

The New York Times Magazine

MAY 16, 1976/SECTION 6

BIG EAR

KZJXO YAXRF OPXJH EMPMJ

NEKAI XELGJ JXLLB NBOLG

HYLNA OPBLT ZJSPG GSJFT

This coded message reads:
N.S.A. is America's
phantom ear.
And sometimes
it has eavesdropped on
the wrong things.

VAGLA SABXA JKNZ 8PBJO H

BROTHER?

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BIG EAR OR BIG BROTHER?

The National Security Council was created 23 years ago to intercept and decode the messages of foreign governments. Who said it should listen in on Americans at home?

By David Kahn

Room 6510 at the State Department is a warren of windowless offices with a special cipher lock on the door. Scrambler teletypewriters, shielded by special walls so that none of their radiation can escape, tick out a stream of material. Another door bars an inner area to all but perhaps 5 percent of the officials at State. This is the LDX room—long-distance Xerox. Here, the scourgings of the globe's electronic environment flood in.

The environment is heavy with traffic—the *didahdidah* of Soviet Army radiograms in code or in clear; the buzzings of foreign air-defense radars; the whines of high-speed radio-teletype-writer circuits carrying diplomatic dispatches; the bleeps of missile telemetry; the hums of the computer-data

David Kahn, assistant professor of journalism at New York University, is the author of "The Codebreakers."

links of multinational corporations; the plain language of ordinary radio messages; the chiming sing-song of scrambled speech. Moving on these varied channels may be Soviet orders to transfer a regiment from one post to another; Chinese Air Force pilots complaining during a practice flight about deficiencies in their equipment; Saudi Arabian diplomats reporting home from a meeting of OPEC. Tens of thousands of such messages are intercepted daily around the world and beamed to a complex at Fort Meade, Md., for decoding and relaying to the State Department and, simultaneously, to the White House, the Defense Department and the C.I.A.

The tall, bespectacled Air Force general sat down behind a table in the high, colonnaded Caucus Room of the Old Senate Office Building. Television focused its dazzling lights upon him and recorded his gestures. Two business-suited aides pulled up their chairs on either side of him. Before him sat the members of the Senate's Select

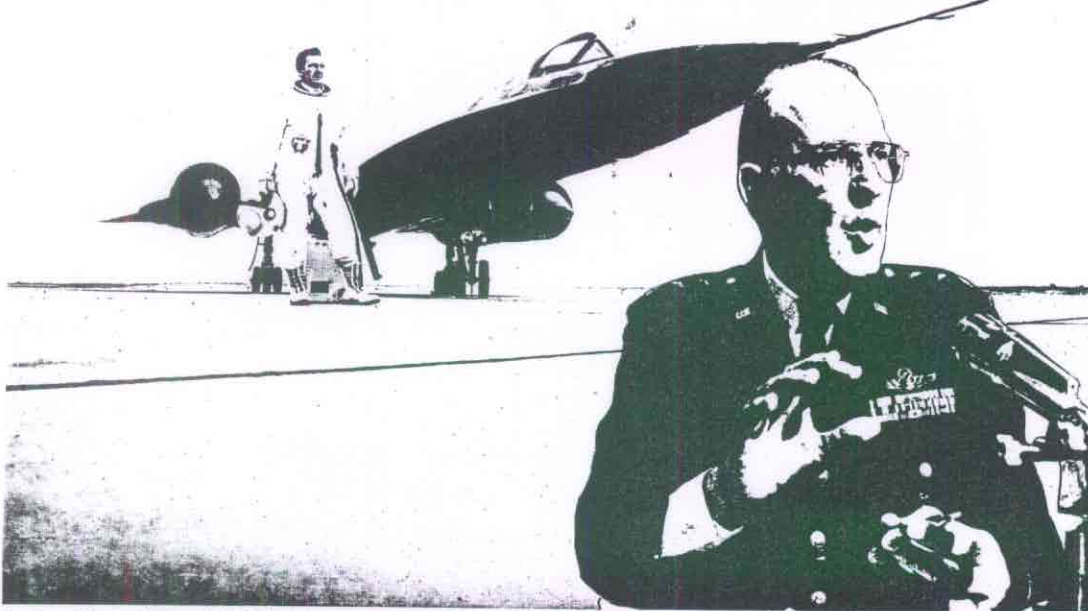
Committee on Intelligence. A gavel banged, and the hearing began.

