(U) DDE & NSA: An Introductory Survey
David A. Hatch

(U) Introduction

(U) When Dwight D. Eisenhower left the presidency in January 1961, his reputation already had begun to decline. The media and many historians characterized the man as out of touch and manipulated by strong-minded subordinates.

(U) Dwight D. Eisenhower

(U) The resurgence of Eisenhower's reputation, however, began with Fred Greenstein's writings in the 1980s on the "hidden hand" presidency.[1] Greenstein demonstrated that Eisenhower had actually been an activist president, but preferred to work behind the scenes, letting his cabinet officers and other subordinates engage in the public policy debates, perform public actions — and take the public heat!

(U) Parallel with this rehabilitation was the revelation of Eisenhower as active also in the field of intelligence. Stephen Ambrose, in *Ike's Spies*[2] in 1981, first showed Eisenhower as a manager and user of intelligence from World War II through his presidency. A number of books, such as Dino Brugioni's *Eyeball to Eyeball*[3] in 1990, and Philip Taubman's *Secret Empire*[4] in 2003,

emphasized Eisenhower's concern to develop a well-rounded aerial reconnaissance capability for early warning.

(U) However, none of these recent books was able to discuss Eisenhower's involvement with NSA or communications intelligence (COMINT) as president. Virtually nothing on this subject had been declassified from the 1950s.

(U) In fact, Eisenhower, with considerable experience with COMINT during World War II, continued as an interested consumer of COMINT information during his presidency, and involved himself in many aspects of strengthening NSA to improve government COMINT capabilities.

(U) This article cannot deal with all major events concerning NSA in the 1950s; it cannot even treat all aspects of Eisenhower's interactions with NSA or COMINT. However, the cases cited here will demonstrate, I believe, that Eisenhower was important to the development of NSA as an institution in its formative years and to the health of the nation's COMINT process.

(U) The World of the New Administration

(U) When the Eisenhower administration took office in 1953, American officials had little solid knowledge about the sources of policy or immediate goals of the USSR. Even hard facts on such basic matters as Red Army troop deployments at home and in Eastern Europe and development of Soviet weaponry were scarce.

(U) In October 1953, the National Security Council adopted a basic statement on the Soviet threat. NSC 162/1 noted a USSR armed with atomic weapons, a country that devoted one-sixth

of its gross national product to military spending.[5]

(U) NSC 162/1 also listed fourteen defense recommendations; number twelve called for an intelligence system capable of analyzing hostile intentions. The system would also have to evaluate friendly and neutral countries to forecast any "potential foreign developments" bearing on national security.[6]

(U) Despite this, Eisenhower sought moderation in defense spending. He believed that fear compounded by lack of knowledge about the adversary could lead to a garrison state, that unchecked expenditures for national security would lead to economic ruin. He propounded what became known as the "New Look" in defense, characterized by a sizeable reduction in conventional military forces balanced by a greatly enhanced nuclear arsenal.

(U) Considering the Soviet threat, and with the New Look as a cornerstone of the administration's policy, and a desire to damp down budgets, accurate and timely intelligence would be a must.

(U) Eisenhower, believing the national security staff had been organized too loosely, made General Paul T. Carroll staff secretary to facilitate paperwork and coordinate issues across organizational lines. When, in September 1954, General Carroll died of a heart attack, the president brought in Colonel, later General, Andrew J. Goodpaster as his replacement. Goodpaster had worked with Eisenhower at NATO in the office of chief of staff.[7]

(U) Eisenhower's management style was to block out wide issue areas, give policy direction, and then leave subordinates to handle the details. He also required his chief of staff to follow up on details and prompt him about areas needing attention.

(U) Goodpaster received daily and weekly intelligence reports from CIA that included COMINT and rewrote them for the president. When Goodpaster and his staff gave intelligence items to the president, they sent in no more than thirty or forty items daily, and kept them concise, that is, around five lines. The president's daily report would run three, or sometimes four, pages.

(U) Another principal source of the president's intelligence was the weekly National Security Council meeting, usually 10:00 every Friday. DCI Allen Dulles would often start off with a juicy tidbit from a recent intercept, but the group generally followed an agenda that had been set weeks in advance, and thus did not necessarily discuss current intelligence.[8]

(U) Goodpaster rated the president "extremely competent" in analyzing the intelligence brought to him. Eisenhower did not ask about sources and methods, but insisted that he receive the "best available" intelligence. Goodpaster, assisted by the president's son John, found Eisenhower conversant with COMINT and that the president appreciated its value.[9]

(U) NSA & COMINT in the 1950s

(U) National-level intelligence activities in the United States began only after World War I, and most were products of the Second World War. The community of intelligence producers and consumers in the 1950s was still seeking the best organization and practices.

(U) Both the U.S. Army and Navy had separate organizations to produce COMINT (information derived from the exploitation of encrypted communications) before and during World War II. Working with their British counterparts, they produced timely and well-detailed intelligence reports for Allied military commanders, including Eisenhower.

(U) The postwar atmosphere of budget and personnel retrenchment made difficult the maintenance of three COMINT organizations (when the Air Force became a separate service, it quickly began to do COMINT). To consolidate effort and funding, the secretary of defense created the Armed Forces Security Agency (AFSA) in 1949. When problems became apparent in AFSA's structure and practices, President Harry Truman — on the basis of a study — reorganized it as the National Security Agency in 1952.

(U) Thus, although it traced its antecedents directly to organizations of the 1930s, NSA as the government's central cryptologic organization had been in existence as such for less than a year when Eisenhower took office.

(U) The National Security Act of 1947 resulted in formation of the U.S. Intelligence Board and its subcommittee, the U.S. Communications Intelligence Board (USCIB). These committees brought producers and consumers of intelligence together to consolidate requirements and ensure that operations were conducted in accordance with them.

(U//FOUO) NSA, subordinate to the Department of Defense, was responsible for national-level or strategic COMINT, while each military service had an organic cryptologic agency to provide tactical support. In addition, these Service Cryptologic Agencies conducted some intercept and intermediate-level processing tasks for NSA.

