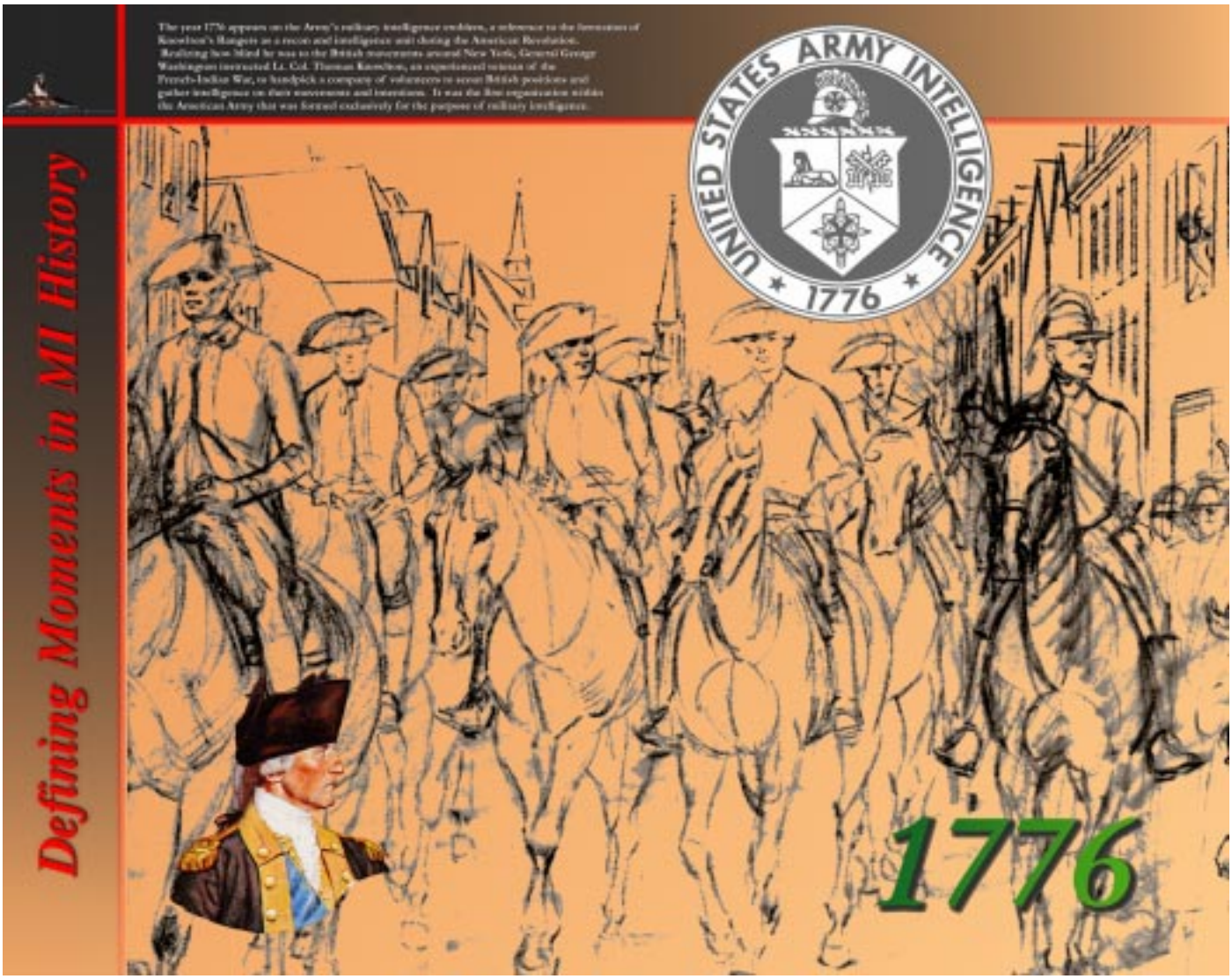
THE MI TRADITION

Winning Smart



A Brief History of U.S. Army Intelligence

The American Revolution was one of the great upsets of history. A small colonial force, made up mostly of militia, eventually defeated the splendid disciplined ranks of the professional British Army, with a grateful nod to French naval power. It was a vision that shaped the American Army over the centuries to come. The ideas of freedom and democracy would cloak the Americans in invulnerability. No large standing professional army would be needed. The British experience had taught America that regular armies were engines of oppression. Instead they would depend upon their militia. When dangers reared, determined American males would pull their hunting rifles off the wall and they would prevail.

This anti-standing-Army attitude would inhibit the growth of the U.S. Army and retard the development of professionalism in its ranks. But it would also shape its character, calling into play in all of its wars the qualities of resourcefulness and ingenuity. These characteristics would be especially apparent in the field of military intelligence, which was forced to reinvent itself in every campaign. While the British Army formed a Department of Military Knowledge as early as 1803 to collect terrain and Order

of Battle information on potential foes, no such organization existed in the U.S. Army until 1885, and then it was on an insignificant scale.

The Revolutionary War, with the appearance of the Continental Army in 1775, is thought to be the beginning of American military history, even though many of its key participants were seasoned in the French and Indian War. It was that earlier war on the North American continent that gave the American Army its unique personality, its hardy resourcefulness, its frontiersman's distaste for authority, and its irregular way of fighting, even though it rested solidly on English military traditions.

The Revolutionary War was one of generalship, tremendous courage and suffering, and, not surprisingly, military intelligence. Because it was impossible to know where one's sympathies lie, it was also difficult to know whom to trust. Spies were everywhere on both sides. General George Washington relied heavily upon the use of spies and his ledgers show that he spent $17,000 on his network of paid informants. To safeguard security, Washington would not reveal the identity of these men and this secrecy became the subject of the novel *The Spies* by James Fenimore Cooper.

The year *1776* appears on the Army's military intelligence emblem, a reference to the formation of Knowlton's Rangers as a recon and intelligence unit during the American Revolution. Realizing how blind he was to the British movements around New York, General George Washington instructed Lt. Col. Thomas Knowlton, another experienced veteran of the French-Indian war, to handpick a company of volunteers to scout British positions and gather intelligence on their movements and intentions.

It was from the ranks of Knowlton's Rangers that Captain Nathan Hale stepped to undertake an espionage mission, one that would ultimately result in his capture and present him the opportunity to declare while standing on the British gallows, "I regret that I have but one live to give for my country."

No lesser fate was handed down to Knowlton and his Rangers. The intrepid colonel had been killed in action on 16 September and his company was decimated in the battle. This was not an auspicious beginning for U.S. Army intelligence. But there would be some important triumphs in the months and years to come, as well as some unforgivable tragedies.

Major Benjamin Tallmadge, a Yale classmate of Captain Nathan Hale and an officer in the Second Connecticut Dragoons, was a veteran of some hard fighting at Long Island, White Plains, Brandywine, Germantown and Monmouth. The former Connecticut high school superintendent would be charged with superintending a network of spies in and around his native Long Island. Tallmadge also had a hand in counterintelligence efforts, exploiting the capture of the British operative Major John Andre which led to the exposure of Benedict Arnold as a turncoat and spy.

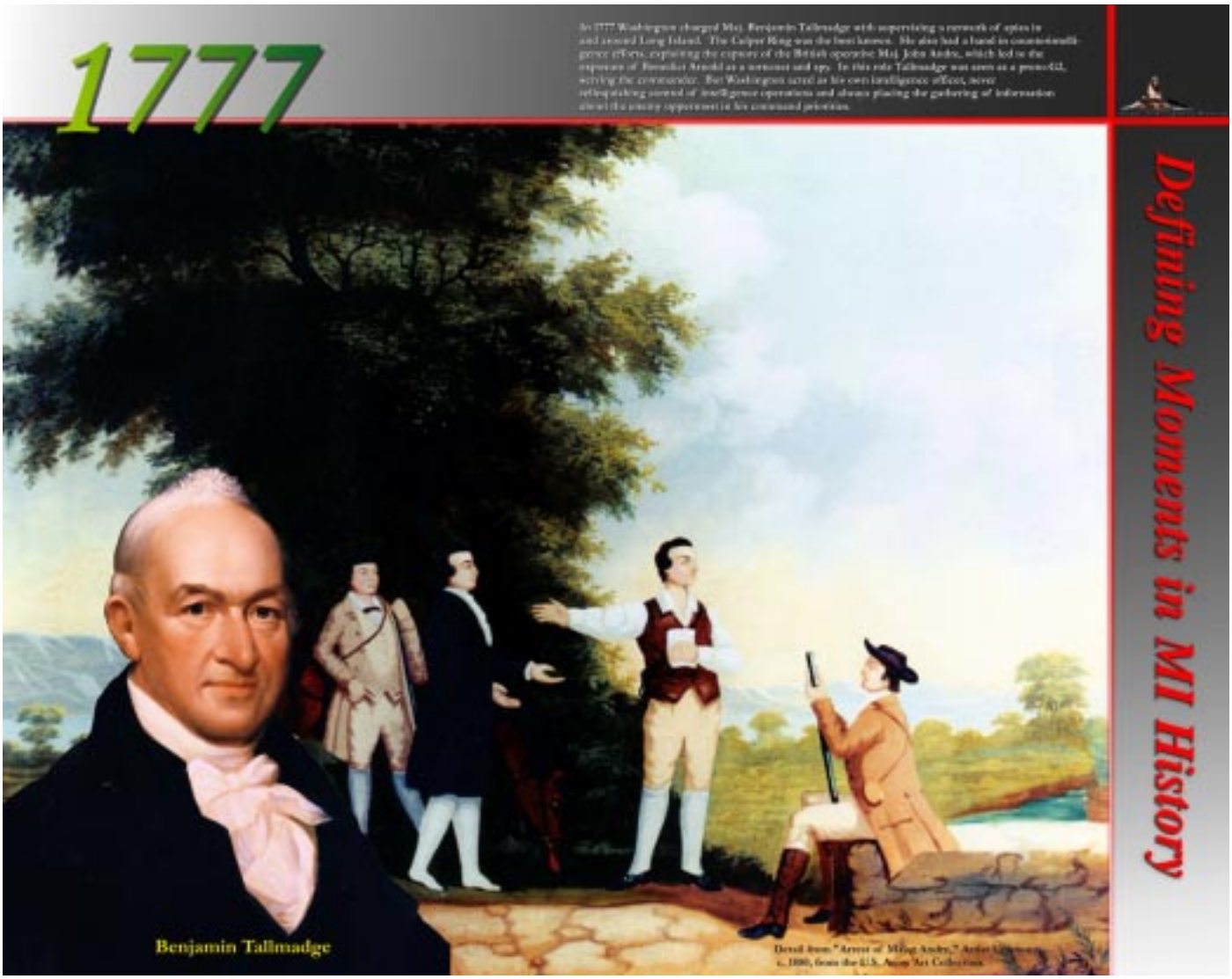
The Culper Ring was the best known net run by Tallmadge, with ample direction and advice from General Washington. In this role he was seen as a proto-G2, serving the commander. But, as several historians of this period are quick to point out, Washington acted as his own intelligence officer, never relinquishing control of intelligence operations and always placing the gathering of information about the enemy uppermost in his command priorities.

Washington was not only a spymaster but a master of deception operations, the most striking of which was the battle of Yorktown where the British were frozen in their vulnerable positions by an ingenious campaign of misinformation. The American Revolution was a laboratory for rudimentary intelligence gathering and it was given form and purpose by the Commander in Chief of the American forces himself. General Washington is eminently quotable on the subject of the importance of good intelligence.

However, for all of Washington's emphasis on intelligence in the newborn American Army, after the war's end in 1783 no intelligence organization had been institutionalized and that discipline would be largely ignored over the next century.

The explorations of men like Captain Meriweather Lewis and Second Lieutenant William Clark in 1804 up the Missouri River and the reconnaissance of First Lieutenant Zebulon M. Pike into Colorado and New Mexico in 1806 can rightly be seen as intelligence operations as their object was the acquisition of information about unknown terrain. But they were peacetime efforts by adventurous soldiers.

It would take the War of 1812 to remind the amateur American Army that intelligence was a function of warfare that could not be ignored without deadly consequences. In August Colonel William Hull surrendered Detroit to the British, having fallen victim to their clever misrepresentations of their strength. Tragic



loss would befall the Americans again two years later when British troops marched through Washington, torching the capitol and the White House. Both of these defeats and others can be traced to faulty or absent tactical intelligence, although the U.S. Army was woefully unprepared in most other respects as well.

Secretary of War John Armstrong, who took office in February 1813, was known to have strong opinions about the requirement to obtain good intelligence. The intelligence systems of the day were conventions like cavalry reconnaissances, cavalry screens, outposts, pickets, scouts and spies. In the field, intelligence was the job of Indian scouts and spies. William Henry Harrison had 13 "spies and scouts" in his employ when he marched on his way to the Battle of Tippecanoe. The British also depended heavily on the help of Indians for intelligence purposes. Enterprising Indians like Tecumseh regularly captured the mail to learn of the American's situation.

Sometimes prisoners and deserters could be the source of information and at least one commander, Brig. Gen. Zebulon Pike, took advantage of a lull during the attack of Fort York in April 1813 to personally interrogate a few prisoners.

Deception was used repeatedly during the War of 1812, mostly by the British, to misrepresent strength. At the siege of Fort Wayne, Tecumseh sought to convince the small American force that he had been reinforced by British artillery by setting up dummy guns made from logs, demonstrating the military sophistication of this Indian adversary.

By the time of the 1846 Mexican War, the intelligence art was still unformed and did not exist in the curriculum of the U.S. Military Academy or in the drill manuals of the day, but only in the minds of some offic-

ers as an ill-defined requirement akin to reconnaissance. In spite of knowing nothing of the terrain or the enemy's numbers or dispositions, the American units under Zachary Taylor were able to succeed in Northern Mexico only because of the extraordinary mettle of their soldiers.

Winfield Scott, moving on the Mexican capitol after landing at Veracruz, was likewise blinkered, but he was ably served by a soldier with an acute insight into the exigencies of warfare. Colonel Ethan Allen Hitchcock spent a considerable amount of his time as Scott's Inspector General seeing to the intelligence needs of his commander, relying on informers and his Mexican Spy Company. A life of philosophic inquiry may well have honed his clarity of vision which allowed him to foresee the possibilities presented by a native intelligence and reconnaissance company. But the Mexican Spy Company's contribution was not Scott's sole tactical intelligence tool. The purpose of intelligence was also notably served by daring reconnaissances made by young engineering officers like Robert E. Lee and George B. McClellan.

During and after the war, the officers of the Army Corps of Topographical Engineers were assigned a mission unique in U.S. Army history. They were to reconnoiter routes through rarefied and intimidating mountain ranges, canyons awesome in their vastness, down rushing rivers and across parched deserts, so that the American people could expand westward to Pacific shores and so that the Army outposts placed to protect the pioneers could be supplied overland. At the same time they would observe and record a plethora of data on the heretofore unknown natural history of some of the most exciting wildlife habitats in the world. These men ranged over America's great Southwest, campaigned during the 1846-48 Mexican War, surveyed the new border with Mexico, opened wagon train trails, provided tactical maps for the Indian-fighting Army, mapped transcontinental railroad routes and produced, in just twenty years, one of the most comprehensive scientific inventories ever made of any part of the earth. They were men like John C. Fremont, William H. Emory, Lorenzo Sitgreaves, Amiel W. Whipple, George H. Derby, John G. Parke and George Stoneman.

The American Civil War, like the American Revolution, was an occasion for widespread human intelligence operations, owing to the fact of an identical language and the shared cultural backgrounds of the protagonists. It was an easy matter to conceal allegiances and pass through the familiar countryside. It was also the brink of the modern era of warfare, employing new technologies like railroads, telegraphs, photography and lighter than air ships. This opened new avenues for intelligence exploitation. With the proliferation of new concepts of warfare came the attendant potential for intelligence opportunities. It became incumbent upon the intelligence operative to invent ways to seize these chances. Signals intelligence was born. Codes were deciphered with regularity by both sides. Aerial reconnaissance emerged with Thaddeus Lowe and his balloon corps. The role of cavalry was redefined. Special operations were launched to infiltrate battle lines and spread havoc in the enemy's rear. Railroads brought a new dimension for massing forces and supplying armies. They also became the obvious target for sabotage.

During the Civil War the U.S. Army began using the telegraph, not only to link major headquarters, but tactically, in the form of the "Flying Telegraph." This was the name given to the Beardslee magneto-electric telegraph set, the American army's first electric weapon. It was portable, hand-operated, without batteries, and could signal over several miles of insulated field wire. For the first time the U.S. Army had an electronic Command, Control and Communications (C3) system. And, for the first time, telegraph lines were tapped and messages intercepted.

Captain Anson Stager, head of the Military Telegraph Service, established in 1861, developed a route transposition cryptosystem to provide an elementary safeguard against wiretapping. It scrambled the words of a message according to a prearranged pattern and, although far from sophisticated, it defied Confederate decryption, at least according to employees of the Military Telegraph Service.

The Federals on the other hand had little trouble with the Confederates' Vigenere polyalphabetic substitution system, owing to their habit of only partially encrypting the messages and leaving substantial plaintext clues. The possibility of using the vulnerable telegraph to send misleading messages was not lost on either side, and both made good use of disinformation.

It was during the Civil War that the Army Signal Corps first began attempting aerial surveillance from lighter-than-air balloons overlooking enemy lines. (During the Mexican

War a civilian balloonist suggested their use, but the idea was rejected as impracticable.) Thaddeus S. C. Lowe, a 28-year-old New Hampshire meteorologist, demonstrated the usefulness of balloons as observation platforms to President Lincoln in 1861 when he sent the first air-to-ground telegraph message. The president authorized the formation of an Army Balloon Corps with Professor Lowe, commissioned a captain, at its head. By the end of 1861, Lowe had a fleet of seven balloons and nine *aeronauts* to man them. In March 1862 with McClellan's Army of the Potomac facing Confederate positions at Yorktown, Lowe took Brig. Gen. Samuel P. Heintzelman, one of the corps commanders, aloft and described the intelligence value of the observation flight:

The entire great fortress was ablaze with bonfires, and the greatest activity prevailed, which was not visible except from the balloon. At first the general was puzzled on seeing more wagons entering the forts than were going out, but when I called his attention to the fact that the ingoing wagons were light and moved rapidly (the wheels being visible as they passed each camp-fire), while the outgoing wagons were heavily loaded and moved slowly, there was no longer any doubt as to the object of the Confederates.

It was one of the earliest recorded instances of an intelligence analyst keeping the commander informed. But the value of Lowe's observations were deemed marginal by most commanders. Little could be seen from great distances, especially when the enemy's positions took advantage of foliage cover. Lowe's salary was cut from $10 per day to six, an insult in Lowe's mind. He resigned in protest and the balloon corps was deactivated in April 1863.

It was at the time of the Civil War that photography was introduced as a means of recording military information. Thaddeus Lowe had used cameras to take pictures from the basket of his balloon.

In the American Civil War the principal intelligence gathering arm of the U.S. Army was the cavalry. Early in the war, however, they could not be said to live up to the present-day motto of the Military Intelligence Corps, "Always Out Front." Rather the cavalry seldom ventured very far from its infantry and artillery support. Its sorties were marked by timidity, and therefore its usefulness as the eyes of the army was hooded. That is until the arrival upon the scene of a "Man on Horseback"—Brig. Gen. John Buford.