In appearance, the event resembled the start of thousands of Congressional hearings. What distinguished this one, last Oct. 29, was that, for the first time, the head of the largest and most secretive of all American intelligence organs had emerged from obscurity to describe some of his agency's work and respond to charges that it had invaded Americans' privacy. The big officer was Lieut. Gen. Lew Allen Jr., current director of the National Security Agency. N.S.A. is America's phantom ear. And sometimes it has eavesdropped on the wrong things.

In addition to sucking up and disgorging its daily load of intercepts from abroad, the N.S.A. had improperly eavesdropped on the conversations of many Americans, such as the antiwar protesters Benjamin Spock and Jane Fonda and the Rev. Ralph Abernathy, successor to Dr. Martin Luther King Jr., current director of the National Bureau of Narcotics and Dangerous Drugs and other Government agencies,

its vast technological capabilities had invaded the domestic field, which they were never intended to do. The committee wanted to know about an N.S.A. activity dubbed the "watch list."

General Allen testified that, in the early 60's, domestic law-enforcement agencies asked the N.S.A. for information on American citizens traveling to Cuba. The assignment, he said, was reviewed by "competent external authority"—two Attorneys General and a Secretary of Defense. All approved it, and the idea of using the N.S.A. for such purposes spread rapidly through the Government. The drug bureau submitted the names of 450 Americans and 3,000 foreigners whose communications it wanted the N.S.A. to watch. The F.B.I. put in a list of more than 1,000 American and 1,700 foreign individuals and groups. The Central Intelligence Agency, the Defense Department and the Secret Service also submitted watch lists. Altogether, General Allen said, some 1,650 Ameri- (Continued on Page 62)



Gen. Lew Allen Jr., director of the National Security Agency, testifying before the Senate, and the SR-71, one of the N.S.A.'s many electronic intelligence tools.

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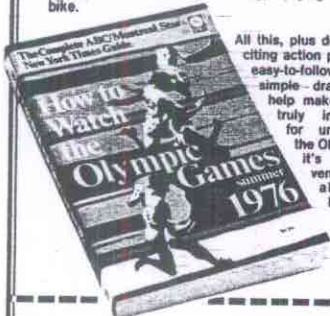
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Big Ear

Continued from Page 13

can names were on the lists, and the N.S.A. issued about 3,900 reports on them.

But all this is over, he said; he personally abolished the "watch list" when he took over the agency in 1973.

The general's assurance did little to overcome the committee's overall concern—and that of many other Americans. For both prior to and since that hearing, disclosures in Congress and elsewhere have indicated a multifaceted practice of using the N.S.A. in ways that threaten American freedoms. For instance:

□ The N.S.A. persuaded three major cable companies to turn over to it much of their traffic overseas. It was partly through this operation, code-named Shamrock, that the N.S.A. complied with the "watch list" assignment. At one office, the N.S.A. man would show up between 5 A.M. and 6 A.M., pick up the foreign messages sorted out for him by company employees (who were said to have been paid \$50 a week for their cooperation), microfilm them and hand them back. When messages began to move on tape, the N.S.A. got them in that form. The agency took some 150,000 messages a month, 90 percent of them in New York, and thousands of these were distributed to other Government bodies. Congress got wind of Shamrock, however, and a year ago, after 28 years and millions of private telegrams, Secretary of Defense James R. Schlesinger had to terminate the operation.

□ A previous N.S.A. director co-signed the notorious plan of White House aide Tom C. Huston to penetrate organizations considered security threats by the Nixon Administration. The agency furnished Huston with several suggestions; one of them seems to have been to let the N.S.A. eavesdrop on domestic American communications. Huston conceded that the plan would use "clearly illegal" techniques. But the N.S.A. has acknowledged that it "didn't consider . . . at the time" whether its proposal was legal or not. The Huston plan was never implemented, but, said

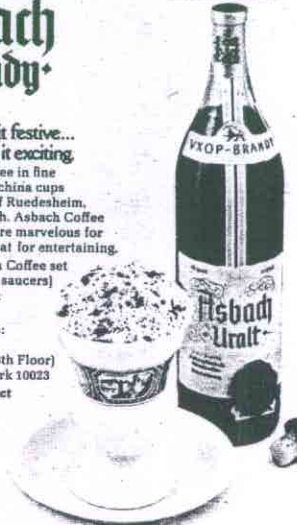
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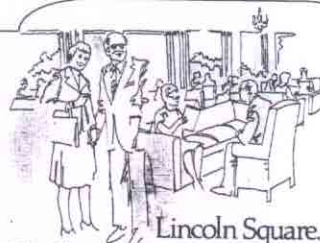
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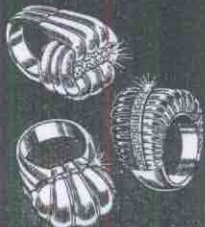
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the Senate Watergate Committee, the "memorandum indicates that the N.S.A., D.I.A. [Defense Intelligence Agency], C.I.A. and the military services basically supported the Huston recommendations."

