up the military and naval position of Germany at the time when Hitler rose to power on 30 January 1933:

The strength of the German Army was 100,000 men. There was no German Air Force. The navy had not yet attained even the strength allowed it in the Versailles Treaty, having only a total strength of 15,000 men. There were 6 new light cruisers, each of 6,000 tons, available. The torpedo boats had been brought up to the permitted number of 24 by the construction of 12 new ships. Of the pocket battleships of the *Deutschland* class, only one ship, the *Deutschland* itself, had been completed. Two more, the *Scheer* and the *Grif*, were building; but the three other pocket battleships which could have been built under the treaty had not yet been ordered.

It was part of Hitler's policy to create again for the German people an adequate wehrmacht which would be in a position to represent the interests of the Reich. The central position of Germany in the heart of Europe compelled her to place the emphasis in rearmament, first on weapons of land warfare, that is, on the army and the air force. Only these latter were in a position to secure the extended and unprotected land frontiers against the large number of hostile continental neighbors, thus creating the first prerequisite for domestic reconstruction. Consequently the navy had, of necessity, to modify its armament demands.

This was all the more possible as Hitler was striving for a political agreement with England, having always regarded Bolshevik Russia as the arch enemy of Germany and Europe. None of the great naval powers, therefore, was considered to be among the future opponents of Germany.

This policy of Hitler found its consummation in 1935 with the conclusion of the naval agreement with England, which fixed the strength of the German Fleet at 35 percent of the English (U-boats at 50 percent). This clearly showed that Germany did not reckon with a war against England, as she voluntarily renounced arming against English sea power.

While Germany neglected to build her navy up even to the strength allowed by the Treaty of 1935, Japan during the 1930's was building in defiance of the naval limitation agreement which prescribed the size of her fleet, and was accumulating stock piles of strategic raw materials against the eventuality of war with Great Britain and the

United States. In its European phase, World War II was primarily a war of land and air power; in its Pacific phase, it was primarily a war of sea power, including naval aviation.

If Hitler had been able, by diplomatic and political means, to prevent the entry of Great Britain and the United States into the war, he might safely have consolidated his aggressions on the continent of Europe, and he would not have had to rely to any considerable extent on the German Navy. Or, knowing that could not prevent the belligerency of the Anglo-American coalition, if he had foreseen the naval aspect of the European war and had built up a strong submarine force in time, he might have been more successful. The fact is that his grand strategy vacillated, and the decision to wage all-out submarine warfare came too late. The result was that by the time Germany had perfected a superior U-boat, Allied bombing of German-occupied Europe, together with effective English and American countermeasures at sea, nullified the threat. In brief, German naval power, unlike Japanese naval power, was a neglected instrument of grand strategy; its importance was realized too late. The failure of Hitler either to shape his fleet in conformity with his grand strategy, or to shape his grand strategy in conformity with the naval capabilities of Germany, was in essence a failure of strategic intelligence.

There was lacking in the German conduct of the war that balance and coordination of the three elements of modern war, land, air, and sea power, which were so characteristic of Allied grand strategy. In *American Sea Power Since 1775*, edited by Allan Westcott, the concept of trielemental warfare is ably stated:

It would be a mistake to assume that the victories over Japan and the European Axis were achieved predominantly by any one arm, land, sea, or air, as it would be a mistake to think of the plane as a mere adjunct or weapon attached to land or sea forces. World War II was necessarily trielemental; armies, fleets, and aircraft were helpless except when operating in close coordination. Realization of this should not be obscured by the fact that in the Pacific all three elements were in many cases Navy-controlled or that in Europe air power was generally Army-controlled. Actually the strength of the Allied Powers lay to a large extent in the balance of their land, sea, and air forces and their ability to merge all three for the achieve-

ment of a single end. In the typical trielemental advance, ships and planes cleared the way by gaining command of the sea and then obtaining control around and above the target. Ground forces next went ashore under cover of sea and air forces to take control of the land. This, once achieved, a base was provided for staging the next advance along the same lines. Throughout the process *balanced* power permitted operations which in former times would have been considered dangerous in the extreme, as when United States forces, dominant on the sea and in the air, safely bypassed strong Japanese garrisons, or when Allied ships, under air cover and using new techniques of fire control, engaged land forces and fought it out with coastal batteries. By the steps indicated, the conqueror approached the enemy's citadel. That the ultimate decision was attained in Europe by land and air and in the Pacific by sea and air was a result largely of the geographical factors involved.

Naval power intelligence must not neglect the bases which support the battle fleet, or the train, the numerous auxiliary and supply vessels which by means of such techniques as refueling at sea enable it to operate far from its home waters. The Allied trielemental advance across the vast distances of the Pacific would not have been possible without the logistics miracle performed by the American Navy.

It has often and correctly been stated that if the Japanese had concentrated on destroying the shore installations at Pearl Harbor, instead of devoting their attention to outmoded ships of the line, they would have dealt our naval power in the Pacific a far more crippling blow, for all naval vessels in the area, including the strategically priceless aircraft carriers which were at sea on 7 December 1941, depended upon the drydocks, fuel and ammunition depots, repair shops, and other shore facilities at Pearl Harbor. This was a strategic error attributable to faulty Japanese naval power intelligence.

An entire port may be destroyed by sabotage in order to deny it to the enemy. An example of this was the destruction by the Italians of the harbor of Massawa, the best port in the Red Sea and the only naval base capable of supporting operations in the eastern Mediterranean. In the spring of 1940, following the disaster at Dunkirk, Mussolini declared war, and, pending the capitulation of both France and Britain, which he confidently expected, ordered all Italian vessels east of Suez to take refuge in Massawa.

France surrendered, but the British failed to go under; indeed, soldiers of the Empire attacked in Africa, sweeping triumphantly through Ethiopia and Eritrea. When British forces took Asmara, the capital of Eritrea, they could look down on Massawa, 7,000 feet below and 40 airline miles away, where the Italians, while parleying for surrender terms, were preparing the greatest example of mass sabotage of a naval base ever perpetrated. They could have defended their port, but they chose to destroy it. The extent of the damage they inflicted is described by Commander Edward Ellsberg in his book, *Under the Red Sea Sun*:

In the three harbors of Massawa and in its off-lying islands lay a fleet of some 40 vessels, German and Italian. Freighters, passenger ships, warships, crowded every berth, while in addition, in the north harbor were two irreplaceable floating steel dry docks.

A tornado of explosions swept the Massawa waterfront as exploding bombs, strategically placed far below their water lines, blew out the sides and bottoms of ships by the dozens. The priceless floating dry docks received special attention, 14 heavy bombs being planted in them to insure not only their sinking but their total destruction. The invaluable machinery in the naval shops was smashed with sledge hammers. Electric cranes were tipped into the sea. Everything in the way of destruction that Italian ingenuity could suggest to make Massawa forever useless to its approaching conquerors was painstakingly carried through.

Finally, placed as carefully as possible, bow to stern, strings of large ships were scuttled in rows to block the harbor entrance. When the last bomb had gone up and the last ship had gone down, the Italian admiral commanding rubbed his hands in satisfaction over such a mass of scuttled ships as the world had never seen before. Then he surrendered Massawa and its smashed naval base as being not worth even one shot fired in its defense.

Massawa surrendered in April 1941. In the autumn of that year, Alexandria was threatened by Rommel, and was in grave danger of being immobilized by German air attack. The strategic importance of Massawa rose sharply as it became necessary for the British to find another naval base from which to operate their Mediterranean fleet, beyond range of the Stukas and safe from the tanks of the Afrika Korps.

It was decided to raise the scuttled ships and floating dry docks, rebuild the shore installations, and make Massawa once more an operational base for the use of the Allies. The United States, al-

ready occupied with a gigantic salvage problem at Pearl Harbor, was assigned this formidable task. In his book, Commander Ellsberg tells how, after months of heartbreaking effort, Massawa, the dead naval base on the Red Sea, was reborn and fitted for the accommodation and repair of all types of Allied shipping.

The Italians correctly assessed the strategic importance of Massawa, and they successfully rendered it nonoperational for a time, but their naval power intelligence failed to predict that Yankee doggedness and ingenuity would recreate all the elements of naval power which had been so carefully sabotaged. Similarly the Japanese could not foresee that battleships sunk by them at Pearl Harbor would be raised and restored to action in the Pacific war.

New Concepts of Naval Power

Certain modifications in existing types of aircraft, ships, and weapons took place during World War II, in addition to the innovation of new types mentioned earlier in this chapter. On occasion the modification represented a startling new departure which might have altered the course of the war, if the modified aircraft, ship, or weapon had been permitted to go into action in time. An interesting example of this was the German type XXI U-boat, which, in the planning stage, gave promise of being a truly revolutionary type. Compromises were introduced, however, which militated against the attainment of the objective, a highly maneuverable, high-speed submarine which could remain submerged most of the time and which could operate at great depths. Commodore Henry A. Schade, U. S. N., head of the Naval Technical Mission in Europe, describes the type XXI U-boat in a paper entitled "German Wartime Technical Developments," which was delivered in November 1946 at the annual meeting of the Society of Naval Architects and Marine Engineers:

Leading submarine designers and engineers from all main building yards were conscripted in late 1943 and ordered to the little town of Blankenburg in the Harz mountains, where the central design agency for the type XXI program was established under the Speer ministry. All design work for this program was either done or approved by this agency.

Radical as these beginnings were, they did not prevent the type XXI submarine from becoming a compromise with the more conventional approach. A prime

reason for her construction was her high submerged speed, yet she also was given two 1,700-horsepower engines with exhaust-driven superchargers in order to give almost equal surface speed; i. e., 16 knots as against 18 submerged. Later, when it was found that back pressure created in the Schnorchel kept the engines from obtaining their rated capacity, the superchargers were reengineered, since the Schnorchel was indispensable; and this reduced the engine output to about 1,050 horsepower each. Advocates of the new design maintained that a true underwater boat had no need for a large tower and for antiaircraft guns. While the tower is streamlined on type XXI, it is still large; and there are hydraulically operated twin 30-millimeter antiaircraft guns at each end of the bridge * * *.

Although a total of 119 of these boats were delivered by the assembly yards, none got out on war patrol. A persistent source of trouble was the hydraulic system * * *. On type XXI, the Germans took an extremely radical step in extending the use of hydraulic power to include not only periscopes but the bow and stern planes, the rudder, torpedo tube shutters and doors, and the training of the deck guns.

A far more dangerous U-boat than the type XXI was the type XXVI, ultimate in German submarine design, which was intended for continuous submerged operation. Commodore Schade states that this type was to be a vessel of approximately 775 tons, 177 feet in length, with four separate means of propulsion to drive a single propeller shaft—Diesel engine, main motor, creeping motor (for ultra-quiet operation), and Walter turbine. Type XXVI was expected to make about 25 knots submerged on the turbine. None of these boats was built; if they had been built and become operational in time, it is not difficult to imagine the damage they might have done to Allied fleets and merchant shipping.

The important point to be made in connection with German submarine development during the last war is that it led the world. Some types of German U-boats were equipped with Schnorchel and operated successfully; while the more advanced types, the type XXI and the type XXVI, were not operational, the improvements incorporated in their design have been noted by technical intelligence specialists of the major nations, and the submarine warfare aspect of naval power, and hence of naval power intelligence, is accordingly in process of being modified.

In an address delivered on 28 April 1947, Rear Adm. William S. Parsons, U. S. N., summed up the reasons for conducting the Operation Cross-

roads experiments at Bikini, and stated that evaluation of the main technical results of the tests would presently be available:

In the fall of 1945 it was realized by many people in high quarters that we needed information as to the effect of the most potent weapon of all time on World War II military equipment. This concern led the Joint Chiefs of Staff to assign to the LeMay Committee the task of drawing up the broad specifications for a test of the atomic bomb against ships. Then in January 1946 the Joint Chiefs of Staff directed Admiral Blandy to form Army-Navy Joint Task Force One to carry out the tests * * *.

Both tests at Bikini were conducted on schedule and the whole complex operation was carried out without injury by the bomb to any one of the tens of thousands of men who participated.

The main technical results have now been transmitted to the Joint Chiefs of Staff Evaluation Board, whose chairman is Dr. Karl Compton, President of M. I. T. Their evaluation should be available by this May or June.

The general statements can be made that the first test provided an essential verification of predictions based on experimental background. The second test was even more valuable since it was the first time an atomic bomb had been detonated below the surface. The paralyzing radio-activity from the second bomb had to be experienced to be believed. It was difficult and dangerous to carry out, but in the long run it would have been much more dangerous not to carry it out, since without it we would have had only incomplete and unconvincing theory to guide us in our preparations and plans for the future.

Under the United States system of government, all large sums of money spent by Government agencies, except sums expended from a personal fund by the President, must be accounted for, and the purpose for which they are sought must be revealed to the Congress, with consequent publicity. Hence much naval power information appears in American newspapers and periodicals. In the spring of 1947 several articles were published which indicated that United States naval power is already beginning to be modified by the results of the Bikini experiments, and that other revolutionary concepts are beginning to be implemented in naval construction as a result of Arctic and Antarctic training exercises.

On 3 May 1947 John G. Norris write in the *Washington Post*:

A naval construction program of new type ships—pioneers for the fighting fleets of tomorrow—was laid before Congress yesterday.

Included in the 55½-million-dollars program were 16 vessels of the following general types:

1. Troop and cargo-carrying submarines to permit small task forces to be dispatched on secret missions.
2. Surface and undersea craft especially designed for operating in Arctic waters—America's new "frontier" and the shortest air route to central Europe. The ships would carry base construction equipment.
3. Antisubmarine craft embodying the latest "answer" to German-developed high-speed U-boats now in Russian hands.

A Navy spokesman said that to save money none of the 16 ships will be built from scratch. Existing submarines, destroyers and other craft will be redesigned and rebuilt to carry out the latest naval construction ideas.

He also made it plain that the converted vessels will serve as prototypes for entirely new classes of vessels. "Troop-carrying submarines," the spokesman declared, "might have a capacity of about 100 fully armed men plus a crew of 60. We anticipate situations in which the undetected movements of troops and cargo might be required. The submarine is an ideal medium for such an operation."

He did not elaborate on this statement, but naval observers pointed out that fleets of such submarines might land forces on enemy coasts to exploit the disorder created by an atomic bomb attack, or secretly land new type weapons of the future.

Another submarine, an assault cargo vessel and two "LSD's"—landing ship, dock—will be converted under the program for operations in ice-filled waters.

"They will explore the possibilities for polar operations," the spokesman said, "particularly in the Arctic which has attracted new and much publicized significance through the fact that the Great Circle routes between here and Europe pass over them."

"These are the routes over which might be employed either piloted aircraft or super long-range guided missiles."

The LSD—developed during the war for amphibious operations—provides a "good, ready-at-hand chassis" which can be altered for Arctic operations, it was said.

"Such a ship can force itself into ice-infested waters carrying all manner of equipment, including construction equipment," the spokesman added.

A "picket" submarine designed for Arctic operations is desired it was said, because such a craft would be harder to spot and less vulnerable.

It will be used for reconnaissance of "planes or guided missiles and certain other functions of a classified (secret) nature," the Navy Department spokesman said.

In addition, the Navy is proposing to convert nine 2,100-ton destroyers into special antisubmarine craft. The plan is to operate them together to develop new tactics and techniques of combating new submarines.

New concepts of naval power as conveyed by a Navy spokesman to a reporter in the above quotation will, if carried out in construction of new vessels and in modifications to existing vessels, inevitably broaden the scope of the naval power category of strategic intelligence, and of other categories as well. We may safely assume that the major powers are experimenting along the same lines; it is imperative that we be fully advised as to the nature and extent of their experiments, while conducting our own.

The next war will in all probability be initiated

by a surprise attack; wartime industrial capacity will count for less, because there will not be sufficient time to set it into motion, and because the industrial centers of the warring nations may well be the initial high-priority targets. In a sense, World War III is being waged now, in pilot plants, research laboratories, shipyards, and intelligence agencies; it is to be hoped, but not necessarily to be expected, that it will be terminated while still in its preparatory phase, through the establishment of world order compatible with the security of the United States.

CHAPTER VIII

WHO'S WHO, SOCIOLOGICAL, AND COUNTER-INTELLIGENCE

In chapter VII we defined and described the political, economic, and geographic categories of strategic intelligence. In chapter VIII the technical and scientific and naval power categories were discussed. This chapter will deal with who's who, sociological, and counter-intelligence categories. In Chapter V, the reader was introduced to the counter-intelligence function of the Domestic Branch of ONI, and to the Contact Register in ONI and in the naval districts. In this chapter, only one phase of the subject of counter-intelligence will be dealt with—intelligence of the capabilities and intentions of foreign powers.

Who's Who Intelligence

At this point a distinction may be drawn between who's who intelligence and sociological intelligence. The former is concerned with human beings considered individually, and the latter with human beings considered collectively. Yet the relation of the individual to the group should be weighed as well, for a little thought on the matter will lead the reader to the conclusion that the individual and the group exercise mutual influence on each other. Man is the product of his environment as well as his heredity, and environment is both tangible and intangible. Such forces as custom, tradition, and religious belief make up the intangible aspect of his environment. Man influences the tangible and intangible aspects of his environment if he reaches a position of power or eminence in the state, whether it be power of position, or power of money, or power of intellect, or a combination thereof.

Obviously the governments and armed forces of potential enemy nations are of intense interest to the intelligence services of a nation in time of peace as well as in time of war. Therefore the men who are in a position to influence those governments and armed forces, or who control them, as in the totalitarian states, are of absorbing interest as well,

for the intentions and capabilities of a nation are nothing more than the intentions and capabilities of its leaders and its people, in varying degree, depending on whether the nation is totalitarian or a democratic state.

Definition

The who's who or personalia category of strategic intelligence is officially defined, in terms of Naval Intelligence, as:

Disclosing data on the personalities in a position to direct the foreign policy or the war-making facilities of a foreign power, and those who could be influenced to our advantage.