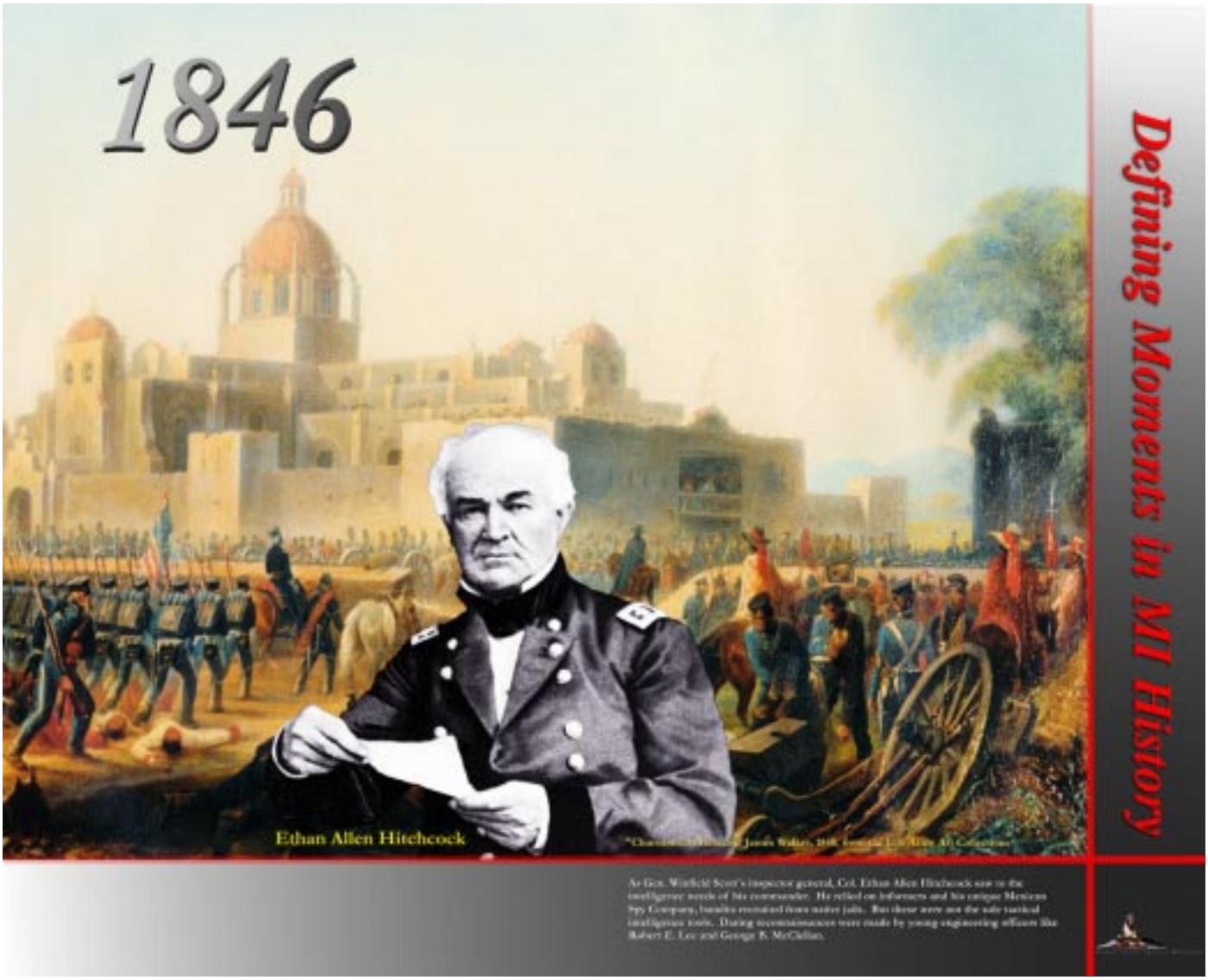
Buford recognized that the Union cavalry was no match for the better mounted Confederate cavalry. He also knew that the use of horsemen as shock troops with sabers drawn was a thing of the past. Massed formations of cavalry only made big targets for the more accurate, farther ranging and more rapid-firing rifle. Instead he called upon his Indian-fighting experience and used the cavalry like dragoons. The horse offered mobility, but when it came to fighting he dismounted the troops and had them seek cover. In this way he was able to repel charge after charge of confederates in the saddle. This meant that Buford could keep his cavalry out on reconnaissance without fear of being beaten off by the enemy. This he did tenaciously, taking many important prisoners and gathering some very useful intelligence information such as a letter from Lee outlining his plan for the campaign found in the pocket of J.E.B. Stuart's adjutant.

Maybe the best combat commander of the Civil War, Phil Sheridan was called by William Sherman "A persevering terrier dog—honest, modest, plucky and smart enough." He was also remembered as the best informed commander of the war, relying on a highly organized spy network and reconnaissance. What we call intelligence today, Sheridan called "that great essential of success, information." This careful attention to intelligence would serve him well again in the Indian Wars when he assembled an intelligence network composed of scouts who had much experience with the Indians and could keep him informed, not only of enemy movements, but of their intentions.

The lack of any official intelligence gathering body was keenly felt in the opening years of the Civil War. A railroad detective named Allan Pinkerton became the secret service of the Army of the Potomac, telling its commander, George McClellan, that the Confederates facing him were double the strength they actually were and feeding the cautious McClellan's penchant for inaction. Pinkerton and his men were better at counter intelligence than they were at pinpointing order-of-battle information. They snagged some southern spies in Washington. The detective also seemed more at home with a political kind of espionage.

Military intelligence took on a more professional look in early 1863 when Colonel George H. Sharpe, Assistant Provost Marshal of the Army of the Potomac, formed the Bureau of Information to provide a more efficient and systematic collection of military information from all sources. Sharpe appointed as his deputy John C. Babcock, a volunteer in the Sturgis Rifles and, after his enlistment expired, a civilian order-of-battle expert with the Topographical Department. It was Babcock who stayed on after Pinkerton resigned to prove that accurate information could be assembled about the enemy's numbers. Third in command was Captain John C. McEntee.

The bureau employed some 70 "guides" to gather intelligence in the field. Using information collected from their own scouts, from southern refugees and deserters, from intercepted communications, from balloon observations, from military patrols, prisoner interrogations, and from open sources like newspapers, they were able to write informed and coordinated intelligence summaries for the commander. Sharpe also benefited from a windfall of information provided by the Richmond underground, a highly organized and far-reaching spy organization improbably directed by Elizabeth Van Lew, a 44-year-old abolitionist in 1862 and a resident of the southern capitol. Among Van Lew's sources was Mary Bowser, a freed slave who was planted as a housemaid in the home of Jefferson Davis. The Bureau of Information was the first case in the U.S. Army of a modern military intelligence organization, comparing intelligence from a number of sources and evaluating it before passing it along. The head of the bureau was promoted to brigadier in March 1864. It would seem that the U.S. Army had realized the importance of the intelligence function and the necessity of having it performed by a distinct unit of specialists. But at war's end, the bureau was disbanded and its members returned to civilian life. The lesson



about the key role intelligence could play would have to be relearned, the next time by young officers in the decades to come who studied European armies seeking a more professional U.S. Army.

With the Civil War at an end, the American Army turned its attention to the frontier where a different kind of warfare would occupy them for the next quarter of a century. The low intensity conflict of the Indian Wars once again drew forth the resourcefulness that would become the hallmark of the American Army leader. The use of Indian Scouts by U.S. Army commanders on the frontier was one way military intelligence was employed with ingenuity and effectiveness. A prominent example was the Apache campaign in Arizona and New Mexico between 1862 and 1886. Their use in Arizona, as both spies on the reservation and as reconnaissance patrols in the field, was given credit for bringing the renegade Apaches to bay and significantly shortening the Apache campaigns.

In the 1870s, the telegraph was employed extensively in the Arizona/New Mexico theater of operations to quickly relay intelligence of Apache movements and to get orders out to the far-flung outposts. The Apache realized the threat posed by the telegraph and severed the lines, thus effectively disrupting American communications. But the Indians took their jamming efforts one step further, employing deception. They would cut the wires where they passed through a tree or were attached to a pole and then join the wires with a piece of rawhide. When the U.S. Army rode the line looking for the break, they would not be able to locate the broken line without much effort. One response to this problem was to field an experimental back-up communications system, the heliograph.

The Apache Scout is usually thought of as falling within the category of human intelligence because of his job as a long-range reconnaissance man, but the Indian's skills at tracking resemble the techniques used by the imagery interpreter. Imagery intelligence studies the earth's surface for clues to identify and locate enemy activity. Today that is accomplished mainly by photographic, radar, infrared, or electro-optic images, some conveyed from platforms in space. The Apache too scrutinized the ground for signs of enemy activity, but he gathered his images from as close to the earth's surface as you can get. Occasionally his platform was the back of a horse.

The American Army had used Indians as guides ever since its inception, but they were employed as civilians. It was not until an Act of Congress in July 1866 that Indians were actually enlisted and became an official unit of the U.S. Army. General George Crook made extensive use of Apache scouts in Arizona territory to track down Apache renegades. Crook would emphasize their worth in his official report: "I cannot too strongly assert that there has never been any success in operations against these Indians, unless Indian scouts were used. These Chiricahua scouts...were of more value in hunting down and compelling the surrender of the renegades than all other troops...combined. The use of Indian scouts was dictated by the soundest of military policy."

On the reservation where many Indian factions intrigued against each other and the U.S. Army, a network of "Confidential Indians" would report to the military any plans or dissatisfaction. This proved useful in 1882 when informants alerted the Army to the intentions of renegades to attack the reservation at Camp Goodwin and breakout Loco and his Warm Springs people to join them in raiding. The information, however, did not prevent Geronimo, Juh, Chato, and Nachez from doing just that.

It is now necessary to shift our attention from the exhausting vertical chases over Southwestern mountain ranges after Apache renegades to the cooler heights of the Army hierarchy in Washington, D.C. This is where, according to one observer who noticed that staff officers spent most of their time in billiard parlors, "the balls flew the thickest." But it was also where organizational decisions were made, and while the Army in the field was hunting for Geronimo, the Army staff was making room for military intelligence.

In his memoirs, Ralph Van Deman claims that the 1885 establishment of a military intelligence division under the Adjutant General was the result of the Secretary of War asking for information on a foreign nation's military might and learning that nothing was known about it. Whether this was the germination of the Army's first headquarters level intelligence organization, or whether the War Department simply saw a need to build a military reference room to house the influx of reports being written by touring military observers, this event is accorded the significance of being the beginning of an MI establishment within the U.S. Army.

While the organization of the little MID is now thought of as a watershed, it certainly was not thought of as greatly important by Major William J. Volkmar, who together with a handful of clerks, crowded into a single room in the State, War and Navy Building. His modest shop was named the Division of Military Information, a subsection of the Reservations Division of the Miscellaneous Branch of the Adjutant General. It was not until 1889 that the office was charged with assembling "Military data on our own and foreign services which would be available for use of the War Department and the Army at large." Here would be filed maps and monographs, reports and rosters. The Adjutant General, in a letter to the field, asked "all officers" to "make report on anything which it may be desirable for the government to know in case of sudden war." The determination of what was military intelligence and what was not, was left to the "discretion of the officers." It was a minor archive that would grow quickly since the void it was filling was so wide.

If being lumped under "Miscellaneous" was not humbling enough, the office had to endure the sneers of their naval colleagues who's Office of Naval Intelligence (ONI) had been established three years earlier. When an Army officer was found to have borrowed a report from ONI, the Navy chief was outraged enough to write, "Such an incident as this served to make me doubly cautious, especially in dealing with these Army people, who in matters of tact or discretion seem to me to be a lower order of intellect than the mule." It was an early example of the begrudging cooperation that was to plague joint operations over the next century.

Four years later, the Military Information Division (MID) was expanded to encompass a network of military attaches. The attache system

which Congress had authorized in 1889 involved the stationing of officers in four major European capitols and one in St. Petersburg. Their job was to observe the training and exercises of foreign armies and make reports on their relative strengths and weaknesses. A War Department memo exhorted them to:

Examine into and report upon all matters of a military or technical character that may be of interest to any branch of the War Department and to the service at large. Keep informed...of the occurrence of all military exhibitions and trials of Ordnance.... Examine the military libraries, bookstores and publishers lists in order to give early notice of any new or important publications or inventions or improvements in arms, or in any branch of the service; also give notice of such drawings, plans, etc.; which may be of importance and within your power to procure.

The attache in France in 1892 was Captain Henry Dana Borup, who was following instructions of the War Department to collect "drawings, plans, etc. which may be of importance and within your powers to procure," when he tried to buy some plans for the fortification of the seaport of Toulon from a Ministry of Marine employee. He was found out and earned the distinction of being the first attache to be expelled for espionage. Jefferson Coolidge, an American diplomat in France voiced his puzzlement at Borup's actions, calling them "perfectly useless," since we were not at war with France and did not yet possess a Navy with which to invest Toulon.

Attache duty was usually reserved for officers who had personal wealth, since the Army lacked the funds to support them overseas. This criterion was seldom a guarantee that the attache had any knowledge of intelligence work. The MID with its attaches

soon would have a chance to prove its worth. Tensions with Spain were building.

American support for Cuban insurrectionists against an increasingly oppressive Spanish regime brought the United States and Spain ever closer to war. When an unexplained explosion sunk the U.S. battleship *Maine* in Havana harbor on February 15, 1898, the incident was thought to have been caused by Spanish treachery and it precipitated the war, which was officially declared by the U.S. Congress on 25 April. It was a war which President William McKinley had souught to avoid and for which the United States was ill prepared. From a military intelligence standpoint, however, the U.S. Army was the best prepared it had ever been in its history.

It was the first American war in which a military intelligence function was up and running before the war began. While the work of the Military Intelligence Division would be considered rudimentary and slight by today's standards, it was unusual for the U.S. Army to have even this fundamental degree of knowledge about its adversary on the battlefield.

During the 1890s, the MID accomplished much with its dozen officers, not only monitoring the preparedness of American militia and National Guard units, but preparing over 50,000 card file entries of information received; producing much needed maps of Mexico, Canada, Puerto Rico, Cuba and the Philippines; and completing studies on foreign armies. By the time the Spanish-American War started, the U.S. Army attache in Madrid had compiled much useful information on Spain's military capabilities.

In 1893 the MID thought its work sweeping enough to warrant four branches. A Progress in Military Arts Branch compiled information sent in by attaches and observers. Information about the Canadian border was processed by the Northern Frontier Branch. A Spanish-American Branch kept an eye on developments in Spanish possessions in the Caribbean. The readiness of state National Guard units was monitored by the Militia and Volunteer Branch.

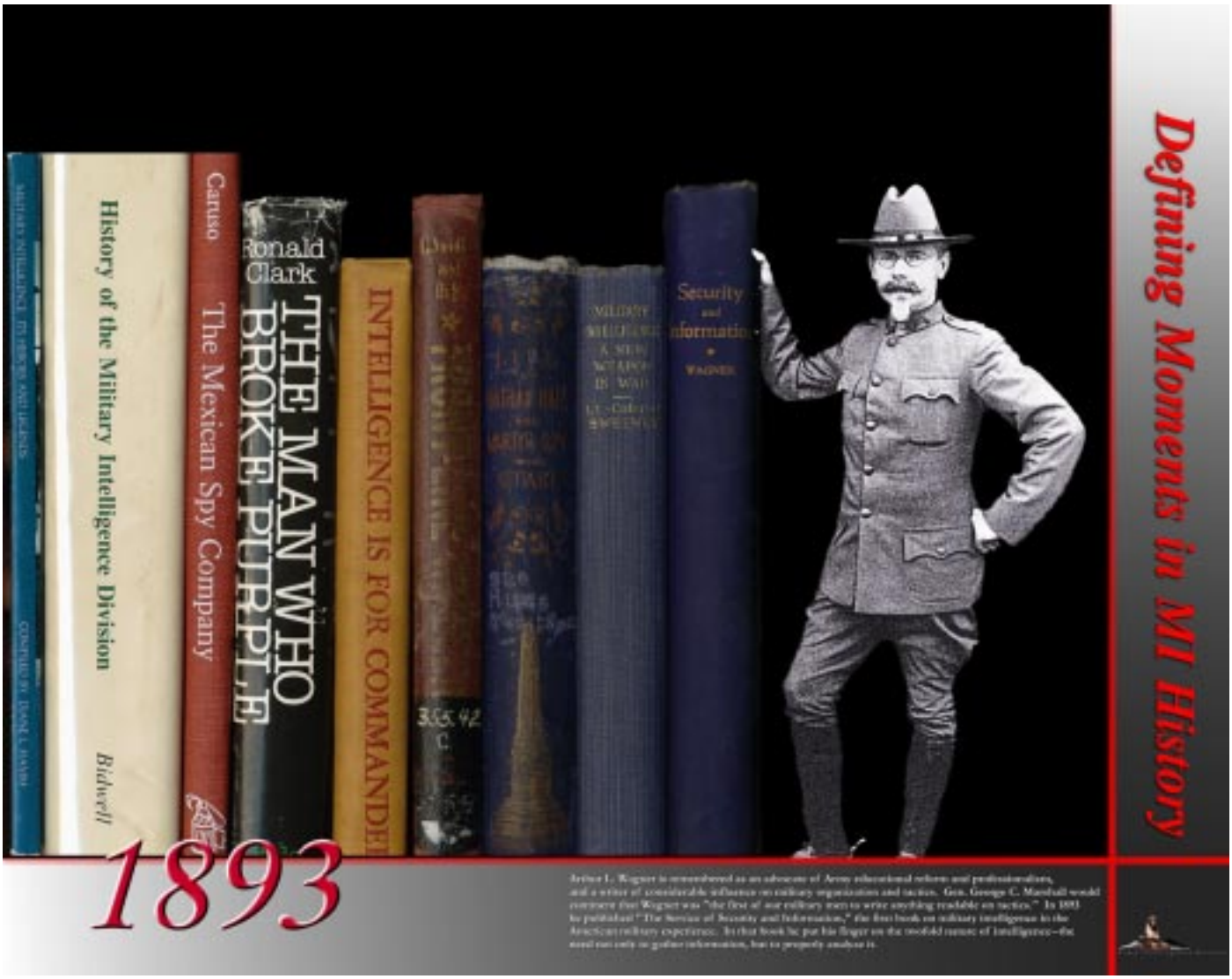
The MID was in good hands in 1897. Its chief was Major Arthur L. Wagner, who was a respected military educator and thinker, but, more importantly, a believer in intelligence. He brought to the job a professionalism and a voice for intelligence reform. His MID consisted not only of 11 officers, but a network of 40 officers stationed at National Guard headquarters around the country, who reported directly to MID. He had 16 attaches, 10 civilian clerks and 2 messengers, occupying four rooms, and an annual budget of $3,640 to keep the whole thing going. It had been assembling information about Cuba since 1892, mostly from emigres living in New York and from traveling Army officers like Captain George P. Scriven who toured Cuba in 1893.

The output of MID was prodigious during the years under Wagner's leadership. Anticipating the war with Spain, MID produced special studies, orders of battle, and maps on Cuba, Puerto Rico and the Philippines. Wagner convinced the leadership to send Lieut. Albert Rowan on an espionage mission to Cuba, and Lieut. H. H. Whitney to Puerto Rico.

A basic example of human intelligence operations was the mission in 1898 of Andrew S. Rowan. A lieutenant with the Military Information Division in Washington, he was entrusted with a job directed by the president himself. Chosen by his boss, Arthur L. Wagner, the Chief of MID, to carry out McKinley's instructions, Rowan first traveled to Jamaica, then by small craft landed on the shores of Cuba. Guided by Cuban rebels, Rowan cut through the jungles of the island until he reached the headquarters of General Garcia. There he conferred with the rebel leader, elicited information about the strength and disposition of Spanish forces on the island, discussed Garcia's suggestions for joint American-Cuban operations against the Spanish, then returned to the U.S., taking with him two of Garcia's most knowledgeable aides to furnish intelligence information to the American military. His exploits were the subject of a post-war, best-selling essay entitled "Message to Garcia," which lauded the virtue of self-initiative. Rowan retired in 1908 as a Colonel and in 1922, after a campaign by General Nelson Miles and other friends, Congress bestowed upon him the Distinguished Service Cross.