□ Former President Nixon acknowledged in a recent deposition to the Senate Intelligence Committee that he had used the N.S.A. to intercept American nonvoice communications. He said he wanted to discover the source of leaks from the staffs of the National Security Council and the Joint Chiefs of Staff.

□ The agency is said to have passed reports on what prominent Americans were doing and saying abroad directly to Presidents Johnson and Nixon. Once, for example, the agency informed Johnson that a group of Texas businessmen involved in private negotiations in the Middle East had claimed a close relationship with him to improve their bargaining position.

□ Two Stanford University computer scientists have recently accused the N.S.A. of promoting its own interests at the expense of the public's in a standard cipher proposed by the Government for computer networks. At issue is the key that would afford secrecy between pairs of users. The scientists accuse the N.S.A. of maneuvering to get industry to accept a key that, while too complex for rival businesses to try to solve, would be susceptible of cracking by the N.S.A.'s superior capabilities. That would permit the agency to raid the economic data flowing into the computer network, and to penetrate personal-data files enciphered for security.

□ In the whole area of economic intelligence, N.S.A. interception has been developing rapidly. The House Intelligence Committee, in its report, expressed concern over the resultant "intrusion . . . into the privacy of international communications of U.S. citizens and organizations."

At the root of General Allen's appearance before the Senate Intelligence Committee, and of the entire Congressional investigation of the N.S.A., lay the question: Who authorized these abuses? What was there about the agency's legal basis that permitted it to invade privacy at the request of other Government agencies—and with so little qualm? Was the final authority the President's—and, in that case, was he not armed with powers to play Big Brother beyond the worst imaginings of the recent past?

"[The N.S.A.'s] capability to monitor anything . . . could be turned around on the American people," said the committee's chairman, Senator Frank Church. "And no American would have any privacy left. There would be no place to hide. If a dictator ever took charge in this country, the technological capability that the intelligence community has given the Government could enable it to impose total tyranny."

How essential to the nation's security is the National Security Agency? How can a balance be struck between the legitimate needs it serves and the freedoms it has shown itself capable of undermining? How did the whole problem originate?

Signals intelligence reaches back in America to the founding days of the Republic. But it matured only in World War I, with the widespread use of radio. During World War II, it became the nation's most important means of gathering secret information. When the Iron Curtain closed down, the United States wanted to preserve these extraordinary capabilities. In 1952, President Truman issued a directive transforming the Armed Forces Security Agency, the interservice arm for signal intelligence, into the National Security Agency, serving all branches of government.

Therein lay the first pitfall. Unlike the C.I.A., in which all intelligence functions were centralized in 1947, the N.S.A. was not formed by act of Congress, with a legislative charter defining the limits of its mission. The cryptologic empire has only a Presidential directive as its legal base. So shadowy has been the N.S.A.'s existence, however, that the text of the seven-page directive has never been made public.

This obsession with secrecy is well reflected by the agency's headquarters. At the edge of Fort Meade, just off the Washington-Baltimore Parkway, it is ringed by a double chain-link fence topped by barbed wire with six strands of electrified wire between them. Marines guard the four gates. Inside lie a modern, three-story, square-A-shaped structure and, within its arms, a boxy nine-story building. From the latter, in particular, emanates a chill impersonality, quite different from the flashiness of C.I.A. headquarters in McLean, Va. Topped by a frieze of antennas, the



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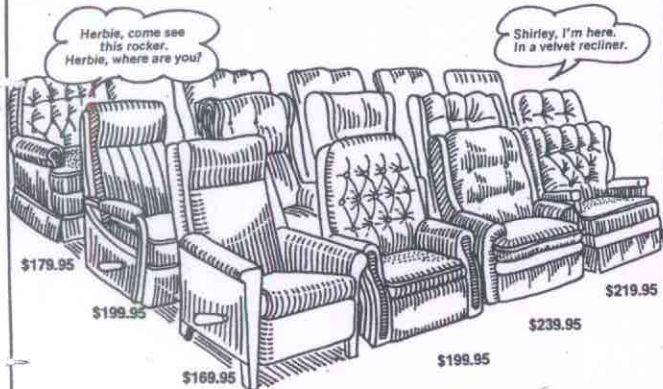
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only sign of life a plume of white steam rising from the roof, the afternoon sun gleaming off its glassy facade, it stares bleakly south, toward Washington, the White House, and the centers of national power.