(TS//SI) It was estimated in the mid-1950s that these cryptologic services intercepted in excess of five million messages per month, and forwarded most of it — about one ton of paper per day — to the D.C. locations of NSA.

(TS) NSA was also responsible for national communications security (COMSEC), i.e., establishing COMSEC doctrine and policy, and procuring COMSEC materials.

(TS) NSA itself had a personnel strength of just over 10,000 employees, of whom about two-thirds were civilians. In addition to those at NSA, the Army Security Agency and Air Force Security Service each had over 15,000 people, and the Naval Security Group had about 3,300.

(TS) A constant theme in both internal and external evaluations of NSA was the difficulty in hiring a civilian workforce and retaining career military in the cryptologic services. The constant turnover not only was a security problem but also imperiled the continuity of COMINT operations.

(U//FOUO) Although admitting it was difficult to compute the total cost of the U.S. COMINT effort, a presidential commission in the mid-1950s estimated that the annual expenditure was "in the neighborhood of $500,000,000."[10]

(U) The first director of NSA (DIRNSA) was Major General (later Lieutenant General) Ralph Canine, USA. Although not a professional intelligence officer, Canine quickly learned the essentials of cryptologic management, and worked hard to build a more effective organization. In 1956 Canine retired and was replaced as DIRNSA by Lieutenant General John Samford, USAF.

(U//FOUO) The post of deputy at NSA was a problem in the early years. Initially, NSA had three military vice-directors, each responsible for one particular aspect of cryptologic operations. After the Pentagon urged selection of a deputy director from outside, two different civilians had been tried, but were found unsatisfactory. When Pentagon officials again proposed bringing in an outsider, General Samford asked for promotion from within. Referring to the arcane nature of cryptology, he argued that an outsider would have to survive "artificial stimulus, frustration, conflict, disillusionment, and rationalization" before becoming effective.[11]

(U//FOUO) This led to the appointment of Dr. Louis Tordella in 1958. "Dr. T" had been in

charge of a major Navy collection station during World War II; postwar, as a civilian with NSA's predecessors, he had had an important role in developing early computers for cryptologic tasks.

(U//FOUO) When Dr. Tordella was nominated for the post, Department of Defense senior officials suggested the appointment be for four years.[12] In actuality, Dr. Tordella became the longest-serving deputy director at NSA, holding the post until his retirement in 1974.

(U) Dr. Louis Tordella

(TS//SI) William Jackson, a former director of CIA who consulted on intelligence matters for the president, advocated elevation of responsibility for NSA within the Defense Department. The secretary of defense had given responsibility to a deputy, who, in turn, had delegated it to the assistant for special operations. Jackson wanted responsibility placed where it had originally been envisioned when NSA was formed, at the assistant secretary level.[13] While this idea surfaced again, more than once over the decades, it has never been implemented.

(U) Studying and Reorganizing

(U) Hoover Commission

(U) During the campaign of 1952, the Republicans had charged the previous two administrations with inefficiency, even outright corruption. Therefore, in 1954 Eisenhower commissioned former president Herbert Hoover to study U.S. government organization and make recommendations for more efficient operations. This included examination of the intelligence agencies.

(U) Hoover delegated study of the intelligence community to a subcommittee under retired Army General Mark W. Clark.

(U) The study encompassed extensive interviewing — over 200 individuals — as well as visits to sites around the country. The report from the Hoover Commission was sent to the White House on May 25, 1955, with a top secret appendix on NSA, communications intelligence, and communications security.[14]

(TS//SI) The Hoover Commission found NSA "basically well conceived, well organized, and efficiently operated," and that it did excellent work.

(TS) U.S. communications security was adjudged good, although the Commission felt too many messages were transmitted in plain text, giving away a great deal of information to foreign governments.

(TS) The Commission found that 30,000 Americans were cleared for COMINT. The vast majority were producers, with recipients numbering only 4,687. The commission felt that this large a number, combined with a high turnover rate for military personnel involved in production, represented a "constant danger" to the security of COMINT.

(TS//SI) The Hoover Commission recommended that USCIB improve its guidance to NSA, ensuring more realism and clarity. At the same time, NSA needed to make greater efforts in production. In fact, expenditures equivalent to those of the Manhattan Project were needed "at once."[15]

(TS) Another major recommendation advised the administration to consider combining COMINT and electronic intelligence (ELINT) in one organization. We will return to this.

(TS//SI) Given an opportunity to respond to the provisions of the Hoover report, USCIB, the Department of Defense, and NSA essentially rejected them. They first denied the idea that COMINT production had suffered because of USCIB's guidance practices, but, conversely, noted that USCIB was already implementing changed requirements and guidance procedures for COMINT.[16]

(TS//SI) The Department of Defense expanded on the call for Manhattan Project-sized expenditures. The limitation on improvement to cryptanalysis was not funding, DoD stated, but a shortage of qualified personnel. Having said this, the Department noted it had authorized DIRNSA to bring in the "best possible analytic brains" from outside NSA to help attack the problem.[17]

(TS) The three respondents agreed that it was desirable to seek ways to achieve a higher level of communications security. However, they noted that NSA and the military services kept this problem under review "at all times."[18]

(U//FOUO) The Hoover Commission resulted in no direct institutional or procedural changes at NSA. It did, however, start administration and NSA officials thinking about necessary changes; in a sense, it prepared the way for acceptance of change in the future.

(U) Killian Panel

(U) After a White House conference in March 1954, Eisenhower asked the Office of Defense Mobilization (ODM) to study the nation's readiness to defend against a surprise nuclear attack from the Soviet Union. In turn, the chairman of ODM's Science Advisory Committee suggested that Dr. James R. Killian, president of the Massachusetts Institute of Technology, conduct an initial study on this.

(U) President Eisenhower (left) and Dr. James Killian (right)

(U) After further meetings, Killian and ODM suggested creating a special task force to study defense, striking power, and intelligence. Eisenhower thereupon asked Killian to take charge, studying American "technical capabilities to meet some of its current problems."