In 1898 Wagner set up a war room in the White House, next door to the State, War and Navy building in which MID was located. Then, his staff work completed, he turned over the reins of MID to Capt. Louis C. Scherer. Another of the officers he left behind to assume the intelligence work was Lieutenant Ralph Van Deman.

Appointed to the staff of General Nelson Miles, the Army's Commanding General, Wagner was able to use his influence to organize the Bureau of Military Information which



would be assigned to the General William R. Shafter's V Corps to centralize and collate all intelligence information in the theater. As visionary as this organization was for its day, it would not get off the ground due to petty rivalries. General Shafter would dismiss the Bureau of Military Information, believing that Wagner was sent by Miles to spy on him. Without a job, Wagner volunteered to lead reconnaissance patrols behind enemy lines to gather intelligence for Brig. Gen. Henry W. Lawton, the Second Division commander.

Remarking after the war on the failure of General Shafter to make use of his field MI concept, Wagner said:

...No use was made of the Bureau of Military Information. ...I believe that a bureau...would be of great value; but the utilization of such a bureau implies a certain degree of system and intelligent organization in the military force to which it is attached.

Wagner would be the first to agree that "Intelligence is for commanders." By the turn of the century, cameras were being attached to large kites (which were cheaper and more portable than balloons) and the shutters triggered with clock devices or fuses. These kite surveillance devices were reportedly used in Puerto Rico during the Spanish-American War. About the use of observation balloons in the Spanish-American War, a cumbersome device hard to move down the narrow trails and an inviting target for enemy fire, Wagner had this to say: "For the first time in military history a balloon was seen practically on the skirmish line, and it will probably be the last time that such an exploit will be witnessed. It is hard to understand what fantastic conception of the art of war could have caused such a reconnaissance to be seriously contemplated in the first place."

In August 1903 the Military Information Division became the Second Division, one of the three main divisions of the new General Staff, the others being the First Division in charge of all Army administration and the Third Division in charge of plans. One of the new chief of staff's early actions was to issue a call for qualified officers to assist the Second Division in translating Russian, German, French, Italian, Spanish, Portuguese and Japanese documents.

The job of the Second Division was spelled out as "collection, arrangement, and publication of historical, statistical, and geographical information; War Department Library; system of war maps, American and foreign; general information regarding foreign armies and fortresses; preparation from official records of analytical and critical histories of important campaigns." It was also responsible for the system of military attaches. The first chief was Major William Dorrance Beach who was supported by only five officers and the same four rooms in the State, War and Navy Building. He organized the division into six sections: 1. Military Attache and Manila Office Section; to be controlled by the Division Chief, assisted by Capt. J.C. Oakes. 2. Classification, Card Indexing and Library Section; to operate under the supervision of Capt. H.C. Hale, the Division Secretary. 3. Map and Photographs Section; directed by Capt. H.M. Reeve. 4. Historical Section; to which any officer of the Division may be assigned as required. 5. Monograph Section; to which all officers of the Division will be automatically assigned and provided with appropriate work projects of a continuing nature. 6. Publication Section; headed by Capt. C.T. Mencher.

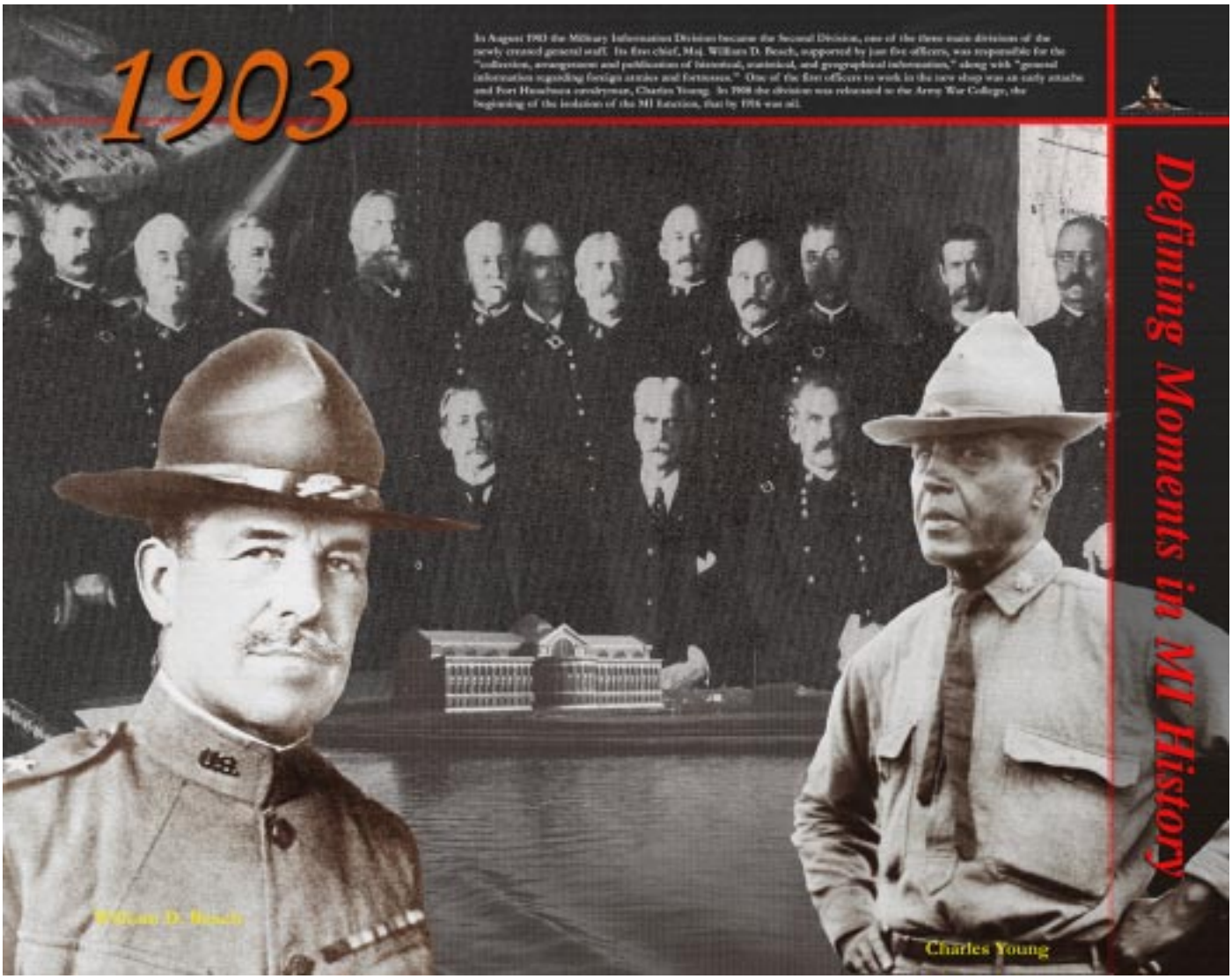
One of the early successes of the new Second and Third Divisions acting jointly was anticipation of insurrection in Cuba and the preparation of a plan for U.S. Army intervention. The Cuban Pacification plan was put into effect after requests for aid from the new Cuban government in 1906. As part of the occupation forces, a branch office of the Second Division was created in Havana and "engaged in collecting valuable statistical and topographical information."

The Third Division planners, essentially the members of the Army War College, relied extensively on information provided by the Second Division and worked closely with them. So when the Third Division moved into its new quarters in the War College Building at Washington Barracks, D.C., it recommended that the Second Division move there too to facilitate coordination between the two staffs. While objected to by the military information people, the Chief of Staff approved the move and it was completed in May 1908. A month later the chief directed the merger of the Second and Third Divisions into a Second Section. Its chief would be the president of the War College. A Military Information Committee was created in this new organization, along with a War College Committee. The mission of the Military Information Committee was not much different from the one assigned to the second division in 1903, but centralization followed and the intelligence function was virtually absorbed into the War College. A mission statement issued in February 1912 showed fewer true intelligence tasks and more work related to the education of the Army. By May 1915 the Military Information Section of the Army War College had even less to do with intelligence duties, instead being charged with doing "current General Staff work."

In 1898 an Insurgent Records Office was created in the Manila headquarters of the Expeditionary Force in the Philippines to sift through and translate the boxes of captured documents that could furnish valuable information to the field commanders. The importance and scope of the office grew and so did the staff, finally becoming the Military Information Division of the Adjutant General's Office, Headquarters, Division of the Philippines, on 13 December 1900. The new agency was performing all tactical and counter intelligence tasks for the Philippines, recruiting Filipino agents and working closely with the MID in the War Department. It was eventually merged with the War Department MID on 18 June 1902, receiving its funding from Washington and serving as a branch of the MID in the War Department. This had the disadvantage of excluding the local commander from the direction of intelligence work.

Its first chief was Lt. Colonel Joseph T. Dickman, who would later be a major general and lead the Third U.S. Army over the Rhine to occupy Germany in November 1918. He was seconded by Captain John R.M. Taylor who would be assisted by Capt. Ralph Van Deman. It was Van Deman who set up a Map Section and ordered terrain reconnaissances.

Unlike Cuba, where informants were plentiful, little was known about the Philippines at the time of the Spanish American War. The researchers in MID seemed to have neglected these far-away Pacific islands and their



data was not always up to later standards. The aide to Maj. Gen. Wesley Merritt, commanding, Capt. Thomas B. Mott gave this picture of the MID product in the summer of 1898:

General Merritt had charged me, when in Washington, with collecting data concerning the Islands and one document had been handed me [by MID] with special recommendations as to its care and early return, for it was "confidential.' I read it eagerly when I got back to Governor's Island, but as the first pages seemed familiar, I compared it with other papers I had already collected. Lo and behold, it was a transcription of the article on the Philippines from the last Encyclopedia Britannica!

The Spanish-American War for the first time presented this young nation as a global power. Military intelligence had little or no effect on its outcome, but because of the commitment of a dozen officers, military intelligence spread out from its few rooms in the War Department to the provinces of Cuba and the jungles of the Philippines. But as memory of the war receded, so too did intelligence work shrink until the word disappeared altogether on the Army's organizational charts. It would take some troubles along the Mexican border and a world war to revive the intelligence craft in the second decade of the 20th century.

Despite the reorganization of Army by Secretary of the Army Elihu Root and the creation of a general staff after the turn of the century, intelligence, originally the Second Division of the general staff, was increasingly ignored in favor of the more robust Third Division, or plans division. There were too few voices defending the importance of intelligence to an Army leadership absorbed with plans and operations. One of the few advocates of a stronger military intelligence organization within the U.S.

Army, Ralph van Deman, would be recognized only when the United States was on the brink of a war. But before he could be heard, another Army commander was conducting a rehearsal along the uneasy Mexican border for the full-scale war in Europe. In the mountains of northern Mexico, John J. Pershing would learn some things about intelligence.

Political instability in Mexico, which often spilled across the border in the form of bandit raids and refugee exoduses, resulted in a troop buildup along that border as early as 1911. In 1914 it was proposed by the Chief, Army War College Division, who also chaired the Military Information Committee of the War College, that some officers along the border be invested with intelligence duties. This was adopted but with the proviso that they not cross into Mexico, limiting their work to the interrogation of refugees. That ban was lifted after Pershing mounted his Punitive Expedition.

We know that at least one intelligence officer crossed into Mexico. In 1916 a lieutenant of the First Arizona Infantry, Sidney F. Mashbir, was asked by the Department Commander, Brig. Gen. Frederick Funston, to conduct a secret reconnaissance of northern Mexico to check out persistent rumors of a sizable Japanese military presence. Mashbir, an Arizonan familiar with the Sonoran desert, with the help of his Papago (today Tohono Oodham) spies, found Japanese ration tins and *Kanji* written on rock faces that confirmed that Japanese military exercises were being conducted and that Japanese patrols may have even crossed into the United States to obtain water.

During the Punitive Expedition into Mexico in 1916 led by General John J. Pershing, human intelligence (HUMINT) and signals intelligence (SIGINT) took on new proportions. Although an embryo intelligence staff had been organized in 1903 as part of the Army's General Staff, it was up to General Pershing to organize his own field intelligence network. He realized that good intelligence was necessary if he was to track down the bandit/revolutionary Pancho Villa. Pershing appointed an intelligence officer to his staff, Major James A. Ryan, 13th Cavalry, and started an "Information Department." Later, when five separate districts were established in the Mexican theater of operations, he instructed the district commanders "to organize [their] own agents and establish as far as possible [their] own service of information."

The Information Department employed a network of agents who were reported to have penetrated Villa's camp. The department reported in 1917 that it "soon was able to decipher any code used in Northern Mexico. Thereafter, by tapping the various telegraph and telephone wires and picking up wireless messages we were able to get practically all the information passing between the various leaders in Mexico."

Apache scouts from Fort Huachuca accompanied the 10th Cavalry and others from Fort Apache joined the 11th Cavalry on their long scouts into Mexico in search of the bandit/revolutionary, Pancho Villa. It was the last time Indian Scouts were used in U.S. Army operations, though they remained as part of the U.S. Army until 1947.

Captain Parker Hitt was 34 years old in 1911 when the Signal School at Fort Leavenworth conducted its first conference on military cryptology. The infantry officer had interrupted his studies in civil engineering at Purdue University to join the Army in 1898. He served in the Philippines, Alaska and California before attending the Signal School and then becoming an instructor at that institution. He possessed a flair for solving ciphers and deciphered coded messages intercepted from Mexico from both the agents of Pancho Villa and the Constitutionalists, the latter code becoming known as the Mexican Army Cipher Disk. Hitt wrote the U.S. Army's first publication on cryptology in 1915 when his *Manual for Solution of Military Ciphers* was printed at Fort Leavenworth. From 1914 to 1917, Hitt developed a code machine that, after some improvements by Joseph Mauborgne, Chief of the Signal Corps' Engineering and Research Division, would become in 1922 the Army's M-94. It was used up until World War II. In the 1930s it was replaced by the M-138a, which incorporated some more improvements on Hitt's prototype. As a Colonel, Parker Hitt went to France with the American Expeditionary Force (AEF) in 1918 and served on Pershing's staff before becoming the Chief Signal Officer for the 1st Division.

Known as the Father of Military Intelligence, Ralph Van Deman had worked as a young lieutenant in the Military Information Division in the days of Arthur Wagner, who we then must call the "Grandfather of Military Intelligence." He was influenced by the scholarly Wagner who had a firm conviction in the importance of

intelligence. Van Deman was an intellectual in his own right, a graduate of Harvard, Yale, and Miami Medical School, with degrees in both law and medicine, first entering the Army as a surgeon. He would carry on the crusade for a professional intelligence organization within the U.S. Army.

While his wife was going up for plane rides with the Wright brothers in the Virginia countryside [thus earning the distinction of being the first woman passenger], Van Deman in 1909 was laboring in obscurity, but acquiring more experience than any other officer in the American Army about the subject of intelligence. He had the opportunity to draw an that extensive experience when he was assigned in 1915 to the Army War College, the organization that had absorbed the functions of intelligence and relegated it to an obscure committee.

Following the lead of his boss, the Chief of the War College Division, Brig. Gen. H.H. Macomb, Van Deman sought to convince the Army Chief of Staff Maj. Gen. Hugh L. Scott that a separate intelligence function was needed in the Army's general staff. He wrote a staff study to that effect, but was turned down by Scott who thought that our allies in Europe would provide all the information that we needed if we entered the war in Europe. Repeated briefings by Van Deman failed to move the chief, a man who President William Taft thought was "wood to the middle of his head." When Brig. Gen. Joseph E. Kuhn, Macomb's successor resubmitted the recommendation to form an intelligence section just one week after Congress declared war, it was again firmly turned down. Van Deman resorted to other means, enlisting the support of his British intelligence counterparts to urge the case at higher governmental levels, and even using an unnamed woman

writer who had influence with Secretary of War Newton D. Baker. With suggestions now coming from Scott's superiors, he reversed himself a few days later in April 1917.

When a separate Military Intelligence Section was organized in May 1917 by Brig. Gen. Joseph E. Kuhn, Chief of the War College Division, it was given these functions:

(a) The collection, collation and distribution of military information. This will be understood to embrace every class of military information, formerly handled by the Information Committee or by the War College Division as a whole.

(b) The supervision of the duties of our Military Attaches abroad, insofar as those duties pertain to the collection of military information.

(c) Officers and Intelligence Officers at posts or stations and with commands in the field in matters relating purely to military intelligence.

(d) The consideration of questions of policy to be promulgated by the General Staff in connection with all matters of military intelligence.

(e) The supervision and control of such system of military espionage and counterespionage as shall be established, by authority of the Chief of Staff or the Secretary of War, during the continuance of the present war.

(f) Cooperation with the Intelligence Sections of the General Staff of the various countries at war with Germany, in connection with military intelligence work in the United States and with our forces in the field, either at home or abroad.

(g) The preparation of instructions in military intelligence work for the use of our forces in the field.

The new organization was more than a staff agency, but an operational department with control of all field intelligence units in the Army.

Van Deman was named the chief of the new Military Intelligence Section (MIS). Starting small with three officers and two clerks, it grew with the force of an idea whose time had finally come, with 282 officers and 948 civilians in the outfit by war's end. Van Deman benefited from his close liaison work with British intelligence, particularly Colonel Claude Dansey of the British Security Service who provided a handbook on intelligence organization and methods. This gave structure to the organization which was divided into positive and negative branches, positive intelligence being information about the enemy and negative corresponding with the job of today's counter intelligence. The Military Intelligence Section was made up of these subsections:

MI meant military intelligence, with "intelligence" replacing "information," a British usage that now became institutionalized in the U.S. Army, although there were examples of its use at least back to 1907 when an appointment was made for an "Intelligence Officer for the Hawaiian Islands." Earlier in American history, intelligence was a synonym for "news."

The MIS would later become responsible for training all of the officers and NCOs needed in Europe in each battalion intelligence section and those sections in regimental, divisional and corps headquarters. The Military Intelligence Section also filled the AEF G-2's request for 50 sergeants with investigative experience and the ability to speak French. This became the nucleus of the Corps of Intelligence Police (CIP) organized in August 1917. The CIP had 750 agents in France, where they were headquartered near Bordeaux, and 500 in the United States. They would be cut back to 28 in the year following the armistice.

Van Deman had ultimately accomplished his goal of restoring intelligence to equal footing with the other general staff sections in the War Department, as had originally been envisioned in 1903.

The intelligence organization would undergo yet another reformation. Taking over as the new chief of staff in March 1918, Maj. Gen. Peyton C. March viewed the Military Intelligence Division as "a minor appendage to the War Plans Division," which was not quite true as it was assigned to the Executive Division of the General Staff. March wanted to place MI back on the General Staff. In his 26 August 1918 reorganization, there were four divisions on the general staff: Operations; Military Intelligence; Purchase, Storage and Traffic; and War Plans. Replacing Van Deman who was on his way to France, Marlborough Churchill was promoted to brigadier and appointed Director of Military Intelligence. His division would:

have cognizance and control of military intelligence, both positive and negative, and shall be in charge of an officer designated as the director of military intelligence, who will be an assistant to the Chief of Staff. He is also the chief military censor. The duties of this division are to maintain estimates revised daily of the military situation, the economic situation, and of such other matters as the Chief of Staff may direct, and to collect, collate, and disseminate military in-

telligence. It will cooperate with the intelligence section of the general staffs of allied countries in connection with military intelligence; prepare instructions in military intelligence work for the use of our forces; supervise the training of personnel for intelligence work; organize, direct, and coordinate the intelligence service; supervise the duties of military attaches; communicate directly with department intelligence officers and intelligence officers at posts, camps, and stations; and with commands in the field in matters relating to military intelligence; obtain, reproduce and issue maps; translate foreign documents; disburse and account

for intelligence funds; cooperate with the censorship board and with intelligence agencies of other departments of the Government.