All around sprawl the vast macadam parking lots for the 20,000 employees who work there. They have passed some of the most rigorous security tests in the Government, but they may be fired merely on a suspicion. They are enjoined from talking even to their spouses about their work. And inside the building they are physically restricted as well. The colored badge each of them wears tells the patrolling Marine guards into which areas they may and may not go.

Their work is of two kinds. Some of them protect American communications. They devise cryptosystems. They contract for cipher machines, sometimes imposing performance standards so high and tolerances so close that suppliers quit in despair. They promulgate cryptologic doctrine to ensure that the procedure of, say, the State Department do not compromise the messages of Defense. But the main job is SIGINT—signal intelligence—listening in. To do all its work, the N.S.A. alone spends about \$1 billion a year. The agency also disposes of about 80,000 servicemen and civilians around the world, who serve in the cryptologic agencies of the Army, Navy and Air Force but stand under N.S.A. control, and if these agencies and other collateral costs are included, the total spent could well amount to \$15 billion.

The N.S.A.'s place on the organizational chart is ambiguous: It is "within but not a part of" the Defense Department. The Secretary of Defense merely serves as the "executive agent" of the President in carrying out the functions assigned to the agency. It is not subordinate to the C.I.A., but its director sits on the United States Intelligence Board, the intelligence community's steering committee, whose chairman is the Director of Central Intelligence—the C.I.A. chief. The N.S.A. di-

rector is always a three-star general or admiral. (The deputy director must be a career cryptologist.) The President appoints the director, rotating among the three services, which get 85 percent of its output. The seven directors before General Allen held the job for an average of three and a half years each.

The agency's orders—Truman's 1952 directive—are to "obtain foreign intelligence from foreign communications or foreign electronic signals," General Allen is said to have told the House Intelligence Committee. The agency can be remarkably successful.

"Most collection agencies give us history. The N.S.A. is giving us the present," said Lieut. Gen. Daniel O. Graham, a former head of the Pentagon's Defense Intelligence Agency (D.I.A.). "Spies take too long to get information to you, [satellite] photographs as well. N.S.A. is intercepting things as they happen. N.S.A. will tell you, 'They're about to launch a missile. . . . The missile is launched.' We know in five minutes that a missile has been launched. This kind of intelligence is critical to the warning business."

During the Strategic Arms Limitation Talks (SALT) of 1972, the N.S.A. reported on the precise Soviet negotiating position and on the Russian worries. "It was absolutely critical stuff," said one high intelligence officer. The information was passed back quickly to the American diplomats, who maneuvered with it so effectively that they came home with the agreement not to build an antiballistic missile defense system. "That's the sort of thing that pays N.S.A.'s wages for a year," the officer said.

In 1973, large antennas appeared in satellite photographs of Somalia, which lies east of Ethiopia on the Indian Ocean. They looked like Soviet models. But not until the N.S.A. had learned where the antennas' signals were going to and coming from was the Government certain that the Russians, who had been kicked out of Egypt, had moved their military advisers



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into Somalia in force and were controlling their warships in the Indian Ocean from there.

Examples like these made General Allen's task a little easier when he appeared before the Senate Intelligence Committee. Senator Walter F. Mondale, the Minnesota liberal, told the general, "The performance of your staff and yourself before the committee is perhaps the most impressive presentation that we have had. And I consider your agency and your work to be possibly the single most important source of intelligence for this nation."

Senator Church concurred. "We have a romantic attachment to the days of Mata Hari that dies very hard. The public has the impression that spies are the most important source of information, but that is definitely not so. The more authoritarian the Government being penetrated, the less reliable the information derived from secret agents. In the Soviet Union and other Communist countries, the penetrations are likely to be short-lived and the information limited. But information obtainable through technical means constitutes the largest body of intelligence available to us, except by overt means."

