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To some extent this was an inevitable development. Johnson's handling of SIGINT had been unique, and it was not to be repeated. Journalists like Seymour Hersh have claimed, on what appears to have been good authority, that intelligence, and especially SIGINT, was being misused for political purposes. This has been confirmed to some degree by SIGINTERS who had contact with the White House. It fell into a pattern that was to emerge during the second Nixon term – the Watergate pattern. It was not good for SIGINT, and it was deadly for the presidency.<sup>179</sup>

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Southeast Asia

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## Chapter 11

### NSA in Vietnam: Building the Effort - The Early Years

Cochinchina is burning, the French and British are finished here, and we ought to clear out of Southeast Asia.

Lt Col Peter A. Dewey (OSS) writing from Saigon, 1945

Much has been said about the American decision to become involved in Southeast Asia. The decision to intervene was hotly debated and controversial from the first. Intervention resulted ultimately in the nation's most humiliating military debacle (although by no means its first defeat). So many things went wrong that the failures obscured the successes, but successes there were. From both the military and the cryptologic standpoint, it was a learning experience.

#### VIETNAM - THE COUNTRY

Actually, three countries were involved: Laos, Cambodia, and Vietnam. (Vietnam's political geography is complex, involving as it does three separate areas: Cochinchina (presently known as Cochin China) in the south, Annam in the center, and Tonkin in the north.) But Laos was landlocked and primitive - it hardly counted - and Cambodia was little more than a "Sideshow to War" (to use British writer William Shawcross's phrase). Vietnam became the main show, the country where American lives and national prestige were put on the line.

Vietnam (meaning, literally, "South Viet") had been settled by a Sino-Tibetan group called the Viet, who had been pushed by Mongolian population pressures farther and farther south. They finally wound up in the Red River valley, a broad and fertile plain suitable for wet rice cultivation. As they migrated ever farther south, however, they were hemmed in by mountains, which cascaded, like boiling water, into the South China Sea. The Viets picked their way along the coast, inhabiting isolated valleys, until they finally arrived at the broad Mekong delta. There were no mountains on the delta, and they quickly converted it to rice-growing. As a result, Vietnam became long and thin in the center, averaging no more than fifty miles wide along the Central Highlands, with two large plains attached to each end. It has been compared in shape to a pole across the back of a farmer, with a basket of rice on each end.

Vietnam was a meeting place of disparate cultures - primarily Indian and Chinese. The Vietnamese warred fiercely with the armies of their neighbors, and they acquired a reputation for recalcitrance and military prowess. Chinese sovereignty over the region, strong during the Han dynasty (about a century before Christ), was reduced over time to a

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more or less nominal one. This was the situation when the French arrived in the mid-nineteenth century. France established a tenuous hold on the country - solid in Cochinchina, less sure in Annam, very loose in Tonkin.

The French overwhelmed the Vietnamese with technology but had little chance to stay permanently. After all, the Chinese, who lived next door, had never completely subjugated the restive Vietnamese. French efforts were, in the long run, doomed by distance and the stubbornness of the Vietnamese.<sup>1</sup>

French colonial rule came to an effective end during World War II. The Japanese retained a French colonial government, but it was only a puppet, and in 1945, faced with defeat, the Japanese extinguished even this shred of French dignity. The Japanese defeat left Vietnam without a government.

What emerged was a government of sorts, effective only in the Red River Valley to the north, under a communist named Ho Chi Minh. The remnants of the Japanese war machine transferred formal power to Ho's organization, the Vietminh, on 18 August. On 2 September Ho declared the independence of Vietnam. The United States, mostly through OSS, maintained distant contact with the Vietminh during the war. The opportunistic Ho, apparently hoping for substantial American aid, even adopted phraseology from the American Declaration of Independence when he declared Vietnam a sovereign country.



Ho Chi Minh in Paris, 1946

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Occupied with larger matters, Allied leaders were not exactly consumed with worry over Vietnam. Roosevelt believed that colonial rule was finished everywhere, and that included Southeast Asia. But what to do with the former French properties was a more difficult question. He toyed with the idea of giving it back to the French under a trusteeship arrangement with independence guaranteed at a future date. He also offered it to Chiang Kai-shek, who did not want it. (He had enough trouble at home.) FDR died without resolving the issue, and Harry Truman had it on his plate.

At the State Department, a stealthy battle was going on between the Asianists, who were promoting independence for all Asian countries, and the Europeanists, who did not want a dispute over the colonies to jeopardize postwar relations with Britain and France. The Europeanists won, and the United States informed France in May 1945 that the U.S. recognized French claims to Indochina. It was decided that British forces would occupy the south of Vietnam, while Chinese forces under Chiang would occupy the north, until France could get some forces together to reoccupy its former colonies.

French troops eventually regained a tenuous hold over much of Vietnam, especially the southern portion. Meanwhile, negotiations continued with Ho, who, it will be remembered, had already proclaimed independence and had effectively occupied much of the north. But negotiations broke down in 1946, and outright warfare began. This period of conflict culminated in the French defeat at Dien Bien Phu in 1954.

Having successfully ejected this latest occupying power from Vietnam, all that remained for the Vietnamese was to formalize a separation. Divorce court was held in Geneva. It resulted in an independent and neutralist Cambodia and Laos and in a Vietnam divided at the waist. The part north of the 17th parallel, effectively controlled by the Communist forces under Ho, would become the Democratic Republic of Vietnam, while the portion below the 17th parallel would establish its own government. At some point the two would theoretically meet to hold elections of national reconciliation and reunite into a single nation.

The United States had by this time become deeply involved in Vietnam's troubles. American aid to the French mounted each year, and by the fall of Dien Bien Phu it came to about 80 percent of French expenditures for the conflict. There were behind-the-scenes talks of American air strikes to bolster the French position at the base, but at the last minute Eisenhower decided not to go ahead. At the peace conference, the Americans, frightened of communist encroachment, did everything they could to hem in Ho's government.

#### **The Americans Enter the Fray**

Once the war was over, the United States effectively assumed responsibility for the mess. When Ngo Dinh Diem, the new president in the south, refused to go ahead with elections for fear of losing them, he had full American support. By early 1956 the U.S. had