One of the jobs accomplished by the MI section since its inception was the production of daily and weekly intelligence summaries that covered a wide range of subjects, not only military, but political, social and economic areas as well. Early efforts were characterized by rudimentary collection techniques, like newspaper clippings and even brochures provided by the French General Staff, and superficial assessments. But, as resources increased, so too did the sophistication and interpretative content of the intelligence summaries.

By the Fall of 1918, these summaries were being distributed to the Army Chief of Staff, the Secretary of State and the President. The main source of information was the military attache network, but reports supplied by the Office of Naval Intelligence and the State and Justice Departments were relied upon as well. The MI section also drew upon the services of "confidential agents, special informants, and distinguished foreign visitors." In 1922, with its staff reduced, the MI division cut back

production to a weekly basis.

To respond to an increasingly pressing need for interpreters in the American Expeditionary Force in France, the Secretary of War approved the commissioning a limited number of officers who could qualify as interpreters. In July 1917, a Corps of Interpreters was created in the National Army which would fall under the supervision of the Chief of Staff with a close affiliation to the Military Intelligence Section. Exams were conducted around the country with the ranks of the corps filling up with 17 captains, 41 first lieutenants and 72 sergeants. It sent men to all the major field headquarters and to the MIS.

American neutrality at the outset of World War I was shattered when a coded message from German Foreign Secretary Arthur Zimmerman to the Mexican government was intercepted by the Americans and deciphered by British Intelligence. The Zimmerman telegram proposed an alliance between Germany and Mexico in the event of war with the United States. If the alliance proved victorious, Mexico would regain Texas, New Mexico and Arizona. As a result, border outposts at Douglas, Naco and Nogales were strengthened.

The lessons Pershing learned about the value of military intelligence during the 1916 Punitive Expedition caused him to place great reliance upon this tool during World War I when he commanded the American Expeditionary Force and organized a G2 section along French and British examples. An intelligence section existed in every battalion and higher command.

Adopting an organizational system for his American Expeditionary Force (AEF) staff, General Pershing took the four main staff sections from the French (Personnel, Intelligence, Operations, and Logistics) and added the British prefix "G" for General Staff. So his intelligence staff, led by Colonel Dennis E. Nolan, a Spanish-American veteran and close friend of Van Deman, became the G2 with these various subsections and duties:

G2A (Information): 1-Order of Battle and Strategic Intelligence, 2-Translation/Interpretation and Technical Intelligence, 3-Situation Maps and Aerial Reconnaissance, 4-Summaries and Terrain Studies, 5-Artillery Target Development, 6-Radio Intelligence and Carrier Pigeons, and 7-Dissemination and G2 Journal.

G2B (Secret Service): 1-Counterespionage Policy and Investigation of Atrocities, 2-Dissemination of Information from Secret Sources and Control of Intelligence Contingency Funds, and 3-Index of Suspects, Control of the Civil Population and Counterespionage Operations.

G2C (Topography)

G2D (Censorship) 1-Press Relations and Press Censorship, 2-Censorship Regulations and Postal and Telegraphic Censorship, and 3-Photograph and Movie Censorship and Visitors.

G2E (Intelligence Corps)

Nolan had far-reaching plans for his intelligence network, extending it beyond the collection of battlefield intelligence. He wanted his G-2 to reach beyond the front in France and Belgium and collect strategic intelligence from theaters in Italy and Macedonia, places where the AEF might be expected to fight later in the war. For this purpose he formed a G-2 Secret Service unit which also had a counterespionage staff with stations in neutral countries.

In the AEF, intelligence was now recognized as a critical element of warfighting. Up and down the command structure could be found G-2s. Starting at the infantry battalion, an intelligence staff officer could call upon a reconnaissance platoon of 15 scouts, 11 observers, and 2 snipers, a total of 28. The regimental intelligence officer had eight observers. Each division had a G-2 who also was assigned men to act as observers. At the Corps level, the G-2 could rely upon observation posts, balloons, aero squadrons with both visual and photographic recon, and flash or sound-ranging teams which targeted enemy artillery. These tools gave him the ability to look five miles beyond the enemy's front-line positions.

In addition to those assets at corps, the field army headquarters had a radio intelligence section working on decoding and translating enemy messages. Intercept was done by a Signal Corps radio section at GHQ in Chaumont, using a combination of direction-finding equipment, listening posts, and induction coils placed near enemy ground lines. Communications security was undertaken by the Signal Corps.

A Radio Intelligence Subsection (RIS) was created under the American Expeditionary Force G-2 early in 1917, long before the first American fighting forces would arrive. Cooperating with their French and British allies counterparts, they prepared for the coming joint operations.

When the American First Army arrived in France, a three-man RIS was formed on 12 June 1918 with "Code" and "Goniometric" (Direction Finding) sections. Commanded by First Lieutenant Charles H. Matz,

it was enlarged to three officers and eight men by the armistice. The First Army RIS was responsible for analyzing and translating communications intercepted by the Signal Corps radio intelligence operators, and locating enemy radio stations based on bearings plotted by Signal Corps "gonio" operators. These Signal Corps radio intelligence personnel had arrived in France in December 1917 and had undergone training enabling them to intercept messages at the rate of 25 words per minute and to translate 15 words per minute from the German. All of their intercept, direction-finding, or wire-tap stations were tied into the division RIS.

The goniometric teams used the portable SCR-83 radio receiving sets with six-foot-square antennas. Two stations could triangulate signals transmitted by enemy radios and pinpoint their locations. By analyzing traffic and combining that information with direction-finding, they could determine the depth of the enemy echelons and compile a daily order of battle.

One indication of the value of this kind of information occurred at the battle of Saint Mihiel in September 1918 when American commanders, believing the Germans to have withdrawn from the salient, considered sending up the infantry without artillery support. Goniometric stations warned that all the enemy radio stations were still operating in their former positions, a solid indicator the enemy was still there. General John Pershing decided to attack only after a four-hour artillery preparation, thus saving the lives of considerable infantrymen. In that same battle, SIGINT alerted the Americans to a German counterattack, giving the strength and exact time three hours before it was launched.

The GHQ also had 450 sergeants in its Corps of Intelligence Police by war's end. The AEF G-2 had a psy-

chological warfare mission, bombarding German troop concentrations with 3 million propaganda leaflets delivered by balloon, plane and infantry patrols.

Perhaps a tribute to its versatile capabilities, G-2 also collected some marginal missions, like publishing the new *Stars and Stripes* newspaper, considered a morale builder, supervising eight Army artists in the theater, and being the principal section for press relations. Having the department responsible for keeping the Army's secrets also charged with releasing information to the press was not a sound idea. It would foster distrust and hamper Army press relations in the years to come.

Like Van Deman's organization back in Washington, Pershing's AEF G2 would be a model for supporting tactical organizations. In his book, *Military Intelligence: A New Weapon in War*, published after the war, Walter C. Sweeney wrote:

There is nothing new in a recognition of the necessity of having ample information of the enemy upon which to base military plans. The successful plan of campaign always has been and always will be based upon knowledge of the strength, situation, plans and intentions of the enemy.

What is new, however, is that in recent years there has been such an increase in the amount of information of the enemy to be gathered, and so many changes in the means and methods of collecting and utilizing it, as to make necessary the creation of an entirely new organization or system to keep track of it....

Before America entered the World War, the Military Intelligence Service, as a coordinated and cooperating system, did not exist in our military establishment.... There was no conception of the modern Intelligence Service which, with specially trained personnel, would make systematic and continuous effort to find out and record the strength, position, situation, and movements of the enemy....

During the World War, under the name of Military Intelligence, there was built up in the American forces a carefully organized system represented by an Intelligence Service group at every headquarters from that of the battalion on up to include the War Department.

On 1 February 1918 in Nogales, Arizona, Lothar Witzke, carrying a Russian passport identifying him as Pablo Waberski, was taken into custody as a suspected German spy and saboteur. He was arrested at gunpoint by two U.S. Army agents, members of Van Deman's Military Intelligence Section. Upon his person was an encoded letter from the German consul in Mexico City charging him with undercover operations in the United States. In fact this German naval officer had been responsible for several incidents of sabotage, including the famed Black Tom explosion. It was this message, decrypted in Washington by MI-8, the code and ciphers section of the Military Intelligence Section, that led to his conviction for spying. The damning message read: "The bearer of this is a subject of the Empire who travels as a Russian under the name of Pablo Waberski. He is a German secret agent. Please furnish him on request protection and assistance; also advance him on demand up to 1,000 pesos of Mexican gold and send his code telegrams to this embassy as official consular dispatches." Convicted by a military court, his death sentence, the only one to be handed down during World War I, was later commuted by President Wilson to life imprisonment. Witzke was released from Leavenworth prison in 1923, owing in part to his heroism during a boiler explosion incident.

The Witzke case was not only an example of good Army counter intelligence, but was illustrative of one of the more dubious functions of the MIS, the "counterespionage among the civilian population" charged to the MI-4 subsection. Encroaching on civilian jurisdictions, domestic security became one of the largest areas of MIS operations during and after the war. One of the areas in which the Army focused was "Negro subversion and political demagoguery," disseminating counterpropaganda in black communities in the Southeast. The Army investigated what they considered to be anarchist or revolutionary organizations like the Industrial Workers of the World, the Communist party, the Communist Labor Party, and the Union of Russian Workers. After an incident in October 1922 in Oregon in which the American Federation of Labor was included among these organizations, a wave of protests was sparked and field commands were ordered by the War Department not to involve themselves in the collection of unauthorized domestic intelligence.

After the war, General Marlborough Churchill, the successor to Van Deman as Director of Military Intelligence in Washington, made the case for a separate intelligence organization within the War Department.

At present, the Military Intelligence Division is one of four coordinate divisions of the General Staff....

This staff organization is essential to success. It is especially vital in intelligence administration, ...[since] it is obvious that national policy must depend on correct predictions concerning the international future.

[In sum] there must be a G2 in the War Department ...performing a similar function, not only with the War Plans Division in the initiation and perfection of plans, but concurrently with the State Department in the work of prediction upon which national policy is based.

Soon after becoming the Chief of Staff of the Army, General John J. Pershing reorganized the War Department General Staff to resemble his AEF structure. Effective 1 September 1921 there would be five General Staff Divisions: The Personnel Division (G-1), the Military Intelligence Division (G-2), the Operations and Training Division (G-3), the Supply Division (G-4), and the War Plans Division (WPD). This organization would be duplicated down to division level, with battalions and companies adopting the "S" prefix to delineate their S-1, S-2, S-3, and S-4. The G-2 lost the Negative Branch and added the formal duty of "press relations."

This marked the beginning of a period of decline for the intelligence function, as its head was only authorized to be a colonel, while all the other chiefs were general officers. They were to be called henceforth "Assistant Chiefs of Staff." In 1920 the G-2 was authorized 234 people (79 officers) and $400,000. It reached a low point in 1939 with a total of 69 personnel (20 officers) and $89,450 dollars. The division underwent an almost annual reorganization between 1919 and 1939 at the instigation of each new chief.

The advances in weaponry by World War I created a stalemate in the

trenches of France. A part of the new technology was full blown aerial surveillance to determine enemy strong points and direct artillery fire. Sausage-shaped balloons with tail fins for stability were tethered in the thousands along the trenches and used by both sides for observation. Observation balloons could reach an altitude of between 1,200 and 1,800 meters, depending on whether it carried one observer or two. A fighter pilot named Frank Luke, Jr., from Phoenix, Arizona, earned the reputation as the "Arizona Balloon Buster."

Aerial reconnaissance also included airplanes. Cameras were aimed from the cockpit by photographers/observers. Most of the pictures were taken at oblique angles rather than pointed straight down. Fighter planes were developed with the express purpose of shooting down the reconnaissance planes. The first American tactical surveillance flight of World War I was made on 15 April 1918 by Major Royce of the 1st Aero Squadron.

Great importance was placed on aerial photography by both the Germans and the allies. Near the war's end, during the Meuse-Argonne offensive in 1918, the U.S. Army reported that 56,000 aerial shots were printed for use by the American Army. Between 1 July and 11 November 1918, 1.3 million aerial photos were taken. And the products were approaching a "real time" usefulness as the time between a photograph being taken and the time it was developed, printed and interpreted, was as little as twenty minutes.

The Army had formed an aerial photography school in Ithaca, New York, in 1917. One of its first graduates and instructors was 2d Lieut. George W. Goddard. Goddard pioneered many of the advances in aerial recon, experimenting with infrared photography, and long-focal length camera lenses. On 20 November 1925 he took the first night aerial photograph, using a flash-powder bomb with timing fuses to light the city of Rochester, New York, from above, while a camera shutter was opened in his airplane. He foresaw the need of getting the photographs to the users in a timely manner, and in 1927 he took an aerial picture of the federal penitentiary at Fort Leavenworth, Kansas, developed the shot in the plane, and transmitted the picture telegraphically to New York within twenty-three minutes. Between 1936 and 1939 he worked on a stereoscopic camera that employed two lenses and a strip camera. The strip of film was electronically moved through the camera in synchronization with the plane's ground speed, eliminating blurs that had existed before.

Another champion of aerial photography between wars was Captain A. W. Stevens, who devoted his time to long-distance photography as a solution to the vulnerability of recon planes to both fighters and ground fire. Along with pilot Captain St. Clair Streett, he set a two-man airplane altitude record of 37,854 feet in 1928, and later established another record for long-distance photography when he took a picture of Mount Rainier from a distance of 227 miles.

One of the first intelligence manuals to be published was the *Tactical Interpretation of Aerial Photographs* which came out in 1925.

An Air Section within the Military Intelligence Department was created in 1926, in recognition of the growing importance of aerial reconnaissance. Maj. Joseph T. McNarney, Air Corps, was assigned to MID in August 1926 to act as chief of the new section. He would:

1. Handle all questions on policies pertaining to the use of Air personnel in combat intelligence.

2. Handle in connection with the Map section all questions on policies pertaining to serial photographs and mapping.

3. Handle in connection with the Communications Section all questions on policies pertaining to codes or communications between airplanes and the ground.

In Europe during World War I, the code analysts in the Intelligence Section of the General Staff (G2) supervised the code compilers of the Signal Corps. Some of the men who worked at making and breaking the codes of the war in GHQ in the Radio Intelligence Section of G2 were Major Frank Moorman, later the Army's Chief Signal Officer, Lieut. J. Rives Childs, Corporal Joseph P. Nathan, Lieut. William F. Friedman, and Lieut. Herbert O. Yardley. They would form the nucleus of America's cryptology development.

Back in the U.S., MI-8 was operating a radio intelligence service with a line of listening posts along the Mexican border. The 14 radio tractors spaced along the border were eventually replaced with permanent stations. A large station in Houlton, Maine, pulled in signals from the North Atlantic.

Following the war, America's cryptology work would be a joint undertaking of the War and State Departments under Herbert O. Yardley, whose inflammatory book about his work christened the effort

the "American Black Chamber." His cryptology section was an outgrowth of the organization he had worked for under military intelligence in the war. The crowning achievement of the Black Chamber was the breaking of the Japanese diplomatic codes in 1920. In 1929 Secretary of State Henry L. Stimson closed the nation's only code-breaking office, declaring "Gentlemen do not read each other's mail."

When the American Black Chamber closed down, the Army decided to enlarge its cryptology operations and appointed William Friedman, now a civilian employee and Chief Cryptanalyst of the U.S. Army Signal Corps, as its chief. In 1930 the Signal Intelligence Service was created, staffed by Friedman, three junior cryptanalysts and two clerks. The official name was the Signal Intelligence Section, Office of the Chief Signal Officer, but Friedman called it the Signal Intelligence Service and that became the more common usage. Friedman thought the purpose of the new agency should be to organize and prepare "for operations at maximum efficiency in war."

Friedman conducted some short courses in cryptology from 1930 to 1933 despite the absence of funding for any training. He also developed some extension courses for an Officer Reserve Corps program. By 1934 the SIS school was formed with 1st Lt. W. Preston Corderman as the instructor. Nine regular Army officers would receive extensive training in communications intelligence there by 1941. Signals intelligence field work was brought together in the 2d Signal Service Company established at Fort Monmouth, New Jersey, in January 1939.

The giant of U.S. Army cryptography, William Friedman, became the Chief Cryptanalyst of the Signal Corps in 1922. His many publica-

tions made him preeminent in the field. His series of Army texts, *Military Cryptanalysis*, are the most lucid presentations on the solution of basic ciphers that have ever been published. As the Army mobilized for World War II, the Signal Corps cryptography effort expanded under the leadership of Major General Joseph Mauborgne, Chief Signal Officer, and Friedman. He reached the peak of his career when he and his team solved the Japanese PURPLE code system in 1940. The strain of this endeavor, however, led to a nervous breakdown and his medical retirement as a colonel in the Signal Corps reserves.

Friedman and the other inventors in the SIS developed the M-134A Code Converter in 1937, signing their individual patent rights over to the Secretary of War. The machine saw limited production because of small budgets and only 69 were in use just after Pearl Harbor. Used for high-level communications, it was called the SIGABA.

The Corps of Intelligence Police, continued after the war, performing security tasks for the Versailles peace talks, conducting investigations in the U.S. Army occupation forces in Germany, and functioning in Army departments, notably in the 8th Corps Area which encompassed the Mexican Border. The number of noncommissioned intelligence police hit an all-time low of 15 in 1934. The organization was revitalized in 1940 when its authorized staff was raised to 288. The were redesignated the Counter Intelligence Corps, U.S. Army, on 1 January 1942.

Attaches continued, between the two world wars, to be a first line source of information on foreign military developments. In major countries the attache was authorized an assistant in the form of an Air Attache to look at the technology of air warfare. The attache in Germany was especially active between 1935 to 1939, making good use of the U.S. officers who were attending the German War Academy. Chosen for their proficiency in the German language, these student officers mingled at the highest levels in the German War ministry and wrote authoritative studies on various assigned aspects of the German Army. Their reports found their way back to the Intelligence Branch. (The Positive Branch was reorganized in February 1922 and emerged three years later as the Intelligence Branch of MID.)

The National Defense Act of 1920 created a military intelligence reserve within the Officers Reserve Corps. It became effective on 4 August 1921, adopting the secretive Sphinx as its symbol. The ACofS, G-2, WDGS, Brig. Gen. Dennis E. Nolan, saw this as a way to expand the number of military intelligence specialists in time of war. But because of a number of factors, not the least of which was the lack of an authorization to grant commissions to recently demobilized intelligence personnel, the MI Reserve never reached its full potential, averaging only about 635 officers in the years 1921 to 1941. At the time of the Japanese attack, the MI Reserve was "woefully inadequate to fulfill its assigned mission of providing a proper cadre of military intelligence officers for required use in war," according to Maj. Gen. Sherman Miles, the G-2 at the beginning of World War II.

Electronic warfare got its start early in the century, according to Alfred Price's book, *The History of U.S. Electronic Warfare*. During the 1904 Japanese bombardment of the Russian naval base of Port Arthur, a Russian radio operator on shore heard radio signals from Japanese scouting craft used as spotters and correctly guessed their mission. Using his spark transmitter, he successfully confused the signals and unwittingly opened the era of electronic warfare. Some of the early landmarks in EW follow. An elementary radio direction was placed aboard the U.S. Navy coal ship *Lebanon* in 1906. The Navy bureau chief wrote that "the system will have a far-reaching effect on the safety of vessels at sea, and will possibly play an important part in naval warfare by making it feasible to locate the direction of the enemy's fleet." Scientists at the Naval Research Laboratories at Anacostia discovered in 1922 that the radio signal that they were sending across the Potomac River was interrupted by passing ships, leading to the discovery of a principle upon which radar would be founded.

A provisional Radio Intelligence Detachment was organized at Fort Monmouth, NJ, in 1934. In 1936 engineers at the Naval Research Lab built a 28 Mhz pulsed radar that could detect aircraft 10 miles away. Subsequent models increased the range with the addition of megahertz. With information from NRL, the Signal Corps Lab at Fort Monmouth also tested a 110 Mhz pulsed radar. The NRL also developed a ground direction finder.