And, he might have added, the most reliable. It is free of the suspicion that blights a spy's reports: Is he a double agent? Photographs from satellites also provide data as hard as can be, but, as Schlesinger once remarked, "nobody has ever been able to photograph intentions."

On the other hand, communications intelligence is far more easily jeopardized than other forms of information gathering. If a Government merely suspects that its communications are compromised, it does not have to hunt down any spies or traitors—it can simply change codes. And this will cut off information not from just one man but from a whole network. That is why the Government is so hypersensitive to any public mention of the N.S.A.'s work. When President Ford last September refused to send classified material to the House Intelligence Committee after it made public four apparently innocuous words—"and greater communications security"—it was because of fears that the words would reveal to the Egyptians, to whom they referred, that the United States had pierced deeply enough into their communications to detect important changes. When last February he invoked executive privilege for private firms to keep them from furnishing information to a House committee looking into Government interception of private telegraph and teletypewriter messages, it was also for fear of compromising N.S.A. procedures.

In doing its work, the agency doesn't just tune up its receivers and go out hunting for codes to break. It gets its assignments from other elements of the Government. They tell the United States Intelligence Board what information they need that the N.S.A. can probably provide. After board approval, the Director of Central Intelligence levies the requirements upon the N.S.A. Typical assignments might be to locate and keep track of all the divisions of the Chinese Army, to determine the range and trajectory of Soviet ICBM's, to ascertain the characteristics of radars around East Berlin. In all of these, the first step is to seek out the relevant foreign transmissions.

Some of the intercepts come from N.S.A. teams in American embassies. The team in Moscow has been spectacularly successful—at least before the Russians began flooding the building with low-intensity microwave radiation. It had picked up the conversations

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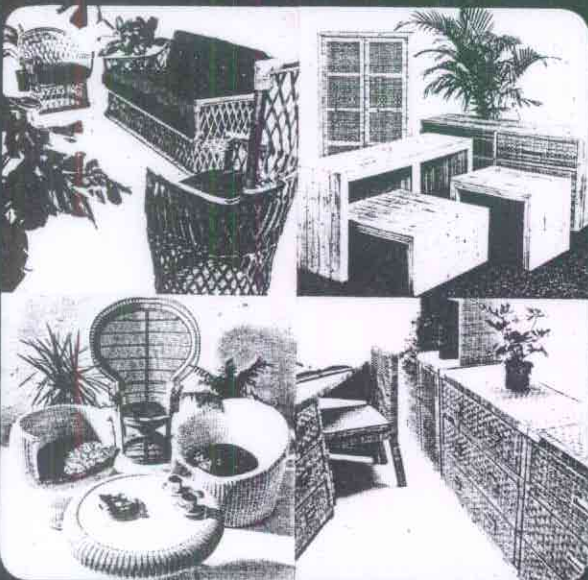
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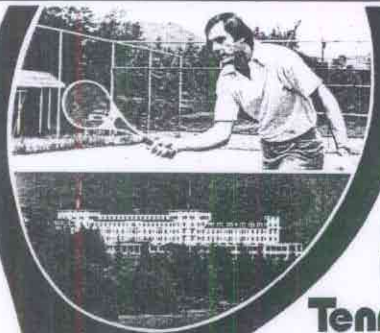
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between Soviet leaders in their radiotelephone-equipped automobiles and other officials in the Kremlin.

More intercepts come from special satellites in space called "ferrets." Swinging silently over the broad steppes and scattered cities of the Communist world, or floating permanently above the golden deserts and strategic gulfs of the Middle East, these giant squat cylinders tape-record every electric whisper on their target frequencies. These they spew out upon command to American ground stations.

Most radio intercepts come from manned intercept posts. Some of these are airborne. The Air Force patrols the edges of the Communist bloc with radio reconnaissance airplanes, such as the supersonic SR-71, the EC-135, and the EC-121, which carries a crew of 30 and six tons of electronic equipment. These planes concentrate not on communications intelligence (COMINT) but on the second branch of signals intelligence, or ELINT.

ELINT plays an important role in modern war. Suppose the Air Force were to send a bomber force against Moscow. Soviet radars would detect the force and report its range, direction and speed, enabling their fighters to attack. To delay this, the Americans would have to jam the radars, or "spooft" them—i.e., emit counterfeit pulses that would indicate a false position and speed for the bombers. But to do this, the Air Force would first have to know the frequency, pulse rate, wave form and other characteristics of the Russian radars. That explains why, in fiscal 1974, according to a report of the Center for National Security Studies in Washington, the Air Force flew at least 38,000 hours of ELINT flights—better than a hundred hours a day—dissecting radar signals with oscilloscopes and other electronic means. The game is not without its risks. No nation leaves all its radars turned on all the time. So the planes sometimes dart toward the country's territory. They hope the target will turn on its more secret radars. The danger, particularly at a time of international tension, is that the target will take the tease for the real thing and start World War III.