(U) Killian's panel had a subcommittee on intelligence, chaired by Edwin Land, of Polaroid fame, and included prominent figures from universities and private industry. Killian was indoctrinated for COMINT by the CIA in August 1954.[19] Nine members of the group, including Killian and Land, visited NSA for orientation on

October 13, 1954,[20] beginning five months of study.

(U) Although its actual title was "Meeting the Threat of Surprise Attack," the final report was known throughout the intelligence community as the "Killian Report," the "TCP [for Technical Capabilities Panel] Report," or the "Surprise Attack Report."[21]

(U) When Killian published his own account of these years, he discussed at length the portions of the TCP Report that dealt with continental defense, missile programs, and aircraft reconnaissance. However, he noted that "[a]t the time of this writing, only part of the report has been declassified (a restriction of which I approve)."[22]

(U) Four of the TCP Report's five sections dealt with continental defenses and the effect of technology on the military. The first section, however, read:

> *Increasing our capacity to get more positive intelligence about the enemy's intentions and capabilities and thus to obtain, before it is launched, adequate foreknowledge of a planned surprise attack.*[23]

(U) The intelligence study said the United States "must find ways to increase the number of hard facts on which our intelligence estimates are based." The U.S. should have the "best-informed government in the world," it read, not only for defense, but also to help resolve the debates between "contending views and fantasies" that appear in the democratic process.[24] This meant increased COMINT efforts.

(TS) Since the TCP's task was to examine intelligence as a tool to provide warning of a Soviet surprise attack, it paid less attention to communications security. However, it did comment on communications, since a communications failure due to malfunctions or jamming in a

crisis would negate any COMINT warning capabilities.

(TS) NSA's communications group, in response, considered the assumption the Soviets would undertake wide-scale jamming "not necessarily sound." NSA, on the other hand, did support the TCP call for research and upgrading of communications.[25]

(TS) When the TCP study expressed concern about the number of persons with access to COMINT, USCIB responded that the number of persons cleared for COMINT was under constant review. USCIB also said that all member agencies were enjoined to keep the need-to-know principle a priority.[26]

(U) In later years, recalling the TCP, Killian expressed a belief that its worth went beyond any practical recommendations it had made. He believed the panel had helped restore trust between scientists and the government. He also noted that Eisenhower was pleased that, unlike other panels, there were no leaks from the TCP.[27]

(U) The Killian panel gave Eisenhower confidence in its chairman, and put Killian in a position to make further recommendations. Dr. Killian became an influential figure in further studies of the intelligence community. In fact, the next step, initiated by Dr. Killian, had far-reaching effects on NSA.

(U) Baker Panel

(U) When Killian, by then Eisenhower's science advisor, presented a report to the NSC in January 1957, the president discussed the need for survivability of intelligence organizations in case of war, and the need to save money. As discussions progressed, Eisenhower agreed with a recommendation to seek ways to save money by keeping NSA's costs from going up. Treasury Secretary Humphrey said he was "numb" at the rate at which COMINT expenditures were

increasing. DCI Allen Dulles interjected that "great value" was received from NSA activities. When Defense Secretary Wilson questioned Dulles's assertion, Eisenhower sided with Dulles.

(U) Killian contemplated a group of about fifteen scientists to study COMINT, probably for four to six months. Eisenhower agreed and expressed the hope that the group would advise NSA how to remain productive in COMINT.[28]

(TS//SI) As a result of these recommendations from Killian, Eisenhower appointed a special panel under Dr. William O. Baker of Bell Telephone Laboratories to study the state of cryptanalytic proficiency. For administrative purposes the panel members were consultants to the Office of Defense Mobilization, although the Department of Defense — NSA's parent organization — footed the bill.[29]

(U) Dr. William O. Baker

(U) Baker had received his Ph.D. from Princeton University, and joined Bell Laboratories in 1939. He had served as Bell's vice president of chemical and metallurgical research from 1951 to 1954, and would serve as vice president of research from 1955 to 1980.[30]

(TS//SI) Over a period of months the panel studied all phases of COMINT production from the general to the specific; most members had had no prior concepts of the specifics of cryptography or cryptanalysis. Panel members met with senior and mid-level supervisors at NSA to discuss cryptanalysis and other topics, such as ELINT.[31]

(TS//SI) Dr. Baker summarized his findings in front of the president, members of the NSC, and other officials, including the DIRNSA, General Samford, on February 10, 1958. He argued that the cryptographer had won over the cryptanalyst, and this situation was likely to continue. Nevertheless, Dr. Baker said, "there is no doubt that NSA has paid its way."

(TS//SI) Baker first stated it would be necessary to reevaluate government COMINT activities and separate cryptologic research from actual exploitation of enemy communications. Second, Baker recommended, the government should establish a separate organization on the model of a university department to undertake fundamental research in mathematics and cryptanalysis.

(TS//SI) Discussing this, Eisenhower said his understanding was that a research organization meant hiring experts who "wouldn't have to do anything but think." He asked whether the research organization would be over NSA or subordinate to it. Baker replied that the panel envisaged the institute as tied to NSA and able to utilize its facilities, but not superior to it.

(TS) Next, Baker claimed there was wide acceptance of the concept of putting ELINT and COMINT together in one organization. DCI Allen Dulles agreed that this should be done, but Undersecretary of Defense Donald Quarles reminded the group that many military commanders depended on ELINT for enemy order of battle information. He urged a six-month delay before taking any action.

(TS//SI) Eisenhower approved prompt implementation of proposed presidential actions generated by the Baker Report.[32]

(TS//SI) NSA cryptanalysts found Baker's evaluation of their activities too pessimistic. They let it be known that they considered a proposal to separate basic research from production dangerous. NSA argued that the two supported each other, and when separated "both suffer."[33]

(TS//SI) The Baker Panel's report began a process of change to NSA's organization. As it happened, despite the president's approval of immediate implementation, the change did not occur exactly as the panel recommended.