It is not the function of the who's who category of strategic intelligence to exercise such influence, but to disclose foreign nationals of position, their characteristics, weaknesses, and susceptibility to subversion. It should be noted here that the Axis concept of who's who intelligence was broadened to include persons of relatively minor importance, all over the world, on whom extensive records were kept.

The foreign policies and war-making facilities, and hence the grand strategies, of the Axis nations were directed almost solely by Hitler and Mussolini personally, and by the Japanese High Command. Hitler, in *Mein Kampf* and in public speeches, had served notice on the world of his intentions even before World War II broke out; Mussolini began fulminating orally in the 1920's and continued to spout his invective throughout the following decade. The prime source of who's who intelligence regarding these dictators lay in their printed and spoken utterances. The great mistake of the democracies was that they did not take Fascist Italy and Nazi Germany seriously.

Axis Employment of Who's Who Intelligence

While the democracies allowed themselves to be bullied and confused by bewildering spates of words issued in the Axis press and over Axis-

controlled radio stations, both Hitler and Mussolini were making use of who's who intelligence at home and abroad. At home, anti-Fascist and anti-Nazi elements were hunted out by counter-intelligence agencies and dealt with, either by assassination or by means of the concentration camp. Abroad, a close watch was kept not only on German and Italian nationals, but on citizens of German and Italian descent as well, and control was exercised over them, as we have seen in earlier chapters. Coercion, abduction, and assassination were indulged in by Gestapo and OVRA agents overseas.

The extent to which the Nazi government scrutinized German nationals and foreigners of German origin living abroad is indicated by the celebrated French lawyer, Henry Torres. Alarmed by the number of German agents operating in France in the decade 1930-40, M. Torres compiled a private dossier on suspected German and Italian fifth columnists, and studied the infiltration methods of the Axis. The results of his study are incorporated in his book, *Campaign of Treachery*, published in 1942, in which he described the German Foreign Institute of Stuttgart as follows. This quotation is pertinent to a discussion of both the who's who and sociological categories of strategic intelligence:

The German Foreign Institute of Stuttgart was the most active and the most important of all the agencies engaged in foreign propaganda. Disguised as a patriotic and scientific association, it was in reality the most extensive intelligence service in existence. The purpose of this institute was the study of the "30 million German men and women living abroad." According to its director Richard Scaki, it "is at the service of all the Germans and pursues the goal of spiritually, racially, and ideologically unifying them into one great community. It has the most extensive and the most authoritative collection of documents concerning foreigners of German origin and Germans living abroad of any institutions in Germany. The institute offers guidance and assistance to all the German citizens residing abroad as well as to foreign German organizations. The foreign German, regardless of his citizenship, finds the comfort and understanding in the strength of his ties to the German people."

It had departments of education, press, propaganda, solidarity and welfare, archives, emigration and immigration, repatriation; advisory services for tourists going abroad; employment agencies, trade agencies and centers for the distribution of propaganda to foreigners of German origin—thus covering all the activities in all

the necessary fields. Seventeen hundred employees worked for this institute. Its most important department was that of the "Archives" which filed, interpreted and commented upon the 1,020 German newspapers published abroad, kept up a close correspondence with the "members of the German nation" abroad, sent out subversive literature and supervised German associations all over the world. It possessed a list of 43,000 German organizations and compiled biographies of several thousand families of German blood.

This central organization for rallying foreigners of German origin had developed detailed genealogical charts. It sent letters regularly to nearly one million persons informing them of all the Nazi achievements and of everything especially related to the German province of their origin. The party spirit thus ingeniously exploited the provincial chauvinism of Germans living abroad.

In 1938 the Italians conducted a violent propaganda campaign in Tunisia, a colony of France. Mussolini exploited for political purposes Italian nationals and foreigners of Italian descent living abroad, and exercised close control by means of state police power. The following description by M. Torres of Italian activities in Tunisia will suffice as an example of Fascist employment of who's who intelligence in the territory of a friendly state:

In Tunisia, in addition to 2,400,000 natives whose loyalty to France was as firm as their justified hatred of Italy was deep-rooted, there lived 108,000 Frenchmen and 94,000 Italians, among whom were 20,000 Fascists. These Fascists, of whom a considerable percentage were impoverished Sicilians, barely educated, if not entirely illiterate, were aroused to a feverish pitch by irredentist demagogues: "Italians, awaken! Fascism is about to conquer the world. Lift your heads. You are the greatest of the nations! You are the elite, the conquering vanguard! Remember the grandeur of Rome."

The French administration looked on complacently while these illiterate sons of Romulus and Remus were organized into *fasci*. They had their *dopolavoro*, their schools, their sport clubs, they paraded in the streets in military formation with bands and flags.

At the same time, the anti-Fascists, hunted down by the OVRA agents and their French collaborators in the PPF and other groups, were treated by our authorities as suspicious characters. Those among them who were not sustained by a profound faith in the ultimate triumph of their cause were sometimes tempted to join the Fascists. Italian fascism was totally unscrupulous in its methods of exerting pressure on the recalcitrants; workers could not get a job without showing their membership card in the *fascio*; their children were compelled

to attend Italian schools; relatives of Tunisian colonists still in Italy were treated as hostages.

Who's who intelligence was also used as a means of blackmailing political figures, or persons of financial or journalistic power, in other countries, with results favorable to the Axis. An example of the wooing of the so-called Cliveden set in England by Nazi agents and diplomatic representatives, and the blatantly cynical and eminently successful attempts to buy key figures in France. If subtle methods failed, more direct methods were tried. R. W. Rowan, in *Secret Agents Against America*, describes a form of sabotage which is aimed at the leading members of a community and which attempts to destroy their reputations, or to control them by threatening such personal destruction. Who's who intelligence provides the raw material for this game; and the dossier system is the great repository of who's who intelligence. Mr. Rowan defines it as follows:

In Europe the secret of political police power resides mainly in the dossier system, which the French originated. Unlike the "police record" known to the United States, the dossier is a body of confidential information officially held. It comprises in France today a complete life record of every citizen of the Republic who seems at all likely ever to be of interest to the authorities. It covers, in short, all persons of distinction and their relatives, all persons who appear on the way to achieving public renown and their family connections, and again, all persons even rather remotely associated with what is loosely termed the underworld.

Great world, half-world, and underworld meet in the dossier system—a future ambassador, a retired cabinet minister, a thief, a courtesan, and an old woman who does the cleaning at the embassy of a foreign power. But it remained for Wilhelm Stieber, the Prussian spy master of monumental intrigues and triumphs, to apply the dossier system to citizens of other countries and—prior to the World War—for purposes of German espionage and secret service in case of hostilities. German agents sent out before 1914 were instructed to report any private information they might obtain that related to a foreigner of social or political prominence. This resulted in the accumulation at a secret-service headquarters near Berlin of a kind of encyclopedia of contemporary scandal.

Mr. Rowan states that in the opinion of some foreign commentators the almost unaccountable support of Nazi demands on Czechoslovakia in 1938 might have been the first obvious accomplishment of German secret-service pressure as applied by Hitler. The complete story of the extent to

which who's who intelligence was used by Hitler for the accomplishment of political ends may never be told. A treatise could be written on this one aspect of strategic intelligence alone. There is much material for speculation, for example, in the Munich conferences, and regarding the extent to which the Nazi leaders studied the personality of Neville Chamberlain before each of those fateful meetings. Certainly who's who intelligence played an important part in the political and diplomatic maneuverings that preceded the outbreak of World War II.

The dossier system, in which information about people is officially held by the government, is fundamentally repugnant to citizens in a democracy. In the United States all known information about criminals, including known and suspected agents of foreign powers, is, in fact, held in peace and war by the several intelligence agencies of the Government charged with safeguarding the national security. But the formation of a secret state police similar to those which existed in Germany, Italy, and Japan, and to that which exists today in Soviet Russia, has been prevented by specific delimitation of authority between the several agencies, and by our democratic form of government which includes provision for checks and balances.

Sociological Intelligence

In the first part of this chapter we stated that who's who intelligence is concerned with people as individuals, and sociological intelligence with people in groups. In this second part, certain terms will be defined, and some aspects of the sociological category of strategic intelligence will be discussed.

Some overlapping exists between the sociological, political, and who's who categories. If who's who intelligence seeks to disclose the personalities in a foreign nation who are in a position to influence the foreign relations and preparations for war of that nation, sociological intelligence is concerned with social forces which shape both the governors and the governed, and foreign policies which may be expected to prevail. Personalities, social forces, and domestic and foreign policies are inextricably intertwined. The personality is the

representative of the will of the people in a democracy, and is the shaper of the will of the people in a totalitarian state.

Definitions

The sociological category of strategic intelligence is officially defined, in terms of Naval Intelligence, as:

Disclosing political, ideological, and ethnic forces within a foreign country, psychological characteristics, castes, education, propaganda, and so forth.

The words *politics* and *propaganda* have been defined in chapter VI, in which we learned that *psychological warfare* is synonymous with *political warfare*. In order to avoid repetition, we will define below only the following:

1. Sociology.
2. Ideology.
3. Ethnology.

Sociology, from which the adjective *sociological* is derived, is defined by Webster, as "the science of the origin and evolution of society, or of the forms, institutions, and functions of human groups; social science."

Ideology, in the sense in which it is used above, is defined by Webster as "manner or content of thinking characteristic of an individual or class; as, bourgeois *ideology*."

Ethnology, from which the adjective *ethnic* is derived, is defined by Webster as "the science that treats of the division of mankind into races, their origin, distribution, relations, and peculiarities."

Since the term "*sociological intelligence*" includes the disclosure of political, ideological, and ethnic forces within a foreign country, and since the other items listed in the definition of the sociological category of strategic intelligence may logically be expected to fall within the province of one of these three forces, we will confine our treatment of sociological intelligence to a broad discussion of political, ideological, and ethnic forces, grouped together.

An intimate relationship exists between the language of a nation and its political, ideological, and ethnic forces. Because the Japanese language had been considered so difficult for occidentals to learn, we had before the war paid little attention to training Japanese linguists, and consequently

our knowledge of the people of Japan was far from complete, and there were gaps in our strategic intelligence picture of the major Far Eastern power. The Japanese, having started their war against China early in the 1930's, were on the offensive and alertly spy-conscious. Any occidental in search of strategic information in the Orient was conspicuous by his physiognomy, if not by his lack of familiarity with oriental languages and folkways. However, in spite of the ease with which they travelled about in the United States, the Japanese were similarly handicapped. Writing in 1939, R. W. Rowan, in *Secret Agents Against America*, brought out this fact, and ascribed the huge Japanese expenditures for secret service to the fact that occidentals had to be employed for espionage missions in occidental countries:

Today all activities that come under the heading of Japanese "secret service" cost the Mikado and his grim and groaning taxpayers the staggering total of 25 million dollars. This estimate includes the costly operations of sabotage, or the new combatant secret service which have played their part in the Chinese war.

The Japanese could keep themselves even busier if their physical racial characteristics did not make them so conspicuous outside their own land. The absolute necessity of bribing occidentals for espionage missions in occidental countries has consequently dipped its hand into the Japanese secret-service funds.

This is an example of ethnic forces working against the acquisition of strategic information in an occidental country by an oriental country.

But ethnic forces may work in the service of gathering intelligence as well as against it, and they must not be overlooked in time of war by top strategic planners. It has been related elsewhere in this text that Naval Intelligence played an important part in China before and after Pearl Harbor. A consideration of ethnic forces was vital to the success of NavGroup China.

The education of American servicemen with regard to behavior abroad had also to be considered in the global war just terminated. Several Government agencies cooperated to this end, and drew on the services of scientists in order to assure that the information disseminated would be of practical value.

Pocket guides to many countries were prepared and issued to soldiers and sailors who were enter-

ing the foreign country in question for the first time, in an effort to explain the complexities of that culture. Organization of the material in the guides was worked out in the Psychology Division of the Office of Strategic Services, and the first draft was written by an "area" man, frequently an anthropologist. The Special Services Branch of the Army edited the copy and produced and distributed the printed guides.

In an article entitled "Anthropology and the War," in the Autumn 1946 issue of the *American Association of University Professors Bulletin*, John F. Embree wrote:

The pocket guides provided mass information on foreign customs and, like the training given in Hawaii, the armed services found it necessary to lean on the anthropologist who had studied the peoples in question. But not always; some of the guides were written in part by missionaries or businessmen who had resided in the foreign country, which is one reason why it was necessary at the start to establish certain forms and standards for the series. The shaping of the mold was a job for psychologists and social anthropologists to wrestle with in the Psychology Division. The problem of communicating knowledge of an alien culture in understandable form is not easy and the pocket guides were by no means perfect, but their creation was a symptom of some of the complexities of World War II. We were beginning to realize that the war included people as well as bullets and that if we were to work out solutions of problems in human relations we had to do more than give a man a gun and tell him to use it on the enemy. The Mohammedans could be friends or enemies in 1942, and it was vital to our interest to make them friends—a thing that could not be done by force. The natives of New Guinea could help the Japanese or they could help the Allies—it was to our interests to persuade them to help us. (The Australians had much better knowledge of the culture of New Guinea tribes than the Japanese had, since government anthropologists have been attached to the Papuan administration for years.)

While the question of physical differences between races has been debated by anthropologists, scientists agree that ethnic differences exist. Over periods of thousands of years, races develop traits that better fit them to cope with their environment. The Aleuts, original inhabitants of the Aleutian Islands, are today all but extinct. At one time they numbered approximately 20,000; they have dwindled to less than 2,000, not because of inability to cope with their environment, but because vast numbers of them were slaughtered by Russian seal hunters in the Eighteenth century, and other thou-

sands fell victim to diseases introduced by the white men. The survivors are squat and bow-legged because for generations their people have fished and travelled in kayaks. Awkward on land, they are at home and wonderfully adept in these frail craft on a stormy sea.

During World War II the Aleuts were evacuated to an island in southeastern Alaska because their settlements were scattered and vulnerable to attack by the Japanese. Less than 2,000 men, women, and children spread out along a chain of islands stretching for 1,000 miles did not constitute a defensive force. The males recruited from the tremendous native population of the mainland, however, contributed materially to the defense of Alaska Territory, principally as scouts in the Alaska Territorial Guard. Population is related to defense; inasmuch as approximately half of the 70,000 people in Alaska at the time of Pearl Harbor were natives, plans for the defense of the Territory logically involved utilizing this large fund of manpower and benefiting by the special ethnic skills which the natives had developed. Among these skills were ability to live off the land, to navigate coastal waters, to move stealthily, to detect unfamiliar objects at a distance and report them. In this connection the following story is quoted from the column of Marquis Childs which appeared in the *Washington Post* on 3 May 1947:

Not long ago, the Navy decided to conduct secret submarine maneuvers in Alaskan waters. These maneuvers were so secret that not even the Army was told about them. But the presence of the submarines in Arctic waters was reported to Army intelligence in Alaska. For the moment, at least, it produced tremendous excitement. They might, officialdom thought, be Russian submarines. The mystery was soon cleared up, with some red faces all around.

Not the least interesting part of the story was the way in which the submarines were detected. At the outbreak of World War II, Alaska was pitifully unprepared. There was a very real threat that the Japanese might conquer the Alaskan mainland from bases established in the Aleutian chain. One of the defense measures taken by Alaskan officials was to organize an Alaska Territorial Guard. Enrolled in this guard were many Eskimos who proved invaluable as scouts in the white wastes of the Arctic wilderness. They have powers of vision far beyond those of the white man. That is why they were able recently to sight the submarine periscopes and thereby disclose the Navy's highly secret maneuvers.

Natives were employed in the service of Allied intelligence not only in Alaska during the last war, but in many other parts of the world, including, notably, China and the southwest Pacific. The coastwatcher system, established by the Australians in 1939, and later conducted in cooperation with United States intelligence agencies, depended in part for its effectiveness on the information obtained from natives in the island screen which lay north of the continent. Operation Ferdinand, as the coastwatcher organization was called, might equally well be discussed like the activities of NavGroup China, under counter-intelligence. The wartime shroud of secrecy which veiled not only the functions but the very existence of Operation Ferdinand has been lifted; interested students are referred to a book entitled *The Coastwatchers*, by Commander Eric A. Feldt, O. B. E., Royal Australian Navy.

Space does not permit of a detailed discussion of ethnic forces as a part of strategic intelligence in World War II. Suffice it to say that in no previous war did the ethnic differences existing between races of people play so important a part. Global war forced nations to become better acquainted with the inhabitants of all other nations. Knowledge of ethnic forces contributed to the establishment of close relations between allies, and to grand strategy as conducted by the two coalitions, the Allies and the Axis.

While the word *ideology* was defined above as manner or content of thinking characteristic of an individual or class, its meaning may be broadened to include the manner or way of thinking of an entire nation, particularly in totalitarian states, in which thinking is regimented. Furthermore, in the totalitarian states the ideology nearly always derives from one man, and is spread by him within the boundaries of the state he controls, and within the boundaries of adjacent and other states. The ideology of this one man may itself be derived from a previously existing body of doctrine, as the ideology of Stalin was derived from Karl Marx and Lenin, or it may be formulated by a process of intuition in the crazed brain of the dictator himself, as were the ideologies of Mussolini and Hitler. Once formulated and promulgated in the totalitarian state, the official ideology

becomes a kind of religion, and no apostasy is tolerated.

In World War II the differing ideologies of Japan, Italy, and Germany were linked together within the framework of the Axis, which was more a propaganda device than a hard-and-fast political alliance. At best the Axis was a marriage of convenience, as, indeed, was the coalition formed by Great Britain, the United States, and Soviet Russia for the purpose of defeating the Axis. Thus we saw the formation in opposition to each other of two ideologies which transcended national boundaries—the ideology of oppression, held by the Axis, and the ideology of freedom, to which the Allies adhered.