Other N.S.A.-directed posts lurk in the depths of the sea, aboard submarines in the Navy's Holystone program. This seeks, among other things, to "fingerprint" the acoustics of Soviet missile submarines. Aboard the Holystone submarine Gato, when it collided

with a Russian sub in the Barents Sea in 1969, were eight sailors working for the Navy's N.S.A.-related security group. The Navy also used to have nine noncombatant surface ships collecting signal intelligence. But after the Liberty was strafed by Israeli forces during the Six-Day War of 1967 and the Pueblo was captured by the North Koreans, it decommissioned this mode.

The vast majority of the manned posts are fixed on the ground. They ring the Soviet Union and China—clusters of low huts huddling on a dusty plain or in the foothills of some remote Karakoram. In Turkey, they nestle close to the Russian underbelly. The post at the Black Sea port of Sinop—the ancient Sinope, which centuries ago colonized the shores of the Euxine—strains to hear Soviet voices. At Okinawa, the antenna field cobwebs a mountainside.

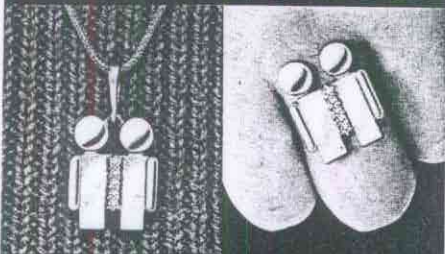
But much of the interception is done by servicemen. Earphones clamped to their heads, they hear the staccato of Russian Morse: One Soviet Army post reports the movement of half a dozen trucks to another. Other messages are in cipher. On a voice circuit, soldiers can be heard talking on maneuvers.

During moments of tension, the routine changes. Transmitters will vanish from their usual points on the dial. Station call signs will cease following their normal pattern of changes. Yet this is when information is most needed. The monitors hunch over their radio sets as they hunt up and down the frequency spectrum for their target transmitter. They can recognize him by peculiarities in sending or by the tone of his transmitter. One may sound like *dowdy-dowdy*, another like *doodee-doodee*. One may sound as if he's sending from inside a can; another may let his frequency slide up two or three kilohertz during a message.

They type out their intercepts on four-ply carbon paper and pass them back to the analysts. These men graph message routing to deduce organizational relationships. They monitor traffic volume for an upsurge that might indicate unusual activity. They extract from the message content indications of equipment capabilities, unit morale, names and characteristics of commanders. And they send the messages in cipher back to the cryptanalysts.

These are the aces, the shamans, of the communications intelligence business. They are the descendants of the ruffed divines and mathematicians

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who broke codes in curtained, candle-lit black chambers to further the grand designs of their absolute monarchs. The N.S.A.'s modern Merlins work in large open spaces filled with rows of gray steel desks. They pore over green-striped sheets, tap on computer terminals, print letters with colored pencils in rows and columns on cross-ruled paper, sip coffee, confer. Their successes become the agency's most jealously guarded secrets.

They succeed, however, mainly with the ciphers of third-world countries and with the lower-level ciphers of major powers. Underdeveloped nations have neither the money nor the expertise to secure their messages from American—and Russian—exposure. Anyhow, they mainly want to keep things secret from their neighbors—Pakistan from India, Egypt from Israel, Argentina from Chile. So they buy commercially available cipher machines. But N.S.A. cryptanalysts, backed up by probably the largest concentration of computers under one roof in the world, some of them perhaps a generation or two ahead of any others in existence, can often beat these.

The major powers, on the other hand, use machines to generate ciphers so strong that, even given a cryptogram and its plaintext, and all the world's computers of this and the next generation, a cryptanalyst would need centuries to reconstruct the cryptosystem and use the reconstruction to read the next message. The N.S.A., in other words, cannot get the most desirable communications intelligence—the high-level messages of the Soviet Union and Communist China. (The SALT coup was partly the result of a Soviet enciphering error.) Worse, the area in which cryptanalysts may expect success is shrinking. The main reason is the declining cost of computation. This is falling by 50 percent every five years; the most obvious example is the price of pocket calculators. For the same amount of money as it spent five years ago, a nation can buy a cipher machine today with double the coding capacity. But doubling the coding capacity squares the number of trials the cryptanalyst has to make. Very quickly this work rises beyond practical limits.