(U) Cryptology

(TS//SI) Despite its initial reservations, NSA eventually warmed to the Baker Panel recommendations for a cryptologic think tank. This was particularly so after the idea evolved, when it no longer meant dismantling NSA but creating a group to supplement the Agency's activities.

(TS//SI) The director of NSA, General Samford, with DoD approval eventually, selected the Institute for Defense Analyses (IDA) in Princeton, New Jersey, where an existing DoD contract could be used.[34]

(U) When the IDA Board of Trustees met in late 1957, NSA deputy director Dr. Howard Engstrom presented them with a proposal to do directed research on behalf of the Agency. Subsequently, after "considerable discussion," centering on the need for more detailed proposals on specific projects and whether commitments to NSA would interfere with other obligations, IDA accepted.[35]

(TS//SI) IDA accepted in June,[36] and the NSA-IDA contract began in October 1958.[37]

(TS//SI) IDA in fact made some significant contributions to cryptanalysis, communications security, and computer development. Looking back at it, long-time NSA deputy director Dr. Louis W. Tordella, in an interview after his retirement, commented that IDA "has paid for itself several times over."[38]

(U) PBCFIA

(U//FOUO) The President's Board of Consultants on Foreign Intelligence Activities was established by executive order on February 6, 1956. Its members were to be knowledgeable people from outside the government and were to serve without compensation.[39] In a "more explicit" letter to the board, Eisenhower told them their responsibility was to review all foreign intelligence activities, not just those of CIA. The board was to report on "over-all progress," training, security, research, funding, and effectiveness and general competence in carrying out assigned tasks.[40]

(S//SI) The Board met eighteen times over the next five years to consider numerous questions of intelligence doctrine and practice. Over this time, it followed up important issues relating to COMINT, ELINT, and NSA.

(U) In late February 1958, at the chairman's request, Eisenhower replaced Killian with General John Hull. Killian had asked to be relieved as chairman because of the burden of his duties as special assistant for science and technology, but would continue as a member of the board.[41] Eisenhower had known Hull as an excellent planning officer in the Pentagon and at NATO.

(TS//SI) PBCFIA's first concern was getting warning of a possible enemy attack; the problem was to redesign the government communications to get critical information to the president in a

timely way. The existing network was cumbersome, with delays in processing and priorities.[42]

(TS//SI) The Hull Committee's reviews, proposals, and follow-ups accelerated changes to many facets of NSA's organization and mission, particularly communications and ELINT.

(U) Communications

(U) As on-going discussions determined reorganizations and support for the intelligence community, the administration realized that communications support was critical to support the other fields.

(U) At a meeting with the president in October 1957, Dr. Killian, then still chairman of PBCFIA, restated the board's first recommendation about better communications for early warning of a Soviet attack. His group had found delays and "extraordinary blockages" in the communications channels, both in reporting from the field and in successive stops in the Washington reporting chain.

(U) Eisenhower asked if this problem were due to duplication of effort. Killian told him that it was due to system overload and a lack of effective ways to prioritize messages.[43] The president directed formation of a committee under the NSC to study crisis communications.

(TS//SI) The resultant NSC Committee defined critical information as that requiring the immediate attention of the president.[44]

(TS//SI) The committee noted that communications to support COMINT activities had capabilities that met the president's requirement for rapid communications. This was because the COMINT system had to be ready to respond to a crisis at any time and its communications system had operated continuously since the war.[45] Thus, the new presidential system came to be assigned

to the secretary of defense, who would further delegate its management to NSA.

(TS//SI) The National Security Council took up Draft NSCID #7, "Critical Intelligence Communications," at its meeting of August 27, 1958. DCI Allen Dulles said there was little purpose in developing intelligence collection until its product could be sent back to Washington rapidly. Dulles said that critical intelligence should reach Washington within ten minutes; he dubbed this communication network the "CRITIC system."

(TS//SI) Dr. Louis Tordella, deputy director of NSA, briefed the NSA proposal for the CRITIC system. He explained that it would include full automation of the existing COMINT communications system, and critical information would have "overriding priority." Tordella expected the system would be completed in the FY 1962-65 period, and would require funding of $29 million in addition to the $16 million already expended.[46]

(TS//SI) Eisenhower asked no technical questions about the briefing. Tordella remembered the decision went quickly thereafter — a matter of Eisenhower asking, "Can we do it?" With an affirmative answer by the deputy secretary of defense, the president responded, "Let's do it."[47]

(TS) As the government moved to implement the presidential decision, Dr. Baker, on May 1, 1959, worried that the work on communications systems, including CRITICOMM, was "superficially impressive," but really was fragmented and unlikely to result in the integrated system necessary.[48]

(TS//SI) The PBCFIA, in a report to the president, also had "misgivings" about the CRITICOMM effort. Although improvements had been made in message handling and from the field, the board felt that would be impossible to complete the system by the target date of October 1961. The board recommended a thorough review of

the system, followed by a reorganization of it, and more frequent system tests.[49]

(TS//SI) The CRITIC system began initial limited operations on July 21, 1959. Substantial time savings for crisis messages were achieved: average time for messages was one and a half hours, compared with an average of nine and one half hours, as measured two years earlier. A majority of messages were received in less than an hour.[50]

(S) A report of November 1959 listed the establishment of traffic control points around the globe, as well as significant upgrades to equipment. Occasionally, message time approached eleven minutes from origin to Washington, but most still required twenty-four to twenty-nine minutes.[51]

(S) The desired improvements in time were not achieved until the early 1960s, during the Kennedy administration.

(U) Computers

(TS//SI) An advisory group of scientists formed by NSA to study its own operations took computer development as a primary interest. At an October 1954 briefing by NSA staff, members asked about technical aspects of collection and cryptanalysis. Among the questions was "what are things you dream about but do not dare hope for?" Dr. Howard Eachus, replied "more speed in smaller boxes."[52] This led to an active program to develop advanced computers.

(S) An effort to develop a powerful general-purpose computer eventually became known as Project FREEHAND. Associated with it was Project LIGHTNING, an effort to increase computer speed 1,000 times.