When ideologies conflict in peace or in war, the resulting clash is called psychological or political warfare; this subject has been discussed in a previous chapter. Aggressive measures taken by Hitler and Mussolini to spread the ideologies of nazism and fascism abroad before the outbreak of World War II were cited in the first part of this chapter, dealing with who's who intelligence. We saw how the dossier system was used for the purpose of maintaining control over nationals and persons of German and Italian descent residing abroad. The mystic and primitive concept of "blood and soil" was used by Hitler and Mussolini alike in carefully planned propaganda directed at "Greater Germany" and "Greater Italy." The point of origin of the Nazi campaign was seen to be the German Foreign Institute.

In previous chapters we have referred to the active Nazi fifth column as conducted by the *Auslandsorganisation* (Foreign Organization) of the NSDAP, which also kept a close check on and control of Germans and persons of German blood living abroad, by means of espionage, propaganda, and terroristic activities, and which employed these citizens of "Greater Germany" in attempts to influence the internal political structures of other nations. We have also seen how Hitler obtained a stranglehold on the German economy and geared all the resources of the Third Reich for war, while the democracies, ignorant of the full extent of that preparation, still hoped for "peace in our time."

Still another world-wide organization is now proved to have engaged on a gigantic scale in dis-

Nazi propaganda. It became official policy, therefore, to foster an international economic approach; to carry on intelligence work and disseminate propaganda behind the facade of seemingly respectable business. Officials and employes of Farben concerns throughout the world became "economic agents" of the Third Reich.

From the point of view of sociological intelligence, one of the most interesting statements in the above-quoted portion of the indictment is that concerning the relations of the *Auslandsorganisation* with Germans abroad. Propaganda was used to accomplish the aims of solidifying racial unity, to prevent assimilation, and insuring loyalty; if this failed, other forms of persuasion, ranging from economic pressure to terrorism, were used. The majority of German-Americans were loyal citizens descended from those who had sought new freedom and new opportunities in the United States; among these people, thoroughly indoctrinated in the American way of life, and completely assimilated, the Nazi agents armed with an alien ideology made little if any headway.

If studied from the sociological point of view, the lives of those few German agents who were caught, tried, and convicted in the United States before and during World War II present studies in warped character and thwarted ambition. By and large, it was from the ranks of the unbalanced and the malcontents that Hitler recruited his German-American agents for sabotage, espionage, and subversion. American-born renegades who beamed poison words at the democracies via short-wave radio from Berlin were likewise ineffective; their case histories indicate that they too belong to "the lunatic fringe." American democracy not only survived the strains imposed upon it by wartime exigencies but also proved to be invulnerable to the carefully calculated propaganda attacks levelled against it by Nazi agents operating here and abroad.

The one significant postwar clash of ideologies is that now occurring on political, diplomatic, and journalistic levels between the Anglo-American bloc on the one hand and Soviet Russia and her satellites on the other, within and outside of the framework of the United Nations Security Council. The forces which have closed the gap between the English-speaking peoples and widened the cleavage between them and the Soviet bloc are

seminating the ideology of Nazism. The Nuremberg Trials have focused the spotlight on I. G. Farbenindustrie, the chemical trust, the officials of which now stand accused of war crimes.

On May 3, 1947, at Nuremberg the United States indicted 24 top officials of the I. G. Farbenindustrie, charging them with waging aggressive war, mass murder, plunder, and spoliation. The 20,000-word document charged that this huge chemical combine had, by means of cartel arrangements, prevented United States concerns from shipping essential war materials to Britain and other Allies until the United States entered the war. While the indictment is of primary interest to specialists in economic intelligence, it reveals the following significant passage that Farben was one of the main propaganda machines used for the systematic demoralization of intended victims of German aggression, and for the solidification of German racial unity abroad. Cleverly enough, as the latter part of the quotation points out, the Nazi planners realized that open espionage would be resented in the democracies; hence spies were camouflaged as "economic agents." The indictment charges that:

Farben's foreign agents formed the core of Nazi intrigue throughout the world. Financed and promoted by Farben, and ostensibly acting only as businessmen, Farben officials carried on propaganda, intelligence and espionage activities indispensable to German preparation for and waging of aggressive war. In Germany, Farben's Berlin N. W. 7 office was transformed into the Nazi Party intelligence arm of the *Wahrmacht*. The Nazi Party relied upon Farben as one of its main propaganda machines.

It was Hitler's basic thesis that: "After the enemy has been completely demoralized from within we will strike." The weapon chosen for this demoralization was propaganda; the instrumentality the *Auslandsorganisation* (Foreign Organization) of the NSDAP. The purpose of the *Auslandsorganisation* was to solidify German racial unity and regiment German institutions abroad in accordance with National Socialist racial doctrines; prevent the assimilation of Germans in foreign countries; insure the loyalty of all Germans abroad to the Nazi Party; and carry on fifth-column activities. Numerous Farben officials abroad held important positions in the *Auslandsorganisation* and were its sole representatives in many areas.

The German Foreign Office feared political friction if it were obvious that Germany was establishing agents abroad whose chief function was the furtherance of

Natives were employed in the service of Allied intelligence not only in Alaska during the last war, but in many other parts of the world, including, notably, China and the southwest Pacific. The coastwatcher system, established by the Australians in 1939, and later conducted in cooperation with United States intelligence agencies, depended in part for its effectiveness on the information obtained from natives in the island screen which lay north of the continent. Operation Ferdinand, as the coastwatcher organization was called, might equally well be discussed like the activities of NavGroup China, under counter-intelligence. The wartime shroud of secrecy which veiled not only the functions but the very existence of Operation Ferdinand has been lifted; interested students are referred to a book entitled *The Coastwatchers*, by Commander Eric A. Feldt, O. B. E., Royal Australian Navy.

Space does not permit of a detailed discussion of ethnic forces as a part of strategic intelligence in World War II. Suffice it to say that in no previous war did the ethnic differences existing between races of people play so important a part. Global war forced nations to become better acquainted with the inhabitants of all other nations. Knowledge of ethnic forces contributed to the establishment of close relations between allies, and to grand strategy as conducted by the two coalitions, the Allies and the Axis.

While the word *ideology* was defined above as manner or content of thinking characteristic of an individual or class, its meaning may be broadened to include the manner or way of thinking of an entire nation, particularly in totalitarian states, in which thinking is regimented. Furthermore, in the totalitarian states the ideology nearly always derives from one man, and is spread by him within the boundaries of the state he controls, and within the boundaries of adjacent and other states. The ideology of this one man may itself be derived from a previously existing body of doctrine, as the ideology of Stalin was derived from Karl Marx and Lenin, or it may be formulated by a process of intuition in the crazed brain of the dictator himself, as were the ideologies of Mussolini and Hitler. Once formulated and promulgated in the totalitarian state, the official ideology

becomes a kind of religion, and no apostasy is tolerated.

In World War II the differing ideologies of Japan, Italy, and Germany were linked together within the framework of the Axis, which was more a propaganda device than a hard-and-fast political alliance. At best the Axis was a marriage of convenience, as, indeed, was the coalition formed by Great Britain, the United States, and Soviet Russia for the purpose of defeating the Axis. Thus we saw the formation in opposition to each other of two ideologies which transcended national boundaries—the ideology of oppression, held by the Axis, and the ideology of freedom, to which the Allies adhered.

When ideologies conflict in peace or in war, the resulting clash is called psychological or political warfare; this subject has been discussed in a previous chapter. Aggressive measures taken by Hitler and Mussolini to spread the ideologies of nazism and fascism abroad before the outbreak of World War II were cited in the first part of this chapter, dealing with who's who intelligence. We saw how the dossier system was used for the purpose of maintaining control over nationals and persons of German and Italian descent residing abroad. The mystic and primitive concept of "blood and soil" was used by Hitler and Mussolini alike in carefully planned propaganda directed at "Greater Germany" and "Greater Italy." The point of origin of the Nazi campaign was seen to be the German Foreign Institute.

In previous chapters we have referred to the active Nazi fifth column as conducted by the *Auslandsorganisation* (Foreign Organization) of the NSDAP, which also kept a close check on and control of Germans and persons of German blood living abroad, by means of espionage, propaganda, and terroristic activities, and which employed these citizens of "Greater Germany" in attempts to influence the internal political structures of other nations. We have also seen how Hitler obtained a stranglehold on the German economy and geared all the resources of the Third Reich for war, while the democracies, ignorant of the full extent of that preparation, still hoped for "peace in our time."

Still another world-wide organization is now proved to have engaged on a gigantic scale in dis-

Nazi propaganda. It became official policy, therefore, to foster an international economic approach; to carry on intelligence work and disseminate propaganda behind the facade of seemingly respectable business. Officials and employes of Farben concerns throughout the world became "economic agents" of the Third Reich.

From the point of view of sociological intelligence, one of the most interesting statements in the above-quoted portion of the indictment is that concerning the relations of the *Auslandsorganisation* with Germans abroad. Propaganda was used to accomplish the aims of solidifying racial unity, preventing assimilation, and insuring loyalty; if this failed, other forms of persuasion, ranging from economic pressure to terrorism, were used. The majority of German-Americans were loyal citizens descended from those who had sought new freedom and new opportunities in the United States; among these people, thoroughly indoctrinated in the American way of life, and completely assimilated, the Nazi agents armed with an alien ideology made little if any headway.

If studied from the sociological point of view, the lives of those few German agents who were caught, tried, and convicted in the United States before and during World War II present studies before and during World War II present studies in warped character and thwarted ambition. By and large, it was from the ranks of the unbalanced and the malcontents that Hitler recruited his German-American agents for sabotage, espionage, and subversion. American-born renegades who beamed poison words at the democracies via short-wave radio from Berlin were likewise ineffective; their case histories indicate that they too belong to "the lunatic fringe." American democracy not only survived the strains imposed upon it by wartime exigencies but also proved to be invulnerable to the carefully calculated propaganda attacks levelled against it by Nazi agents operating here and abroad.

The one significant postwar clash of ideologies is that now occurring on political, diplomatic, and journalistic levels between the Anglo-American bloc on the one hand and Soviet Russia and her satellites on the other, within and outside of the framework of the United Nations Security Council. The forces which have closed the gap between the English-speaking peoples and widened the cleavage between them and the Soviet bloc are

seminating the ideology of Nazism. The Nuremberg Trials have focused the spotlight on I. G. Farbenindustrie, the chemical trust, the officials of which now stand accused of war crimes.

On May 3, 1947, at Nuremberg the United States indicted 24 top officials of the I. G. Farbenindustrie, charging them with waging aggressive war, mass murder, plunder, and spoliation. The 20,000-word document charged that this huge chemical combine had, by means of cartel arrangements, prevented United States concerns from shipping essential war materials to Britain and other Allies until the United States entered the war. While the indictment is of primary interest to specialists in economic intelligence, it reveals the following significant passage that Farben was one of the main propaganda machines used for the systematic demoralization of intended victims of German aggression, and for the solidification of German racial unity abroad. Cleverly enough, as the latter part of the quotation points out, the Nazi planners realized that open espionage would be resented in the democracies; hence spies were camouflaged as "economic agents." The indictment charges that:

Farben's foreign agents formed the core of Nazi intrigue throughout the world. Financed and promoted by Farben, and ostensibly acting only as business- and espionage activities indispensable to German preparation for and waging of aggressive war. In Germany, Farben's Berlin N. W. 7 office was transformed into the economic intelligence arm of the *Wahrmacht*. The Nazi Party relied upon Farben as one of its main propaganda machines.

It was Hitler's basic thesis that: "After the enemy has been completely demoralized from within we will strike." The weapon chosen for this demoralization was propaganda; the instrumentality the *Auslandsorganisation* (Foreign Organization) of the NSDAP. The purpose of the *Auslandsorganisation* was to solidify German racial unity and regiment German institutions abroad in accordance with National Socialist racial doctrines; prevent the assimilation of Germans in foreign countries; insure the loyalty of all Germans abroad to the Nazi Party; and carry on fifth-column activities. Numerous Farben officials abroad held important positions in the *Auslandsorganisation* and were its sole representatives in many areas.

The German Foreign Office feared political friction if it were obvious that Germany was establishing agents abroad whose chief function was the furtherance of

summarized by George Fielding Eliot as follows in his recent book:

From the political point of view, it is necessary only to point to the established fact that the representatives of the United States and Great Britain have found themselves on the same side in every international political discussion that has taken place since the end of the war. Our differences with the U. S. S. R. have been ideological at root, not military or economic. Americans and Britons have a common political philosophy, a common approach to the great subject of the relationship between the citizen and the state. Their peoples are equally convinced that the basis for security lies in the extension of the frontiers of freedom, the frontiers of truth. They are unified politically and ideologically as they are strategically.

Strategic intelligence of the sociological category, which seeks to disclose political, ideological, and ethnic forces within a foreign country, lies behind peacetime decisions on top policy levels. It is received from sources abroad, including United States diplomatic representatives, United States members of Allied Control Commissions, travelling congressional committees, and special envoys.

It may be put before our legislators in the form of secret documents, the contents of which are sometimes made public at a later date. One example of this was the release to the press, on March 24, 1947, of the subject matter of certain secret documents which had been laid before the House Foreign Affairs Committee as background material on the administration program to help Greece and Turkey ward off encroaching communism. These documents, as quoted in the press, accused Russia of waging a war of nerves against Turkey, told of a master plan to bring Greece under communist domination, and called Poland frankly "a Soviet satellite." Public support for the administration program was thus gained.

Sometimes a political leader will deliver a public address, carried not only to the immediate audience, but to a world-wide radio audience as well, in which he may advocate certain broad lines of action in international affairs. An example of this was the famous "iron curtain" speech delivered by Winston Churchill at Fulton, Mo., in the spring of 1946 in which he advocated unity of the English-speaking world. This address received adverse editorial comment in Britain and America, and was attacked vociferously in Russia.

Subsequent events have tended to justify the position taken by Churchill at that time. It is likely that his remarks were based on political and sociological intelligence not available to the general public, and that this intelligence enabled Churchill to assess accurately the true state of affairs in Europe and to predict to a certain degree the course of future events.

The wartime Prime Minister of Britain was and continues to be such a colorful and dynamic figure that his public utterances have a world-wide audience, and are not without their effect on international relations. On April 11, 1947, in an article in the *New York Times*, he summed up statements made previously at Fulton, and said, in regard to them:

Statements of this character are not seriously challenged in any part of the world today, outside the vast Communist or Communist-controlled regions. They have been endorsed by the overwhelming weight of American public opinion and, not less important, by the policy of the United States Government.

Here Churchill highlighted an undeniable fact—that in a democracy, public opinion must be obtained in support of foreign policy. Later, in the same article, he was careful to indicate that implementation of the Truman policy depended on confirmation by the Congress:

The President has made it plain that vital American interests and duties exist in these waters and throughout the Middle East, and that the United States Government will not suffer such interests to be molested or undermined, nor these duties flinched from or neglected. Should Congress confirm the policy and action recommended by the President, a new situation will be created in the Mediterranean: full of hope for the future of the Middle East and also to the future peace of the world and the United Nations organization newly created to maintain it.

In the modern world, short-wave radio is an arm of foreign policy. Today Russia is waging an ideological war against the United States in many countries. Subject to the approval of Congress as expressed in appropriations, our State Department is able to counteract this propaganda by means of its "Voice of America" program, beamed through powerful transmitters in New York City. Officials of the Office of International Information and Cultural Affairs have at hand a thick document containing an exhaustive analysis of propa-

ganda concepts about the United States that are being employed the world over by the U. S. S. R. A writer in the 4 May 1947 issue of the *New York Times* gives the following summary, in paraphrase, of that portion of the document which deals with concepts disseminated in Russia itself; this summary is presented below because it is pertinent to a discussion of political, ideological, and ethnic forces, and represents deliberate falsification of American ideology for political purposes by partisans of the Communist ideology:

In a 6-month period under observation the situation in the United States was presented in line with the Communist doctrine of the inevitable contradictions and conflicts in capitalist countries. Economic confusion, labor unrest, political quarrels and racial troubles were stressed continually. Charges of growing American militarism were made and it was denounced. The press was reported to be in the grip of monopolists. It was asserted that world control was the American foreign policy aim.

The purpose of the "Voice of America" program is to give the lie to these calumnies and to present to the Russian people a true picture of the United States.

Counter-Intelligence

In the first and second parts of this chapter we have discussed rather broadly the who's who and sociological categories of strategic intelligence. In this third part we will briefly take up the counter-intelligence category, and will present it from the point of view of Naval Intelligence, which defines it as:

Disclosing the plans, procedures and personalities engaged in espionage, sabotage, and subversion directed against the Navy.

As we have seen in chapter V, the Domestic Branch of the Office of Naval Intelligence is charged with the counter-intelligence aspect of the mission of the Chief of Naval Intelligence, that is, the protective function. In a sense, the counter-intelligence category of strategic intelligence is also protective, in that it discloses data which will enable our strategists to formulate sounder long-range plans.

Just as the operation plan and the operation order contain provisions for adequate intelligence measures, including counter-intelligence, so the

long-range strategic plan will contain similar provisions. A combat operation in wartime, no less than a grand strategy in time of ostensible peace, needs the protection afforded by adequate counter-intelligence. This counter-intelligence embraces both active and passive measures, at home and abroad; therefore no useful purpose is served in this discussion by arbitrarily dividing counter-intelligence into pigeon-holes labelled domestic and foreign, or passive and active. For example, the counter-intelligence needed for the invasion of Normandy included protective, deceptive, and aggressive measures, in the United States, the United Kingdom, and in enemy-occupied France. It may be assumed that the enemy directed all his espionage effort toward disclosing the time and place of the Allied landing or landings on the continent of Europe, and the numbers and dispositions of troops and air and naval units involved. It may also be assumed that he tried by all means in his power to disrupt, by sabotage and subversion, the implementation of our plans. The success of the operation attests to the care with which it was planned and protected.

Translations of captured enemy documents, and interrogations of high-ranking prisoners of war, reveal after the termination of hostilities the innermost deliberations of the enemy high command, and hence disclose the extent to which strategic intelligence influenced plans and operations. A document of considerable interest in this respect is that published in several volumes by the Office of Naval Intelligence, entitled "*Fuehrer Conferences on Matters Dealing With the German Navy*," which contains résumés of conferences held by Hitler with his top naval and military advisers. The picture presented becomes increasingly gloomy as the war years pass, and shortages of men and materials harass the German leaders.