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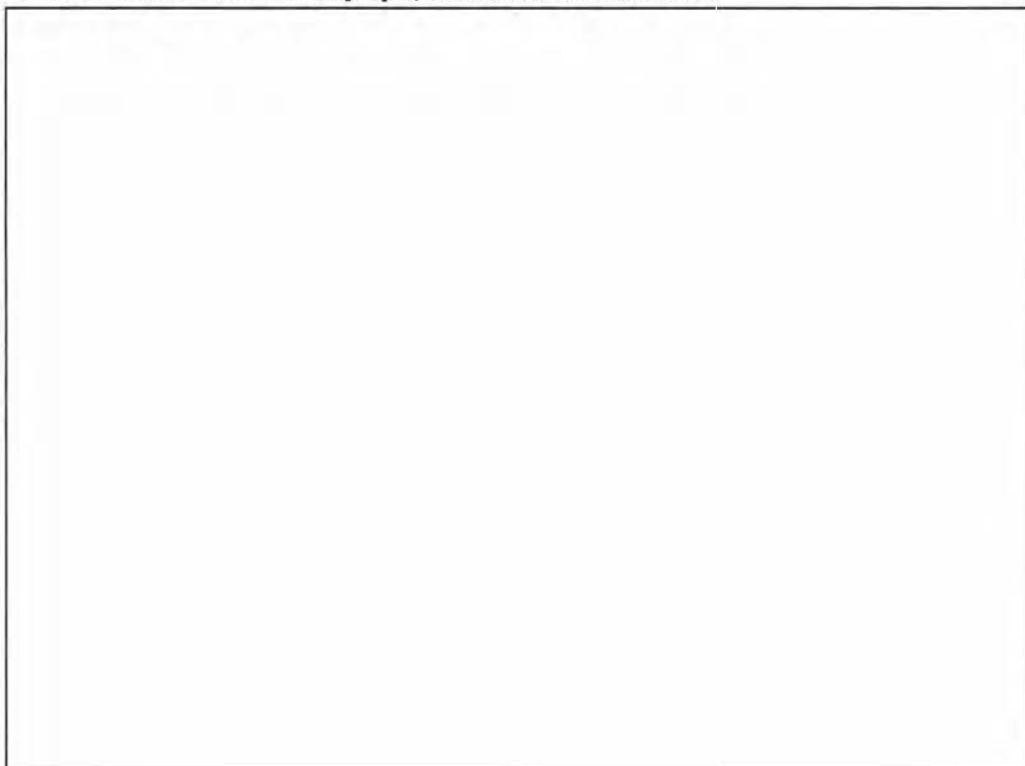
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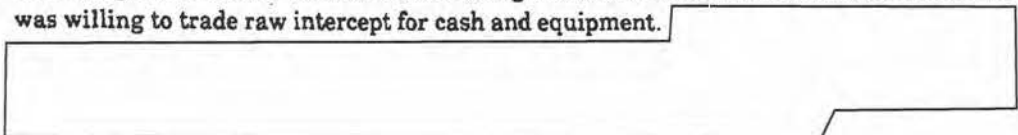
assumed responsibility for arming and training Diem's army. According to historian George Herring,

The United States inherited from France an army of more than 250,000 men, poorly organized, trained, and equipped, lacking in national spirit, suffering from low morale, and deficient in officers and trained specialists...<sup>2</sup>

A military assistance group in Saigon steadily expanded in surreptitious ways beyond the Geneva-imposed limit of 342 people, until it reached almost 700.



Then in 1960 CIA informed NSA that they had inked a Third Party SIGINT agreement with the government of Vietnam. The Diem government maintained three fixed sites and was willing to trade raw intercept for cash and equipment.



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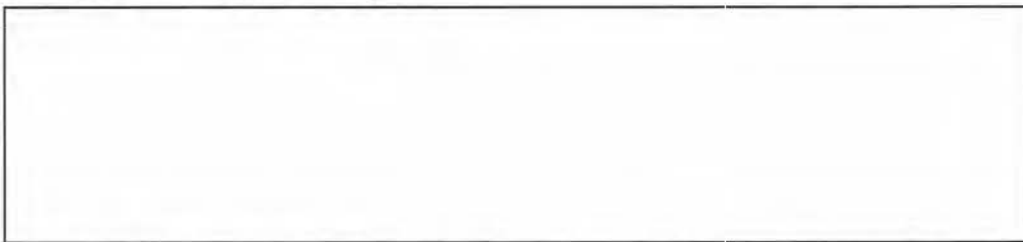
**Laos and the Beginnings of Direct American Involvement**

When Kennedy arrived in the White House, Laos, rather than Vietnam, seemed like the crisis to watch. The 1954 Geneva settlement had initiated a period of tenuous teetering between pro-Western and pro-communist sympathies, with a neutralist group holding the balance of power. Eisenhower had tried to keep a pro-American party in power through lavish subsidies, but in 1960 a series of coups pushed the government first toward the East, then the West.

The outgoing Eisenhower administration succeeded in convincing Kennedy that American interest demanded a favorable outcome.<sup>7</sup>

Wanting to appear firm, Kennedy had 500 Marines airlifted to the Thai side of the Mekong, which formed the border with Laos, while the carrier *Midway* moved into the Gulf of Siam.<sup>8</sup>

But the Bay of Pigs fiasco brought Kennedy up short. If American military power could not secure a favorable outcome 90 miles from its shores, what might happen in an obscure, landlocked Asian nation more than 12,000 miles from Washington? The Pentagon estimated that at least 300,000 troops would be needed to maintain the pro-Western government. So in late April Kennedy opted for a negotiated settlement and agreed to U.S. participation in yet another Geneva conference.<sup>9</sup> A precarious coalition government emerged from the Geneva talks, but none of the three major factions was happy, and within a year the cease-fire was violated by the Pathet Lao. Once again Kennedy mounted a show of force, dispatching 5,000 Marines and infantrymen and two air squadrons to Thailand. Again a coalition government was formed, but its long-term chances for success were not bright.<sup>10</sup>



The 1954 Geneva accords made it extraordinarily difficult to operate in South Vietnam. The Military Advisory Assistance Group (MAAG) staff was already bloated and obviously in violation of the agreements, Thailand was the obvious choice.

But the Thai, with a long tradition of independence (alone in Southeast Asia, they had never been a European colony), were skittish, and negotiations dragged on inconclusively for years. Then the Laotian crisis served to pry open a crack in the door to Thailand,

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[Redacted]

In 1965 ASA began building a major intercept site at Udorn, a Thai town in the far north, near the Mekong River. Called Ramasun Station, it became the location for an FLR-9 antenna, and at the height of the Vietnam War, it housed over 1,000 ASA and AFSS cryptologists.<sup>14</sup>

**Hanoi Decides to Intervene in the South**

In 1954 Hanoi had decided to work on the infrastructure in the north and to put off attempted unification to a later date. But by 1959 the leadership decided that it must expand in the south or else its southern cadres would wither and die. In the spring of 1959, the leadership authorized resumption of armed struggle in the south, a decision that was ratified by a Party meeting in September 1960.

At approximately the same time, Hanoi created a new group, MR 559 (so-named because it was created in May 1959), within the General Directorate of Rear Services (GDRS), to control infiltration into the south. Beginning with only 500 people, it eventually expanded into a network of 40,000-50,000 military and civilian workers. It was organized into sixteen units called Binh Trams, battalion-size units in geographical areas, each controlling the infiltration network through its region. This evolved into the Ho Chi Minh Trail, which provided the wherewithal for revolution and invasion.<sup>15</sup>

[Redacted]

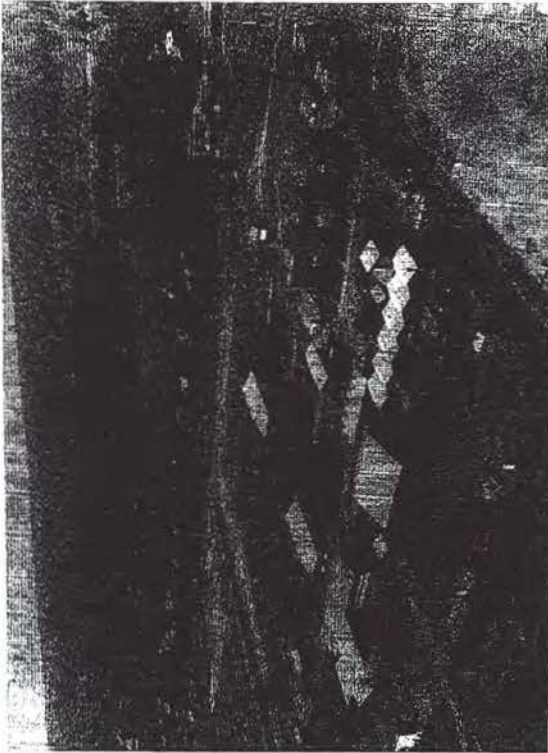
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Ramasun Station, 1966. Consisting of tents and vans, there were few permanent buildings and as yet no FLR's.