(TS//SI) Project FREEHAND was approved at the DoD level in early October 1956. Deputy Secretary Reuben Robertson informed DIRNSA

Ralph Canine that NSA was authorized to spend an extra $5 million per year for five years to develop a high-speed computer. Thereafter, FREEHAND was to become a regular NSA budget item. However, Robertson disapproved any budget increase for the overall NSA effort.[53]

(TS//SI) Projects FREEHAND and LIGHTNING were briefed to the president in January 1957. Eisenhower agreed with the concept of increasing computer speed for cryptology and authorized use of his name in connection with recruiting for the projects.[54]

(S) With DoD funding in late 1956, and then presidential support, NSA and its science advisors took up Projects FREEHAND and LIGHTNING. They sought new ideas from commercial consultants and various universities that were doing related work.[55]

(TS//SI) The magnitude of computer development sought was considered audacious by many scientists. Even Dr. Killian thought the proposed leap in computing power "infeasible."[56] The only point of agreement among those involved was the desirability of pushing technology to the limit. In fact, with no agreement on a single best path, general research progressed on several divergent computer technologies, abetted by at least six corporations under contract and two universities.

(S) A LIGHTNING test machine was not constructed until 1962; in practical terms, the project resulted in HARVEST, NSA's first general-purpose high-speed computer system. Beyond this, NSA proudly pointed to the fact that research results in this area had been shared with other government agencies, academia, and commercial firms, driving the high-speed computing revolution.[57]

(U) ELINT

(C) ELINT (electronic intelligence) is information derived from electronic signals that do not contain speech. As an intelligence discipline it has two aspects: the study of the characteristics of signal emitters such as radars or beacons, and the location of specific emitters. Because specific emitters are associated with specific weapons, ELINT thus provides accurate order-of-battle data.

(TS) Among the problems was the relationship of COMINT producers to ELINT production; in many ways, organization and production activities overlapped. Both COMINT and ELINT were performed by the individual services with similar technologies. Both resulted in information required by both services, but each was processed and reported by different organizations.

(U) The services understandably hoped to preserve their control over an asset vital to their war-fighting capabilities. Split responsibility in production and reporting, however, frequently meant wasteful duplication of effort, and, worse, carried with it the risk that commanders in combat would not get data as quickly as needed or not get it at all.

(TS) The first major study of the intelligence community, the Clark subcommittee of the Hoover Commission, examined ELINT along with other sources of intelligence. It found affinities between ELINT and COMINT because of similarities of intercept operations, and because each helped in interpreting the other.

(TS) The Hoover Commission had favored giving most responsibility for ELINT to NSA.[58] NSA would have control of analysis, as well as responsibility for "guidance and coordination" of collection and dissemination. Tactical ELINT would remain with local commanders.[59] This recommendation was not implemented, and the

problem came up again with the other studies of the intelligence community.

(TS//SI) Although the report of the Baker Panel concentrated on COMINT, it made a clear statement about ELINT: "We recommend that responsibility for and control of ELINT processing and analysis be assigned to the National Security Agency."[60]

(TS) A special ELINT task force, chaired by Philip G. Strong of CIA, responding to a presidential directive of February 1958, concluded that it was "essential" to have a single operational and technical authority for ELINT.[61] USCIB approved the task force's conclusions in mid-August 1958 and sent them to the president. They proposed making the secretary of defense executive agent for ELINT; he, in turn, would assign NSA an ELINT mission equivalent to its existing COMINT responsibilities.[62]

(TS) The assignment of ELINT analysis to NSA under this presidential decision produced mixed results and reactions.

(U//FOUO) At an NSC conference on December 16, 1958, General John Hull pointed out that the decision had improved coordination. He emphasized, however, that NSA needed "maximum support" from DoD. Eisenhower agreed with this, and noted that the arrangements were correct.[63] This sentiment was repeated at an NSC meeting in mid-January 1959. Eisenhower said he fully endorsed NSA's COMINT-ELINT efforts.[64]

(TS//SI) In a review of COMINT and ELINT at the end of August 1960, just six months before the Eisenhower administration was to leave office, DCI Allen Dulles noted that improvements had been made and were continuing. The DCI's report concluded "COMINT, and to a lesser extent ELINT, continue to provide one of our best

potentials for early warning" against a surprise attack.[65]

(U) Allen Dulles

~~(TS//SI)~~ The PBCFIA disagreed. In two summary reports near the end of the Eisenhower administration, the Board, although noting progress in coordinating COMINT and ELINT under NSA, felt it had been too slow. The director of NSA was not exercising positive control but deferring frequently to the individual services. The Board recommended that DoD promote greater continuity in the term of office of the director of NSA, that tactical control of ELINT be given from the services to NSA, and that COMINT and ELINT planning be done at the USIB level.

(U//~~FOUO~~) Eisenhower issued no instructions about the problem, but directed that a copy of this report be given to incoming president John Kennedy, and this was done.[66]

(U//~~FOUO~~) NSA's assumption of responsibility for some aspects of ELINT, by the way, resulted in a new term to describe one of the Agency's principal missions. Since communications intelligence dealt with messages that contained speech, it did not encompass electronic intelligence, which dealt with non-speech signals. Thus, the term signals intelligence (SIGINT) was coined to describe a mission that included both.

(U) Observations

(U) There are no startling revelations about President Dwight D. Eisenhower in his relationship with NSA or his fostering of communications intelligence. Eisenhower was the consummate staff chief, one who had mastered the art of delegation for research and action. Thus, we find few direct fingerprints from him on intelligence developments.

(U) Yet, it is clear from the record that he understood COMINT, had knowledge of NSA operations, and acted in positive ways to improve both.

(U) Eisenhower had greater involvement with the burgeoning reconnaissance programs because these were essentially new activities, and, moreover, programs that had the potential for causing an international incident. With NSA and COMINT, it was not a matter of creation; Eisenhower was dealing with institutions, structures, and processes already in existence that needed reforming.