Much of the story of Allied counter-intelligence in World War II is still classified as top secret or secret; hence this discussion is limited. However, it is suggested that the student look for examples of the counter-intelligence category of naval strategic intelligence in commercially published books about World War II experiences, and in such official documents as are from time to time made available for study.

The purpose of this section is to provide a framework for the analysis and reporting of operational intelligence. It is intended to guide the analyst in the collection, processing, and dissemination of information that is essential to the operational effectiveness of the force.

The purpose of this section is to provide a framework for the analysis and reporting of operational intelligence. It is intended to guide the analyst in the collection, processing, and dissemination of information that is essential to the operational effectiveness of the force.

The purpose of this section is to provide a framework for the analysis and reporting of operational intelligence. It is intended to guide the analyst in the collection, processing, and dissemination of information that is essential to the operational effectiveness of the force.

The purpose of this section is to provide a framework for the analysis and reporting of operational intelligence. It is intended to guide the analyst in the collection, processing, and dissemination of information that is essential to the operational effectiveness of the force.

CHAPTER IX
OPERATIONAL INTELLIGENCE

The purpose of this section is to provide a framework for the analysis and reporting of operational intelligence. It is intended to guide the analyst in the collection, processing, and dissemination of information that is essential to the operational effectiveness of the force.

PART THREE: OPERATIONAL INTELLIGENCE

The purpose of this section is to provide a framework for the analysis and reporting of operational intelligence. It is intended to guide the analyst in the collection, processing, and dissemination of information that is essential to the operational effectiveness of the force.

The purpose of this section is to provide a framework for the analysis and reporting of operational intelligence. It is intended to guide the analyst in the collection, processing, and dissemination of information that is essential to the operational effectiveness of the force.

The purpose of this section is to provide a framework for the analysis and reporting of operational intelligence. It is intended to guide the analyst in the collection, processing, and dissemination of information that is essential to the operational effectiveness of the force.

CHAPTER IX

FLEET INTELLIGENCE ACTIVITIES

Naval strategic intelligence has been defined in this text as that body of intelligence needed by naval commanders charged with determination of naval policy and planning. It was noted that in the execution of military plans involving contact with the enemy, a point is reached at which strategic intelligence must be employed for tactical purposes. Chapter V was concerned with the actual handling of naval strategic intelligence during World War II, its production by staffs conducting operations against the enemy, and its dissemination to operating units engaging or about to be engaged in combat. These operating forces need a further flow of information which at no previous time entered into planning, either because it was unavailable or because it was not useful in long-range planning. The difference in the purpose, volume, and method of handling the intelligence utilized by a high echelon for long-range plans, and that needed by the fleet for the conduct of actual naval operations, has proved sufficiently striking to warrant a distinguishing name.

Definitions

During World War II, two such terms were in common use. At the beginning of the war, the term "combat intelligence," borrowed from the Army, was generally applied to intelligence processed in an operating area and needed for actual operations against the enemy. It was defined by COMINCH as "information about enemy forces, their strength, disposition, and probable movements." This follows the accepted military general staff doctrine that the intelligence officer is primarily the expert on the enemy, that he is, in the striking Army phrase, "the enemy in camp," or, in other words, the representative of the enemy on the staff of the commander.

While accepting this general view of the main function of intelligence, some naval authorities during World War II felt that the connotations of "combat intelligence" unduly limited the scope of

the information actually desired; they sought a term that would suggest more fully the function intelligence should perform in naval warfare. The term decided upon was "operational intelligence," defined as "intelligence needed by naval commanders in planning and executing operations, including battle," and described as:

Intelligence needed by naval commanders charged with—

1. The operations and support of operations of naval forces in theaters of operations, and with
2. The successful employment of forces under their command against enemy or hostile forces in the immediate zone of combat and in those areas from which the issue of battle can be materially influenced or affected before, during, and immediately after battle.

The term "combat intelligence" is used to describe that part of naval operational intelligence which falls within the province of paragraph 2 above, that is, intelligence needed by naval commanders actually engaging enemy forces during the comparatively short time of a naval battle, as distinguished from a more extensive and time-consuming naval operation.

It will be remembered that the Chief of Naval Intelligence has both a counter-intelligence and a positive-intelligence mission. The latter is subdivided into strategic intelligence, which is further subdivided into the eight categories described in Part Two of this text, and operational intelligence, which is further subdivided into intelligence for planning, and combat intelligence.

In the five chapters comprising Part Three: Operational intelligence, a description of operational intelligence activities conducted by the United States Navy in World War II will be presented. Throughout Part Two the subject of naval strategic intelligence was interwoven with the subjects of grand strategy and national strategic intelligence, and many references were made to foreign intelligence collected both from domestic and foreign sources. By definition, operational intelligence is a narrower, more technical, and

PART THREE: OPERATIONAL INTELLIGENCE

more specialized field; hence the discussion in Part Three will be more detailed.

Chapter IX, Fleet Intelligence Activities, and chapter X, Operational Intelligence Duties Ashore and Afloat, are rather more general than chapters XI, XII, and XIII, which deal with air intelligence, photographic intelligence, and amphibious intelligence respectively. Specialization in these three aspects of operational intelligence was developed to such a degree in World War II that each warrants a full chapter. Chapter XIV will be devoted to a description of naval intelligence in action in the latest, most extensive, and most efficiently planned and executed amphibious operation in the Pacific war, the Okinawa operation.

The discussion of operational intelligence contained in Part Three of this text is intended to describe procedures as they existed during World War II and is not to be construed as having the force of a directive. Students are referred to the recently published *Naval Intelligence Directive (Operational Intelligence)*, and to the *Naval Intelligence Manual* as final authorities on the subject of operational intelligence. It is technically correct to refer to what is commonly known as "air intelligence" as "operational intelligence for air operations," and to "amphibious operations" as "operational intelligence for amphibious operations," but, since these terms are unwieldy, the more common terms will be used.

Intelligence and the Operational Functions of Command

A better understanding of the character and range of operational intelligence may be derived from a brief consideration of the function of intelligence in general staff theory. In that theory, as accepted and formulated by the United States Naval War College, the operational functions of command for intermediate and lower echelons are analyzed according to the steps required for the solution of a typical military problem, as follows:

Planning:

Step I. The estimate of the Situation, resulting in **THE DECISION**.

Step II. The Completion of the Plan, involving the solution of complementary military problems, and resulting in **THE DETAILED PLAN**.

Step III. The Inauguration of the Planned Action by the formulation and issue of **THE DIRECTIVES**.

Step IV. The Running Estimate of the Situation required for **THE SUPERVISION OF THE PLANNED ACTION**.

The intelligence section of the staff is expected to assist the commander to take each of these four steps by assuming the responsibility of providing the information required for each section, the characteristics of the theater of operations, as well as enemy capabilities and intentions.

Step I begins with an appreciation of the task. For intermediate and lower echelons, military problems are generally posed by an assigned task in the directive of a superior. An assignment such as "Capture Island X" or "Protect Blue Convoy" may be in an operations plan which allots forces, states assumptions, and is supplemented by a detailed intelligence annex, or it may be in a despatch or some other form of naval directive.

In any event, before the commander can decide how to carry out the task assigned, he must make his own estimate of the situation. Among the factors which he is ordinarily obliged to consider are:

1. The relative fighting strength of own and enemy forces as affected by the characteristics of the theatre of operations.
2. The enemy's situation and probable objective.
3. The enemy's capabilities and possible course of action in pursuit of that objective.

The commander expects intelligence to supply him with the information on which he bases his estimate of these factors. If the operation is a considerable one, and the directive has assigned so general a task that the commander has a wide range of choice in selecting a specific objective or series of objectives, the estimate may be obliged to consider all the factors of strategic intelligence listed in chapter V. If the commander is on a lower echelon and has received a more specific plan or order, the field of consideration will be proportionally restricted. But it can never be safely restricted to the information set forth in the intelligence documents which may be received with the directive. Each commander is obliged to consider for himself what information is rele-

I and II must take place as a part of any sound military decision, no matter at what point their results begin to appear on paper.

The problem is necessarily reduced to writing in step III, the inauguration of the planned action by formulating and issuing the directives. In preparing the detailed plan (step II) the staff intelligence section assembled the intelligence to be included in each directive to be issued and the supplementary intelligence data to be distributed to subordinate commands. The chief work of the intelligence section during step III is preparing the intelligence annex to the operations plan (or whatever the supplementary intelligence may be called); writing the intelligence plan (if one is called for) for acquiring essential information and distributing adequate, timely, and usable intelligence documents to all subordinate commands. The encyclopedic area surveys, the great variety of charts and maps, the aerial photographs, recognition materials, and terrain relief models distributed in connection with the invasion of Normandy serve to remind us of the enormous increase in the intelligence work of step III since the days when a few simple sentences in an information paragraph contained all the intelligence presumably required by subordinate commanders for an important operation.

The planned action is inaugurated and step III completed with the issue of the intelligence data, which may be supplemented by oral briefing of subordinate commanders on enemy and area intelligence. It still remains the responsibility of the commander to supervise the planned action, supplementing or changing his orders and objectives as the situation requires. In this final phase, that of tactical maneuver and actual combat (step IV), the responsibility of intelligence becomes especially critical. The intelligence section must maintain that part of the commander's running estimate of the situation which has to do with the enemy's strength, disposition, movements, and capabilities. Intelligence must keep the commander continuously informed of the enemy's reactions to our movements, and their capabilities as affected by the progress of the action as it develops, and supply him with every clue that might enable him to understand and anticipate their intentions.

Types of Operational Intelligence Officers

The remainder of this chapter and all of the next will be concerned with specific duties and skills involved in the collection, use, and dissemination of operational intelligence. Like all weapons in the arsenal of war, these duties and skills must be tested and improved in the light of combat experience. They must keep pace with new technical developments, more rapid communications, and changing tactical concepts, and be as efficient and modern as the newest gun, the latest aircraft, and the best atomic missile.

It is obvious that developments in science, economics, and international relations will be major factors in determining intelligence methods for future wars. The requirement for operational intelligence will always exist. The technique of obtaining it and the use made of it may alter radically.

Sir Francis Drake, a commander with a high regard for the value of operational intelligence, was warned of the approach of the Spanish Armada by a system of picket boats, coast watchers, beacon fires, and mounted couriers. His successors in the modern Royal Navy received like warnings through the media of radio intercept, aerial reconnaissance, and radar. It has been universally recognized for centuries that a commander must be supplied with the latest and best information of the enemy, the strength and disposition of their forces, and the characteristics of the theater of operations. The methods employed to collect and process the information have changed, the requirements have not.

Even though the value of fleet intelligence had been established early in World War I by the British, the United States Navy made no concerted attempt during the war to establish intelligence as an integral part of the naval service afloat. Various reasons have been offered: The British system supplied our needs. Naval air power was in its infancy. A one-ocean war with comparatively few bases did not require it. Allied control of the sea after Jutland, except for the efforts of U-boats and raiders, was assured.

After World War I, peacetime economy measures and peace itself inhibited the growth of any organization which could fulfill this vital wartime

function. Intelligence work, if carried on at all, was assigned to a ship's officer as a collateral duty. The same situation obtained in commands ashore. There was no training program designed to train specialists in this highly specialized field. True, some effort was made to collect and disseminate strategic intelligence but subsequent events have shown that the prewar intelligence organization was starved for trained personnel.

World War II was actually two major wars fought on and across the oceans separating us from the Eastern Hemisphere. It was waged in climates ranging from the Arctic regions to the Tropics and in terrain from the jungle, mountain, and desert to the civilized and well-developed plains and cities of the European mainland. This war not only necessitated the development of new weapons, techniques, and logistics but also an overlapping—more so than ever used or contemplated in the past—of the functions of the Navy, Army, and Air Forces. Whatever the reason, this major conflict at the start found the Navy with no organized system for collecting, processing, and disseminating operational intelligence.

After Pearl Harbor an adequate intelligence organization became an obvious necessity. Again, British experience stood us in good stead. In the first few months of World War II, British intelligence activities were considerably expanded. This expansion as concerned naval matters resulted largely from the greatly increased importance of the coastal command of the Royal Air Force, and particularly because two new techniques, aerial photography and aerial antisubmarine warfare, revealed new and complex intelligence requirements.

Originally, photographic reconnaissance by air was employed to collect information concerning the enemy's fixed defenses and other items of basic intelligence interest. However, it was soon found that the camera, by a proper interpretation of its record, could be made a most reliable source of operational intelligence. Photo interpretation reports, disseminated by trained intelligence officers to the appropriate forces, were invaluable. It was an airborne camera that caught the *Bismarck* and the *Prinz Eugen* at the moment of their sortie from Hfjelte Fjord. This picture began the chase that resulted in the destruction of the battleship.

By the time we entered the war the British had recognized the dominant function of aerial photography in modern war, and had begun to explore its many uses in operational intelligence.

The other technique, which led to an equally important expansion of operational intelligence, was that of submarine hunting by aircraft. The Sunderlands and Catalinas of coastal command patrolled constantly over the Channel, the Bay of Biscay, and a wide sector of the North Atlantic. In these waters the British and the Germans operated submarines, motor torpedo boats, merchantmen singly or in convoy, and other units. Not infrequently, and particularly before we entered the war, neutral shipping was also present. This situation required that pilots and crews of the patrolling aircraft be briefed clearly, accurately, and comprehensively concerning friendly and neutral movements. Only by such briefings could their attention be directed toward enemy targets, and tragic mistakes of recognition between friendly forces be avoided. Coastal command developed active operational centers within the area, group and station commands. At these centers operational intelligence officers kept complete air, surface, and subsurface plots, briefed and interrogated pilots, and developed other basic procedures.

Just as it was the exigencies of the air force which led to the great expansion of British intelligence activities, so, after December 1941, the Bureau of Aeronautics led the way into new fields of United States Naval Intelligence. Since the British Fleet Air Arm had not provided for air intelligence officers, there was no British prototype for combat intelligence procedures for carrier operations. Consequently, the procedure for air intelligence aboard aircraft carriers, which by the end of the war was extremely complex and efficiently organized, was evolved wholly by the United States Navy. By July 1942, the first air intelligence officers reached the carriers in the Pacific. Throughout that summer and early fall others assumed duties at naval air stations and with patrol squadrons along the Atlantic coast. They assisted in the establishment of intelligence centers for CinCPac and ComAirPac at Pearl Harbor, and, later, at Noumea furnished the air forces under ComSoPac with the necessary intelligence units. Air combat intelligence officers were

active in August 1942 at Guadalcanal, the first major American invasion of enemy territory, and from then on were constantly engaged in improving operational methods in the Pacific war.

There was a similar lack of foresight regarding surface intelligence. In early 1942 German submarines were sinking our coastal shipping in broad daylight and at the very entrances of our harbors. Our defensive means were meager and it was necessary to employ our limited forces efficiently and economically.

In the latter part of 1942, conditions began to improve. The decrease in the effectiveness of enemy submarine warfare along our coast line and major shipping routes was due in large part to the increase in number and efficiency of our forces patrolling these waters. Credit, also, is due to naval intelligence which made significant contributions to the antisubmarine effort. The intelligence organizations of the Eastern, the Gulf, the Caribbean, and the Panama sea frontiers and the coastal information sections of the district intelligence offices particularly played important roles.

Briefly, the flow of intelligence in the Atlantic was directed as follows:
In COMINCH an antisubmarine warfare section collected all intelligence concerning submarines and disseminated it by bulletins and daily despatch to all commands concerned. By 1943 COMINCH was able to estimate with reasonable accuracy the daily position of every submarine at sea. This intelligence job alone undoubtedly saved valuable ships and numerous lives in our trans-Atlantic convoys.

The COMINCH reports were also disseminated to the headquarters of the sea frontiers, Joint Army-Navy defense commands, in which the chief responsibility, short of actual invasion, lay with the naval commander. Eastern Sea Frontier maintained its own enemy submarine plot. Each Sea Frontier maintained a joint operations office (JOO) and an operational intelligence section at its headquarters; these acted as a clearing house for handling reports of enemy forces or action in the area as well as operational information about our own air and surface forces, including movements of noncombatant shipping. The JOO and operational intelligence section were usually in close physical proximity, in some instances were even

located in the same room. The operational intelligence section collected and evaluated all intelligence for the area and disseminated it to the naval districts and commands afloat. The joint operations office maintained charts on which our own air and surface movements were continuously plotted; Army air liaison officers sat with the Navy operations officer and coordinated Army and Navy activities. A similar set-up was maintained at the operational headquarters of each naval district. At each port of entry, section base, naval air station, and Army air field, operational intelligence officers received intelligence pertinent to their immediate area in order to enable them to brief pilots and captains of patrol craft and provide adequate local information to convoy commanders and hunter-killer groups.

When this system began to work well, every genuine submarine contact received such immediate attention that the Germans became wary of visiting our coast. Improved procedures not only reduced to a minimum the waste effort resulting from patrols made in pursuit of false reports, but also resulted in a complete cessation of attacks by our forces on our own surface and submarine vessels operating along the coast. The operational intelligence organization of the sea frontiers and naval districts was a significant factor in the elimination of the German submarine menace.

While operational intelligence procedures were being developed in sea frontiers, our forces in forward areas were beginning to feel the need of a more efficient and highly developed fleet intelligence service.

Our amphibious operations in North Africa and the western Mediterranean taught us other valuable lessons about intelligence. We discovered how inadequate our peacetime collection of basic intelligence had been, and how difficult, even with the assistance of our Allies, it was to supply deficiencies in basic intelligence in time of war. But even more cogently we learned how vast and complex were the problems of disseminating intelligence in an amphibious operation, and of insuring that landing craft, gunfire support forces, and air support were all adequately informed of the situation as it developed.