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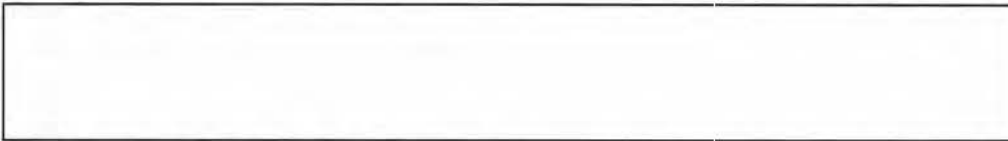
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### NSA Expands Cryptologic Involvement

The nascent Kennedy administration adopted an initially cautious line toward Vietnam. The U.S. government had troops in the South, but they were still called "advisors," and the numbers were limited. At the time, the only SIGINT involvement was the very limited CIA relationship with the South Vietnamese SIGINT service. There were no American cryptologists in the country [redacted]

But as the number of American "advisors" expanded, so did the cryptologic presence. In early 1961 the chief of the MAAG in Saigon advised Maxwell Taylor (chairman of the JCS) during one of his trips through Saigon that the ARVN (Army of the Republic of Vietnam) had no SIGINT capability. This touched off a debate back in the United States about the advisability of expanding in Vietnam.<sup>18</sup>

At NSA, Admiral Frost directed a complete evaluation of SIGINT in Southeast Asia, and from that came a new plan to expand the cryptologic presence. Essentially, two plans were written. The first was called SABERTOOTH, and it involved noncodeword assistance to the SIGINT services of [redacted] Vietnam. [redacted]

[redacted] The second, called WHITEBIRCH, would involve the establishment of a mobile ASA intercept unit with Morse, voice, and HFDF positions. NSA was skeptical of the voice positions because ASA had few qualified Vietnamese linguists, but the Agency approved the plan despite the reservations.<sup>19</sup>

The new NSA plan also envisioned a beefed-up collection posture. In addition to expanding the cryptologic presence in Bangkok, ASA would introduce people directly into Vietnam for the first time. The burden of field processing would fall most heavily on the sites in the Philippines. It also called for an "Evaluation Center" in Saigon to integrate SIGINT with other intelligence for the chief of the MAAG. When General Paul Harkins showed up in February 1962 to become the first COMUSMACV (Commander, U.S. Military Assistance Command Vietnam), this became the Current Intelligence and Planning Branch, J2, and was housed in the MACV building, originally located in downtown Saigon.<sup>20</sup>

Before Harkins arrived, NSA interests had been served by a TDY arrangement. In April 1962, however, the first permanent NSA representative, [redacted], was on board. His arrival was accompanied by vigorous protests by the Army. Secretary of the Army Zuckert sent a scorching letter to Assistant Secretary of Defense John Rubel protesting the assignment. "This action," he said, "would result in removing these SIGINT resources from the control of military commanders in the area. . . . Generally, responsiveness to intelligence requirements of CINCPAC and COMUSMACV would be dependent

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upon the decisions of a national level agency, far removed from their areas of responsibility. . . .” He proposed that all SIGINT assets in the area be placed under the operational control of MACV. It was the opening shot of a war within a war, the struggle to control SIGINT assets in Southeast Asia.<sup>21</sup>

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In April 1961 USIB took two giant steps toward direct involvement. One was a decision to approve the new, expanded Third Party relationship with Vietnam, to be run by ASA. [redacted] inasmuch as it was at the noncodeword level and involved a limited amount of [redacted] targets. It went beyond the arrangement already operated by the CIA and involved ASA advisors to train the Vietnamese. In return, USIB expected Vietnamese approval to establish American intercept facilities.<sup>22</sup>

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The second step was to approve an Army COMINT unit in Vietnam in support of counterinsurgency planning. The National Security Council then required that the results obtained by that unit be shared with the South Vietnamese to the extent needed to launch rapid attacks on the Viet Cong.<sup>23</sup>

#### The Buildup of Cryptologic Assets

The first ASA troops began arriving in May 1961. They were under cover, wore civilian clothes, and were prohibited from carrying military identification cards. They found spaces in an RVNAF hangar on Tan Son Nhut Air Base and lived downtown at the Majestic Hotel. Working areas were set up inside the hangar by piling boxes of C-rations seven feet high to make rooms. A few of the officers had desks, but the analysts worked at tables constructed of plywood and scrap lumber. Since there were few chairs, the tables were hoisted four feet off the ground so analysts could stand. Needless to say, there was no air conditioning, and the troops sweltered in the tropical heat.<sup>24</sup>

The unit was called the 3rd Radio Research Unit (3rd RRU). Operationally it was called USM-9J, subordinate to USM-9 in the Philippines. The original processing mission consisted mainly of traffic collected by the South Vietnamese SIGINT service, which was at the time composed of only about 100 officers and men. They had two collection sites, at Saigon and Da Nang, and soon established a third site at Can Tho in the Delta. They were operating with equipment left over by the French or provided by CIA. Among the assets that they had inherited from the French were three DF stations and all the equipment, which happened to be of World War II vintage. In 1961 CIA gave them six AN/PRD-1 mobile HFDF sets. When 3rd RRU began processing, the main input was the DF bearings from the South Vietnamese.<sup>25</sup>

Meanwhile, ASA advisors conducted classes in DF, traffic analysis, and intercept for the Vietnamese under the SABERTOOTH program. They were supposed to hold the classification to noncodeword, but the line between SIGINT and non-SIGINT was very shaky, and it was crossed regularly.<sup>26</sup>

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The focus of the operation, though, was DF. ASA set up an HFDF net, called WHITEBIRCH. Because of availability, the AN/TRD-4 was the equipment of choice. Three sets were mounted in vans and positioned at Nha Trang, Can Tho, and Bien Hoa, with control in Saigon. The Third RRU was also receiving bearings from an ASA site in Ubon, Thailand, [ ] sites in Vietnam, and [ ] ARVN operated its own three stations at Pleiku, Da Nang, and Ban Me Thuot, and the results were supposed to provide direct support to the South Vietnamese Army.<sup>27</sup>

The WHITEBIRCH net was a failure. It had the lowest fix rate in the Pacific, and it was constantly short of manpower. This dismal state of affairs was due primarily to the circumstances surrounding its mission. In the dense and humid tropical jungles, the ground wave faded to imperceptibility in only a few miles. The sky wave came down at such a steep angle that the existing DF equipment (the ancient TRD-4s) could not cope with it. Moreover, the skip zone between ground and sky waves was almost ninety miles, meaning that most of the ASA sites were located in a skip zone. When inadequate maintenance and unreliable communications were added to the woes of WHITEBIRCH, it was clear that the system would not do the job.<sup>28</sup>

Frustrated, ASA turned to the mobile PRD-1s now owned by the ARVN. These were effective, but only if the DF set was within five to fifteen miles of its target. To be that close to a VC transmitter was often a dangerous proposition, but they tried it anyway. On 31 December 1961, they found out how dangerous it was. An ARVN DF operation returning to Saigon from the DF site at Ha Tien (on the southern coast) was ambushed by VC. Nine ARVN soldiers were killed, along with Sp4 James T. Davis, the ASA advisor. Davis was later called by President Johnson the first American soldier to die in Vietnam. The 3rd RRU compound was named Davis Station, thus adding to the immortality of the unfortunate Davis.<sup>29</sup> ASA had come to a full stop on the DF problem, and until they solved it, the amount of direct SIGINT assistance that they could provide to the ARVN forces was limited.