(U) The principal tool for his actions in regard to COMINT and NSA was a chain of panels that studied the important intelligence issues. Eisenhower initiated many of their studies, considered their recommendations, and took appropriate actions based on them. Not infrequently, the actions taken were the commissioning of additional panels for further study.

(U) Eisenhower put first-rate minds from the government or academia on the panels to study the intelligence community and NSA. Their involvement attracted other top people to the panels and ensured that NSA and its component disciplines would get the best analyses possible.

(U) In many cases, such as the CRITIC communications system and ELINT, the results were not apparent during his administration. Change was slow for a variety of reasons. In the case of ELINT, for example, the military services had sound reasons for objecting to structural changes to an intelligence source and opposed them. The CRITIC system moved steadily toward implementation, but the technical challenges were great, and the physical challenges of emplacing the system on a global basis were daunting.

(U//FOUO) Change did come, however. The major areas in which he fostered change were those that most affected NSA's intelligence mission — cryptanalytic research, communications improvement, computing power, and ELINT — would not have happened naturally; they required Eisenhower's concern and intervention.

(U) The changes Eisenhower initiated, even if not fully realized during his time, had profound impact in keeping NSA ahead of the technological curve, and ensuring that SIGINT would be available to help keep the American people secure in the decades to come.

(U) Notes

1. (U) Fred I. Greenstein, *The Hidden-Hand Presidency: Eisenhower as Leader* (New York: Basic Books, 1982).

2. (U) Stephen E. Ambrose, *Ike's Spies: Eisenhower and the Intelligence Establishment* (New York: Doubleday & Co., 1981).

3. (U) Dino A. Brugioni, *Eyeball to Eyeball: the Inside Story of the Cuban Missile Crisis* (New York: Random House, 1990).

4. (U) Philip Taubman, *Secret Empire: Eisenhower, the CIA, and the Hidden Story of America's Space Espionage* (New York: Simon & Schuster, 2003).

5. (U) "Note by the Executive Secretary to the National Security Council on Basic National Security Policy," Washington, October 30, 1953, marked "TOP SECRET," in Lisle A. Rose & Neal H. Peterson, editors, *Foreign Relations of the United States, 1952-1954,* Volume II: National Security Affairs, part 1 (Washington: Government Printing Office, 1984), 577-78.

6. (U) "Statement of Policy," 582.

7. (U) *New York Times* Oral History Program, Eisenhower Administration Project, interview of General Andrew J. Goodpaster by Ed Edwin, 25 April 1967, interview no. 1, 9, 13, 24, 31.

8. (U) Richard Kovar, "An Interview with Richard Lehman," www.cia.gov/csi/studies/summer00/art05.html.

9. (U) Hatch telephone interview with General Goodpaster; Goodpaster interview by Edwin.

10. (U) Task Force on Intelligence Activities of the Commission on Organization of the Executive Branch of the Government, "Report on Intelligence Activities in the Federal Government," hereafter, "Report on Intelligence Activities," Appendix I, 11. Center for Cryptologic History Series File, VI.C.1.8.

11. (U) LtGen John A. Samford, Director, NSA, letter to General G. B. Erskine, 10 July 1958. NSA ARC ACC #26030 CBOL48.

12. (U) G. B. Erskine, Memorandum for Deputy Secretary Quarles, "Director of National Security

Agency," 17 July 1958. NSA ARC ACC #26030 CBOL48.

13. (U) William H. Jackson, Special Assistant to the President, Memorandum for Sherman Adams, Assistant to the President, "Weekly Report of William H. Jackson, Special Assistant to the President," 28 July 1956. Eisenhower Presidential Library, Subject Series, White House Subseries, Box 1-7, file: Jackson, William H. (3); William H. Jackson, Special Assistant to the President, Memorandum for Sherman Adams, the Assistant to the President, "Reorganization of the National Security Agency," 1 August 1956. Eisenhower Presidential Library, Subject Series, White House Subseries, box: 6, file: Jackson, William H.

14. (U) George F. Howe, "The Clark Report," unpublished manuscript, Center for Cryptologic History Series File, VII. 1.9.

15. (U) "Report on Intelligence Activities," Appendix I, 20-24, 27, 36, 46-49.

16. (U) Untitled, undated response to the "Report on Intelligence Activities," 1-2. CCH Series File XVI.D.1.2.

17. (U) Untitled, undated response to the "Report on Intelligence Activities," 3.

18. (U) Untitled, undated response to the "Report on Intelligence Activities," 3.

19. (U) LCDR P. J. Karl, USN, Memorandum for Mr. Hugh S. Erskine, "The President's Science Advisory Committee," 9 March 1955. NSA ARC ACC# 20659 CBJG 16.

20. (U) William F. Friedman, Special Assistant, memorandum for the Chief of Staff, "Visit to NSA by Members of the Special Subcommittee of the Scientific Advisory Committee," 6 October 1954. NSA ARC ACC #28690, CBTK57.

21. (U) James R. Killian, Jr., *SPUTNIK, SCIENTISTS, AND EISENHOWER: A Memoir of the First Special Assistant to the President for Science and Technology* (Cambridge, Massachusetts: The MIT Press, 1977), 64-70.

22. (U) Killian, SPUTNIK, 70.

23. (U) Killian, SPUTNIK, 71.

24. (U) Killian, SPUTNIK, 79-80.

25. (U) John A. Skinner, A/Chief, Communications, "Analysis of Technological Capabilities Panel of the Science Advisory Committee

as it Pertains to NSA Communications," enclosure in Powers, DF, "Report by the Technological Capabilities Panel," 7 June 1955. NSA ARC ACQ #30235.

26. (U) No author, n.d., "Interim Statement for Killian Board." NSA ARC, ACQ #2944.

27. (U) Columbia University, Oral History Collection, Part VI, "Killian, James P., Jr.," 29, 36.

28. (U) Memorandum, "Discussion at the Special Meeting in the President's Office on Thursday, January 17, 1957. Eisenhower Presidential Library.