Between wars the Regular Army intelligence staff was again pared away to peacetime levels. Now called the War Department G2, there were 20 officers and 48 civilians on staff. General Dwight Eisenhower remem-

bered the "shocking deficiency" in intelligence assets that hampered planning. "The fault was partly within and partly without the Army. The American public has always viewed with repugnance everything that smacks of the spy: during the years between the two World Wars no funds were provided with which to establish the basic requirement of an intelligence system—a far-flung organization of fact finders." General George C. Marshall voiced a similar view of the pre-war situation. "Prior to World War II, our foreign intelligence was little more than what a military attache could learn at dinner, more or less over the coffee cups."

The length of this section on World War I is indicative of the rise of intelligence to a fully functioning part of military operations both on the War Department General Staff and in the field in Europe. In the decade following the war, however, the intelligence effort, with the exception of some internal security missions and codebreaking, would collapse to almost negligible levels.

If the World War I experience had reformed intelligence as an equal partner with the other general staff sections, World War II would be a time of constant redefinition for the discipline, as its several separate functions sought to organize, reorganize and merge themselves into some kind of meaningful whole best suited to carry out the intelligence mission. Army Deputy Chief of Staff Lt. Gen. Joseph McNarney, himself once assigned to the Military Intelligence Department back in 1926, said that the Army G-2 "was always a headache for the War Department and was reorganized continuously and unsuccessfully throughout the war."

The shortage of trained intelligence officers and enlisted specialists in the American Army prompted General Eisenhower to select British

officers as his G2, a practice he continued from the campaign in North Africa to war's end. General Omar N. Bradley expressed the problem this way:

The American Army's long neglect of intelligence training was soon reflected by the ineptness of our initial undertakings. For too many years in the preparation of officers for command assignments, we had overlooked the need for specialization in such activities as intelligence.... In some stations, the G2 became the dumping ground for officers ill-suited for command. I recall how scrupulously I avoided the branding that came with an intelligence assignment in my own career. Had it not been for the uniquely qualified reservists who so capably filled so many of our intelligence jobs throughout the war, the Army would have been pressed....

Talking about both the Army and Navy, Secretary of War Henry L. Stimson concluded at the end of 1943 that the "intelligence services are pretty bum."

The G-2 in the War Department was the largest element of the General Staff. Because of the McNarney reorganization of the Army staff, the G-2 was reduced to 16 officers and 10 others, with 342 officers and 1,005 enlisted and civilian personnel moved to a newly created Military Intelligence Service. The Military Intelligence Service was formed in March 1942 as part of a general Army reorganization that relegated general staff sections to just planning functions. This created the need for an operating agency of G2 that could control intelligence work in the Zone of the Interior, such as training for combat-bound soldiers in escape and evasion and the interrogation of high-level enemy prisoners in U.S. prison camps. The Military Intelligence Service coordinated the activities of intelligence production both overseas and in the United States. It was made up of men who were specialists in a variety of fields, including language students and language experts, scholars in areas like history, geography and economics, world travelers, journalists, and professional investigators.

At first, the transfer of MID's operational functions to MIS was largely a paper exercise, since the G-2, Maj. Gen. George V. Strong, wished to maintain control over all intelligence assets so as to be in the best position to advise the Chief of Staff on intelligence matters.

Months after the creation of the Military Intelligence Service, a new Special Branch was formed to process communications intelligence, an outgrowth of the Army's inability to put MAGIC intercepts in the hands of the proper commanders before the Pearl Harbor tragedy. It was headed by Brig. Gen. Carter W. Clarke.

Other added missions to affect the MIS were some inherited field offices in New York, San Francisco and New Orleans. In April 1942 a fourth branch office was set up in Miami to counter Axis operations in Latin America, which grew to become a semi-independent intelligence agency with extensive operations in Central and South America. It was known successively as the American Hemisphere Intelligence Command, the American Intelligence Command, and the American Intelligence Service.

The MIS opened offices in London and Washington to analyze captured documents under its Military Intelligence Research Section. The Psychological Warfare Branch assumed the duties its name implies until the Office of Strategic Services picked up this mission in December 1942.

In April 1943 the Military Information Division was given the task of managing the Army's World War II history program. The Historical Branch was formed in August 1943 with Lt. Col. John M. Kemper as its first chief. It was removed from G-2 responsibility in 1945.

Under G2 was the Corps of Intelligence Police, which was renamed the Counter Intelligence Corps (CIC) in 1942. With the mission of recruiting, training and administering Army counterintelligence personnel, the Corps performed security investigations in the United States and sent 17-man detachments to combat divisions overseas. One of its first and most influential chiefs was Colonel H. Gordon Sheen.

When the CIC was established in 1942, it had an authorized strength of 1,026. When Germany surrendered in May 1945, that figure had risen to 7,500. In Washington, D.C., the headquarters would be located in a single room in the Munitions Building until they were evicted to a series of other accommodations in the city. They eventually settled into a private home on North Charles Street in Baltimore. Their activities were far-ranging and diverse, calling upon a resourcefulness that would characterize their efforts in all theaters.

In the United States during the war, over 13,000 members of the CIC "pushed nearly a billion doorbells, making more than two and a quarter million background investigations and running down leads for thousands of complaint cases [against suspected subversives]." In the U.S. the CIC

was responsible for the security of the Manhattan Project, the secret scientific work on the atomic bomb, and performed censorship duties for all mail arriving from overseas. Counter Intelligence Corps detachments were assigned to each Army division in the North African, European and Pacific theaters, with a total of 241 CIC detachments operating during the war.

The CIC detachment in Tunisia conducted psychological warfare operations in the prolonged fighting at El Guettar. In North Africa and Italy, CIC agents accounted for hundreds of prisoners from whom they extracted valuable information. In Sicily they captured enemy radio transmitters and maps of enemy minefields. In Italy between October 1944 and April 1945, the CIC captured 200 German agents in the Fifth U.S. Army area, including Dr. Kora, the commander of a German intelligence unit known as Abwehr Kommando 190. CIC agents were airdropped into Normandy on D-Day. They played an important part in the Battle of the Bulge and the counteroffensive that followed, blunting the subversion campaign of Col. Otto Skorzeny who had infiltrated English-speaking Germans in U.S. Army uniforms to disrupt operations.

In Europe teams of CIC men followed U.S. forces into combat with the mission of scouting out and capturing German work on the atomic bomb and rocketry, and taking into custody German scientists. This was known as the "ALSOS" Mission, led by Col. Boris Pash who with daring and imagination personally led his teams into enemy-held territory. In addition to German and Italian scientists, they seized over 70 tons of uranium and radium products that were shipped to the U.S. for use in American nuclear projects.

CIC units played an even more important role in the postwar occupation of both Germany and Japan, investigating and apprehending war criminals, rounding up Nazis, and countering Communist subversion. For instance, the 970th CIC Detachment in the American Zone of Occupation in Germany, picked up over 120,000 Nazis after the war.

In the European theater, many of the CIC's counterespionage duties were usurped by the OSS. But in the Pacific that was prevented by a command directive from General MacArthur's headquarters, proscribing the OSS from operating in the Southwest Pacific Area. There was another important difference in CIC operations in the Pacific. With fewer urban areas to secure or captured soldiers to interrogate, the CIC was able to devote more of their time assisting with combat intelligence and in working on captured documents. In the Leyte campaign, CIC took into custody officials working for the Japanese and in Luzon in January 1945, 30 CIC detachments came ashore with the invasion force.

The CIC secured and captured enemy headquarters, interrogated prisoners, and impounded enemy documents. They arrested or surveilled any suspected enemy agents. They surveyed and protected public utilities, supply depots or any other potential targets of sabotage. They seized radio stations and telephone switchboards, halting all communications and turning over any communications data to Signal Corps personnel. They shut down presses and seized mail for censorship teams. They cooperated with local provost marshals on matters of law and order. CIC operatives familiarized themselves with local economic, political and social conditions, and cultivated well-placed informants.

In the first two months of 1944 the CIC headquarters was abolished, its school transferred, and its staging area closed down, perhaps the victim of enemies in the Army bureaucracy. It was combined with the Provost Marshal General, briefly called the Security Intelligence Corps, and its Zone of Interior missions were turned over to the Army Service Forces. The overseas CIC detachments continued to function as before. The Counter Intelligence Corps would reemerge as a separate entity before the war was over. A new CIC center and school were opened at Fort Meade, then Camp Holabird, in July 1945, and the office of the Chief, Counter Intelligence Corps was reestablished under the Intelligence Division of the Army Service Forces in July 1945, with the Security Intelligence Corps being reassigned from the Provost Marshal General.

The World War II infantry divisions incorporated a cavalry reconnaissance troop. Each of their regiments also had an Intelligence and Reconnaissance (I&R) Platoon which provided patrols, observation posts, and performed other tactical intelligence collecting missions on behalf of the S2 or regimental intelligence officer. This was typical of the tactical intelligence organization of World War II and reflected a growing appreciation of an organized military intelligence effort. Teams of interpreters, interrogators, Order-of-Battle specialists and photo interpreters were allocated to each division by theater-level military intelligence services. Corps and armies were also supported by intelligence detachments.

While the Army Air Forces did the aerial reconnaissance, the Army retained a small recon capability by using their L-4 "Grasshoppers" when they were not flying their normal artillery observation missions.

In the allied invasion of Sicily in July 1943, deception operations convinced Hitler that the blow was going to fall in the Balkans and that is where he moved his reinforcements, allowing the allies to avoid massive casualties. Deception operations were carried out by what was called the "A" Force, a forerunner of Eisenhower's Ops "B" deception unit before the Normandy landings. The operations included a body washed up on the coast of Spain with documents showing that the allies would next move on Greece and Sardinia. The ruse suggested Sicily was just the cover target for the invasion of Sardinia. Other techniques included an inflated allied Order of Battle fed to the Germans by radio traffic, double agents and rumor. The enlarged OB led the Germans to believe the allies had the capabilities to carry out these ambitious assaults around the Mediterranean. Rumors were spread about troop movements to the areas of the notional assaults. Radar reflectors and jamming devices were used at the time of the actual landings in Sicily to cloak the invasion, while feints and phoney radio communications diverted German attention to other landing sites.

Deception operations took the art to new levels before the Normandy invasion when small deception units imitated larger tactical formations by fielding mock equipment like inflatable tanks. To complete the picture for German analysts, the Signal Security Agency's Protective Security

Branch broadcast elaborate signals to simulate the communications network of a large unit. Large German formations were pinned down at Pas de Calais by what they thought was a U.S. Army Group across the channel from them, thereby preventing their reinforcement of the defenses around the Normandy beachheads.

A World War II forerunner of the unattended ground sensor was the microphone that, according to a 1940 field manual on observation, was connected by wire to a "sound-ranging" station manned by observation personnel of a field artillery battalion. "When conditions are favorable, sound-ranging can locate hostile batteries with considerable accuracy and may even be used to adjust fire on the batteries' location."

The Japanese used for their highest codes a machine cipher that was extremely difficult to break. William Friedman solved some of the Japanese coded dispatches and then went on to painstakingly duplicate the machine that produced the codes. These machines and the codes they created were called PURPLE by the Americans and the flow of information intercepted from the Japanese was codenamed MAGIC. Access to the Japanese codes gave the Americans a tremendous advantage but it was largely wasted when a series of missteps led to the failure to warn in time the commander in Hawaii of the attack on Pearl Harbor. This failure would lead to a congressional investigation and a major shakeup of intelligence activities and organizations after the war.

Turning to the area of electronic warfare, the U.S. Radiation Laboratory was established in October 1940 at the Massachusetts Institute of Technology by the National Defense Research Committee. Its mission was to further microwave radar research and to investigate ways to counter enemy radars.

The National Defense Research Committee formed the Radio Research Laboratory in December 1941, using a name designed to conceal its real purpose, within the Radiation Lab at Massachusetts Institute of Technology. Its job was to work on electronic countermeasures. Scientists working out of the Camp Evans Signals Laboratories, Camp Coles Signal Laboratories, the aircraft radio research laboratories, and the Radio Research Laboratories (RRL) at Harvard University developed van-mounted direction finding and intercept systems; portable direction finding equipment like the SCR 206; a jammer deployed by parachute called the CHICK (AN/CRT-2), and the RADAR CHICK (AN/CPT-1) which was an expendable radar jammer. Improvements included multi-scanners jammers that would eliminate friendly frequencies from the jamming spectrum.

The first U.S. Army radar, the SCR-268 coastal and anti-aircraft gun control set, went into production in 1941. S-27 Receivers, built by Hallicrafters in Chicago, became in 1941 the standard receivers used by the British and U.S. Ferrets (modified B-17 bombers) for ELINT missions in World War II. General Radio made the P-540 Receiver and Tuning Unit in 1941 which would become the basis for the ELINT receivers used during World War II.

Production of "jammers" was started at the Delco Radio plant in Kokomo, Indiana, in April 1943. Known as "Anti-Radar Devices," the APT-2 Carpet and APT-1 DINA (Direct Noise Amplifier) were the first models. The requirements for ECM equipment rose drastically in the European theater. The Normandy invasion called for 30,000 high frequency transceivers, 10,000 VHF radios, 3,000 radars and 100 radar ECM devices. At the end of the war, 4,100 jammers along with other various intercept receivers were being used by Supreme Headquarters, Allied Expeditionary Force. The headquarters had asked for 10,000 ground and airborne jammers and for 1,500 tons of chaff.

The U.S. Army Signal Intelligence Service in the European Theater of Operations was responsible for providing ULTRA. At the theater level, Signal Security Detachments disseminated ULTRA intelligence furnished from England down to Army level, and integrated the ULTRA intelligence with Army and Army Group SIGINT passed up to them. The contributions of SIGINT to allied operations was made possible only through unprecedented cooperation between the intelligence agencies of Britain and the United States.

Communications intelligence was collected in the field by signals intelligence platoons at the division level until November 1943 when signal service companies at the corps level were assigned that task. They had organic intercept, direction-finding, and analysis capabilities. At the Army level medium grade enemy communications were exploited by a radio intelligence company made up of eight officers and 150 men. They operated from 12 to 15 intercept positions and as many as three direction-finding stations. At the Corps headquarters, the mission was direction-finding and the intercept of low-grade enemy

communications, plain text and low-grade field ciphers. This was accomplished by four officers and 100 men in a Radio Intelligence Company, working under the supervision of the corps G-2. They manned eight to ten intercept positions and one direction-finding position.

At the end of the war, every corps and army headquarters had an organic Radio Intelligence company, while an Army Group had a battalion. But it wasn't until the 113th Signal Radio Intelligence Company landed at Normandy in June 1944 that the first tactical radio intelligence unit was fielded. It was estimated that 26,000 U.S. soldiers were involved in working with communications intelligence by the end of the war.

In the Battle of the Bulge in December 1944 and January 1945, Third U.S. Army received airborne jamming support, but jamming was infrequent because the Army Air Force was reluctant to fly into heavy antiaircraft and fighter concentrations and intelligence officers did not want to deny themselves the good information they could get from signal intercepts.

The second world war saw the emergence of Electronic Warfare and Electronic Intelligence with the introduction of a range of electronic breakthroughs, foremost among them the use of long-range radio signals, or radar, to guide planes and ships to their target. The U.S. Army Signal Intelligence Service was able to exploit radio communications by intercepting them and passing them along to the code-breakers who would apply carefully gathered information about the enemy's encrypting machines and mathematical theory to decipher the codes. Using high frequency direction-finding receivers, the source of the message could be determined and the quantity of the message traffic could be analyzed to detect enemy buildups and deployment. A definite military advantage was handed to the allies by signals intelligence.

The SIS was renamed the Signal Security Service in 1942, and again changed to the Signal Security Agency in 1943. There were 935 people working for the agency at the beginning of the year and 3,455 at the end of 1943. By June 1944 the effort grew to employ over 5,100 civilians at its Arlington Hall headquarters. In December 1944 the operational control of SSA was transferred from the Signal Corps to the War Department G2, its chief customer, and renamed the Army Security Agency on 15 September 1945. It opened a training school at Vint Hill Farms, Virginia, which later would be moved to Carlisle Barracks, Pa., and then to Fort Devens, Mass.

For secure communications, the Wehrmacht confidently depended on their electromechanical code machine which allowed for each encoded character to have 1.5 million permutations. Called the "Enigma," the machine was thought to be impregnable. But British cryptanalysts solved the workings of Enigma. The information gleaned from Enigma intercepts was codenamed ULTRA and gave allied forces a decided intelligence advantage.

Signals intelligence was carried out in the Pacific by a joint American-Australian agency known as the Central Bureau organized on 15 April 1942. Radio intercepts were handled by the U.S. Signal Intelligence Service and the Australian Special Wireless Group.

During World War II, the Army Air Corps assumed the mission of aerial reconnaissance, mostly using P-38s, also known as F-5As, configured without guns or ammo but with their distinctive long-range fuel tanks under the wings. On some occasions armed F-6s were also used so that pilots could attack targets of opportunity. So large had the number of photo recce planes grown by 1943, that the Air Corps flew as many as 200 missions in one month in 1943 and delivered over half a million prints. The photo planes were assigned to tactical reconnaissance squadrons in 1944.

Training in the several intelligence disciplines was carried out in a range of schools across the country. The Signal Corps operated its SIGINT school for officers and civilians at Arlington Hall, its headquarters and a former junior college for girls, while enlisted personnel were trained at Vint Hill Farms in Warrenton, Virginia. The Counter Intelligence Corps conducted CI training at its U.S. Army Investigative Training School in Chicago. The Military Intelligence Service Language School gave language training to second generation Japanese-Americans at Fort Snelling, Minnesota. For most intelligence personnel, the Military Intelligence Training Center at Camp Ritchie, Maryland, was the training site. There, in an old National Guard Armory, 19,669 combat intelligence specialists were graduated during the war.

In the Pacific theater, General Douglas MacArthur developed his own intelligence apparatus, combining several different joint and combined organizations under his G-2, Maj. Gen. Charles Willoughby.

Working out of Australia, the Central Bureau performed code work and the Allied Intelligence Bureau did clandestine operations. In the Southwest Pacific Area, the AIB replaced the Office of Strategic Services which was prohibited from operating in the theater by MacArthur's policies. It used Australian coast watchers, many of them stay-behind agents, to report on Japanese fleet movements. In the Philippines, native agents and guerilla forces were used to good advantage.

An important arm of MacArthur's reconnaissance capabilities was a commando organization known as the ALAMO Scouts, who were trained for patrolling behind enemy lines.

The Allied Translator and Interpreter Section (ATIS) used as many as 2,000 American Nisei soldiers to provide interrogation and translation services from headquarters level down to the front lines. During the war the ATIS language teams translated 350,000 captured documents and debriefed 10,000 prisoners. The unit's duties carried over into the postwar disarming of Japan and her colonies. The section was headed by Colonel Sidney F. Mashbir, himself a student of Japanese and former undercover agent in Tokyo.

Technical intelligence (TI) teams began to be deployed to the Pacific in December 1942 to speedily examine captured enemy equipment in order to make use of its technical characteristics.

The Office of the Coordinator of Information was established on 11 July 1941 to conduct covert operations and supply information necessary to the national security. At its head was William J. Donovan, a New York lawyer and World War I Medal of Honor winner. Exactly one year later President Roosevelt ordered that the office be renamed the Office of Strategic Services (OSS) and placed under control of the Joint Chiefs of Staff. According to Allen Dulles, the agency recruited some of the nation's best historians and scholars to man its research and analysis desks. The OSS was given a charge "to collect and analyze strategic information and to plan and operate special services." Some of its special services included dropping teams behind enemy lines to support resistance movements, gather intelligence, spread disinformation, carry out sabotage missions, and undertake counterespionage work. OSS conducted espionage and partisan operations which captured the public's imagination, largely because of the descriptions of their colorful exploits published by their literary members after the war. The ranks of the OSS were filled with some 8,000 Army personnel. One of the most notable of these special operatives was Col. Carl Eifler who commanded the famed Detachment 101 in Burma and secured the vital Stilwell Road.