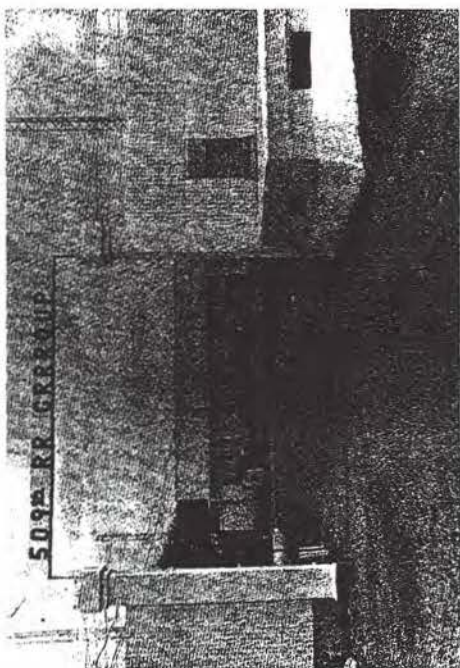
The next group of SIGINTers to arrive in Vietnam were the Marines, who sent a training detachment from Fleet Marine Force in Hawaii. They originally set up next to the ARVN SIGINT operation in Pleiku, and as such were completely cut off from direct contact with other U.S. SIGINT units. This proved unsatisfactory, even for training.<sup>30</sup>

In 1962, the cryptologic community decided to move its main base of operation to Phu Bai. A large ASA site was constructed, and it became the center of SIGINT operations for Vietnam. The Marines decided to move in with ASA, but the Air Force Security Service was more standoffish. Da Nang was the center of air operations, and AFSS located its principal site there to support the Seventh Air Force.

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Entrance to the WHITEBIRCH compound

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At the time, the Vietnamese problem was entirely manual Morse. Rumors of VC voice swirled about, and in February 1963 [redacted] intercepted some voice traffic emanating from a low-level [redacted] net in Vietnam. ASA tried but, right up until the Tonkin Gulf incident of 1964, had not intercepted any.<sup>31</sup>

As cryptologic resources expanded, the question of operational control occupied increasing attention both in Saigon and in Washington. The Army continued to insist that MACV should control all cryptologic resources in theater. During Admiral Frost's tenure as DIRNSA, a compromise of sorts was worked out. When the first ASA resources arrived in country, Admiral Frost delegated operational control to ASA and recognized the further delegation of control to the commander of the MAAG (later MACV). This gave MACV a handhold but kept the strings ultimately tied to DIRNSA.<sup>32</sup>

In 1963 General Wheeler (chairman of the Joint Chiefs) negotiated directly with General Blake. They arrived at a new compromise whereby NSA would continue to control major, fixed sites like Phu Bai, while operational control of ASA's direct support units (DSUs) would be delegated to ASA, and thence to the supported Army commander. This was actually more restrictive than the original decision, and it was made more onerous by the edict that when MACV wanted additional units under its control it would have to submit the request through the lengthy and cumbersome chain of command which ran through Hawaii.<sup>33</sup>

#### DF Goes Airborne

The ambush of Davis and the ARVN DF team in December 1961 brought about a scramble for a better system. The safest thing would be to put the mobile DF sets on airplanes. This technique had been tried as early as World War I, and the French had employed ARDF aircraft in their struggle with the Vietminh, with good results. But the technical barriers were serious. The problem was in the interference of ground and sky waves. Aircraft were up high enough to receive both, and the accuracy of the bearing was degraded because, while the on-board system tried to read the direction of the signal from the ground wave, the aircraft itself acted as a huge antenna for the sky wave, which arrived from a different direction.<sup>34</sup>

An ASA engineer, Herbert S. Hovey Jr., went to work on the problem and was joined by a team from the Army's laboratory at Ft. Monmouth, New Jersey. Knowing of the French ARDF effort but not knowing what technique they used, Hovey experimented with different techniques and various aircraft. He tried rotary-wing options, but found that the rotor blades created too much turbulence. Hovey finally settled on the U-6A, a single-engine fixed-wing aircraft widely available in Vietnam. Instead of using the almost universal (in DF arrangements) loop antenna, he used antennas fixed on the leading

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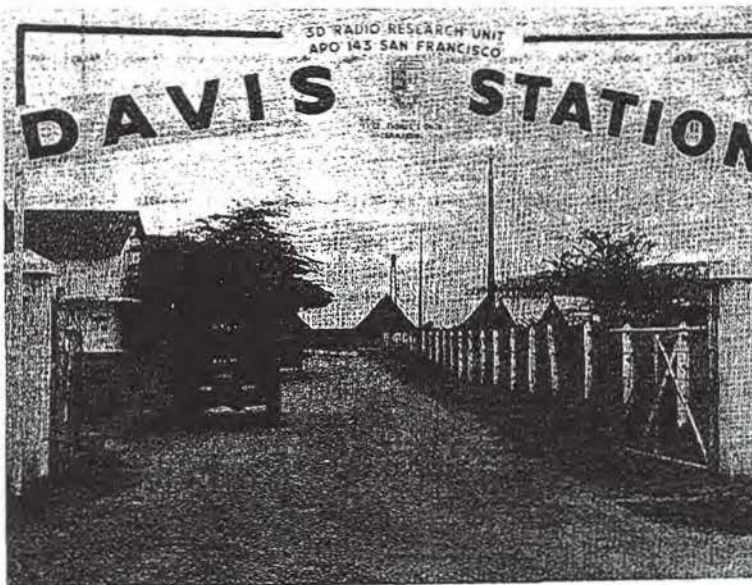
Herbert S. Hovey (second from right) and an early U-6 ARDF-configured aircraft



A 3rd RRU AN/PRD-1 short-range DF set

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Entrance to Davis Station, Saigon

edge of each wing, about forty feet apart, with the receiver in the center. This turned the aircraft itself into a large HF antenna. The aircraft had to be pointed directly at the signal, thus creating an aural null on the pilot's gyrocompass. To create the aural null, the pilot fishtailed the aircraft back and forth, going into and out of the maximum signal strength. He would then fly at the signal from three different angles, the three lines of bearing thus constituting a fix. This peculiar flying technique solved the problem.<sup>35</sup>