The lessons of the Atlantic war were probably less important and less painfully administered

than the lessons of our first year in the Pacific. The most drastic lesson of all was administered at the outset. After Pearl Harbor, the intelligence section of CincPac's staff, even though limited in personnel and equipment, began to function efficiently. The Midway campaign was a shining success. Even though the intelligence staff of Commander in Chief Pacific Ocean area did brilliant work, and an efficient intelligence center was established by ComSoPac at Noumea by this time, intelligence on the lower echelons was often sadly deficient. The gravest difficulty was the scarcity of trained men. Throughout 1942 and into the early months of 1943 the only Reserve officers trained for operational intelligence duties were air combat intelligence officers. In the area most active at that time, the South Pacific, these officers were utilized as rapidly as they arrived to staff the center at Noumea and to serve as air intelligence officers for squadrons operating from Guadalcanal and New Hebrides. Although it was occasionally possible for surface forces to secure the services of one of these officers, many forces, even major units, were obliged to operate under difficult conditions with inadequate information.

As in the Atlantic, the intelligence organizations learned by experience. By the time of the landings on New Georgia, in the summer of 1943, there was an increasing amount of intelligence available and almost all types of operational intelligence played a part in these operations. Beginning with the carrier raids on Wake and Marcus in the fall of 1943, operational intelligence aboard carriers became a factor of vital importance in major fleet operations and began to acquire a standardized procedure. By constant variation in techniques and organization, both to improve the organization and to meet the ever changing operational requirements, intelligence became, by the end of the war, a highly complex and efficient weapon. What was done in the Pacific represented, to a large extent, the sum of all the lessons we had learned about intelligence in all areas.

Before the end of the war, trial and error, expediency and deliberate planning had produced an intelligence organization in the Pacific theater whereby information was gathered, processed, and distributed according to recognizable patterns and practices. The effectiveness of an intelligence offi-

cer was in large part directly dependent upon his understanding of intelligence as a whole, a knowledge of the few primary sources of information, and a realization of the many and varied intelligence needs of operating and planning units in the theater. Equally important was a comprehension of how the units were utilized to satisfy the intelligence demands of the planning organization. It seems desirable therefore to present a description of the intelligence organization, emphasizing the basic postulates eventually accepted as most effective in the difficult process of turning information from primary sources into finished intelligence.

In the following discussion of this process, two of the three primary concerns of the intelligence officer—the enemy situation and the character of the theater—will be treated separately. The third, information relating to friendly forces, is inextricably woven into the other two and is treated accordingly. No operational intelligence officer can function properly without good liaison with the operations section, and will be further helpful if he has intimate knowledge of our own forces, their location, organization, and capabilities, and of operations pending or in progress. For instance, in evaluating a submarine contact, the first step is to see if friendly submarines are operating in the area. In order to realize the importance of information and to be able to disseminate it properly, the intelligence officer must know who needs what, and equally important, how to get the information to them. No attempt will be made within the theater itself, except for emphasizing the role of the intelligence center as the proper agency to maintain liaison with other theaters and with Washington.

Information of the Enemy and the Character of the Theater of Action

Combat operations constituted one of the primary sources of information about the enemy. The observation and experience of personnel involved, when properly evaluated, were immensely valuable in furnishing intelligence concerning enemy intentions, strength, disposition, matériel, and tactics, to say nothing of geographical detail and valuable target information. Interrogations

of carrier- and land-based pilots subsequent to combat missions were one of the most important sources of information. Their reports of damage inflicted and enemy air action encountered were of primary value in estimating enemy capabilities and intentions. Such action reports were often the basis for vital operational decisions. Other information obtained from pilots resulted in improvements in equipment, techniques, and tactics. Only combat experience led to the development of tactics that enabled American fighter pilots to deal effectively with the highly maneuverable Japanese planes. Reports from surface forces were also valuable. The badly charted waters of the Solovalemons were a constant peril for our ships until knowledge gained during battle, escort, and bombardment experience had been adequately disseminated. The charts of the southwestern Bougainville coast were in error by several miles and it was several weeks after the initial landings before the safest approach to Cape Torokina could be determined.

Prisoners of war, enemy documents, and enemy equipment were also acquired during combat operations. Partial processing of these sources in the field furnished information of obvious and immediate significance to the command and to its subordinate forces for use in combat operations at hand. Further processing by rear echelons produced a vast quantity of intelligence valuable to all commands engaged in combat or planning operations.

During the war in the Pacific, missions whose major purpose was to gain information about the enemy and enemy-held territory occurred chiefly in the form of air searches, submarine patrols, and aerial photographic reconnaissance. These were either of a routine, regular nature or were ordered to secure information for use in a definite, planned operation. In the latter classification were the highly important reconnaissance and beach parties utilized in connection with and prior to amphibious operations. Of all reconnaissance operations in the Pacific theater, aerial photography was by far the most productive. Photographic intelligence formed the basis for a great many of the decisions of planning and operating commands. The choice of beaches at Iwo Jima and Okinawa awaited information from photographic interpreters relat-

ing to gradients, reefs, defenses, and the terrain behind these beaches. Detailed plans for the first carrier strike on the Tokyo area were constantly changed as photographic intelligence discovered, located, and determined the individual significance of some 80 airfields in the target area. All of these could not be given concentrated attention. Neither did all warrant it. Photographs, however, made decisions possible, just as they did when the vexing problem of selecting the vital buildings in a complex industrial target was causing much trouble to the B-29 and fast carrier forces. Pilots did not deem their information complete without photographs which they could carry with them over the target.

The Flow of Information—Direction and Means

The most usual flow of intelligence was from the sources of information—the operating unit, reconnaissance unit, etc.—to higher commands. Then, after processing, the intelligence was disseminated to lower echelons as desirable. Carrier aircraft and photo reconnaissance planes gained valuable combat information during strikes on enemy airfields and installations. This information received preliminary processing on the carrier and given to the task force commander via the task group. Ultimately, whether contained in despatch, action report, or actual photographs, the material was received by the theater commander and his intelligence center. The all-important step in the process was to insure that the intelligence center received all such information. There the final analysis, synthesis, and dissemination to operating commands took place.

However, necessity, common sense, and convenience dictated a simultaneous flow of information between one subordinate command and another. Some information was so intimately and urgently related to the needs of certain operating units that it was wise to make timely dissemination to these units concurrently with, or separate from, that to higher commands. Submarines on patrol off Kyushu on the night of 6-7 April 1945 sighted the battleship *Yamato* and gave the information to the fast carrier force, simultaneously passing it upward to higher commands. The *Yamato* was sunk by carrier aircraft the next day. Photographic interpretation squadron II, based at Guam

during the Okinawa campaign, processed new photographs of Kyushu and Honshu airfields and disseminated the results by despatch, intelligence reports, and actual prints directly to carrier forces and all other interested commands. Naval search plane commands included a long list of information addressees in their daily despatch reports, thus simultaneously presenting all interested commands with the latest picture of enemy waters within the radius of our patrol aircraft. Such reports were not only indispensable to submarine and fast carrier forces approaching the Japanese coast through the protective lines of Japanese picket boats, but provided much target information for submarines and Navy and Army aircraft.

Still another variation from the normal flow of information from lower to higher echelons and back again occurred because certain sources of information were available only to the theater commander. Accordingly, information from other theaters, most strategic intelligence, and special information, were usually received first by the theater command and the intelligence center. Such information was promptly processed and disseminated to lower echelons in a manner similar to the methods used in handling information from other primary sources.

Whatever the direction or destination of intelligence, it was prepared and disseminated in several well-recognized forms. The most important of these were despatches, action reports, special intelligence reports, operation plans and orders, and intelligence publications. Also personal conferences and briefings were extensively used to disseminate intelligence. The method chosen for distribution depended upon an appraisal of the needs of the various commands in the theater and a determination of the timeliness of the information in view of current operations. Similar considerations determined the content of the medium chosen. When the Japanese Baka bomb, a rocket-propelled suicide weapon, was first examined on Okinawa, responsible officers handling the information did not wait to include the discovery in a written action report to be submitted upon the conclusion of the campaign. The existence of the weapon was too great a threat to surface units in the area. Radio communication was the proper medium. The despatch addressed to all interested

commands could include only the briefest description of the features then known. The disadvantage of this means of dissemination, however, was more than compensated for by the speed with which our forces were warned. After further examination of Baka by technical experts, more complete information was disseminated by the Okinawa command and the theater commander in special bulletins.

Thus the flow of information, which filled the hiatus between the sources and those who needed intelligence, was not an automatic process. Information was not widely disseminated by accident. No intelligence publication, no intelligence despatch appeared automatically. Someone—some intelligence officer—saw the need for it, determined its content, and specified its distribution. The utility and value of the intelligence organization depended directly on the judgment, training, and experience of the intelligence officer in each step of the process. Deliberate effort made of the workings of intelligence, the remainder of this chapter will examine the function of the intelligence officer at each step in the process, beginning with the primary sources of information and ending with a finished intelligence product in the hands of its users.

Operational Intelligence Officers at the Sources of Information

Operational intelligence officers at the sources of information, operating units, reconnaissance units, etc., were responsible for developing these sources fully. It was clear that in their hands lay the opportunity to gather information of great value to their own units, to higher commands, and to other subordinate units.

Common sense reaction to such responsibility led to several developments. The technique of extracting intelligence from personnel engaged in offensive and defensive operations came to be a real skill not easily or naturally acquired. Interrogation of pilots by air combat intelligence officers represented the technique in its clearest form. Artful and thorough questioning produced a continuous stream of information about the enemy. Further, combat personnel were gradually taught to observe pertinent events and facts which there-

fore had gone unnoticed. Carrier pilots, for example, were taught to observe closely not only the number of planes on Japanese airfields but the location, dispersal, and identification as well. Submarines and PT boats were expected to observe carefully the hydrographic conditions in their patrol areas. Submarines and search planes made careful notes and reports of weather in their search sectors. On destroyers and cruisers, intelligence officers found it wise to utilize a proficient system of observers, yeomen, and logs to secure the desired information in permanent form. During a daylight bombardment of Kavieng, New Ireland, destroyers carefully plotted the positions of very active coastal defense guns and the sectors in which their fire was most effective. Equal attention was given to radar identification of islands and coastlines which were not too well charted. The data secured were preserved and made available for forthcoming bombardments. Intelligence officers engaging in such procedures were simply practicing the necessary principle of making battle experience an effective source of information.

Similarly, such a governing principle led to developing entirely new skills requiring further specialization. Combat operations resulted in the constant acquisition of prisoners of war and considerable quantities of captured documents. Interrogation or translation on the spot could produce intelligence of immediate value. Consequently, language officers were trained and assigned to selected commands, particularly amphibious forces. Information of urgent significance was therefore not lost to those in actual combat. Also illustrating the development of new skills and their spread to operating units were the radio intelligence units and flak analysis officers eventually functioning with units afloat.

It is plain, then, the beneficial consequences resulted from a thorough indoctrination of intelligence officers with their duties at the sources of information. Proper attention and initiative could produce intelligence of inestimable value to planning and operating commands. It became normal behavior for intelligence officers to provide this attention and initiative.

Assuming that the intelligence officer discharged his initial duties at the basic sources of informa-

tion, his next problem was the disposition of the resulting collection of potential intelligence. The requirements of his own command must first be fulfilled, but further and more complicated were the needs of other commands. So much of the detail collected was of importance only to other units, that in addition to a realization of their requirements, the intelligence officer needed an adequate understanding of the functions which any ship, aircraft, or tactical unit was capable of performing and also the type of information important to discharging those functions. Thus a destroyer could fight enemy ships with guns and torpedoes, hunt submarines, conduct bombardments, and provide antiaircraft defense. Training, experience, and common sense revealed the type of intelligence needed for these particular tasks. In the Solomons campaign, destroyer battle doctrine for night torpedo attacks was under constant refinement. The approach employed depended to a great extent on surprise. Clearly, then, any information of Japanese shipborne and airborne radar equipment was vital to destroyer commanders. Intelligence officers in any center or with any other command were expected to be cognizant of such a need and to act accordingly. The same idea was applicable to the needs of any other ship, aircraft, or operating unit.

Assuming that the collecting process had accumulated much information, the intelligence officer had at his disposal, as we have seen, several means of disseminating information. Selecting and utilizing one of these means was not a simple task. The content of each depended upon the pertinence of the information involved to various commands within the theater. Specifying the addressees of each demanded constant attention. The delivery problems of each type of communication had to be understood. Thus the usual practice of operating commands was to send a daily despatch report of operations. Significant intelligence was contained in these despatches, while matters of unusual urgency might be made the subject of a special despatch. Any command to whom such facts were important supposedly appeared as an action or information addressee. Further, the precedence of the despatch, the channel in which it was sent, and the circuit employed were matters of real concern if timely and reliable dissemination

was to be effected. The intelligence officer thus found indispensable a working knowledge of the naval communications system and the communication plan currently in effect. Information collected but undelivered, or delivered late, served no useful purpose.

In March of 1945 the first strikes by the fast carrier force at the Japanese air concentrations in Kyushu were scheduled. Two major bombing targets selected and included in the operation order issued by the force were the Kanoya and Miyazaki airfields, at both of which rather old photographs revealed large air depots. On the day prior to the first strike, photographic reconnaissance by a shore-based command showed clearly that the Miyazaki depot and many of the vital buildings at Kanoya had been disassembled and removed. Had the officers making such discoveries not been familiar with the imminent strikes, this vital information would have been forwarded via routine interpretation report and annotated print. Instead, these officers knew that planes would be over these targets the next morning. Time was short. Each carrier, as well as the task group and task force commander needed immediate service, for there would be no time for distribution within the force by the force commander. The information was prepared in despatch form and all carriers made information addressees. The despatch was given urgent precedence. Cooperation with the communication officer resulted in utilizing a code channel that each carrier had and a circuit that each carrier guarded. The outcome was that the Miyazaki depot was eliminated as a target and pilots taking off the next morning knew what buildings were still standing at Kanoya and had their approaches planned accordingly.

This is but one example of the value of a thorough knowledge of friendly forces. The importance of this factor cannot be overemphasized. Had the officers in the instance cited above been ignorant of the intentions of task force 58, they would not have recognized that the information was of immediate operational value. Had they not had an intimate knowledge of carrier intelligence procedures, they would not have realized the necessity of sending the intelligence directly to all carriers. Finally, had they not been aware of

addressees of his information, in whatever form it was disseminated, normally included the theater commander and the intelligence center. In the Pacific theater this organization came to be the most important establishment in the intelligence institution. The normal flow of information was toward the center which was manned by a body of experienced intelligence specialists.

The main function of the intelligence center, as it finally developed, was to secure information from all sources, regardless of the form in which it was sent or prepared, and from this information to fulfill the intelligence needs of all planning and operating commands or units in the theater.

In discharging this function, those in policy-forming positions in the center worked upon principles which were very similar to those applicable to intelligence officers at the primary source of information, but which required more expert attention and application. Positive steps had to be taken to insure receipt of all information originating within the theater and within other theaters. The Philippines campaign required concerted efforts by the naval forces responsible for the initial attack on Philippine airfields and other targets were under central Pacific command. Yet the information necessary to select targets and to distinguish between friendly and enemy installations was available chiefly to southwest Pacific forces by way of photographic reconnaissance and the excellent guerrilla organization operating in the Philippines. Obviously, exchange of information between the two theaters was vital. It was also difficult and complicated process, which was finally perfected only through the concerted efforts of many intelligence officers working through and under the supervision of the intelligence center.

Similar attention had to be paid to other sources by the center. The needs of planning and operational units required the full application of strategic intelligence. This required the maximum of attention to the special sources available only to the center. When existing information proved inadequate, the development of new sources and new techniques was necessary. Thus, it was normal to find the center closely supervising the photographic reconnaissance activities of shore- and carrier-based aircraft, directing their coverage,

the current task organization of Admiral Mitscher's fast carrier task force, they would not have known how to address the despatch to reach all carriers in the force. Lack of knowledge in any one of these factors would have resulted in an abortive strike. In this case, as in countless others, training and awareness by an intelligence officer at the source of information paid large dividends.

Similarly, careful attention had to be paid to the preparation of distribution lists for intelligence publications, action reports, and operation plans. The intelligence officer was responsible, at least, for presenting his views concerning those to whom such information was of real significance. When the fast carriers first struck the Tokyo area, the operation order included a list of Japanese airfields arranged in the order of their supposed importance. Attention was to be given to these fields according to this priority list. However, information was quite inadequate on many of the fields and their assigned priority was equally faulty. It was obvious that later information bearing upon the relative significance of the Tokyo area fields would be received by any one or all of several shore-based commands. If these commands were to be aware of the fast carrier problem and were to be in a position to evaluate and disseminate new and useful information, they required the fast carrier operation order for reference. Intelligence officers included these commands in the distribution lists for the operation order and for all changes thereto. What is more, personal delivery was effected wherever possible.

Such consideration eventually meant only one thing to experienced intelligence officers, namely that the main responsibility for the effective functioning of the intelligence institution lay on the sender, the originator. If he failed to send it out in proper form and in proper time, he could have spared himself the effort of collecting it. It was all very well to aim criticism at operating units for failure to have on board certain information at crucial times, but proper functioning at the sources of information would, in the majority of instances, have avoided all trouble.

Operational Intelligence Officers at the Intelligence Center

If the intelligence officer at the source of information properly performed his function, the ad-

suggesting equipment, and passing upon the results obtained. Likewise a large staff of Japanese-language students was employed to squeeze every bit of valuable information from the large quantities of captured documents and the many prisoners of war. If intelligence needs were not to go begging, sources had to be exploited with vigor.

From the vast store of information received by despatch, mail, or otherwise, the center, by an expert process of analysis and synthesis issued specialized publications designed to fulfill the planning and operating needs of any command for any operation. In the center, more than in other places, the intelligence officer with long and wide experience was at a premium. To furnish the material needed by an amphibious command during any operation was not an amateur's job. The fast carriers required still different information to perform their very different function during the same operation. Material published and distributed had to be in finished form and usable by the recipient with a minimum of additional evaluation and processing. The center, in addition, geared itself to give rapid and adequate despatch service to all echelons at any stage of an operation, including combat. The strain put on an intelligence system by the pace, variety, and magnitude of large-scale naval operations made it imperative to man key positions with experienced officers.