Maj. Gen. George V. Strong was chief of the Military Information Division in 1942 when the OSS came along and was determined to have his own foreign intelligence unit. He created what became known as the Grombach Organization, named after its head, Colonel John V. "Frenchy" Grombach, to run highly secret operations in Europe from 1942 to about 1947. Little is known about this shadowy Army unit and its competition with the OSS.

The Army Security Agency was formed under the command of the Director of Intelligence, U.S. Army, on 15 September 1945. It absorbed the missions of the former Signal Security Agency and its operating arm, the 2d Signal Service Battalion. It was also responsible for signals intelligence and communications security of all Army assets in the field. The first head of the Army Security Agency was Brig. Gen. W. Preston Corderman who, as a first lieutenant, was the sole instructor at the Signal Intelligence Service's first formal school in 1934. Its all-encompassing mission was diminished toward the end of the decade as some of its functions were turned over to the Air Force Security Service and the joint-service Armed Forces Security Agency, which would become the National Security Agency in 1952.

Acting on a proposal of William Donovan of the old OSS, President Truman called for the establishment of a permanent central intelligence agency that would operate as an arm of the executive branch of government to counteract Communist tactics of "coercion, subterfuge, and political infiltration." Congress passed the National Security Act of 1947. It created the Central Intelligence Agency which would be responsible for coordinating the intelligence activities of the various government departments and make evaluations and recommendations to the National Security Council. In 1947 the CIA vowed "Bigger Than State by '48," and it would succeed, receiving a larger budget allocation than the State Department a year later.

While Donovan succeeded in winning over the administration to his recommendations concerning the need for a national intelligence apparatus, the CIA did not do away with the Military Intelligence Division. But recommendations from within

the Army for a Military Intelligence Corps failed to convince the War Department of its need in peacetime and intelligence functions would continue to be performed by officers drawn from other branches. A Strategic Intelligence School was opened in 1947 as part of the Army's school system.

With the formation of the Defense Department and the Central Intelligence Agency by the National Defense Act of 1947, Army intelligence became subordinated to the larger intelligence role played by these organizations. Further, most of its aerial capabilities were sheared away by the new U.S. Air Force.

U.S. Army intelligence emerged from World War II with an outstanding record, not only in SIGINT, but in all areas of combat intelligence as well. It was a heady time for the Army intelligence officers, former wartime S2s and G2s, who assembled at Fort Riley, Kansas, in 1946 to open the Intelligence School. They felt they had a lot of lessons to pass along and some wrote books on how to perform the intelligence function. But postwar demobilization would decimate their ranks and reduce the American Army to its customary peacetime shell. Few realized that America's next war was only a few years away.

When North Korean forces rolled across the 38th parallel with its Soviet-made armor in June 1950, the Republic of Korea and its sponsor, the United States, were taken by surprise. A desperate perimeter set up around the southernmost city of Pusan just barely prevented the peninsula from being completely overrun. General Douglas MacArthur's brilliantly conceived left hook, landing United Nations forces at Inchon behind the enemy lines, succeeded in pushing the now disorganized North Korean Army to the northernmost reaches of their country. But the UN allies were surprised a second time by the Chi-

nese intervention which drove UN/US forces, now under Gen. Matthew Ridgway, back south of Seoul. A UN offensive would regain a line roughly approximating the old 38th parallel border. Bitter fighting marked the stalemate over the next two years before a truce was concluded in July 1953.

In August 1950, Colonel T.F. Van Natta, an Instructor at the Command and General Staff College, was writing in *Military Review* that the intelligence system had been substantially improved and sound doctrine established. He urged commanders to learn how to use intelligence and to realize that it was their responsibility. He cautioned them not to expect the G-2 to know what the enemy intended to do, but to concentrate on capabilities. He said the results a commander gets from intelligence will depend on the "quality of the people he uses and the amount of personal attention he gives."

Korea was another crisis for Army intelligence, as it was in fact for the entire post-World War II U.S. Army. General James Van Fleet, who commanded the Eighth U.S. Army from 1951 to 1953, remarked that since World War II "we have lost through neglect, disinterest, and possible jealousy, much of the effectiveness in intelligence work that we acquired so painfully in World War II." In his opinion, the Army had not "yet approached the standards we reached in the final year of the last war."

With the dismantling of almost all of the Army's intelligence specialist training following World War II, the Korean War found the U.S. Army without order of battle specialists, photo interpreters, technical intelligence analysts, or even language-trained interrogators. The Intelligence Department, opened in 1947 at Fort Riley's Army Ground School was not graduating anywhere the numbers needed. It took over three months to get the 60th Signal Service Company, an ASA unit, to Korea to support the Eighth U.S. Army with communications intelligence. By war's end the ASA's 501st Communication Reconnaissance Group was providing support with three battalions and five companies.

Detachments of MI specialists, CIC, and ASA personnel were attached to each division. As they were in World War II, 17-man CIC detachments were assigned to each division and they largely succeeded in protecting rear areas against enemy intelligence actions. As intelligence specialists were graduated from the Intelligence Department, they were shipped to Korea to MI units like the 500th MI Service Group and the 163d MI Service detachment which supported tactical units.

The commander's tools in the Korea fighting were limited to prisoner interrogation and aerial reconnaissance. There was little in the way of SIGINT. Allied commanders were also hamstrung by the prohibition of overflights or agent penetrations beyond the Yalu, into Chinese territory. This blinded them to the size and imminence of the Chinese intervention.

Aerial reconnaissance played an important role in Korea, such as delivering photos of the Inchon area prior to the landing there. The Air Force effort was hampered by the initial lack of Army photo interpreters.

For military intelligence, the Korean War was fought in World War II terms. Little had changed in the intelligence arena in either technology or organization. But the war would provoke postwar appraisals and result in some important changes in intelligence organization and professionalism. The changes took hold just in time for another war in Asia.

The National Security Agency was created in 1952 to eavesdrop on the enemy. Its mission was to pull radio transmissions out of the ether and decode them. The agency's emphasis on closely guarded secrecy among its employees caused some to interpret its acronym as "Never Say Anything." NSA's establishment marked a shift in intelligence gathering away from the infiltrated or recruited agents that had provided information from time immemorial to electronic surveillance. Russian penetration of British intelligence services had compromised spy networks and, to some minds, made the use of human agents too untrustworthy.

In the period following the Korean War, intelligence became a growth industry as it began to garner new respect. New agencies and professional forums flourished. In 1955 the Signal Corps transferred its proponency for electronic intelligence and warfare to the Army Security Agency which became a field operating agency under the Army Chief of Staff instead of being subordinate to the Acofs, G-2. The U.S. Army Security Agency was made a major Army command in 1964.

In 1956 the G2 in the Department of the Army was redesignated the Assistant Chief of Staff, Intelligence (ACSI), a two-star billet. Thus intelligence was once again relegated to a secondary position as Personnel, Operations, and Logistics were all reorganized as Deputy Chief of Staff positions filled

by Lieutenant Generals.

To complement communications intelligence, the CIA initiated a program of imagery intelligence over the Soviet Union in 1956, using a plane called the U-2, designed by Kelly Johnson at Lockheed Corporation. Able to fly at 70,000 feet, the U-2 could stay above enemy missile ceilings. In 1960, however, a new high altitude defense missile brought down a U-2 and its pilot, Gary Powers, was captured. The incident caused President Eisenhower to cancel U-2 flights. The aerial surveillance mission was continued by satellite reconnaissance employing high-resolution cameras developed by Polaroid. The satellite program had been receiving high priority funding since 1955 and in 1959 the National Reconnaissance Office was formed under Air Force auspices to control the satellite systems which began operating in 1960.

When the Department of Defense was reorganized in 1958, an Intelligence Directorate, J2, was set up under the Joint Chiefs of Staff. The JCS J2 would be disestablished five years later as a result of the Defense Intelligence Agency's assumption of many of its roles. Concurrently, a United States Intelligence Board was created with the Army's Assistant Chief of Staff for Intelligence as one of the voting members.

Lessons from the Korean War and "Operation Sagebrush," a 1954 maneuver held in Louisiana, prompted a new tactical intelligence organization known as Military Intelligence Organization (MIO). Adopted in 1958, MIO tailored the intelligence support to Army theaters of operation by assigning military intelligence personnel to an MI Battalion, rather than assigning them individually to tactical units. Subordinate elements of the battalion would perform specialized tasks for the tactical commander like collec-

tion, interrogation, technical intelligence and counterintelligence. The MI battalion was usually assigned to a field army, while divisions were supported by MI detachments.

First established as the U.S. Army Intelligence Center in September 1954, the U.S. Army Intelligence School was opened at Fort Holabird, Md, on 1 May 1955 to teach counterintelligence, combat intelligence and area studies. It replaced the old Intelligence Department at Fort Riley's Army Ground School.

The Defense Intelligence Agency (DIA) was created in 1961 by Defense Secretary Robert McNamara so that all defense intelligence operations would be coordinated at a single and central high-level agency rather than be handled separately by the intelligence services of the Army, Navy and Air Force. Collection requirements and estimates now were prepared at DIA. The agency assumed operations of the U.S. Army Strategic Intelligence School and in 1965 became responsible for the military attache system. The move was seen by many in the separate services as an effort to strip them of their autonomy. Allen Dulles disagreed. "DIA was not a merger of the intelligence branches of the armed services, but primarily an attempt to achieve maximum coordination and efficiency in the intelligence processes of the three services."

The Counter Intelligence Corps was renamed in 1961 as the U.S. Army Intelligence Corps, and in 1965 it became a major field command of the Army known as the Intelligence Corps Command. It had subordinate Military Intelligence Groups supporting each Army area in the United States with a network of regional and field offices. Their primary work was counterintelligence: Performing security investigations of personnel needing clearances and supporting operational security.

The Army Intelligence and Security Branch was created on 1 July 1962 to meet the need for a career field for the increasing number of officers performing intelligence missions. It was made up of strategic and combat intelligence officers from both the Intelligence Corps and the Army Security Agency. It was the Regular Army's first MI branch. An organization for Military Intelligence Reserve officers had existed in one form or another since 1921, the latest being the Army Intelligence and Army Security Branches formed for reserve officers in 1952. The Regular Army's Army Intelligence and Security Branch was redesignated the Military Intelligence Branch in 1967.

American involvement in Vietnam steadily increased as the instability of the South Vietnamese government led to greater possibilities of a Communist insurgent victory in the South. Escalating from a small advisory role in 1961, the U.S. committed air power and ground forces in 1965. While the military fought on the often ill-defined battlefields of Vietnam, the politicians found themselves faced with growing anti-war sentiment at home. Army intelligence would be asked to contribute its know-how on both fronts until the withdrawal of U.S. forces in 1973. Following the peace agreement in January 1973, the last intelligence unit pulled out by March, ending for them what had been a mixed experience.

The unpopularity of the war gave rise to the myth that the Army was "managing" its intelligence in relation to enemy strength figures, keeping the numbers low so that the war would not be seen in defeatist terms by politicians back in Washington. The myth was fueled by some Army officers and a CIA analyst named Sam Adams, whose own calculations arrived at much higher numbers. The problem lay in interpretation. If you counted irregular forces who were sympathizers to the Communist cause and would be expected to provide logistic and service support from time to time, but were unarmed and not part of a trained fighting organization, the numbers would be high. However, if you discounted these Self Defense and Secret Self Defense forces, as MACV J-2 did in their monthly Order of Battle Summary, because they did not consider them to constitute a significant threat to allied combat forces, the numbers would be lower.

Army intelligence received another undeserved blow when the press criticized it for failing to warn of the Tet Offensive when in fact intelligence correctly predicted the attack to the day and pinpointed what forces would be involved. If intelligence was to be faulted, it would only be for failing to appreciate the scale of the Tet Offensive.

Maj. Gen. Joseph A. McChristian became the first Army MACV J-2 on 13 July 1965. His first move was to organize the Combined Intelligence Center-Vietnam (CICV), a centralized intelligence analysis and research facility in Saigon. Every kind of intelligence data being collected flowed into this center for analysis and storage in an IBM computer. Captured documents, Order of Battle information, terrain studies, POW interrogation reports, technical

intelligence reports, information from covert agents, and photo interpretation was brought together from both U.S. and RVN sources. McChristian considered the CICV "one of the finest supports of combat intelligence that was ever deployed in support of our forces in wartime."

The U.S. and the South Vietnamese operated four intelligence centers in 1967. They were the Combined Intelligence Center, Vietnam; Combined Military Interrogation Center; Combined Document Exploitation Center, and Combined Materiel Exploitation Center. The CICV employed about 500 American and 100 South Vietnamese. The American staffing for these centers came from the 519th MI Battalion which also supplied the manpower for the MI detachments serving with ARVN corps, divisions and provincial headquarters. They not only trained the ARVN counterparts but provided intelligence of U.S. field intelligence advisors and the U.S. intelligence community. Lt. Gen. William E. Potts, Gen. Creighton Abrams' J-2, would gradually between 1969 and 1972 turn these centers over to the Vietnamese.

On 1 June 1967, McChristian was replaced by Army Maj. Gen. Philip Davidson who reorganized the Army intelligence units to more efficiently support the units in the field. The U.S. Army Intelligence Command (USAINTC) was established in 1965 as a major Army command (MACOM) to handle counterintelligence functions in the United States, collecting domestic intelligence in the event federal troops were called out to intervene in riots. It operated with seven Army counterintelligence groups. With the widespread antiwar feeling and unrest, the FBI was hard pressed to meet the demands of preparing domestic intelligence and the U.S. Army Intelligence Command

filled the void. This involvement with civilian intelligence brought criticism and recriminations for the Army which ended its domestic collection in 1970. The Defense Investigative Service came into being to perform the background investigations necessary to grant security clearances, a job that had made up 90 percent of USAINTC's mission. Significantly cut back in mission and personnel, USAINTC was closed down in 1974. It was replaced by the U.S. Army Intelligence Agency (USAINTA), a field operating agency of ACSI.

The U.S. Army Security Agency (USASA) became a major army field command in 1964 and then became known as the U.S. Army Intelligence and Security Command (INSCOM) in 1977.

Army Chief of Staff Harold K. Johnson approved on 1 July 1967 the recommendations of the Norris Board, a body specially created to look at the Army's intelligence programs and organization. As a result, the old Army Intelligence and Security Branch, which had included the Army Security Agency (ASA), now became the Military Intelligence Branch. The MI mission changed from one of combat service support to combat support. And now the Army began studying the possibility of moving the Intelligence School from Fort Holabird and centralizing the training for the many intelligence specialties.

The early years of the war found military intelligence assets inadequate and unsophisticated, a situation which had become the pattern in every American war. In 1965 there were 200 U.S. army officers serving as intelligence advisers with Republic of Vietnam troops. When U.S. combat troops were committed in that year, the 704th Intelligence Corps Detachment, a detachment of the 500th Intelligence Corps Group, and the 3d Radio Research Unit were on duty in Vietnam. But there were shortages of specialists, especially linguists.

Lieut. Gen. Harry W. O. Kinnard, commanding the 1st Cavalry Division in 1965, commented on the early problems with identifying the enemy:

> When I took the 1st Cavalry Division to Vietnam in 1965, I knew that finding the enemy would be one of our toughest jobs. It occurred to me that perhaps we would be able to identify the guerrilla, a farmer by day and a fighter by night, by the dark circles under his eyes.... As it turned out, our surveillance was just about that unsophisticated.

But improvements were on the way. By the 1968 Tet Offensive, there were 2,500 intelligence specialists in country under the supervision of the U.S. Military Assistance Command, Vietnam (MACV), J-2. In Saigon the 525th Military Intelligence Group exercised command and control over the 135th MI Group, a counterintelligence unit; the 149th MI Group, which engaged in positive collection; the 1st MI Battalion (Aerial Reconnaissance); and the 519th MI Battalion, which operated the joint US/RVN intelligence centers. The combined intelligence centers shared jointly gathered intelligence, translated captured documents and interrogated prisoners. There was a center at MACV and at each of the four corps areas in which the Republic of Vietnam Army (ARVN) operated. There were over 600 intelligence advisers on the ground now with the RVN Army. The 509th Radio Research Group ran a field station and provided support through its tactical units to units down to brigade level. Combat troops had their own organic intelligence assets.

Another unique type of unit to be introduced in the Vietnam War was the Long-Range Reconnaissance Patrol (LRRP) which consisted of four to six-man teams inserted into enemy territory to gather intelligence or submit battle-damage assessments. The Military Assistance Command, Vietnam, Studies and Observation Group (MACV-SOG) was a joint service unit under the command of the Commander-in-Chief, Pacific (CINCPAC), which inserted intelligence teams into enemy territory by land, sea or air.

It was during the Vietnam War that military intelligence reached a potential unparalleled in history. Using the latest electronic gear to detect the enemy, both from the air and the ground, hostile concentrations were pin-pointed and enemy traps were avoided or surprised. Ground surveillance radars were employed, side-looking airborne radar (SLAR) was deployed and a variety of night observation devices were used which took advantage of infrared and image-intensification.

The first use of Unattended Ground Sensors (UGS) was made by the Marines at Khe Sanh in 1968. They were credited with contributing to the successful defense of the Marine base and would evolve in both sophistication and numbers deployed. The UGS could detect the presence of the enemy by acoustic, seismic, or magnetic indicators which were sent back to monitoring stations.

The combat intelligence battalion that was assigned to a division during the Vietnam War was organized as follows: A headquarters and headquarters company was responsible for command and control, communications, radar, remote sensor and vehicle maintenance, and supply services. Ground surveillance radars and remote sensors were deployed by a materiel exploitation platoon of the HHC. An intelligence operations company furnished counterintelligence and interrogation support for the division and manned the battlefield information control centers (BICC) and battlefield information centers (BIC). Long-range reconnaissance for the division was provided by the ground recon-naissance and surveil-lance company. An aerial target acquisition and combat surveillance company had the job of providing both aerial electronic surveillance and imagery inter-pretation through the use of utility and attack helicopters.

Some concepts growing out of the Vietnam experience were the Surveillance, Target Acquisition, Night Observation (STANO) program, an intensive management system for surveillance operations and products; and the Integrated Battlefield Control System (IBCS), a program designed to aid the commander's decision-making process by combining all of the technological tools.

Perhaps the single greatest reason for the improved intelligence apparatus in the Vietnam War was the sense of professionalism instilled by an MI branch. During the war in Vietnam, the Military Intelligence Branch grew to 7,000 officers and became the fifth largest branch. Colonel William F. Strobridge, the G2 in the 4th Infantry Division operating along the Cambodian border in 1970, expressed his feelings on being in the Military Intelligence Branch, created only three years earlier:

...possibly unlike the non-MI Branch officer, I felt as an MI officer working as a combat division G2 that I was at the zenith of my professional and personal satisfaction. I was playing first fiddle for a varied and skilled assemblage of intelligence players that were part of my chosen career field. I felt, as an MI officer, I had greater command of the multiple types of intelligence support I could get for the division. As an MI officer, I could talk nose-to-nose with other MI people on the quality and timeliness of their support, and as an MI officer I could eradicate any hangups MI personnel might have about supporting an infantry division. There is no question in my mind that the MI specialists, sergeants, warrant officers, lieutenants, captains, and majors that I worked with each day passed the test in the 4th Infantry Division, because when the division commander received a richly deserved promotion, he specified he wanted another MI officer for his G2.

Despite all of the acknowledged success of intelligence support in Vietnam, there were still deficiencies, most of which could be categorized under "untimely response." It was General Patton who remarked that he liked intelligence, "like eggs, the fresher the better." The appetite for intelligence is and always will be insatiable. The result is often an information overload that strains the ability of the system to process and disseminate the analyzed information in a timely manner.