So the N.S.A. asks for help. The F.B.I. burglarized embassies in Washington for it. The C.I.A. has subverted code clerks in foreign capitals: It

(Continued on Page 70)

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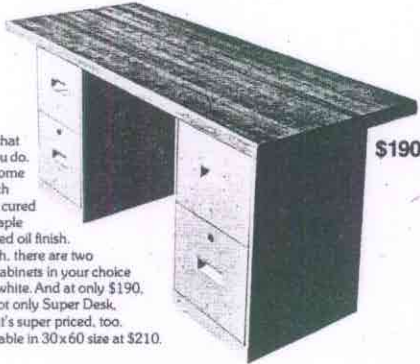
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test, how does it do in its day-to-day operations?

A survey at the State Department showed that most desk officers felt that while the N.S.A. material was not especially helpful, they didn't want to give it up. It made their job a little easier. A former top State Department official was always glad to see the man with the locked briefcase. "I got some good clues on how to deal with various countries," he said, "and I quickly learned which ambassadors I could trust and which not."

At the Defense Department, most officials said they appreciated the help they got from the agency. "D.I.A. relies very heavily on N.S.A.," said General Graham, "because D.I.A. puts out a warning document to American units all over the world and to Washington, and whether the warning lights are green or amber or red comes mostly from the N.S.A."

For policy makers, naturally, the more information the better. But is this marginal advantage worth the billions it costs in a nation that has so many other vital human needs unfulfilled? Put that way, the question poses a false dilemma. The money for health and housing and education can—and should—come from elsewhere. It is on the vastly larger arms budget, on atomic overkill and obsolescent nuclear aircraft carriers, that the nation overspends. Intelligence is far cheaper and usually saves more than it costs. In general, with its record of some failures and some successes, and the incalculable potential value of its sleepless watch around the world, the N.S.A. is worth the money the nation spends on it.

The real question for a nation reappraising its intelligence community is not one of financial priority but of legal basis. There is no statute prohibiting the N.S.A. from activities that encroach on Americans' constitutional rights. In response to criticism, President Ford recently issued an executive order on intelligence that seems to forbid the N.S.A. from intercepting American communications—but also seems to leave a loophole. Even with the best of intentions, however, that cannot be an adequate approach. For what one President can order another—or even the same—President can abrogate or amend.

The final responsibility for all those improper activities by the N.S.A. was, in each case, the President's, even though it remains unclear

whether all of them were reported to the Oval Office. That alone should illustrate the hazards of an arrangement under which the powers of an intelligence service derive not from Congress but from the White House. As a basic reform, Congress should replace Truman's 1952 directive with a legislative charter for the N.S.A.

That, in fact, was the view that underlay much of the questioning of General Allen before the Senate Intelligence Committee; and that is the substance of the recommendations on the N.S.A. contained in the committee's recent report on the intelligence establishment as a whole. "The committee finds," said the report, "that there is a compelling need for an N.S.A. charter to spell out limitations which will protect individual constitutional rights without impairing N.S.A.'s necessary foreign intelligence mission." The committee also made specific recommendations designed to prevent a repetition of the known abuses of the past.

The House Intelligence Committee, in its own report, came to the same basic conclusion, declaring that "the existence of the National Security Agency should be recognized by specific legislation," which should "define the role of N.S.A. with reference to the monitoring of communications of Americans."

There is no question that the National Security Agency, in the words of the Senate committee report, is "vital to American security." In fact, in this nuclear age, when danger-fraught situations can be best handled with knowledge about the "other side," and when many international agreements, such as SALT, are dependent on, say, America's ability to verify Soviet compliance by its own technical means, N.S.A. intelligence, like all intelligence, can be a stabilizing factor in the world.

There is also no question that we need a new statute. No law can guarantee prevention of abuses, especially if lawlessness is condoned in the higher echelons of government, and the C.I.A.'s charter did not prevent that agency from overstepping its bounds. But a gap in the law is an invitation to abuse. An institutionalized mechanism to seek out violations and punish the guilty can best deter the sort of intrusion that so many Americans fear—and that destroys the very freedom the N.S.A. was created to protect. ■

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