These same officers were required to insure the timely and adequate delivery of intelligence. Since final responsibility was on the center to let no intelligence need go unsatisfied, the system of mail delivery and radio communication plans were subjects which had to be mastered. When it became apparent in the Pacific that more effective means of delivering intelligence publications had to be provided, the center initiated a special system of delivery through representatives established at selected points in the forward area. Similarly, both the southwest and central Pacific theaters found it necessary to establish special communications circuits to carry combat reports and other intelligence of vital importance to operating forces. During the Okinawa campaign intelligence officers, cooperating closely with communications officers, worked out an effective system of reporting by radio to naval air forces a detailed daily estimate of Japanese plane strength on

Kyushu fields, utilizing information from all sources, including that from extensive and regular photographic reconnaissance. Timeliness was important. Collecting and processing were not enough in themselves. The center's job ended only when the information was in the hands of those who were to use it.

Those responsible for making up distribution lists for the many and various publications gradually found themselves making these lists more and more comprehensive. Classification of material was downgraded as necessary and production facilities were augmented to every possible extent. The policy of responsible officers was to put in the hands of all surface and air commands all information they would need to perform any tasks they might be called upon to perform; these tasks obviously and frequently went far beyond those spelled out in operation plans. When unforeseen events called for certain information, it was desirable that it already be in the hands of those needing it. If some delivered intelligence was not required, a situation which always occurred, the consequences were not dire. Hindsight revealed only what foresight deliberately intended: All commands were to be prepared for any eventuality and all probable tasks, only a few of which they would be called upon to perform. Information at the center served no useful purpose unless it received timely dissemination in proper form. Operating units could receive no intelligence if none were sent, and the intelligence institution was effective only when senders fully discharged their responsibilities.

Operational Intelligence Officers with Tactical Commands

When the duties of officers at the sources of information and at the intelligence center had been effectively carried out, those officers with operating commands automatically received intelligence which was in finished form and adapted as nearly as possible to the needs of their own units. They were enabled to spend less time hunting and collecting information and more time applying that which they received to the daily activities of their combat units. Intelligence publications were many and came from a variety of major commands within and without the theater intelligence center.

To know the originator and content of such publications was necessary so that the intelligence officer did not have to depend entirely on others to realize intelligence needs. If some useful publications were not being received, an effort to secure a change in the distribution lists was usually effective. Similarly, if publications received did not satisfy operational needs, the duty of the intelligence officer was to make the deficiencies known to the theater center. Each operation brought new demands for intelligence. The center could keep in step only by effective contact, personal or otherwise, with the officers in the field.

To utilize his sources fully, the intelligence officer with tactical commands found indispensable an accurate picture of the radio communication system. Despatches being his only source at sea, the officer had to know the type of information being sent by radio, the commands originating regular despatches carrying useful intelligence, and the circuits and channels by which these despatches were sent. Only with such knowledge could he take effective steps to make information on the air serve his intelligence needs. Whenever it was made clear to communication officers that current operations required certain despatches being sent by radio, they were uniformly willing to use the facilities at their disposal, which were usually overloaded, to secure the desired information. In fast carrier operations it was regular practice to guard the shore-based search plane frequency whenever the force was operating in enemy waters. Although contact reports were relayed over air OpIntel and Fox broadcasts, the time saved by getting such information directly from the search plane frequently determined the ability of the force to bring maximum strength to bear on worthy targets.

An equally obvious situation calling for familiarity with despatch services followed from the in-

ability of all units in a large task force to guard all the many circuits over which valuable information came, or to break all despatches carrying this same information. The task force commander was in a much better situation. The task force alone was usually the only command possessed of the equipment, personnel, and requisite codes to copy and decode all despatches transmitted over the many radio circuits in use. The staff intelligence officer, since he was responsible for relaying information to subordinate units, had to know the despatches which were not available to subordinate units but which it was necessary for them to have.

To acquaint new intelligence officers arriving in the Pacific with existing publications and usual despatch services, a valuable period of indoctrination was provided at the intelligence center, into which, of course, all publications and all despatches available in publications and in despatches was thus acquired, and any officer could know in advance the extent of his intelligence sources in any job to which he was sent.

The sole function of the intelligence officer with a tactical unit was not, of course, receiving and using finished intelligence sent him by others. It should be remembered that he was located at a primary source of information—combat experience. If the intelligence center and subordinate commands were responsible for forwarding pertinent information to him, he was equally responsible for exploiting fully his own opportunities to gather and disseminate intelligence. Only by discharging this duty were higher echelons enabled to perform their all-important function of supplying him with finished and useful material. Such an officer was at once a source and a consumer of intelligence. The intelligence institution worked well only when he played his dual role to perfection.

CHAPTER X

OPERATIONAL INTELLIGENCE DUTIES ASHORE AND AFLOAT

Although no two major wars are ever much alike, and although the specific duties performed in wartime by intelligence officers with the fleet are necessarily determined in large part by the exigencies of the particular situation and the character of the particular campaign, nevertheless it seems useful to outline the major types of fleet intelligence duties as they were performed in the latter part of World War II. This chapter describes these duties in the usual fleet intelligence problems of air intelligence and the highly specialized developments connected with amphibious operations for separate treatment in later chapters.

As has been seen, the function of all intelligence officers is to maintain the flow of information. In operational areas the chief reservoirs and pumping stations receiving and distributing this flow were the intelligence centers maintained by the area commanders.

Intelligence Centers

It is readily recognizable that in a world-wide war, where there is simultaneous fighting on a variety of fronts, in Asia, in Africa, in Europe, and conceivably in the Americas too, one central agency without subordinate units in each theater of operations, attempting to disseminate all intelligence to the various theaters of war, would be hopelessly overwhelmed by the magnitude of its task. The specialized problems which affect one theater of war and not another make it imperative that subordinate units be established under the area commanders to act as central intelligence organizations for their particular areas and to assume the responsibility for the expeditious delivery of all available intelligence to the forces that can use it.

In the last war, this need was recognized early and steps were taken to provide for the establishment of intelligence centers at important bases closer to the operating areas than Washington. The center of all intelligence activity for the Navy

still remained ONI in the Navy Department, but area commanders were furnished the necessary complement of officers, men, and equipment to maintain an intelligence center for their specific requirements. These centers were operated with three missions:

1. To process and evaluate intelligence for their commands.
2. To pass pertinent intelligence to subordinate, collateral, and higher commands.
3. To afford training and local conditioning for officers scheduled for duty with subordinate units of the command.

Centers were established in forward areas soon after the outbreak of hostilities, and continued to function as long as they were of value. At first, they were located at Pearl Harbor for CinCPac, at Noumea for ComSoPac, at Kodiak for ComNorPac, at Brisbane for Com7th fleet under CinCSowesPac, and at Norfolk for ComAirLant. As conditions changed, the organization and locations of the centers were adjusted accordingly. When the South Pacific area ceased to be an active theater of operations after the collapse of Japanese resistance in the Solomons, the center at Noumea, having no further function, closed. As operations in the North Pacific moved forward, the headquarters of the advanced intelligence center moved down the Aleutian chain to Adak; similarly, the SoWesPac centers moved up the line from Brisbane to Hollandia, Leyte, and finally to Manila. One of the largest, and certainly the most important intelligence center from the point of view of the fleets which operated in Central Pacific waters, was the joint intelligence center Pacific Ocean areas (JICPOA) which was staffed by personnel of all United States and several Allied services. Located first at Pearl Harbor, it later opened advanced offices at Guam when the fleet admiral moved forward, and also established advanced distribution centers at Leyte, Ulithi, and Eniwetok.

The activities of each center, while basically

similar, were of course influenced by the nature of the warfare in the area. The center at Norfolk, under commander air force, Atlantic Fleet, quite naturally concentrated on problems of antisubmarine warfare for the operating squadrons in that command, and problems of training for recently formed air groups which were destined for duty in the Pacific. At Adak the center was forced to study most thoroughly the peculiar aerological conditions prevailing in the Aleutians, the Kuriles, and Kamchatka, since the weather was so unpredictable and distinctly limited operations in that theater of war. Large naval surface and carrier-based air forces were required for the island-hopping operations of the Central Pacific. In this area, JICPOA and related centers concentrated most efficiently on the specialized intelligence required for carrier warfare and for fleet and air support of amphibious landings. In the Southwest Pacific the short overwater jumps preliminary to the Philippine invasion were supported by Army land-based aircraft and did not require, for the most part, large naval supporting forces. Consequently, the seventh fleet intelligence center (SEFIC) did not have the weighty responsibilities of JICPOA in servicing large naval fleet and air forces. SEFIC, responsible for keeping the Army theater commander informed on all phases of naval intelligence, specialized too in problems peculiar to the theater. Prior to the Philippines landings, the center was concerned in the development of the guerrilla organization in the Philippines, including training of personnel, establishment of communications, and the organization of submarine missions to supply the guerrillas with arms, equipment, and supplies. Nevertheless, despite superficial differences in the subject matter and should be basically similar.

As stated above, one of the missions of the intelligence center was to process intelligence for the command. This mission, for most centers, had a twofold application: First, certain officers functioned as staff officers, furnishing information to the commander himself and to his operational staff, standing by to answer all questions pertaining to intelligence whenever called upon; and second, a larger group of officers than those performing the first function (frequently including

some whose duties fall into the first category as well) were assigned to the various branches, divisions, or sections within the center, and were engaged in collecting and processing the intelligence for the subordinate, collateral, and higher commands. The duties of the first group were virtually those of officers assigned to staffs and are discussed in detail in the section on staffs. The duties of the second group were multitudinous, covering a wide variety of subjects of which the following were the most common:

The term "objective data," as used in intelligence centers, generally applied to factual studies, principally of geographical nature. Some of these studies were comprehensive, attempting to give as much information as possible, such as the JANIS publications, ONI monographs, and ACAS interim reports; others specialized in more restricted areas, such as objective folders, air target folders, and information bulletins; still others covered special fields, such as the joint target group series on Japanese industrial systems, translations of captured documents on enemy airfields, and terrain intelligence.

The chief responsibility of the officers working in the objective data section of a center was to insure that all areas under their cognizance were being made available to the planning and operating forces that required them. If insufficient material was available, it was more desirable to publish a preliminary survey based on it than to wait until all the data were collected. As a consequence, studies were constantly undergoing revision and expansion, but the rapidly changing circumstances of modern warfare allowed for no other procedure.

An important part of the analysis of strategic intelligence undertaken by intelligence centers in active theaters was the thorough examination of all available data pertaining to potential targets, including photographs, captured documents, reports of prisoner-of-war interrogations, and the reports of technical intelligence teams with the object of recommending priorities and tactics for bombing missions and other combat operations. This became a highly valuable service of the JICPOA target analysis section, especially to carrier forces.

The cartography section of the center had cog-

nizance over the map production for the area. Although the Hydrographic Office and the Army Map Service provided much of this material, maps, charts, and models for special purposes such as air support or bombardment were planned at the center servicing the area, and frequently were produced there as well.

One of the most important activities of the intelligence centers was the maintenance of complete centralized files of intelligence materials, adequately indexed and cross indexed. This was the duty of an adequately staffed section. As an offshoot of the work of this section, accession lists were published daily, with cumulative lists at longer intervals. The daily accession list issued by JICPOA's reference section during the latter part of the war proved invaluable in informing interested commands of available information. These accession lists went out regularly and promptly to a carefully prepared distribution list.

The obvious need for a constant and current estimate, or order of battle, for all enemy forces required that a section of the center record all available information on the organization, characteristics, and numbers of the enemy fleet, air forces, and ground forces. Such information was collected from many sources including whatever basic knowledge may have been acquired prior to the opening of hostilities. To this were added the reports of prisoners of war; data collected from captured material which frequently yields valuable information such as the markings on aircraft, thereby enabling intelligence officers working on order of battle in the last war to assign various types and numbers of aircraft to their respective squadrons and air groups, both for the German and the Japanese air forces.

The intelligence center was the appropriate place for the compilation of data on enemy merchant shipping, and the maintenance of special studies and compilation of statistics on this subject.

The tremendously valuable intelligence obtained from prisoners of war, captured documents, and captured matériel made it imperative for centers to include an adequate number of language experts. When large-scale operations were in progress, the quantities of documents and matériel and the large numbers of prisoners of war made it essential that trained officers be on the spot to supervise the ef-

ficient collection of intelligence from such sources. Consequently, intelligence teams were organized and sent out from the centers to follow up all landings and important operations. Teams normally included specialists in naval aviation matériel, bomb and mine disposal, and language. Saipan alone produced 27 tons of Japanese documents, the crash intelligence section of the Saipan team found 23 Japanese fighter planes on Aslito airfield, most of them in flying condition, as well as 30 aircraft engines and 300 boxes of spare parts.

The photographic section of an intelligence center was of the utmost importance. Upon receipt of the negatives the photographic section was normally charged with all of the reproduction. It distributed the photographs directly, or the distribution was handled by the personnel and facilities of the center.

JICPOA printed and disseminated to interested commands thousands of photos per day. A large staff of photographic interpreters was maintained at JICPOA to title and file negatives and prints, to prepare the photo interpretation reports, mosaics, and overlays. This section also constituted the Pacific naval photo interpreter pool. It was the practice to retain inexperienced officers here for practical experience and informal indoctrination before assigning them to combat units. In those instances where an objective had not been previously photographed and the information was needed immediately, a "first phase" report was speedily distributed. As soon thereafter as complete and careful study had been made, a "second phase" report was issued. Special reports such as shipping, aircraft summaries, beach studies, photographic studies, were issued as requested or deemed worthwhile. As in other sections of JICPOA, photo interpreters concentrating on specific areas or subjects were available and employed for conferences and briefing sessions.

In addition to extensive photo reproduction facilities, the photographic section had ozalid, blueprint, photostat, multilith, and mimeograph equipment, all of which was extensively used. The reproduction of great quantities of aerial photographs for the cartographic section was a very important part of the photo section program. Especially in the Pacific, where maps, charts, and background intelligence were either inadequate or

did not exist, the photographs and interpretation reports furnished much, if not most, of the vital information needed by the objective data section for the preparation of the *Information Bulletins*, *Target Analysis Bulletins*, *Air Information Summaries*, and other reports. This section also published summaries of various types of photo coverage.

With representatives in the field to collect all enemy material that might prove to be of value, the technical experts attached to a center analyzed the information which they received and converted it to usable intelligence both for the strategists and the operational forces. Thus, information gleaned from crashed enemy aircraft established the rate of production in the home aircraft factories, and tests of aircraft captured in good condition revealed the plane's capabilities in combat, thereby providing our own fighter pilots with a better comprehension of their opponents' tactical potentialities.

The psychological warfare section maintained liaison with other agencies interested in attacks on enemy morale. Especially at JICPOA during the war, a vast amount of psychological warfare material keyed to the exigencies of the existing situation was prepared and distributed directly from the center, and the operating forces were indoctrinated from the center in the utility and employment of this material.

Chief responsibilities of a section devoted to survival intelligence were the production of all intelligence and equipment for air-sea rescue, evasion and escape, and general problems of survival in friendly or enemy areas. Experts reviewed all experiences of personnel who had returned with information valuable for others, and disseminated it accordingly, either informally through memoranda and articles in current publications, or officially through directives, such as those issued by CinCPac during the last war on the standard operating procedure for air-sea rescue in combat and noncombat areas in the Pacific Ocean areas. In such fashion, distress communications procedures, emergency flight controls, survival methods and equipment, and indoctrination of personnel in these matters were standardized, and prompt emergency assistance to aircraft and surface vessels in distress and the rescue of survi-

vors was made possible within a maximum of efficiency. Centers also produced evasion and escape manuals containing the latest information available on the locations of enemy forces, guerrilla forces, Allied troops, and friendly or unfriendly natives as the case might be. Special sections were prepared for each part of enemy controlled territory in which linguistic or other differences in the native population or terrain required special evasion procedures, and large-scale briefing maps for these areas were included. This information was kept current for the operating forces by supplementary despatches.

The size and complexity of operations in modern warfare have made the assembly, evaluation, and dissemination of operational intelligence increasingly difficult, particularly in aerial warfare. To ascertain what happened during an operation or series of actions, and what lessons might be learned therefrom concerning our capabilities against the enemy, the enemy's capabilities, the enemy's tactics, and the probable effect of the action on the enemy's order of battle, and the effectiveness of our tactics and ordnance, required comprehensive study and correlation of many action reports, frequently with the aid of statistical procedures.

Some of the information gained from such study was useful principally to higher commands, but much battle experience was also useful to subordinate commands and to individual personnel, for general information and morale purposes as well as an aid to tactical training. Experience demonstrated the desirability of combining in one intelligence center all the functions of analysis, evaluation, and dissemination of combat and operational experience, including statistical analysis, so that in one coordinated operation appropriate material might be extracted for command statistical and analytical purposes and for dissemination to various levels.

Detailed statistical analysis of operations was largely the function of ONI and other officers in Washington. Nevertheless, it was found necessary, in order to avoid delay in furnishing data to combat commands and units, and to secure appropriate concentration on matters of local importance and interest, to conduct a large volume of preliminary analysis and basic statistical work in intelligence centers. An example during the war

ply the necessary data on recognition whenever required. It was general practice to include in the weekly publications, photographs and statistics on new aircraft, shipping and ground vehicles, material which would be furnished by the recognition officers in the center.

All centers assigned to certain officers, either as a full-time or part-time duty, the task of maintaining liaison with other services, agencies, or any unit which required the information accessible to the center. In turn, representatives of other units were at times stationed in a center as permanent liaison officers to act for their commands wherever desirable. This, of course, was especially true in joint intelligence centers where, in addition to the organizations directly involved, such as the Army, Navy, and Marine Corps at JICPOA, liaison officers from Allied services, such as the British Army and Navy and the Australian forces, were also present.