In Vietnam, depending on the source, the time elapsed from the occurrence of an event to the time the report reached the hands of the user could range from 15 minutes in the case of a triggered ground surveillance radar to 72 hours in the case of an agent report. In between were elapsed times of 20 minutes for an airborne personnel detector, 50 minutes for an unattended ground sensor, an hour and a half for a usually reliable intelligence report, known as "special intelligence," four hours for SLAR and airborne infrared, five and one-half hours for prisoner interrogation, and six hours for intelligence civic action program. These processing times were too long to be useful to the commander who was dealing with a fast-moving, guerilla force which depended a great deal on deception.

After Vietnam, the U.S. Army was determined to find a better way to organize and focus its intelligence assets to more efficiently serve the combat commander.

In the final years of the Vietnam War, and over the decades that followed, Army intelligence faced a thicket of challenges and alternating bouts of contraction and growth. The last quarter of the 20th century would be a time of self-definition and re-emergence as an equal partner with operations, personnel, and logistics.

With the war in Southeast Asia over, the emphasis pivoted to the European theater where intelligence was expected to counter the superior numbers of the Warsaw Pact forces with the celerity of its early warning information.

The MI community would be transformed, not only by its own frenzy of reorganization, but by changes taking place in the U.S. Army as a whole. In 1972 the draft was discontinued, drying up a reservoir of

college-trained manpower; by 1973 the strength was cut by half, causing some leaders to refer to it as "a hollow Army;" and in 1976 women soldiers were assimilated across the Army rather than segregated in the now defunct Women's Army Corps.

In 1970 a former MI officer, Christopher Pyle, wrote an article detailing Army surveillance of legitimate political organizations like the National Association for the Advancement of Colored People, supervised by the U.S. Army Intelligence Command at Fort Holabird, Maryland. It triggered congressional investigations and resulted in the June 1970 Adjutant General directive which halted all Army involvement in domestic intelligence. Recriminations lingered in the public mind over the next decade about the part played by Army counterintelligence in reinforcing the FBI at times when domestic intelligence was collected on anti-war activities. The Army was a reminder to many of the divisions over the Vietnam War that tore the fabric of American society.

The special problems that faced Army intelligence in those uncertain postwar years included the lack of any central organization. The pieces that made up the MI mosaic were often scattered, isolated and uncoordinated. They needed to be cemented together in some more practical organization. This fusion did not happen all at once, but incrementally and tentatively.

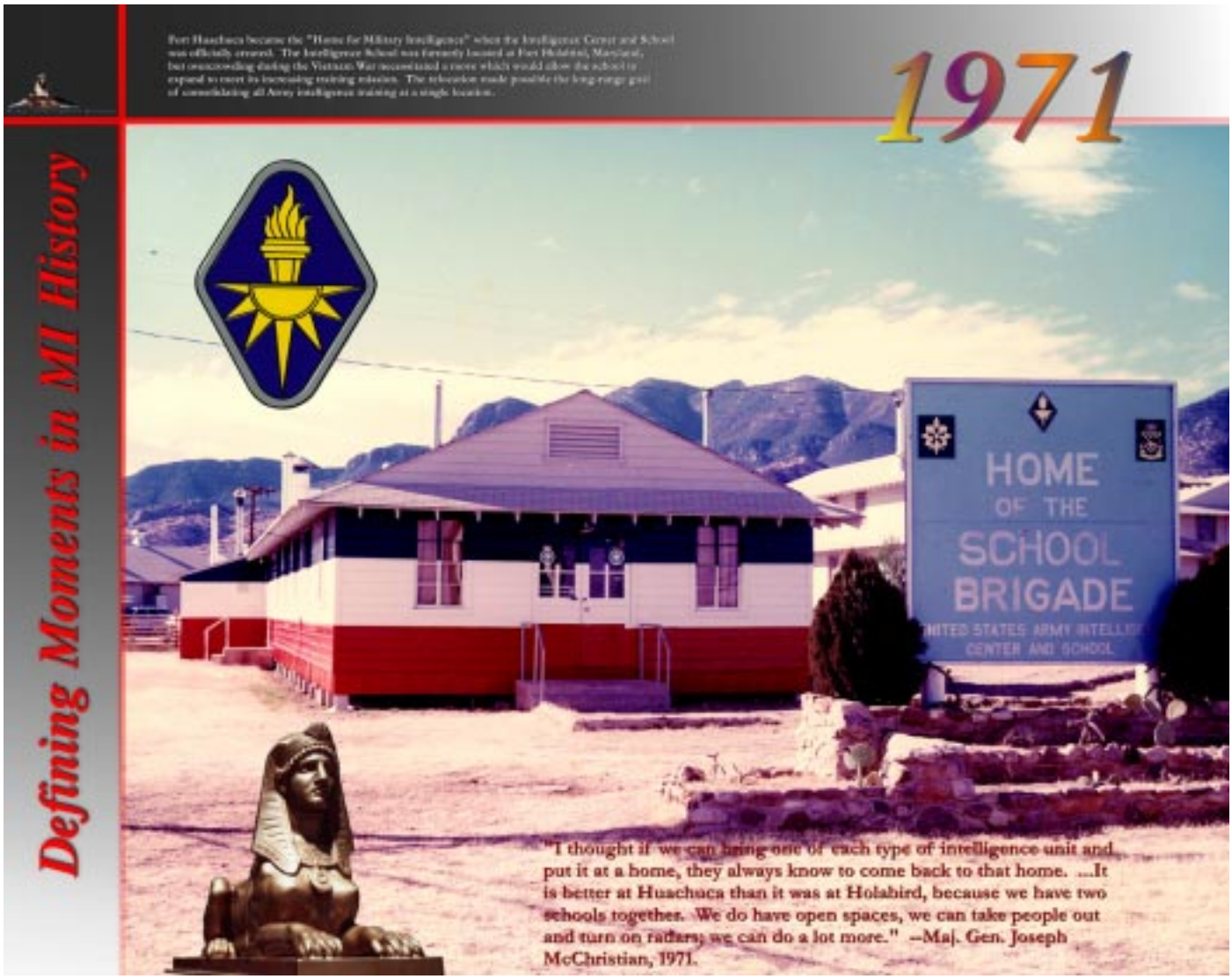
Since 1945 the Army Security Agency (ASA) controlled the Army's code and signals intelligence through a vertical organizational structure in which all its units reported directly upward. In 1955 it took over all Electronic Warfare responsibilities and in 1964 it became one of the Army's major field commands. The ASA ran its own training schools and undertook its own research and development. It encompassed a network of listening posts around the world called field stations, and operated aloft in specially configured U-21s called Special Electronic Mission Aircraft. This vast effort was indicative of the predominant role that SIGINT had assumed in the Cold War. Because of its self-sustaining command structure and the cloak of secrecy that shrouded its operations, it was thought to be separated from the Army main stream by a metaphorical "green door."

Since 1965 the U.S. Army Intelligence Command performed the HUMINT and counterintelligence missions for the Army. With seven subordinate groups in the continental United States, it conducted background investigations on Army personnel and became involved in domestic intelligence work during the height of the anti-Vietnam War movement. This latter role was the subject of much civilian criticism of the government and was dropped in the early 1970s. At the same time the Intelligence Command was whittled away to two subordinate groups, and its mission of performing background checks was turned over the Defense Investigative Service specifically created for that purpose. Eventually, it was discontinued entirely in 1974 and succeeded by the U.S. Army Intelligence Agency which assumed the HUMINT missions for the Army.

One of the most far-reaching changes to the MI structure was the establishment of a home for military intelligence training at Fort Huachuca. Heretofore, ASA did its training at the U.S. Army Security Agency Training Center and School at Fort Devens, Massachusetts, while the U.S. Army Intelligence School at Fort Holabird, Maryland, carried out schooling in general military intelligence. In 1966, Maj. Gen. Joseph A. McChristian, the Assistant Chief of Staff for Intelligence, asked that the Army's intelligence training be examined for the purpose of consolidating the fragmented training that was spread over several commands and conducted at different schools. The Army Chief of Staff, Gen. Harold K. Johnson, responded by forming the Norris Board to evaluate intelligence programs. He approved the Norris Board recommendations on 1 July 1967.

As a result of the initiative of Maj. Gen. Joseph A. McChristian, the Norris Board deliberations, and the overcrowded conditions at Fort Holabird, it was determined to consolidate MI training at a single new location. In 1971 the concept became a reality when the Intelligence School was moved from the banks of Colgate Creek to the foothills of the Huachuca Mountains. From its inception in 1971, the U.S. Army Intelligence Center and School contributed a host of innovations and programs that would revamp the MI community.

The Commanding General of the Intelligence Center and School was made the proponent for the Military Intelligence Branch in 1983. As such, he became concurrently the Chief, Military Intelligence. In October 1989, the CG of the Intelligence Center and School became Fort Huachuca's installation commander, making Army intelligence the lead agency at that historic site.



In 1974 the Chief of Staff directed a study to determine the best organization to carry out intelligence and electronic warfare missions. Called the Intelligence Organization and Stationing Study (IOSS), its chairman Maj. Gen. Joseph J. Ursano announced its recommendations in 1975. It resulted in a basic restructuring of military intelligence assets, one that would completely revamp the intelligence organization and how they did business. The Ursano Board found that intelligence production was compartmentalized, especially within ASA which did not share its product with the tactical commander or make the electronic warfare weaponry available to the Army as a whole. Likewise, it determined that intelligence was inefficiently organized in vertical lines which did not intersect.

The U.S. Army Security Agency was merged with the U.S. Army Intelligence Agency and its intelligence production components formed a new major Army command on 1 January 1977 called the U.S. Army Intelligence and Security Command (INSCOM). The "green door" of ASA had been unhinged. Now INSCOM had the mission of accomplishing multi-discipline intelligence, security, and electronic warfare functions at the echelon above corps. It pooled a number of its newly acquired production functions into an Intelligence and Threat Analysis Center in 1977. In 1978 it took over the U.S. Army Russian Institute and in 1980 it gained the Special Security Group which disseminated Sensitive Compartmented Information (SCI) to the entire army.

The former Foreign Science and Technology Center of the Army Materiel Command and its Missile and Space Intelligence Center both came over to INSCOM in 1983 and were combined with the Intelligence and Threat Analysis Center to form the

short-lived Army Intelligence Agency, a field operating agency of ACSI.

It was INSCOM, the Army's Service Cryptologic Element (SCE), that supported operations of both the NSA and Defense Intelligence Agency (DIA). INSCOM's 704th MI Brigade, formerly the CONUS MI Group, exercised command and control over many of INSCOM's subordinate agencies and provided staff personnel for the National Security Agency, at Fort Meade, MD.

When INSCOM took over the Army Security Agency's mission and assets, it assumed control of a network of fixed installations called field stations at Berlin and Augsburg, Germany; Sinop, Turkey; Okinawa and Misawa, Japan; Pyongtaek, Korea; Key West, Florida; and San Antonio, Texas. In 1986 the station at Okinawa was shut down, but others came on line during that decade at Kunia, Hawaii, and Panama. These stations housed sophisticated SIGINT equipment and were recognizable by their large antenna arrays. In 1987 MI brigades and battalions were organized to provide the Army personnel at these field stations units with which to identify.

INSCOM also fielded multidiscipline MI groups to support theater-level Army operations around the world. The original four groups were the 66th (the largest in Munich, Germany), 501st (at Yongsan, a neighborhood of Seoul, Korea), 500th (located at Camp Zama in the suburbs of Toyko, Japan), and 470th (at Camp Clayton, Panama). A fifth, the 513th MI Group, was added in 1982 at Fort Monmouth, NJ, to support contingency operations for the Army's Central Command.

During the 1980s, INSCOM also operated a number of specialized intelligence, counterintelligence, and support organizations. They were the 902d MI Group which was responsible for the Army's counterintelligence throughout CONUS; the Special Security Group, the agency that controlled the Sensitive Compartmented Information traffic to the major Army commands and accredited the facilities; the Central Security Facility which oversaw the work of the Investigative Records Repository and the Freedom of Information and Privacy Office; the U.S. Army Russian Institute at Sheridan Barracks in Garmisch, Germany; and the Foreign Language Training Center, Europe. INSCOM moved into its new headquarters at Fort Belvoir, VA, in 1989.

Field intelligence units, following the Ursano report, were no longer controlled by the Assistant Chief of Staff for Intelligence, but integrated into the normal Army command structure, making them responsive to the tactical commander. The old ASA units were absorbed into combat electronic warfare and intelligence (CEWI) units which combined Army intelligence and security disciplines. The Yom Kippur War of 1973 validated the theories of many Army thinkers who saw an increasing role for electronic warfare.

The new multi-disciplined CEWI units supported divisions with CEWI battalions and corps with CEWI groups and later brigades. This gave the tactical commander better control over electronic warfare, signals intelligence, operational security, and ground surveillance radar which were now integrated into one unit. They eliminated the old isolation of the various components of the intelligence picture and enabled electronic warfare to assume a more useful place in the commander's arsenal. In October 1976 the first CEWI battalion, the 522d MI (CEWI) Battalion, was activated. After a series of field tests, it was decided to activate CEWI units Armywide during 1983. In the words of one observer, "the intelligence community had gone all out tactical."

The line companies performed the functions of collection and jamming, ground surveillance through radars and sensors, and service support, while the headquarters company handled collection management, counterintelligence, interrogation, and aviation personnel. Airborne collection battalions were redesignated as Military Intelligence Battalions (Aerial Exploitation) as part of the 1985 reorganization and they combined aerial surveillance with imagery interpretation. CEWI groups became brigades in 1985.

A test for the tactical capabilities of MI and its organization arose with the launching of an invasion of Grenada in the Carribean, thought necessary by President Ronald Reagan to protect American citizens and interests.

Operation URGENT FURY, the code name for the U.S. invasion of politically torn Grenada, involved Joint Task Force 120, commanded by Vice Admiral Joseph Metcalf III. Army Major General H. Norman Schwarzkopf was his deputy. The island of Grenada had been divided into two zones of responsibility, the northern part to be occupied by the Navy and Marines, and the southern portion belonging to the Army and Air Force. Navy SEALs landed on 24 October 1983 at 2200 hours on

the northeast coast to reconnoiter what would be Marine landing beaches. On the southern tip of the island, an Air Force AC-130 Spectre, armed with infrared sensors and low-light TV cameras was taking a look at the Point Salines airfield in preparation for the 1st and 2d battalions of the 75th Rangers to jump in.

The Marines landed on 25 October, took the defenders by surprise, and secured the Pearls airport by 0630. The Rangers encountered stiffer resistance from Cuban forces, but by mid-morning of the 25th the runway at Port Salines was open and the lead elements of the 82d Airborne Division began arriving at 1405 hours. The U.S. citizens attending medical schools on the island were rescued, the dictator General Austin and his bodyguards were taken into custody, and the island was cleared of all resistance by D+5. Eleven soldiers, three Marines and four Navy SEALs died in Operation URGENT FURY and 116 U.S. personnel were wounded. The loss of Grenada was a severe setback for Cuban prestige and a signal that U.S. interests in the Caribbean would be upheld by force, if necessary. Most of the 82d Airborne was withdrawn in November and all U.S. combat forces were out by December.

The 525th Military Intelligence Group of the XVIII Airborne Corps supported the 82d Airborne Division with tactical intelligence collected and produced in its Intelligence Operations Center. It was a windfall for military intelligence as tons of captured documents gave important information about Cuban and Soviet intelligence activities in the Western hemisphere. Captured Soviet-manufactured military equipment kept technical intelligence specialists busy.

Did MI's tactical CEWI units meet the test of the URGENT FURY operations? According to John F. Stewart, Jr., the commander of the

525th MI Group, "CEWI works." He found intelligence and electronic warfare units under his command to be responsive to the tactical commander.

The United States Military Liaison Mission (USMLM) to the Commander-in-Chief, Group of Soviet Forces in Germany (GSFG), was an outgrowth of the 1947 Potsdam Agreement, dividing Berlin into zones of occupation. Housed in a building designed by Albert Speer, Hitler's chief architect and Minister of Munitions, the liaison mission's job was to insure that terms of the Potsdam agreement were met by the Soviets in their zone. This involved unrestricted travel for the members of the mission and presented a unique window into East Germany. A casualty of the Cold War, Lt. Col. Arthur D. Nicholson, was a military intelligence officer serving with the U.S. Military Liaison Mission at Potsdam, East Germany, when he was gunned down by a Soviet sentry in 1985. He was on a mission to observe Soviet facilities, as provided for in a long-standing international agreement, when he was killed.

Since 1956 the two-star Assistant Chief of Staff for Intelligence occupied a lesser niche in the Department of the Army hierarchy, symbolic for some of the back seat to which Army intelligence had been relegated. In 1987 the Assistant Chief of Staff for Intelligence on the Army staff was upgraded from a two-star position to a three-star job and renamed the Deputy Chief of Staff for Intelligence or DCSINT. Now Army intelligence had been reestablished at the Army staff level on an equal footing with the other Deputy Chiefs. Lt. Gen. Sidney T. Weinstein was the first to assume the new position of DCSINT in the Pentagon.

The Military Intelligence Corps was founded on 1 July 1987, the 25th anniversary of the establishment of the first Regular Army intelligence branch. The MI Corps would embrace all Army intelligence personnel, including civilians, in the tradition of the Army regimental system. Maj. Gen. Julius Parker, Commanding General of the Intelligence Center and School, became the first head of the Corps in activation ceremonies at Fort Huachuca. It was a milestone that General Parker, called "a recognition and celebration of our evolution from a plethora of diverse and separate intelligence agencies into the cohesive MI community we enjoy today. In short, it symbolizes the fact that Military Intelligence has truly arrived."

In late 1989 MI would have another test of its ability to support the combat commander when President George Bush decided intervention in Panama was necessary to stop the drug trafficking of Panamanian dictator Manuel Noriega.

Operation JUST CAUSE, 20 December 1989 to 31 January 1990, depended on meticulous planning, rapid force projection, the element of surprise, and a versatile, professional joint force. On D-Day simultaneous attacks took place across the isthmus of Panama. Nine separate task forces each were given specific objectives, which were largely accomplished during the first day of the operation. On D+1 the Panama Canal was reopened to traffic, the Marriott Hotel was taken and hostages there protected, and Task Force Bayonet began civil-military operations in Panama City to handle the growing flow of refugees. On the second day the Panamanian Police Force was formed and the U.S. Army began civil-military operations in earnest. Penonome Prison was surrendered without a fight and mopping-up of hold-out Panamanian Defense Forces began. Joint patrolling was undertaken with the Panamanians. Dictator Manuel Noriega, after taking sanctuary in the Vatican embassy, surrendered to U.S. forces on 3 January.

Intelligence support for military operations was provided by the 470th MI Brigade stationed in Panama and its 29th MI Battalion, along with the intelligence assets of the organizations making up the joint task force. MI doctrine proved itself flexible enough to support contingency operations like JUST CAUSE. One participant credited a large part of the U.S. Army's success in Operation JUST CAUSE to Intelligence Preparation of the Battlefield.

One of the most shaping developments in recent years for Army intelligence was the 1987 publication of the Army Intelligence, Electronic Warfare, Target Acquisition Master Plan, or AIMP. It was a coherent plan for guiding intelligence systems and organizations into the age of high-tech warfare. It evaluated future threats, determined requirements, and prepared a response that addressed all of the systems that would need to be developed and procured in order to modernize Army intelligence for a range of contingencies. It was the genesis for the Intelligence Revolution and would stock the Army intelligence arsenal with electronic weaponry. This singular, visionary plan would be reassessed by the 1991 MI Relook and revised in 1993 to take into account the lessons of the Gulf War.