ASA sent the first DF-equipped U-6 to Vietnam in March 1962. It was an instant success. In May 1962 the ARVN successfully struck a VC unit based on ARDF fixes.<sup>36</sup> In December of that year, when an ASA ARDF fix located a VC radio transmitter in the northern Delta, American advisors under General Harkins used the intelligence to plan an assault on what they thought would be a communist unit of no more than 120 men. The ARVN 7th Infantry Division was employed in the action and swooped into the area by helicopter early on the morning of 3 January 1963. Instead, they ran into a unit of more than three times that many, which stood and fought. The resulting battle of Ap Bac was a turning point in the war for both the VC (which found that it could confront and defeat a main ARVN force) and for the Americans, who concluded that they would have to become more directly involved. The battle was initiated based on an ARDF fix.<sup>37</sup>

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The value of ARDF was quickly recognized. It became the most important advance in the employment of SIGINT for tactical applications in the war and the principal targetting tool for MACV. NSA boxed up this valuable technique within its own sphere of control by declaring that the ARDF aircraft were simply outstations of the WHITEBIRCH net, which was already a CCP resource. ARDF was to become the battleground on which the JCS and NSA fought for ultimate control of SIGINT in Southeast Asia. It was easily the most divisive issue in the entire intelligence community.<sup>38</sup>

**INTO THE MIRE**

*The troops will march in; the bands will play; the crowds will cheer; . . . and in four days everyone will have forgotten. Then we will be told we have to send in more troops. It's like taking a drink. The effect wears off, and you have to take another.*

John F. Kennedy, 1961

While all this was going on, the Kennedy administration was assessing its chances in Southeast Asia. The first thing Kennedy did was to gather information, using the time-honored technique of a fact-finding team. In the spring of 1961 he sent Walt Rostow and his personal military advisor, Maxwell Taylor, to Saigon. They came back very pessimistic. The Diem regime was crumbling and would require a large infusion of American troops and material. They recommended that some 8,000 American "advisors" be sent to Vietnam under the cloak of providing "flood relief." Averell Harriman, the long-time advisor to Democratic presidents, and Chester Bowles, a senior diplomat, both doubted that the corrupt and repressive Diem regime could be adequately shored up, and he urged Kennedy to call a new Geneva conference and negotiate a settlement. But Kennedy had just emerged from the disgraceful Bay of Pigs incident and was in no mood to be perceived by either the Soviets or the American public as a "negotiator."<sup>39</sup>

But he also rejected the Taylor-Rostow proposal as transparent. Instead, he compromised, increasing the size of the aid mission but failing to increase it enough to make a big difference. All the while he was disturbed by the narrowness and inflexibility of the Diem regime. To have a happy ending in Vietnam, it would be necessary to obtain a more reasonable and competent government.<sup>40</sup>

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[redacted] the Crisis in Third Party Relations

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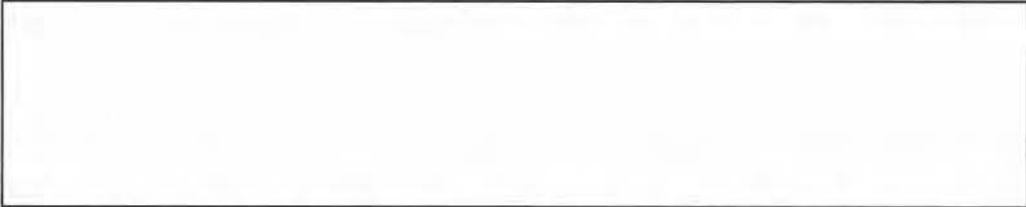
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USIB decided to back away from SIGINT collaboration with the ARVN, and USM-626 (the former USM-9J in Saigon) was instructed to stop providing certain technical data. At the same time, NSA made plans to move most SIGINT operations to Phu Bai and to make it a U.S.-only site.<sup>43</sup>

The USIB decision, prompted by NSA, created an uproar in the field. Harkins protested and was backed up by Huntington Sheldon, the CIA official who watched over SIGINT for the intelligence community. Moreover, General Khanh, the RVNAF chief of staff, refused to authorize a solely American operation at Phu Bai, thus holding the super-SIGINT site at Phu Bai hostage to a continued close SIGINT relationship. In the end, Khanh, Harkins, and Sheldon won. Admiral Frost issued a revised and liberalized interpretation of the USIB edict, and the Americans exited the controversy with as much grace as possible.<sup>44</sup>

**The Diem Coup**

Riven by internal dissent, the Diem regime was tottering by 1963. The regime was controlled by Diem and his corrupt family, and no reform appeared possible. The last straw was a Buddhist revolt against the strongly Catholic Diem regime. The uprising began in May 1963 and became marked by self-immolations by Buddhist monks. When confronted by such opposition, no regime could last.<sup>45</sup>

Even Diem knew it and began exploring a negotiated settlement with the north. To the Kennedy administration, this looked like a way out. The JCS prepared a plan for a phased military withdrawal beginning later in 1963. The first 1,000 troops were actually withdrawn before the plan came to a halt.<sup>46</sup>

But negotiations were never begun. In early November the generals in Saigon rose against Diem, with the knowledge, if not the active connivance, of the American embassy. Diem and his brother Nhu were captured and, in a twist which was not in the original script, executed, apparently on the orders of General "Big" Minh. Minh took over the government, beginning a series of revolving door regimes, each weaker and less popular than the previous one. The JCS withdrawal plans were shelved. Later in the month Kennedy was dead, and a new president had to look again at the morass in Vietnam.<sup>47</sup>

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**The Cryptologic Expansion of 1964**

With withdrawal plans on hold, the new DIRNSA, General Blake, directed a relook at the American cryptologic posture in Southeast Asia. Blake decided to accept Phu Bai as the super-site for Vietnam, with major resource additions there and at other sites in the Philippines and Vietnam. Collection from Thailand would also increase, and Udorn was selected as the Thailand super-site. In early summer, with Maxwell Taylor (the new ambassador in Saigon) lining up behind it, Blake took the plan to Fubini. They agreed that most resources for the new effort would be transferred from existing SIGINT problems (primarily Soviet), except for some assets already targetted on Southeast Asia that would be moved to the mainland from Okinawa and Japan.<sup>48</sup>

SIGINT resources would also be needed for a major new operation, under the general rubric of OPLAN (Operation Plan) 34A. This was a JCS plan to support South Vietnamese infiltration and unconventional warfare operations. The SIGINT support for OPLAN 34A, called KIT KAT, would come mainly from vans flown in [redacted] and the Philippines and located at Phu Bai. A new SIGINT Support Group in Saigon would provide MACV with direct support to OPLAN 34A.<sup>49</sup>

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Communications still represented a sore point. SIGINT exited Vietnam through an Army communications center in Saigon that was known for its cramped quarters and ancient equipment. Worse, it was an HF shot to the Philippines, and in the heavy tropical atmosphere HF was even less reliable than usual. Reliability ranged from 30-75 percent, an unacceptable figure.<sup>50</sup>

DCA came up with a solution. A submarine cable was installed between Nha Trang and the Philippines, and by the mid-60s all cryptologic communications were being routed through the cable (dubbed "Wetwash"). Circuit reliability leaped upward.<sup>51</sup>

This development had a major impact on SIGINT operations in Vietnam. The submarine cable could take higher circuit speeds, and it was possible to ship much more SIGINT back and forth. This led to the feasibility of sending encrypted traffic back to a central processing center - at first in the Pacific (Clark AB and JSPC in Okinawa) and later all the way back to NSA. It changed the way SIGINT was done in the theater, but it also increased the suspicion of tactical commanders who preferred to rely on their own people from ASA rather than on some unseen computer far away.