Duties at Advanced Bases

The mission of an advanced base and the intelligence duties determined by this mission were variable during World War II. They vary according to the place of the naval base in the local command organization; the geographical location of the base; the proximity of the base to enemy held territory, air bases, and fleet anchorages; the importance of the base as a logistics center for operating forces and as a terminal or routing point for supply ships; the use of the base as a staging point for large-scale operations; the nature of offensive operations, particularly air operations, carried on in the vicinity of the base; and the presence or absence of a native population. The base intelligence officer had to be intimately acquainted with the exact nature and limits of the mission of his commanding officer if he were to perform his duties efficiently.

Among these duties a good many were likely to have no relation to operational intelligence. They possibly included investigations, counter-intelligence, and certain security functions. In larger and better-established bases, however, specialized officers were probably available to perform these special duties. The following discussion is confined chiefly to the operational intelligence aspects of duty at advanced bases.

was the operational intelligence center of ComAirPac, which produced the periodical *Analysis of Pacific Air Operations*, *Air Operations Memorandum*, and briefs of both reports for distribution to commands of fleet units, and produced also special statistical data and operational reports for ComAirPac and CinCPac. By virtue of conducting these studies in conjunction with a general intelligence center, it was possible to produce reports that presented operational intelligence in practical relationship to applicable objective and order of battle intelligence.

The principal duties of Flak Intelligence Officers assigned to intelligence centers were the development of methods, such as the flak computer, of analyzing enemy AA; the investigation of the characteristics of enemy AA matériel to determine all capabilities and limitations; the observation of all tactical tests of flak intelligence; the statistical analysis of AA damage to naval aircraft to determine the circumstances under which it was effected; the training of flak intelligence officers for service with the fleet; and the dissemination of all useful flak intelligence, a function that was carried out by the usual channels for dissemination established in the center.

Aside from the publications of a specialized nature which were issued by the sections described above, it was customary for intelligence centers to prepare some type of periodical of general nature to keep the command informed of the most significant developments in all categories. Such publications were daily, biweekly, weekly, or monthly, the regularity being determined by the amount of intelligence to be disseminated and the speed required. Some Commands published more than one of these, though the most common practice was to issue a weekly intelligence bulletin.

Although the group of specialists concerned with the identification and characteristics of own and enemy aircraft, fleet and merchant shipping, and mobile land equipment were at times separate units attached to administrative commands, such as the ComAirPac recognition unit during the last war, it was nonetheless essential for intelligence centers to insure that all such information was given adequate dissemination. Furthermore, for its own work, it was necessary to include in its organization a sufficient number of officers to sup-

The commander of an advanced base usually had duties relating to the repair and supply of an operating fleet and to the routing and control of shipping, merchant or otherwise. His intelligence officers, therefore, had to be familiar with current operation plans in effect, especially those of commands charged with routing and control of shipping. From these he could usually secure shipping routes, reference points, some shipping schedules, friendly air-search plans, and the intentions and operating areas of friendly submarines. As an operation progressed, current despatches supplemented information relating to these subjects and from them were obtained routing and sailing orders, changes in operation plans, and the needs of the fleet for logistics and repair. These sources enabled the officer to present his commander with a complete picture of convoys and combat units within his area and those destined to pass through that area.

In addition to presenting the progress of such shipping and its relationship to friendly forces of any type, the intelligence officer furnished all that information of the enemy and the character of the theater which bore on that shipping and which would be useful to the routing and sailing duties of his commanding officer.

The information dealing with friendly shipping and the bearing of enemy activities on this shipping were best handled by means of comprehensive plots which furnished an accurate, ever-changing picture as ships and convoys progressed along their routes.

Pertinent enemy information, particularly concerning submarines and air bases, as well as friendly air searches and the movements and operating areas of friendly submarines could be incorporated in such a plot, or if impracticable, made the subjects of additional plots.

Responsibilities of the intelligence officer also extended to ship captains themselves, naval or merchant, who required briefing on intelligence matters relating to their logistics mission, whatever the route sailed.

Comprehensive collection of friendly shipping data and dissemination to all those requiring it eliminated many of the usual hazards to the security of the all-important supply lines.

A further intelligence service was performed by the boarding of merchant ships to secure special types of information. The degree and nature of this activity varied from base to base, for in some locations a special commerce and travel officer was assigned, while at others such duties were performed by the operational intelligence officer.

Since the ultimate end of the advanced base was to furnish services to operating naval forces, the intelligence officer was of great use to the operational intelligence officers with the fleet itself by making available to them any intelligence on hand which they needed but had not received through normal channels. An adequate library and a current despatch file were most helpful, as was the detailed knowledge of friendly forces which the base intelligence officer had plotted and recorded in comprehensive form.

Depending upon the location and use made of the advanced base, it proved desirable for the area intelligence center to establish in the base intelligence section an officer and sufficient intelligence material to service fleet and other units using the base. The use of such advanced distribution points proved highly successful in Pacific operations.

The advanced base was one of the major subordinate commands to which various defensive functions were delegated by the island or area commander. The assigned mission of course depended much upon the location of the base. Considerations applicable to the base on a small island in friendly waters differed from those applicable to the base on an island or a mainland near enemy held territory.

Staff Operational Intelligence Duties

Intelligence duties with the various staff afloat, varying from that of the fleet and force commander to that of the destroyer division commander, were sufficiently similar to allow their treatment as a separate phase of Fleet intelligence. Although the following discussion is written chiefly from the standpoint of an intelligence officer with a fleet or force flag, the duties applicable to officers with lower echelons are easily identified.

This discussion is a chronological account of the primary duties of the intelligence officer with a staff afloat, beginning with the planning stage

of a large scale operation and running through the execution and post-combat phases.

The Preaction Phase

The primary duty of the intelligence officer during this phase was to supply the information concerning the enemy, the theater of action, and friendly forces necessary for his commander to carry out the orders from higher authority. The operations plans of the latter assigned specific missions. Information gathered had to pertain to these missions, but could not be limited to these alone. Developments during an operation possibly dictated changes in plans. Therefore, probability had to be provided for. Furthermore, the intelligence officer's responsibility did not end when he supplied his commander with intelligence needs of all echelons and units within the force. If any unit lacked information when called on to perform any mission, the staff intelligence officer had been delinquent.

With the requirements of his commander and of the units of the force well in mind, the intelligence officer's initial task was to survey the information he had aboard and to ascertain what additional material had to be received from higher echelons, the intelligence center, or other subordinate commands. For any large-scale operation, the center was probably the only organization capable of furnishing such material in the necessary detail or volume.

Personal liaison with the center was preferable to any attempt to communicate detailed needs by letter. The library and files of the center provided much of the necessary information. However, the content and form of publications available probably did not satisfy the specific requirements of the operation at hand. These matters were best handled through the combined efforts of the staff intelligence officer and the center.

When the intelligence available at the center itself was inadequate, close cooperation was again necessary to develop existing or new sources to provide the necessary information. Thus, it constantly happened that photographic reconnaissance by shore- and carrier-based planes was in large part governed by the information which amphibious commands needed but found missing. So, too, the fast carrier force in planning for the

Okinawa campaign fulfilled specific intelligence needs by requesting certain photographic reconnaissance through the intelligence center. Similarly, the identification of vital targets at Japanese naval bases and air depots was aided by careful questioning of prisoners of war and the examination of captured charts and documents.

When intelligence requirements had been communicated to the center, the intelligence officer worked out plans for adequate and timely dissemination to all units for which he was responsible. Certain material undoubtedly was needed by every ship. Other publications were perhaps required by only part of the force. There was, however, no probable need of any unit which was not filled by the dissemination agreed upon.

The intelligence officer was first responsible to his commander for that information necessary to make the many decisions going into the detailed plans being prepared. Written estimate or personal conversation or both were used to present all pertinent information to the commander, the chief of staff, the operations officer, and all other staff officers whose decisions governed the offensive operations of the fleet, force, or group involved. This process was a continuing one, starting with the receipt of the orders from higher authority and ending only when an operation was completed. Intelligence was never accurate or final enough to obviate further investigation, further refinement, and further revision of plans.

To discharge his responsibility to lower echelons in the fleet or force, the intelligence officer prepared the intelligence annex to the operation plan or order to be issued by his commander. The purpose of the annex was to present all information concerning the enemy situation and the target area necessary for all units in the force to discharge assigned missions.

As the operation plan took form, frequent conferences of intelligence officers with subordinate units were found useful to acquaint them with the content and form of the intelligence being furnished, and its defects or special value. Further, the special needs of lower echelons were made known and steps taken to fulfill them if intelligence being gathered and disseminated was not adequate.

Concurrently with developing sources of enemy

information, the intelligence officer had to familiarize himself with the intentions of friendly forces. The study of operation plans and constant liaison with proper commands furnished the necessary detail.

The intelligence officer had to furnish the details concerning friendly forces first to his commander and secondly to the subordinate units in the force. The intelligence annex and briefing sufficed to disseminate information not already in the hands of these lower echelons.

Plans for large-scale operations usually governed months of preparatory activity. Naval forces remained at sea for long intervals, and assigned missions were changed or altered on short notice. Intelligence material available during the planning phase was never complete; more became available, however, as an operation progressed. The intelligence officer, if he exercised the necessary foresight, laid plans in advance for the preparation and dissemination of information which might become available at some later date while the fleet, force, or group was at sea.

At Sea—Execution and Battle Phase

After the force sortied for an operation, the intelligence officer's tasks concerned mainly the receipt and processing of despatch information. New information concerning the enemy situation, the character of the theater, and the intention of friendly sources required changes in prepared plans or was of use to operations in a number of ways.

To acquaint the commander and staff personnel with pertinent information, the various plots set up were utilized fully. Useful information concerning friendly submarines, search planes, and other friendly forces was best handled by plots. Enemy submarines, surface units, air forces, and minefields were also susceptible to graphic presentation. A daily intelligence summary, supplemented by personal conferences, was usually employed to emphasize the more significant intelligence items.

The flow of information to the flag, whether by despatch or mail, was always of greater volume than that to lower echelons, whose needs, however, were almost as great as those of the flag. Screening all information received to select that signifi-

cant to but not received by these lower echelons was one of the chief responsibilities of the staff intelligence officer. Familiarity with current communications plans and distribution lists enabled him to perform this function. Dissemination within the force was effected by light, radio, or mail, whichever was most practicable.

As the operation progressed, the staff intelligence officer could appraise his over-all intelligence situation and realize existing deficiencies, whether caused by the changing enemy situation or by the improper functioning of the intelligence system within or without his own organization. Necessary corrective steps could involve, for instance, only the breaking of additional dispatches or the guarding of another communication circuit. However, a despatch or letter from the commander was perhaps required to secure the further information needed. In any event the job of the intelligence officer included constant effort to keep his information adequate for operational needs.

During actual combat, whether an amphibious, carrier, or other surface force was involved, duties of the intelligence officer remained much the same but were considerably intensified by the flow of a large volume of information of all types gathered from personnel and units in combat operations and from reconnaissance missions. The prearranged system for collecting and redistributing such intelligence within the Force required constant attention if its maximum contribution to immediate operations was to be obtained. Also to be received and given proper attention were reports from search planes, submarines, and any other friendly force in contact with the enemy. Responsibility to higher command and other forces was discharged only when the daily despatch action report, special intelligence bulletins, reconnaissance photographs, and other material of potential value had been sent in timely manner to their proper destinations. The tempo of events and battle conditions made indispensable the most rapid handling of intelligence. The staff officer found it advantageous to gear his organization to function at this pace from the outset.

These considerations are much emphasized by a frank admission that prior to combat, information about the enemy, his strength, disposition and tactics, as well as the characteristics of the target,

was always inadequate, was frequently inaccurate, and required many estimates and bold guesses. However, when an offensive got underway and the enemy was met in battle or a target was actually under attack, more reliable intelligence immediately became available and led to scrapping or changing many supposedly desirable operations. Any failure to exploit battle experience to the maximum can lead to serious mistakes, unwise operations, and great loss of life. The source—combat operations—should be developed and the resulting intelligence used to serve friendly forces selected according to their needs.

Post-Action Phase

The activities of the staff intelligence officer during the post-action phase of an operation were aimed chiefly at squeezing out of the battle experience just concluded every possible bit of useful intelligence. The adequacy of the records kept during the operation determined to a great extent the success of this endeavor. Facts, figures, and photographs were checked and any necessary revisions were made in previous reports. Analysis of enemy tactics and battle effectiveness was made. Final estimates of damage done to the enemy were completed. Comments upon the suitability of intelligence material used during the operation were carefully collected and any suggestions for improving the intelligence system in any manner were prepared. The formal vehicle in which such data were presented was the action report, which included all valuable intelligence available at a primary source of information—battle experience.

Duties of Battleships and Cruisers

Because operational intelligence billets afloat were a product of World War II and because the demands of commanding officers differed, established doctrine for intelligence officers reporting to single ships awaited experience, trial and error, and zealous attention to the task by a growing number of such officers, who ultimately were assigned to half the battleships, a score of cruisers, and to numerous other units. Standard procedures were forthcoming, however, and the intelligence officer's value duly recognized. One commanding officer of a battleship, in commenting on the duties of his operational intelligence officer,

stated, "He devised means, procedures, and developed systems of intelligence reporting of such value that he made himself of inestimable value to his commanding officer during combat and cruising operation."

The operational intelligence officer assigned to a single ship was at all times responsible to and his duties defined by one person—the captain of the ship. He was, in effect, a member of the captain's staff and he bore the same relationship to the captain as did the flag intelligence officer to his admiral. It is desirable to make clear, however, that the responsibility to the captain included a duty to realize and fulfill the intelligence needs of all ship personnel.

Since most ships during the recent war were in continuous operation, the intelligence system finally employed removed from the intelligence officer of a ship much of the responsibility for developing sources of information aside from the battle experience of his own ship. Instead task force and fleet intelligence officers and, above all, the area intelligence center, were given the primary responsibility for furnishing intelligence for use by combatant units. The process was never perfect, however, and the ship's officer owed to his captain the duty of making sure that the ship was included in all distribution lists governing the dissemination of intelligence publications useful to the ship. Adequate familiarity with the intelligence center; frequent liaison with group, force, and fleet intelligence officers; and extensive visiting with shore-based commands as opportunity permitted were effective means to enable the officer to know the intelligence available and to secure it for his ship.

Intelligence while at sea was for the most part obtained from despatches. Discussion with the communication department to explain intelligence problems and requirements was a simple means to ensure the receipt of valuable messages.

The information which the ship's officer had to have at his disposal, whether contained in despatch or operation plan, included the detailed intentions of friendly forces. He was normally expected to be the ship's specialist on movements and missions of cooperating units, was regularly called upon to brief other ship's personnel on these matters,

and at times was custodian of the ship's copies of current operation plans and orders.

The volume of intelligence received by an alert ship's intelligence officer, although not so great as that sent to higher echelons, required tremendous study if it was to be thoroughly mastered. Furthermore, it necessitated the employment of files useful for quick and ready reference. Publications and despatches contained information on diverse subjects, had utility far beyond the day sent or received, and could hardly be completely retained by the best of memories. Whatever the system devised, it had to be reliable when time is short and full information was required to answer an urgent question.

During World War II, operational intelligence duties were performed by Reserve intelligence officers, and one of the major problems confronting them was that of acquiring familiarity with the duties and intelligence requirements of various departments on a ship. Line officers should realize fully how useful intelligence can be to the OOD, CIC, the gunnery officer, the navigator, etc. Such comprehension was necessary for, and naturally led to, screening all intelligence received and placing pertinent information at the disposal of officers who found it useful in discharging their tasks.

A universal means employed to evaluate and disseminate information was the plot. Much of the intelligence concerning the enemy situation, the theater of action, and friendly forces lent itself to graphic presentation. The information best handled in this manner included enemy surface, air, and submarine contacts, sightings and fixes; known probable enemy air searches; friendly submarine operating areas, positions, and tracks; friendly air searches; shipping routes used by friendly convoys, as well as the positions of friendly convoys, as well as established fueling areas and reference points; own ship's track in relation to that of other combat units; minefields, whether laid by the enemy or by friendly forces; and uncharted navigational hazards.

In most instances, all information suggested above could be kept on one strategic plotting chart, an adequate supply of which could be maintained by request to the area intelligence center. The more or less permanent items could be laid off

directly on the chart, whereas information of temporary value could be plotted on an acetate or tracing paper overlay, which could be changed as conditions warranted.

Since this situation chart or plot was for the primary use of the captain, executive officer, navigator, CIC officer, and OOD, it was maintained near the bridge, in CIC, or at both locations as space and requirements dictated.

A function of battleships and cruisers, when attached to a gunfire support group in an amphibious operation, was bombardment of targets on land. Fire support charts of suitable scale and accuracy were usually furnished by higher echelons and showed all known information on enemy targets useful to bombarding units. However, as an operation progressed, further intelligence was available and was plotted on appropriate charts for the use of the captain, the CIC, the gunnery officer, and other interested personnel. Attention was paid to prospective as well as to assigned target areas. Of interest were gun emplacements, supplies, air fields, radar, roads, harbors, defenses, bases, hideouts for small craft, and similar information. Furthermore, of most vital importance was plotted information on the positions of friendly troops. After the initial landings were effected, this front-line plot was probably maintained separately from the objective area plot or chart.

Another vehicle which was employed by the ship's intelligence officer to convey current information to officers needing it was the daily intelligence report or summary. Its purpose was to collect, and assess the significance of, the most important items of information received during the period covered by the summary.

The activities of specialized departments dictated more detailed attention by the intelligence officer. Thus the development of CIC in World War II as the operational nerve center of the ship concurrently called for special service from the intelligence officer, whose information from wide sources was of tremendous value to the evaluations and operational decisions undertaken by radar and plotting personnel in CIC. The CIC officer, by means of the daily summary, by having access to the strategic and tactical plots, and by being furnished with pertinent information from all sources was kept well informed. When CIC was

inconveniently located in relation to the bridge, it was wise to duplicate some plots in CIC itself. It proved desirable for the intelligence officer to spend considerable time in CIC during surface engagement, air attack, or bombardment in order to lend every aid possible to the executive officer and CIC officers faced with weighty problems of evaluation.