In 1989 all of the traditional threats to the security of the United States and her allies and all of the anticipated scenarios were overturned and made unlikely by the dissolution of the Soviet Union and the Warsaw Pact alliance. The Berlin Wall that had stood for so many years at the symbolic divide of East and West came down in an exuberant celebration of the demise of the cold war. Germany was reunited in October 1990 and there seemed little need of the large American Army presence in eastern Europe. The U.S. Army underwent a major retrenchment, shrinking in manpower and money to a much more compact contingency force. Doctrine began to redefine the military services as a force-projection team, a small but mobile force relying upon technology to overcome its stripped down combat formations.

Army intelligence, because of the AIMP, was well positioned to reevaluate its role in the new order. Following the Desert Storm experience, an MI Relook panel was reinstituted with Brig. Gen. John F. Stewart, Jr., the G2 for Army forces in Gulf War, as its head. In view of the new U.S. Army structure, and the reorientation of the mission to force projection, the panel made a number of recommendations. It called for giving the combat commanders a complete picture of the battlefield and targets by using the array of interacting systems envisioned in the AIMP to relay the best and most current information from the national and theater levels, while at the same time allowing them to share their own information with those at comparable and higher levels. This would allow for a smaller MI force structure, but one that was still responsive to commanders. There would also be a greater reliance on reserves, like the Utah National Guard's 300th MI Brigade, to provide linguists in times of crisis.

The MI Corps took its share of cuts in the Army downsizing of the 1980's and 1990's. In Europe where the Soviet threat had all but disappeared, three field stations were closed down. Field Station Berlin atop Teufelsberg, a cold war landmark, closed its gates in 1992. Field Station Augsburg was closed in 1993, as was Field Station Sinop, which had a commanding view of the Black Sea from that Turkish port since 1951. The 66th MI Brigade moved its headquarters from Munich to Augsburg in 1992. With the inactivation of the VII Corps, the 207th MI Brigade and a number of MI battalions assigned to the divisions had their flags cased.

The Army Intelligence Agency was organized in 1985 as the field operating agency for ACSI, coordinating all intelligence production. It picked up remaining pieces of intelligence production that had been assigned to the Army Materiel Command and the Office of the Surgeon General. As part of Army streamlining in the post-cold-war era, it was disestablished in 1992, its functions being divided up by INSCOM and DIA.

In a January 1993 ceremony at Fort Devens, the colors of the 112th MI Brigade were cased. Its functions were absorbed by Fort Huachuca units as part of the Army's reconsolidation. It was one of four MI brigades to be deactivated out of a total of eighteen.

Atop the U.S. Army intelligence organization in 1993 was the Deputy Chief of Staff for Intelligence (DCSINT), who controlled INSCOM, as well as four directorates within the ODCSINT. The Intelligence Systems Directorate was responsible for the major collection systems, such as SIGINT, PHOTINT and HUMINT. The Counterintelligence Directorate made policy for security and counterintelligence activities. The Foreign Intelligence Directorate was involved in the production of intelligence, determining collection requirements, and preparing technical intelligence. The Foreign Liaison Directorate coordinated intelligence matters with allies.

INSCOM was the operating intelligence arm for the U.S. Army, directly subordinated to DCSINT. It was not only involved in collection, analysis, and counterintelligence, but performed SIGINT/COMSEC missions on behalf of the National Security Agency.

As the turn of the century drew closer, MI soldiers found themselves engaged in a wide array of operations other than war, from peace keeping in Somalia to drug interdiction operations in the American hemisphere.

What would be the role of Army intelligence without the traditional Soviet adversary? A dangerous but miscalculating Iraqi strongman would help the U.S. Army provide some of the answers to that question.

On 2 August 1990, Iraq invaded its oil-rich and defenseless neighbor Kuwait. The United Nations Security Council condemned the attack and four days later invoked economic sanctions against Iraq. Operation DESERT SHIELD officially began on 7 August and by 9 November President George Bush was announcing that as many as 400,000 U.S. troops were slated to be deployed to the Persian Gulf. The U.N. resolved on 29 November to use "all necessary

means" to oust Iraqi forces from Kuwait and gave them a deadline of 15 January 1991 to do so. Three days before the deadline, the U.S. Congress granted President Bush the authority to employ military force. The day after the deadline for Iraqi withdrawal passed, on 16 January, the U.S. and coalition forces launched a massive air strike against strategic targets in Kuwait and Iraq that opened the DESERT STORM phase of the operation. The ground attack began on 24 February. One hundred hours later, on 28 February, Iraq agreed to a temporary cease-fire and it became permanent on 3 March when they accepted conditions for a permanent end to the shooting.

A key to the quick and overwhelming victory was the rapid and efficient mobilization of logistic forces to support the campaign. The 22d Support Command marshaled 300,000 soldiers, 12,000 tracked combat vehicles, and over 100,000 wheeled vehicles in support of the U.S. Army Central Command's combat forces.

In the Army's history of the Gulf War called *Certain Victory*, Brig. Gen. Robert H. Scales, Jr., gave an idea of some of the problems Army intelligence faced in that conflict. There was the lack of Arab linguists, notably those familiar with the Iraqi dialect; a paucity of HUMINT from the closed, tightly supervised Iraqi society; the limited use of radio or radar by the Iraqis to deny SIGINT; and the absence of good maps of the Kuwaiti theater.

One of the advantages for the U.S. forces was its familiarity with the Soviet equipment it would encounter, the fruit of years of technical intelligence directed at the Soviet Union.

Some units, like the 101st Airborne Division, enjoyed good linguist support. The 132 linguists of the 101st were instrumental in debriefing some 400 Kuwaiti refugees before the DESERT STORM phase.

Another difficulty was the scope of the operations themselves. The land area was large and intelligence had the early mission of enforcing the blockade of Iraq, one that required all air, sea, and ground traffic to be monitored 24 hours a day. As the crisis worsened and military action became a possibility, thousands of targets within Iraq and Kuwait had to be identified and photographed and the deployments and movements of enemy forces had to be plotted. Overhead reconnaissance had to be deployed in a map-making effort for the theater of operations.

The aerial recon effort was hampered by the deletion from the inventory the previous year of the SR-71 Blackbird. This aircraft's high-altitude and high-speed allowed it to photograph 30-mile swaths of enemy territory at 2,000 miles per hour and do so outside the range of air defense weapons.

Because of the requirement for a rapid buildup of large numbers of troops in the theater, the combat units were sent in first, followed by their supporting units. So in the first months of the crisis, the troops on the ground were blinded by the lack of their own tactical intelligence which arrived over the next five months. Assigned to XVIII Airborne Corps, the 15th MI Battalion did not arrive until mid-October to provide the Army's only aerial collection. To reinforce INSCOM signals intelligence in the theater, the 204th MI Battalion was deployed from Europe.

Tactical intelligence, or information on the specific enemy formations expected to be engaged, was produced at Corps level and below. It flowed upward from battalion, brigade, division and corps "2" shops, eventually coming together at the 513th MI Brigade, a unit under the operational control of ARCENT, where it was fused with strategic intelligence pulled down from national levels of intelligence gathering. This information was intended to give the theater commander a broad overview of the developing situation. The Foreign Materiel Intelligence Battalion of the 513th MI Brigade was kept busy exploiting an unprecedented windfall of captured equipment. They were assisted by members of the U.S. Army Foreign Science and Technology Center. Upon its return to the U.S. after Desert Storm, the 513th would relocate to Fort Gordon, GA, where it would collocate with a new Regional SIGINT Operations Center (RSOC).

The commander in the field had much more technology to deploy and many more decisions to make than any of his predecessors in history. But with all the added complexities, he had little tactical information to go on, either because his organic intelligence units had not yet become operational in the theater, or if they had deployed they were positioned far to the rear to avoid tipping off the enemy of allied intentions. It was not until 19 January when the intelligence units moved into to their forward positions that they could begin to work on those enemy units to their front. The strategic intelligence collected by national-level agencies was of little use to the commander, ex-

cept in those cases where imagery located enemy emplacements to his front. The Defense Intelligence Agency was not staffed or trained to provide the kind of tactical intelligence a field commander needs. Scales cited an example of a national analyst who saw Iraqi troops movements as training maneuvers while an experienced Army officer "familiar with the last-minute starts and stops of tactical maneuver saw the moves as a final shift to attack positions."

At the Department of Defense, a Joint Intelligence Center was set up in August to combine the service-specific tactical intelligence. The DOD Joint Intelligence Center was the work of Brig. Gen. John Stewart, Jr., who drew heavily upon the Army personnel in the Intelligence and Threat Analysis Center. The Army's Intelligence and Threat Analysis Center produced templates showing every Iraqi division in and around Kuwait on 1:50,000 scale maps. They depicted Iraqi obstacle defenses, tanks, armored vehicles, artillery tubes, vehicles, command posts, and supply dumps, and were updated daily right up to the end of the war. General Stewart was transferred to the theater in December to function full time as the ARCENT, or Third Army, G2. The CENTCOM J2 was Brig. Gen. John Leide.

High above the cradle of land between the Tigris and Euphrates Rivers in February 1991 was amassed the most impressive array of intelligence-gathering esoterica ever assembled in one place. It was as if civilization, now in the prime of life, had returned to its birthplace to show off what it had learned over the intervening years.

The intelligence arsenal was not only hovering dome-like over the nation of Iraq, but encircling it on the ground. It contained a little galaxy of satellites like the Keyhole, which was said to be able to see things as small as a compact disc, or the cloud-piercing Lacrosse designed to keep its eye on the movements of the Warsaw Pact forces. In addition to the picture-taking satellites, there were the listening kind, like the Magnum and Vortex.

In the earth's atmosphere cruised 23 different kinds of aircraft, adding their imagery, electronic and eavesdropping capabilities to the fray. The U2s alone took more than one million feet of film. Enemy airspace was cross-hatched with allied aircraft, mostly American, bristling with antennae. Rivet Joint and Senior Span platforms locked on enemy communications frequencies. Notably missing was the SR-71 Blackbird which had been mothballed a year earlier.

Imagery piled up in Saudi Arabia by the truckload. By one author's estimate, "there were 200 tons of intelligence 'product'" by war's end. This unprecedented volume caused problems for the hundreds of analysts stretched in a chain from the Joint Imagery Production Complex at Riyadh Air Base, to CENTCOM's Joint Intelligence Center, to the Pentagon's own JIC, to the National Photographic Interpretation Center in the Navy Yard in D.C. The workload was too overwhelming and the process could not meet the demand for timely answers, especially in the realm of Battlefield Damage Assessment.

The question of just how degraded the enemy units actually were would be a point of contention between the military on the ground in the theater who were able to factor in gun camera footage, defector reports and other close-in sources of intelligence, and the more cautious CIA which relied mainly on satellite pictures. From the point of view of the ground commander, it was better to err on the side of lower damage than be surprised by an enemy stronger than expected.

With as many as 3,000 sorties per day, BDA was a tough picture to bring into focus. There were subjective factors like the characteristically optimistic pilots' reports, sometimes called "ego BDAs," and natural obstacles like cloud cover and imprecise wide-angle photos. To arrive at some kind of consistent baseline, different formulas were used and then discarded if they proved flawed. Eventually, by early February Brig. Gen. Stewart, put in charge of BDA by the CINC, arrived at a formula that seemed to give a reasonable basis for estimating the enemy's losses and effective strength. He assigned his highest confidence to high-resolution U2 photos, gave a 50 percent weight to the F-111 and F-15E gun-camera footage, and reduced A-10 pilot reports to one-third. SIGINT was of little use since the Iraqis were all but off the air. He proofed his resulting figures by concentrating a second time on a few enemy units and comparing the results with his initial estimates. If they were the same, he could confirm that his formula was consistent. Stewart had to justify his methods and his assessments to Defense Secretary Richard Cheney and JCS Chairman Gen. Colin Powell on 9 February when those officials spent a day in Riyadh being briefed by Gen. Schwarzkopf and his staff.

Satellite coverage produced vast amounts of photos, but never enough

to satisfy tactical commanders who were desperate for detailed photography of targets in their area of responsibility. There were not always processes in place to disseminate satellite imagery at the national level down to the tactical users. An exception was the XVIII Corps which, as the nation's contingency force, had their own satellite transmission capability, the Tactical Exploitation of National Capabilities (TENCAP) Imagery Exploitation System, back at Fort Bragg. The Army force structure had eliminated the aerial exploitation units at division and corps level, choosing to depend on imagery produced at higher levels and transmitted to them via digital bandwidths. The communications systems for this imagery was still in development and not ready for the battlefield. The gap was filled with off-the-shelf software and prototype equipment.

Two battlefield surveillance systems were deployed in Operation DESERT SHIELD/STORM with remarkable success. These were the Joint Surveillance Target Attack Radar System (JSTARS) and the unmanned aerial vehicle (UAV). The JSTARS was in developmental stages. It consisted of a synthetic aperture radar mounted in an Air Force Boeing 707 that could operate in a targeting mode or as a surveillance system, or in both modes simultaneously. The near-real-time information passed back to air or artillery weapons systems was detailed enough to target attacks while the surveillance field of vision was 25x20 kilometers, large enough to watch movement in the entire Kuwaiti theater of operations. The system allowed the commander to see to a depth of 150 kilometers in all kinds of weather.

A JSTARS package was deployed to Saudi Arabia in mid-January. It consisted of two E-8A aircraft (specially modified Boeing 707s), and six ground station modules. Each ground station was manned by a sergeant and two specialists. They were located at CENTAF Tactical Air Command Center, ARCENT Main, ARCENT Forward, XVIII Corps, VII Corps, and with the Marine headquarters. Special modifications were made to the two aircraft to enhance datalink connectivity to the Riyadh-based headquarters. Self-defense systems were added to the planes to increase their survivability in the event air superiority was not achieved. The range of the JSTARS was also doubled for the Gulf War deployment. The JSTARS increased the limited coverage that was provided by Side-Looking Airborne Radar (SLAR) missions flown by the Mohawk battalions assigned to VII and XVIII Corps.

On one occasion when B-52s arrived on station and cloud cover prevented them from finding targets, the CENTCOM Air Force commander, Lt. Gen. Charles A. Horner, turned to JSTARS. Pfc. Timothy Reagan on duty in the ground station pointed out an Iraqi convoy that he had on his screen and Horner directed the air strike against it, destroying the convoy and demonstrating the value of both JSTARS and its operators.

When the ground war began, JSTARS provided the ARCENT G2 the capability of tracking all Iraqi movements and determine what their plan of action was. These situational assessments were extremely important to the corps commanders who could readjust their attack plans at various points in the decision-making process.

To give the commander a better close-in picture, the Pioneer Unmanned Aerial Vehicles (UAV) were called upon. There were six Pioneer UAV systems deployed to Operation DESERT STORM—One each on the battleships *Wisconsin* and *Missouri*, three with the Marine Corps, and one system deployed with an Army task force. The latter was a 36-man platoon of five UAVs sent from Fort Huachuca on 10 January. It arrived in the theater on 26 January and launched its first mission on 1 February in the VII Corps. The soldiers from Company E, 304th MI Battalion, 111th MI Brigade, operated a 400-pound, prop-driven airplane mounted with a television camera that was capable of day or night monitoring of the battlefield. The UAV had two ground pilots, one to make takeoffs and landings and another to fly it down range. It had a payload operator to monitor the onboard camera, a mechanic to perform maintenance, and an electronic technician. The Pioneer, with its 100-mile range, 24-hour capability, and near-real-time data link, could provide targeting information and act in a reconnaissance role.

TROJAN SPIRIT, a satellite that transmitted secure voice and digital imagery to trailer-mounted terminals, was another system that was rushed to the battlefield from the testing labs. It arrived in February, was fielded and its operators trained.

Despite the admirable efforts to rush the means of disseminating imagery intelligence to the field, it was a case of too little too late, and most of the mountain of imagery was moved by old fashioned courier. "Throughout January and February, daily couriers carried 200 pounds of annotated

photos, maps overprinted with Iraqi templates, and other intelligence documents, moving 27 tons of material from one end of the theater to the other." The commanders were often frustrated in their efforts to get up-to-date intelligence.

To fill the void of qualified linguists, Lt. Gen. Charles B. Eichelberger, Deputy Chief of Staff for Intelligence, paved the way to recruit and train young Kuwaitis in the United States, most of them attending college, and ship them to the theater as sergeants in the Kuwaiti Army to act as linguists in intelligence units.

The DIA formed support teams at the various corps and ARCENT to access the national military intelligence data and imagery base.

A four-day target development effort, focused the national collection systems, the theater U-2 and RF-4C Phantom II reconnaissance aircraft, corps aerial exploitation battalions, and the airborne radars they employed against a host of possible key targets like command and control facilities, artillery, armored formations and logistics bases. Enemy deserters were also questioned about targets. A priority list was developed by the ARCENT G2 and revalidated right up until they were attacked.

A high-profile job for Army intelligence was locating the Scud launchers that played such havoc with the coalition. The long-range, high-frequency signals used to control the Scud missiles were vulnerable to jamming by the TLQ-17 Sandcrab, manned by a platoon from the 201st MI Battalion. The jamming forced the Iraqis to resort to less secure communications which could be intercepted. But the effort expended to direct intelligence assets at the Scud sites slowed the targeting missions for the ground war.

The Sandcrab jammer was positioned in northern Saudi Arabia, with its 5,000 watts of power and a massive transmitter. It was ready to go to work jamming enemy transmissions, raising the old electronic warfare debate of whether it was better to forego jamming in favor of intercepting the enemy signals. A compromise was reached whereby Sandcrab jammed only the encoded beginnings of Iraqi transmissions, causing the enemy to become confused and send in the clear.

The Iraqi COMSEC would have to be rated as good however, but this was achieved by not talking on the radio at all or using secure land lines that had not been severed by the bombing, a measure that crippled the ability of units to communicate readily. Despite their prolonged silence, just before the ground war allied intelligence targeted for destruction what were believed to be signal nodes, but left four intact in the hopes that the enemy would resume radio contact in the heat of battle. And they did, leading to valuable NSA intercepts which, in conjunction with JSTARS, brought into view a vivid picture of their movements and intentions.

The commander of allied forces in the Gulf War, Gen. H. Norman Schwarzkopf, gave military intelligence top marks during Congressional testimony on 12 June. Overall, he said, "it was excellent. We had very, very good intelligence support. We had terrific people. We had a lot of capabilities." But he did find areas, like battlefield damage assessment, real-time imagery, interoperability, and overly caveated intelligence estimates, that could use improvement. His experience was incorporated into the findings of the House Armed Services Committee's report on *Intelligence Successes and Failures in Operations DESERT SHIELD/STORM* issued on 16 August 1993. The Oversight and Investigations Subcommittee concluded that:

> Intelligence *collection*...was generally very good and deserving of praise.
>
> Intelligence *distribution* overall was very poor, particularly when it came to serving air fighting units. Both the hardware and the people failed.
>
> Intelligence *analysis* was mixed. The concept was brilliant. but the count of dead Iraqi tanks, APCs and artillery pieces exposed a major systemic failure in the ability to accurately make battlefield damage assessment.

Overall, DESERT STORM could be adjudged as an overwhelming success for U.S. Army intelligence. In addition to the above-stated opinion of the commander of the coalition effort, this conclusion was expressed by a captured Iraqi officer who noted:

> We had a great appreciation of your intelligence system; we knew from our experience in the Iranian War that at all times you could see us during day and night and knew where we were on the ground. If we communicated, you could both hear us and target us, and if we talked too long, you would target us and destroy us with your ordnance. On the other hand, as we looked at our intelligence system, we had no idea where you were on the ground, we had no intelligence system capabilities to see what your dispositions were, and we had no way to monitor your communications. We knew you were going to attack only when you overran our front line positions...."

Ironically, when talking about his own Army's lack of sophisticated intelligence, he could have been describing the U.S. Army in the early stages of the Korean War just 40 years earlier.