29. (U) Gordon Gray, director, ODM, letter to Donald H. Quarles, Deputy Secretary of Defense, 10 June 1957. NSA ARC ACC#34106 CBLG36; G. B. Erskine, Assistant to the President (Special Operations), Memorandum for the Executive Secretary, NSC, "Report to the President by the President's Board of Consultants on Foreign Intelligence Activities, dated December 20, 1956," 26 April 1957. CCH SERIES FILE XVI.D.1.2.

30. (U) "The Bell Laboratory Cronies: The William O. Baker Page," http://ourworld/compuserv.com/homepages/CarolASThompson/Baker.html. Other Baker Panel members included L. W. Alvarez of the University of California, H. W. Bode and J. R. Pierce of Bell Labs, R. L. Garwin and N. Rochester of IBM, D. A. Huffman of MIT, J. W. Milnor of Princeton University, O. Selfridge of Lincoln Laboratories at MIT, A. M. Gleason of Harvard University (part-time), and J. W. Tukey of Bell Labs as a consultant.

31. (U) James S. Lay, Executive Secretary, memorandum for the Secretary of Defense and Director, Office of Defense Mobilization, "Report to the President by the President's Board of Consultants on Foreign Intelligence Activities, dated December 20, 1956," 19 April 1957. NSA ARC, ACC: 46033; James S. Lay, Jr., Executive Secretary, Memorandum for the Director of Central Intelligence, "Recommendation No. 4 - Report of the President's Board of Consultants on Foreign Intelligence Activities dated October 24, 1957, 28 October 1957. NSA ARC, ACC #46033; Gordon Gray, Memorandum for James S. Lay, Jr., Executive Secretary, NSC, "Study of Soviet High-Grade Ciphers," 25 April 1957. Eisenhower Presidential Library, NSC Series, Subject Subseries, box: 7, file: President's Board — 1st Report (8);

phen L. David, ADVA, Memorandum for the ctor, NSA, "The Baker Committee," 16 September 7. NSA ARC ACC#34106 CBLG36; Howard C. low, Memorandum to Mr. Austin, "Parallel," 4 bruary 1957. NSA ARC ACC #34106 CBLG36.

32. (U) J. Patrick Coyne, Memorandum re eeting Held in the President's Office from 10:30 a.m. 11:30 a.m., February 10, 1958, "The Baker Report' Recommendation No 8-a of the Report of the President's Board of Consultants on Foreign Intelligence Activities, dated December 20, 1956, 10 February 1958. CCH Series File, XVI.D.1.2.

33. (U) Unsigned Memorandum for the Executive Secretary, USCIB, "comments on the Baker Study," with ink notation "Dr. Engstrom's," n.d.; Untitled response signed by Arthur J. Levenson, Chief, ADVA; Memorandum "General Comments on the Baker Committee Report," signed by initials FCA. NSA ARC ACC #31003 CBOE53.

24. (U) John A. Samford, Director, NSA, Memorandum for the Deputy Secretary of Defense, "NSA Research Institute," 21 February 1958. NSA ARC, ACC #34285; G. B. Erskine, Assistant to the Secretary of Defense (Special Operations), Memorandum for the Director, National Security Agency, "NSA Research Institute," 4 March 1958. NSA ARC, ACC #34285; John A. Samford, Director, NSA, Memorandum for General Erskine, "NSA Research Institute," 6 March 1958. NSA ARC, ACC #34285; G. B. Erskine, Assistant to the Secretary of defense (Special Operations), Memorandum for the Director, National Security Agency, "Baker Panel Recommendation on Research Institute for Soviet High-Level Problem," 13 March 1958. NSA ARC ACC #34106 CBLG36 H01-0111-7; John A. Samford, Director, NSA, Memorandum for the Secretary of defense, "NSA Research Institute," 4 April 1958. NSA ARC, ACC #34285.

35. (U) "Institute for Defense Analyses, Special Meeting of the Board of Trustees, October 31, 1957." Eisenhower Presidential Library, White House Office, Office of the Special Assistant for Science and Technology (James R. Killian and George B. Kistiakowsky): Records 1957-61, box: 11, file: Institute for Defense Analyses [December 1959].

36. (U) Donald A. Quarles, Deputy Secretary of Defense, letter to Major General James McCormack, Jr., USAF (Ret), President, Institute for Defense Analyses, 24 April 1958. NSA ARC, ACC # 34285; H. T. Engstrom, [Deputy]Director, NSA, letter to Major General James McCormack, Jr., USAF (Ret), President, Institute for Defense Analyses, 17 June 1958. NSA ARC, ACC #34285.

37. (U) A. G. Hill, Memorandum for File, 12 September 1958. NSA ARC ACC #26030 CBOL48.

38. (U) Oral History, Dr. Louis W. Tordella, interviewed by Robert W. Farley, 28 July 1990, OH-08-90, Center for Cryptologic History, 90.

39. (U) Press release and Executive Order "Establishing the President's Board of Consultants on Foreign Intelligence Activities," 6 February 1956. NSA ARC ACC #34187 CBPD47; Colonel A. J. Goodpaster, "Memorandum of Conference with the President, 20 December 1956 - 3:00 PM," 20 December 1956. CCH Series File, XVI.D.1.2.

40. (U) BG John F. Cassidy, Staff Director, "The President's Board of Consultants on Foreign Intelligence Activities," 13 January 1956. NSA ARC ACC #34187 CBPD47.

41. (U) BG John F. Cassidy, Staff Director, PBC-FIA, Memorandum for Captain E. W. Knepper, USN, Chief of Staff, Production, NSA, 7 March 1958. NSA ARC ACC #34187 CBPD47.

42. (U) President's Board of Consultants on Foreign Intelligence Activities, Report for the President, "Recommendations of the PBCFIA," 24 October 1957. Eisenhower Presidential Library, NSC Series, Subject Subseries, box: 7, file: President's Board — 2nd Rpt (1).

43. (U) A. J. Goodpaster, "Memorandum of Conference with the President, October 24, 1957, 8:30 a.m.," 28 October 1957. Eisenhower Presidential Library, White House Office, Office of the Staff Secretary, Alphabetical Subseries, box no. 6, file: board of Consultants [on Foreign Intelligence Activities] (5).