At special times, the most important of which was the period immediately preceding an important operation, the intelligence officer was of great service by briefing key ship personnel on the intentions and missions of the many cooperating forces. The success of complicated amphibious and covering operations depended directly upon proper coordination and timing of component forces.

The seaplanes carried by cruisers and battleships had important patrol, search, and spotting functions and, what was probably of the greatest value in World War II, performed difficult rescue missions. Briefing of seaplane pilots naturally depended on their specific assignments, but in most cases required information beyond that usually emphasized on the ship itself.

Most major units had recognition officers assigned to instruct ship's personnel in identification of friendly and enemy aircraft and ships. However, such officers' information was probably not entirely current. New enemy aircraft and ships frequently first appeared in publications, bulletins, or summaries received by the intelligence officer. The disposition of such material was obvious.

In practice, the responsibility of the intelligence officer to keep ship personnel informed of current information was necessarily limited to notifying key individuals. It was futile to attempt to contact personally all ship's officers and men. Yet all needed an adequate general idea of the over-all situation and successive events. During the past war, one captain arrived at a satisfactory solution by requiring all of his department heads, plus certain designated key officers, to read the daily intelligence summary and to see the situation plot.

Supplementing these regular information services, maps, front-line plots, and other graphic displays were usually found to foster keen interest when maintained in the wardroom for officers and in a readily accessible place for the crew. Lec-

tures on special subjects concerning the enemy, the objective, or especially instructive battle experiences were likewise valuable to all hands, not only to keep them informed but to maintain their morale, their interest, and their desire to fight. The point warrants emphasis. During the Kamikaze days of the Okinawa operation only diligent attention to all means available prevented a complete collapse of morale.

Some description of the battle station and battle duties of the ship's intelligence officer should be presented. He usually was assigned a general quarters station on the bridge or in CIC. If assigned to the latter, his duties were determined by the captain and the CIC officer. If assigned to the bridge, which was usually the case in Pacific operations, his duties were quite varied. He had to keep abreast of the dispositions, ships in company, location of other task groups in the vicinity, course, wind, etc. All information coming to the bridge from CIC was checked and reported to the captain. If the ship was bombarding, the captain required information concerning the situation on the beach, firing schedules of ships in company, supporting air strikes, and target information. Gunfire was clocked and salvos recorded. In addition, the battle announcer needed information from the intelligence officer.

Whatever his station during battle, the intelligence officer, if properly trained, realized that operational experience was a primary source of information. Without the composite efforts of himself and many others in similar jobs, first-hand information on enemy tactics, matériel, strength, and intentions would have been lost. The officer's own notes and observations were supplemented by the reports of other officers and men previously indoctrinated with the value of accurate observations and preservation of its results.

Postbattle duties of the ship's operational intelligence officer, as is true of officers in most intelligence billets, included contributing to the ship's action report. Intelligence officers with higher echelons depended heavily on full and accurate detail in these reports for vital information, evaluated as practicable.

Duties With Submarines

Submarine operations during the war with

Japan resulted in the sinking of 5,000,000 tons of Japanese merchant shipping and the destruction of such a large number of warships that the Japanese Fleet was very seriously crippled in its war operations. An important supporting aid to the submarine commanders in achieving this brilliant record was the intelligence data furnished them by the intelligence centers of the fleet in the Pacific areas. The data furnished the submarine command at various centers were similar and basically the same. However, the method of operation varied at each center. For example, the joint intelligence center, Pacific Ocean areas, assigned no personnel to the submarine command but instead worked through a liaison officer stationed at the center.

Illustrative of intelligence support of submarine operations was the work of the Seventh Fleet intelligence center which prepared and carried on a specialized program of intelligence activities designed to assist the submarine commands of the Seventh Fleet to destroy the greatest possible number of Japanese ships and likewise to avoid the dangers inherent in submarine operations so far as this was possible. More detailed study of the methods employed by SEFIC should give an adequate picture of the general methods employed by all centers in performing this function.

In connection with locating lucrative enemy shipping targets, SEFIC undertook numerous studies and activities relating to enemy merchant vessels and warships, their movements and equipment, and disseminated the findings to the submarine command. Charts were prepared showing individual and convoy shipping routes; points of convergence, overnight anchorages, and hiding points. These charts were kept current and changes in routes based on a compilation of new sightings of enemy shipping by aircraft, coast watchers, and submarines were indicated. Statistical data, including damage and sinkings, new construction, new armament, radar, and special equipment on Japanese merchant vessels and warships were also disseminated by the center.

The Seventh Fleet intelligence center prepared data, charts, and drawings showing the estimated position of enemy minefields, and the estimated search sectors and patrol doctrine of enemy patrol planes, also antisubmarine practices of enemy sur-

face ships and the use by the enemy of picket boats came under consideration.

From time to time information was received at the Seventh Fleet intelligence center indicating, for example, that an important ship target had moved into an area patrolled by a submarine of the Seventh Fleet. Thereupon, the intelligence center would communicate this information directly to the submarine command by radio for further relay to the operating unit itself.

The necessity that the intelligence organization be in constant contact with the submarine command resulted in establishment of an intelligence unit subordinate to SEFIC and attached to commander, submarines Seventh Fleet. The unit maintained a plot room. In it situation charts, special charts of patrol areas, minefields, and similar items, were kept, showing the then current picture. Here the intelligence officers stood a continuous watch and performed operations duties embracing the processing of despatches of an operational nature and including traffic to and from submarines on patrol.

An intelligence annex to each operation order for submarines going on patrol was prepared by the unit. This annex contained all data pertaining to the enemy of value to the submarine commanders and included routes taken by convoys and by individual ships, cargoes carried, ship position, type and number of escort vessels, method of convoy, submarine measures, sonic devices, radar, shore installations, enemy bases and airfields, radio shipping frequencies or major ports, enemy merchant ships and fleet units estimated to be in the operating area, and estimated future enemy movements. In addition to the annex, charts annotated with such of this information as would likely be needed in the operation area were prepared for each patrol or special mission.

Other duties included briefing the commanding officer of each submarine prior to his departure for a war patrol or special mission and interrogating him upon his return.

The intelligence unit made studies of and maintained up-to-date files on Japanese tankers, merchant and escort vessels, with particular emphasis on their then current position. Also, files were kept current on new developments in radar, communications, and ordnance.

Philippines. The hazard presented to the easily damaged boats was lessened only by zealous attention to sources of information concerning the prospective patrol areas.

Therefore, when preparing to move up to an advanced base, the intelligence officer concerned himself to a great extent with a study of the waters and coastlines of the patrol areas assigned in the operation plans of higher commands. Intelligence publications containing objective data were collected, full use was made of reconnaissance photographs, any available representatives of the coast-watchers or guerrilla organizations were consulted, and all Allied personnel with peacetime experience in the area interrogated. The location of reefs, the depths of water just offshore, and the contour of the coastline in the area to be patrolled were matters fully as urgent to torpedo-boat captains as the position and capabilities of enemy coastal defenses.

After the move to an advanced base was completed and the boats began their patrols in strange waters, the emphasis on obtaining hydrographic and coastal information was continued. Boat captains were expected to note, plot, or otherwise pre-serve such information as they encountered during patrols. Reefs and other hazards corrected as areas were to be surveyed and charts corrected as quickly as possible. The correct contour and radar characteristics of islands and coastlines had to be ascertained. Interrogation of boat personnel regularly included these vital matters, intelligence officers using the information obtained in careful briefings for later patrols.

Concurrently, steady attention was given to sources of coastal information in addition to operational patrol experience. Arrangements to obtain current aerial photo interpretation reports usually produced excellent results as did constant liaison with the coast-watcher organization. New objective data, current translations of captured documents, and reports of prisoner of war interrogations were examined carefully. Unquestionably, then, the needs of the torpedo boats for hydrographic and other coastal information determined to a great extent the direction and emphasis of the intelligence officer's activities.

A second major influence on the functions of the

Additional duties of the intelligence unit were the preparation of summaries of war patrols and the compilation of digests from these summaries so that later patrols might learn of operating conditions in patrol areas. Of particular interest to submarine commanders was the information gained from such summaries on salinity and temperature gradient of water and the force and direction of currents experienced in the patrol areas.

Each day the officer in charge of the unit briefed the admiral in command as well as his chief of staff and operations officer regarding the situation of each submarine then on patrol.

Duties With Torpedo Boats

The pattern for the employment of torpedo boats in World War II included moving selected squadrons forward with amphibious forces, establishing advanced torpedo-boat bases, and using them to defend the newly won beachhead against attack from sea and to carry out attacks against enemy supply lines within operating range of the base. The functions of the intelligence officer, whether he was assigned to an operating squadron or to the commander of an advanced base, were in general determined by these missions. Specifically, however, in Pacific operations, the activities of the intelligence officer with torpedo boats were influenced by several additional factors which were highly significant both before and after moving up to the advanced base. A description of these matters follows.

The primary mission of the boats, to attack enemy warships and supply vessels with torpedoes, was steadily expanded to include the destruction of enemy waterborne supplies, whatever the vessel being employed. This meant combatting the barges and other small craft with shallow draft. Such vessels operated on carefully timed schedules, chiefly at night; hugged coastlines to avoid detection, to utilize shallow water, and to take advantage of coastal defenses; and employed carefully selected bases and staging points. To be effective against such targets, torpedo boats needed more than altered hydrographic information to enable them to operate with safety in the badly charted coastal waters of the Solomons, New Guinea, and the

torpedo boat intelligence officer was the lack of communication facilities at the advanced base with which to cover adequately the current despatches carrying information on the rapidly changing enemy situation. The usual staff officer with higher echelons could depend on current despatches as the main source of information regarding the progress of an operation, but the torpedo boat officer was forced to substitute extensive and continuous liaison with local command to secure that information on the enemy necessary to conduct effective patrols. The naval base commander was usually cooperative and gave the intelligence officer access to the base despatch files. The results of friendly air reconnaissance and strikes as they bore on the enemy shipping situation and coastal defenses could be obtained from the local air command. Army and Marine intelligence officers willingly furnished facts concerning the progress of friendly ground forces and the disposition and movements of the enemy on land, all of which exercised obvious influence on the enemy employment of surface craft for supply, evacuation, reinforcement, or redeployment of local forces. The local coast-watcher representative was an excellent source of information on conditions in enemy held territory; on barge and small craft movements, routes and staging points; on supply dumps; on coastal defense; and on the enemy intentions for employment of surface craft.

Liaison with these and other organizations in the vicinity of the torpedo boat base was a daily matter. The information collected was used by the base commander each day in specifying the exact section of the enemy coastline to be patrolled, which harbors, bays, inlets, and straits should be investigated, the timing of the patrols, and other matters necessary for effective operations. Furthermore, the basis for the intelligence officer's daily briefing of boat captains prior to patrol was in large part furnished by the information gathered during his liaison activities.

To the torpedo boat intelligence officer's preoccupation with the coastal information and liaison activities was added a third major concern requiring considerably more emphasis than was true in the case of officers with other commands. Exact knowledge on the part of the torpedo boats and friendly air and surface forces of each other's oper-

ational intentions was absolutely essential if mutual damage was to be avoided. The primary target for the boats—enemy shipping—was also a high priority target for friendly air strikes and searches day and night, just as it was for friendly light naval forces such as destroyers. Joint operations against a common target always required detailed exchange of information and complete understanding of the operating techniques of cooperating units, whatever the forces involved. This was especially applicable to torpedo boats, chiefly because of the difficulties of mutual identification at night. Torpedo boats could not identify by radar friendly ships and aircraft, and the latter's identification of the boats by similar methods was not always reliable.

The problem was attacked in one way by promulgating and distributing to all commands concerned carefully prescribed operating areas for torpedo boats. Night patrols were then ordered by specific area or areas. Interested air and surface forces were made information addresses on these despatch orders and were expected to confine their night operations to other zones. Mutual understanding was obviously imperative.

The problem was concurrently attacked in a second manner. Torpedo boat, air, and surface force representatives, desiring to work together in the same area and be of mutual aid, agreed upon specific missions, periodically or nightly. Rendezvous, communications, procedures, division of responsibility, and the operating tactics of each force involved were carefully specified in advance. Trial runs were used to iron out special difficulties, and experience in operations against the enemy produced a fairly serviceable doctrine. Joint black-cat (night-bombing flying boats) and torpedo boat operations, for example, aimed at enemy coastal shipping produced gratifying results.

This problem of working with and avoiding damage to friendly forces influenced greatly the activity of the intelligence officer, who became responsible for furnishing to base commanders and to boat captains at daily briefings accurate and timely information of cooperating units. His liaison activities were considerably intensified because of this task, and whether his information came from this source or involved an exchange of

despatches with air or surface forces, the effort expanded paid great dividends in damage inflicted on the enemy.

Sea Frontiers and Districts

A consideration of the duties of an operational intelligence officer assigned to a naval district or a sea frontier is important for two reasons: first, because it was the experience and knowledge gained from those operations which formed the foundation for the development of operational intelligence in the combat areas in World War II; and second, because in future wars we can no longer rely on the vast expanse of ocean which separates us from Europe and Asia to protect our coasts from continuous and devastating attack. The German U-boat campaign from 1942 to 1945 demonstrated the need for a complete and adequate coastal intelligence network. The present development of the submarine, the aircraft, the rocket, and the guided missile are all further arguments in support of the continuance of such a network.

On 14 April 1942, the first victory over a German submarine in Fifth Naval District waters took place. The terse announcement which followed merely stated "U. S. S. *Roper* sank sub at 35-55N, 75-15W, at 00069. 29 bodies recovered." U. S. S. *Roper* did not stumble on the U-85 by chance. It was on the basis of accurate intelligence that Fifth Naval District operations was able to direct her to the location of the first contact. Furnishing such information concerning the enemy was, and is, a normal function of intelligence. District and sea frontier intelligence organizations accordingly discharged this responsibility along with serving operating units with information concerning friendly forces and the characteristics of coastal waters.

During World War II, the basic mission and responsibility of all operational intelligence branches in naval districts and sea frontiers was to collect from all sources combat and operational intelligence and information useful to the Naval Establishment, and to coordinate, evaluate, and disseminate such information to the action agencies of the naval districts, to other naval districts, to frontiers, to the Office of Naval Intelligence, and to other appropriate Government agencies and commands. Such a program entailed the establishment of intelligence rooms and plots in joint operation centers, and of intelligence units at all outlying shore stations. It involved the and other naval watch organizations, the supervision of mine watch information, the organization of a fishing vessel control plan, and many other steps of a similar nature. Coastal information sections of the naval districts, given the job of performing operational intelligence, broadened in scope and came to be known by the latter name.

In the various sea frontiers and naval districts, the mission of performing operational intelligence was accomplished by similar if not identical methods. While operational intelligence in sea frontiers collected, evaluated, and disseminated information and intelligence furnished by the districts within the frontiers, districts performed the same functions for intelligence furnished them by their joint operations centers, section bases, and airfields. In other words, the district organization functioned operationally as a task group under the sea frontier task force command. Physical arrangements and internal organizations varied, but in most instances accomplishments were the same.

CHAPTER XI

AIR INTELLIGENCE

That part of the body of naval operational intelligence which is primarily concerned with naval aviation may be called air intelligence, just as those parts which are primarily concerned with photography and with amphibious operations may be called respectively photographic intelligence and amphibious intelligence. In this and the two following chapters each of these specialized parts of naval operational intelligence will be discussed in turn. A case might be made out for devoting a similar amount of space to the discussion of other specialized aspects of operational intelligence developed by the Navy in World War II, for example, submarine intelligence. However, because of space limitations, only the three aspects listed above can be treated in detail. Again the student is cautioned to bear in mind the close interrelationship which exists between the component parts of both strategic and operational intelligence, and to remember that the distinction between strategic and operational intelligence is at best an arbitrary one, and is fundamentally a matter of emphasis and point of view.

In this chapter, devoted to the subject of air intelligence, the organization of the Air Branch of the Office of Naval Intelligence, and of the Air Intelligence Division, will be briefly outlined, and the principal duties of air combat intelligence officers in World War II will be described. ACIO's are divided into the following types, and treated separately:

1. The ACIO at intelligence centers.
2. The ACIO on air staffs.
3. The ACIO on amphibious staffs.
4. The ACIO attached to ships.
5. The air group ACIO.
6. The air squadron ACIO.

The Air Branch of the Office of Naval Intelligence
 Air Combat Intelligence (ACI) was established by the Chief of the Bureau of Aeronautics early in 1942. Prior to that date, the Navy had no spe-

cialists in this field. Since the application of intelligence to war in the air was more clearly a function of aeronautics than of the Office of Naval Intelligence as it was conceived at that time, ACI was established in the Bureau of Aeronautics. Subsequent developments during World War II modified these earlier justifications to such an extent that ACI is now the Air Branch of ONI.

The mission and objectives of the Air Branch of ONI and of the Air Intelligence Division (AID) were summarized in chapter II. The Air Branch is subdivided into two sections: Collection and Dissemination, and Evaluation. The Air Branch is also responsible for the naval policy in AID, which constitutes one of the three divisions of Air Forces Intelligence and is composed of both Naval and Army Air Forces personnel. The AID replaced and combined a few of the wartime joint Army-Navy air activities, such as the joint target group, the air facilities subsection, and the Army-Navy flak section. Upon reorganization of these activities and the addition of many new functions, this division of AC/AS-2 and ONI covers the entire field of foreign air intelligence and is subdivided into the following branches:

1. Offensive air.
2. Defensive air.
3. Strategic vulnerability.
4. Air facilities.
5. Air estimates.

For security reasons, discussion of the present activities of the Air Branch and the Air Intelligence Division will not be presented in this text. The remaining part of this chapter will be devoted to a description of the functions of the air combat intelligence officer in the American Navy in World War II.

Functions of the Air Combat Intelligence Officer in World War II

It has already been pointed out that the air combat intelligence officer (ACIO) was a special sort of fleet intelligence officer. It is also true that originally the ACIO was considered a sort of