**AFSS Comes to Vietnam**

The Air Force Security Service did not actually start its Southeast Asian operations in Vietnam. Like the Army, it arrived in Thailand in early 1961 to provide SIGINT support for the Laotian crisis. [redacted] RC-47 ROSE BOWL [redacted]

[redacted]

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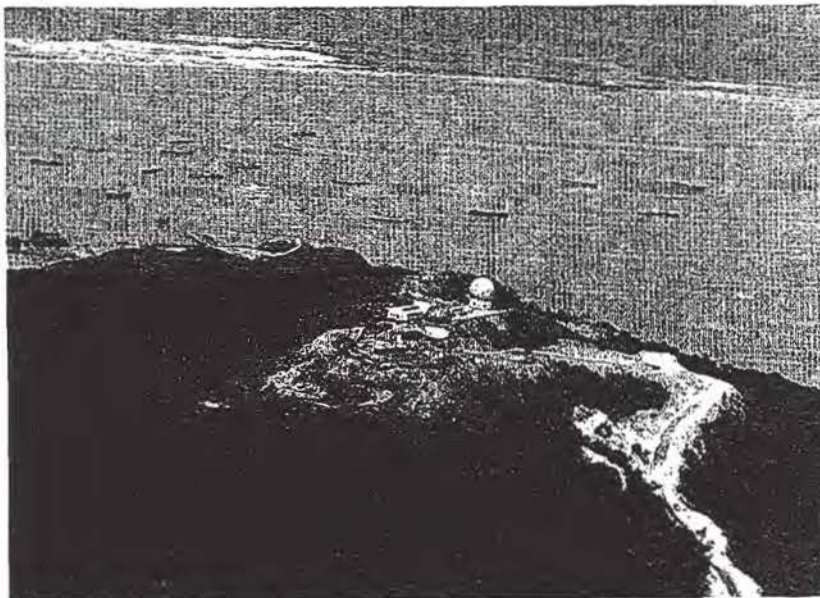
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[redacted] The processing was done on the ground in spaces occupied by the tiny AFSS intercept unit that had been there since the summer of 1960. Spaces were so cramped that at one point a Russian linguist wound up transcribing his intercepted tapes in the shower room. But like the Laotian crisis itself, the SIGINT support operation lost steam, and by spring NSA had cancelled the deployment.<sup>52</sup>

Vietnam was a ground war, and the U.S. Air Force did not get involved in a big way until 1964. The Air Force did, however, set up a tactical air control system beginning in January 1962. The unit was located atop Monkey Mountain near Da Nang, which would give American radars the longest possible reach.

Along with the Air Force contingent of 350 people came an AFSS CCU (COMINT Contingency Unit), consisting of two H-1 vans airlifted from Clark Air Base and a mobile AFSSO, also in a van. A smaller intercept and SSO effort was located at Tan Son Nhut, but the hearability was bad, and the intercept unit was soon relocated to Da Nang. The next year AFSS reorganized its Southeast Asian assets, designating Tan Son Nhut as the headquarters, with subordinates at Da Nang, Bangkok, and Ubon.<sup>53</sup>



Monkey Mountain

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Da Nang remained the only AFSS unit of any size in the war zone. By 1964 USAFSS had two Da Nang sites, one atop Monkey Mountain and one at the air base below. Security Service successfully resisted an NSA master plan to move the unit to Phu Bai, arguing that hearability was better at Da Nang and that they should be closer to the supported commander.<sup>54</sup>

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In March of the same year, the ACRP returned to Southeast Asia. It arrived on the heels of reports that PRC-North Vietnamese military relations were becoming closer.

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NSA initiated ACRP collection to follow this activity, and a new program, called QUEEN BEE CHARLIE, based at Yokota AFB in Japan, began flying missions out of Don Muang. In July a follow-on operation, QUEEN BEE DELTA, consisting of two RC-130s, began flying missions over Thailand every other day. Initially processing was done at Don Muang, but plans were being drawn up to transfer the entire effort to Da Nang. That same year, the Navy began flying EC-121 and EA3B collectors in the Gulf of Tonkin.<sup>55</sup>

Air Force ARDF trailed ASA into Southeast Asia. In 1962 AFSS tried out HFDF programs using two different platforms, a B-26 and a C-47. The ARDF effort had the strong personal support of General LeMay, then the Air Force chief of staff. From the beginning, however, the program was engulfed in controversy.

The first problem was control. The Air Force wanted the ARDF program to be purely tactical, unattached to NSA, operating in a noncodeword environment. NSA, however, insisted that it come under the direct control of USM-626, as outstations of the WHITEBIRCH net. The program was thus placed under double ignominy - within the cryptologic system and under the thumb of the Army.

Moreover, the Air Force insistence that it be noncodeword resulted in non-SI-indoctrinated people being assigned to it. USM-626 was at first prohibited from passing technical data to support the AFSS effort. This was soon straightened out, and all the Air Force people were SI cleared, but it was a bad start for a program.

Finally, the system did not work. It used larger aircraft but did not do well against low-power signals. The Air Force Security Service left the theater to do more research.<sup>56</sup>

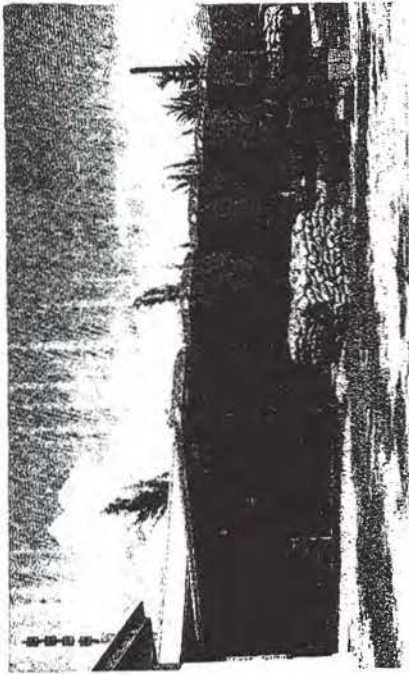
The next year AFSS was back, this time with a second ARDF system produced under a Navy contract and installed on an Air Force plane under Project HAWKEYE. It was more sophisticated than the Army system, using computers and larger, more capable aircraft. But it, too, did not work, and at the end of the year ASA continued to have the only effective ARDF system in Southeast Asia.<sup>57</sup>

The small AFSS effort in Vietnam betokened the lack of an air war. They were not engaged in war - they were just waiting in case an air war happened. They hadn't long to wait.

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USA-32 operations vans, 1964.  
This complex was located on the plains at the foot of Monkey Mountain.

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## THE CRISIS IN THE GULF

Well, I am the guy who rose from the ashes, and twenty years later telling you I saw it, and there were no boats.

Adm. James B. Stockdale, Navy pilot, concerning the 4 August attack

In the many years of conflict in Vietnam, no single incident stands out as more controversial than the 4 August 1964 incident in the Gulf of Tonkin. In it, two American destroyers patrolling in international waters were supposedly shot at by North Vietnamese gunboats. In retaliation, an angry president launched the first air raids on the North, and a few days later Congress passed the Tonkin Gulf Resolution, giving Lyndon Johnson a free hand to deal with North Vietnam in whatever manner he felt best suited the situation. For America, it was the beginning of an apparently irrevocable descent into the maelstrom.