44. (U) William A. Tidwell, Chairman, Ad Hoc Committee, Memorandum for the Chairman, Intelligence Advisory Committee, "Report of the Ad Hoc Committee on Communications," 29 April 1958. Eisenhower Presidential Library, Subject Series,

Alphabetical Subseries, box: 14-15, file: Preparation for Intelligence Communications Test and Exercise.

45. (U) "Annex D, Points of Origin for Critical Intelligence," SC 02305/58. Eisenhower Presidential Library, Staff Secretary, Subject — Alpha, box: 15.

46. (U) Memorandum of the 378th NSA meeting, 38 August 1958; Captain Arthur Enderlin, USN, Chief, Office of Telecommunications, Memorandum for the Record, "NSCID #7, Action on the 'CRITICOMM' Plan," and insert "The CRITICOMM Plan," 27 August 1958. NSA ARC ACC#10149 CBND73.

47. (U) Oral History, Dr. Louis Tordella, interviewed by Robert Farley, 28 July 1990, OH-08-90, Center for Cryptologic History, 22, 66.

48. (U) W. O. Baker, MEMORANDUM FOR DR. J. R. KILLIAN, JR., "Coordination of Military Communications Development with Particular Reference to the CRITICOMM System," 1 May 1959. Eisenhower Presidential Library, Subject Series, Alphabetical Subseries, box: 14-15, file: Preparation for Intelligence Communications Test and Exercise.

49. (U) John E. Hull, Chairman, PBCFIA, Report to the President, 12 August 1959. CCH SERIES FILE, XVI.D.1.2.

50. (U) Draft Memorandum For the President, "Transmission of Critical Intelligence," 19 January 1959. Enclosure in Assistant Director, Current Intelligence, Central Intelligence Agency, MEMORANDUM FOR General Andrew J. Goodpaster, "Transmission of Critical Intelligence," 19 January 1959. Eisenhower Presidential Library.

51. (U) Admiral Dorsey, "CRITICOMM Briefing for The President's Board of Advisors on Foreign Intelligence Activities," 19 November 1959. NSA ARC ACC# 43510.

52. (U) Capt. I. T. Mcdonald, USAF, Memorandum for the Record, Memo Routing, 18 October 1954. NSA ARC ACC #21479 CBJH52.

53. (U) Reuben B. Robertson, Jr., Deputy Secretary of Defense, Memorandum for the Director, National Security Agency, "Project FREEHAND," 1 October 1956. NSA ARC ACC #23666 CBOG51.

54. (U) LTG John A. Samford, DIRNSA, Memorandum for the Assistant Secretary of Defense (Comptroller), "Project LIGHTNING," Serial: N2145, 3 April 1957. NSA ARC ACC #34105 CBLG36.

55. (U) Minutes of the NSA Scientific Advisory Board Meeting Held on 8 October 1956. NSA ARC ACC #26093 CBOL56; Minutes of the NSA Scientific Advisory Board Meeting Held on 9 October 1956. NSA ARC ACC #28690 CBTK57.

56. (U) Second Quarterly Briefing of the Deputy Secretary of Defense, Presentation by General Erskine, 1030, 2 August 1956. NSA ARC ACC #26097, CBNC62.

57. (U) NSA, "Progress in Management: Report No. 12, LIGHTNING," November 1964, 1-9. NSA ARC ACC #22251 CBJL73.

58. (U) "Report on Intelligence Activities," Appendix I, 41-45.

59. (U) "Report on Intelligence Activities," Appendix I, 48-49.

60. (U) Captain Allyn Cole, Jr., USN, Memorandum for the members of USCIB, "Presidential Action on Baker Panel Report," enclosure "Digest of Report," 13 February 1958. NSA ARC ACC #44403N.

61. (U) Philip G. Strong, chairman, ELINT Task Force, Memorandum for Chairman, USCIB, "Report of the USCIB ELINT Task Force," 9 June 1958. NSA ARC ACC #36348 CBNA16.

62. (U) Colonel W. Shepard, USAF, Chief, Plans and Control Group in Production, disposition Form, "Recent USCIB Developments," PROD-042/s-4639, 21 August 1958. NSA ARC ACC #35271 CBPD54.

63. (U) John S. D. Eisenhower, "Memorandum of Conference with the President, December 16, 1958 — 9:00 AM," 22 December 1958. CCH Series File XVI.D.1.2.

64. (U) Memorandum, "Discussion at the Special Meeting held in the Cabinet Room of the White House following the 393rd NSC Meeting, Thursday, January 15, 1959," 19 January 1959. Eisenhower Presidential Library, Box 7.

65. (U) "Developments and Trends in the COMINT and ELINT Fields during Fiscal Year 1960," Annex to USIB-D-3.2/10, 30 August 1960, enclosure to Allen Dulles, Director, CIA, Memorandum for the Executive secretary National Security Council, "Report on 'Developments and Trends in the COMINT and ELINT Fields During Fiscal Year 1960,'" 31 August 1960. Eisenhower Presidential Library.

DOCID: 3300047

55. (U) John E. Hull, chairman, PBCFIA, report to president, 24 May 1960. CCH SERIES FILE, D.1.2; John E. Hull, chairman, PBCFIA, report to president, 5 January 1961. CCH SERIES FILE, D.1.2. A handwritten marginal note states that the ort was handed to President Kennedy as per ahower's instructions.

(U//FOUO) Dr. Hatch is currently Technical Director of the Center for Cryptologic History (CCH) and is also the NSA Historian. He has worked in the CCH since 1990. From October 1988 to February 1990, he was a Legislative Staff Officer in the NSA Legislative Affairs Office. Previously, Dr. Hatch served as a Congressional Fellow. He earned a B.A. degree in East Asian languages and literature and an M.A. in East Asian studies, both from Indiana University at Bloomington. Dr. Hatch holds a Ph.D. in international relations from American University.