### The Desoto Patrols

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The attack on the destroyers originated with the Desoto patrols. These were begun in 1962 as patrolling operations along the Chinese coast. There were three objectives: intelligence collection, realistic training, and assertion of freedom of the seas. Naval Security Group detachments on board pursued the collection of  ELINT and naval COMINT. However, to naval authorities the mission of freedom of the seas clearly stood first, and training second; intelligence was the third priority. By December, the patrols had been extended to the coasts of Korea and North Vietnam.<sup>58</sup> The rationale was to support special operations under OPLAN 34A.

OPLAN 34A stemmed from CIA covert operations which had been going on since the early 1960s under various names. Most of these involved the nighttime coastal insertion of ARVN commando forces, whose mission was sabotage. By early 1964 the Army had taken over most of the operations, under OPLAN 34A. The Desoto patrols were extended to North Vietnam primarily to provide SIGINT support to the commando raids.<sup>59</sup> In addition to NSG afloat detachments on board Desoto craft, the Army was tasked with SIGINT support from positions at Phu Bai.<sup>60</sup>

The operations got off to a very bumpy start in February 1964, but they eventually smoothed out. Although there was considerable behind-the-curtains controversy about their effectiveness, the raids were having at least harassment value by July 1964. The tiny North Vietnamese navy was beginning to pay them close attention.<sup>61</sup>

North Vietnam could mount only a modest defensive threat. Their first-line combatants were twenty-four *Swatow* motor gunboats acquired from the Chinese over a

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period of years. More threatening, however, were twelve Soviet-built motor torpedo boats delivered to Haiphong in late 1961, capable of fifty-two-knot speeds. These, in addition to a few minesweepers, subchaser and district patrol craft, represented the North Vietnamese navy.<sup>62</sup>

### The 2 August *Maddox* Patrol

The increasing harassment value of OPLAN 34A was certain to make the North Vietnamese more belligerent. On 1 August NSA went on record as warning the Navy that their own Desoto patrols might be in danger of attack.<sup>63</sup> A day earlier, the destroyer *Maddox* had begun a patrol in the Gulf of Tonkin.<sup>64</sup>

On 2 August the North Vietnamese decided to attack the *Maddox*. During the morning hours, two SIGINT units, a Navy intercept unit in the Philippines (USN-27) and a Marine detachment collocated with ASA at Phu Bai (USN-414T), reported that North Vietnam's naval headquarters had directed preparations for attack. This series of reports was flashed to Captain Herrick, the task force commander on board the *Maddox*, as the morning wore on. The information was sufficiently unsettling that Herrick questioned the day's patrol, considering it to be an "unacceptable risk."<sup>65</sup>

Just after noon, USN-27 intercepted a message from one of the coastal control authority at Port Wallut to one of the *Swatows*: "Use high speed to go together with the enemy following to launch torpedoes." USN-27 issued a Critic on this inflammatory declaration, and Herrick had it in hand almost an hour before the attack was launched. It was preceded and followed by other North Vietnamese messages leaving no doubt that they were headed for a major engagement. It could, of course, have referred to the 34A operations that had been going on earlier, but Herrick knew nothing of those operations. He had to assume that the North Vietnamese meant him - and he was right.<sup>66</sup>

At about 1600 local, three PT boats launched a high-speed attack on the *Maddox*. Herrick replied with surface fire, and within half an hour the torpedo boats withdrew. About that time air cover showed up, commanded by Admiral (then Commander) Stockdale from the carrier *Ticonderoga*. Stockdale's crew shot up the fleeing torpedo boats, sinking one and putting another out of action.<sup>67</sup>

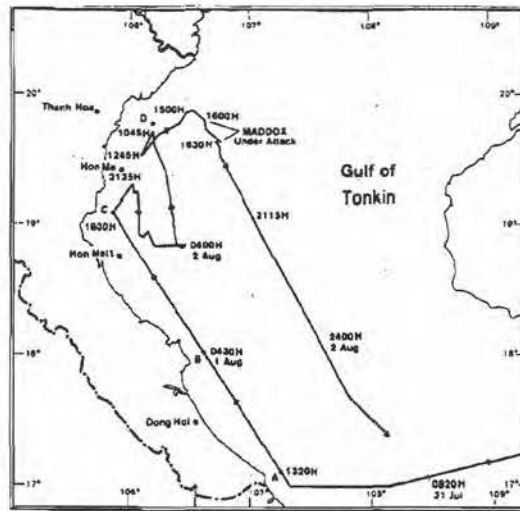
Meanwhile, the two SIGINT stations continued to monitor North Vietnamese communications, keeping Herrick informed of what was happening on the other side. The patrol made for the mouth of the Gulf and withdrew. Back at Fort Meade, NSA declared a SIGINT Readiness Bravo.<sup>68</sup>

There was no doubt of the attack. Not only was it launched in broad daylight, but it was preceded and followed by communications (intercepted by the Navy and Marines)

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Track of the *Maddox*, 31 July-2 August 1964



Captain John J. Herrick, commander of Destroyer Div 192,  
with Captain Herbert L. Ogier, commander of the *Maddox*

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making the entire attack procedure and objectives crystal clear. SIGINT gave impeccable warning, and Herrick came to rely on it almost implicitly.

The Johnson administration chose not to reply militarily to the attack. But at the White House the mood was grim, and there was a feeling that they could not let another such attack pass unnoticed.

#### The 4 August Patrol

After assessing the 2 August attack, the administration decided to keep the *Maddox* in the Gulf at least through the 7th to assert freedom of the seas and to add a second destroyer, the *Turner Joy*, which had been part of the *Ticonderoga* task force. With two vessels, Herrick headed back to the Gulf on the 3rd.<sup>69</sup>

After spending the day near the coast of North Vietnam, Herrick withdrew both vessels to the central Gulf of Tonkin for the night. Through intercepts of Vietnamese radar transmissions, he knew that he was being silently shadowed by at least one North Vietnamese PT boat. Moreover, this tended to be confirmed by reporting from San Miguel that one of the *Swatows* involved in the previous day's activity (T-142) had been ordered by a naval authority to "shadow closely." During the night a 34A task force shelled a radar station and a security post, fleeing to Da Nang at daylight.<sup>70</sup>

Herrick believed his vessels were in imminent danger, but the next morning he was nonetheless ordered back to the area of the previous two days' patrol. The *Maddox* and *Turner Joy* loitered in the general area where the 2 August attack had taken place. At about 1700 they turned back toward the central Gulf to spend the night.<sup>71</sup>

At about the same time that Herrick was ordering his two-vessel task force back to the central Gulf, the Marine detachment at Phu Bai issued a Critic on an intercepted message from Haiphong ordering three of the boats involved in the 2 August attack to make ready for military operations that night. To Herrick this was very ominous, since he had been shadowed by a North Vietnamese vessel or vessels the night before. Based on this and follow-up messages from Phu Bai, he sent a message stating that he believed that the Vietnamese were preparing to attack.<sup>72</sup>

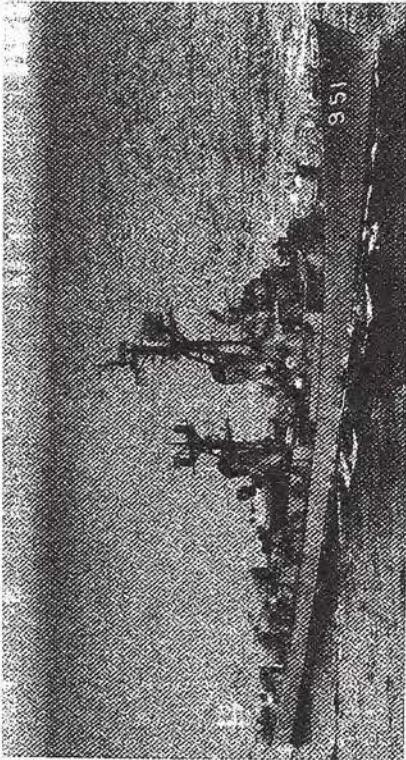
At 2041, the *Maddox* appeared to pick up radar contacts on North Vietnamese PT boats. For the next four hours, the *Maddox* and *Turner Joy* zigzagged through the central Gulf, apparently pursued and attacked by unknown and unseen vessels. The crews of the two vessels claimed to have had radar and sonar contacts, torpedo wakes, gun flashes, and searchlights, and fired repeatedly at whatever seemed to be attacking them. When air cover showed up from the *Ticonderoga* task force (led by Stockdale), the pilots could not see any boats, but it was an unusually murky night with very low overcast and poor visibility.<sup>73</sup>

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The American destroyer *Turner Joy*

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After the engagement, San Miguel reported that T-142 claimed to have shot down two "enemy planes" and that "We sacrificed two comrades but are brave and recognize our obligations."<sup>74</sup>

Back in Washington, the events in the Gulf grabbed everyone's attention. The initial indication that something was afoot was the Critic and follow-up from Phu Bai. These were called over to DIA from NSA just after 8 A.M. By 0900 copies of the reports were distributed to McNamara and Wheeler, and McNamara called the president at 0912. This kicked off a long train of actions that spanned the entire day.<sup>75</sup>

Thus forewarned, the president had no trouble believing that an attack had actually taken place once he received the first news at 1100. McNamara convened a meeting to discuss possible retaliation. At a lunch with Rusk, McNamara, Vance, McGeorge Bundy, and John McCone, Johnson authorized an aerial strike on North Vietnamese targets. But soon thereafter, the White House was looking at a message from Herrick casting doubts about the attack. Adverse weather conditions and "overeager sonarmen" may have accounted for many of the alleged contacts. Based on this, Admiral Sharp in Hawaii (CINCPAC) phoned McNamara to recommend that the air strike be delayed until they received more definitive information. At that time a retaliatory air strike, scheduled for 0700 Vietnam time, was only three hours away.<sup>76</sup>

Soon after, Sharp received the new information about the supposed shooting down of enemy aircraft and the sacrifice of two vessels. Sharp, Admiral Moorer (CNO), and Johnson all became convinced that an attack had taken place, and Johnson authorized Pierce Arrow (the bombing attack on North Vietnam) to proceed. It was delayed almost three hours, though, and came very close to preceding Johnson's televised address to the nation announcing the Gulf incident and the American response.<sup>77</sup>

The sequence of events at the White House was driven largely by SIGINT. The reliance on SIGINT even went to the extent of overruling the commander on the scene. It was obvious to the president and his advisors that there really had been an attack - they had the North Vietnamese messages to prove it.

But to the analysts working the problem at NSA, things did not appear to be so obvious. The preplanning messages could, after all, have been referring to reactions to the Desoto patrols. Or the entire series of messages might have been old traffic referring to the attack on the 2nd. NSA sent out frantic requests to the units involved (Phu Bai and San Miguel) to forward their raw traffic. NSA also requested verification from SIGINT intercept operators on the *Maddox* and *Turner Joy*. The ships' operators had nothing - their intercept capability (all VHF voice) was completely blocked by the ships' radios during the period of the incident. As for the mainland intercept, it took hours to obtain, and the first NSA follow-up was issued without the benefit of the messages intercepted in the field.<sup>78</sup>

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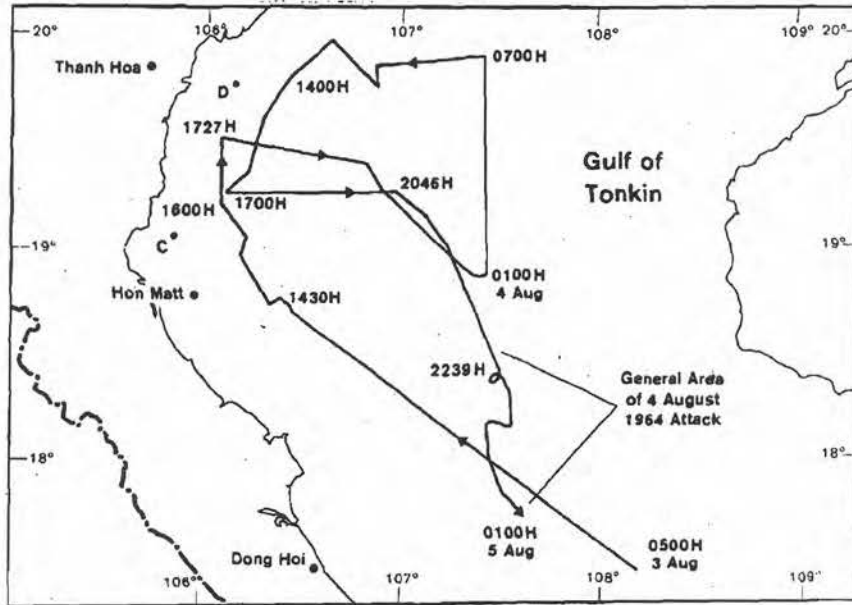
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Track of the Maddox and Turner Joy, 3-5 Aug 1964



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The first NSA report indicated that the vessels supposedly planning for operations on the night of the 4th apparently did not participate in the events regarding the *Maddox* and *Turner Joy*. A subsequent wrap-up on 6 August homed in on the 2 August attack (easy to substantiate), conveniently avoiding the direct issue regarding the 4 August incident.<sup>79</sup>

The NSA analyst who looked at the traffic believed that the whole thing was a mistake. The messages almost certainly referred to other activity - the 2 August attack and the Desoto patrols. The White House had started a war on the basis of unconfirmed (and later-to-be-determined probably invalid) information.<sup>80</sup>

There had been no dissembling in the White House. The messages looked valid, and Lyndon Johnson had come to be a believer in SIGINT. When he ordered the attacks, he was sure he was right. He wasn't, and it was not until NSA analysts laboriously pieced together the SIGINT information over a period of days that it became obvious how big a mistake had been made. The Johnson administration defended its actions in public for years, but the reality eventually sank in. Even the president was heard to say in later years, "Hell, those dumb stupid sailors were just shooting at flying fish."<sup>81</sup>

Some months previously, William Bundy (deputy secretary of defense) concluded that Johnson would need some sort of congressional endorsement for the expanding American role in Vietnam. He felt that a declaration of war was too blunt an instrument, and its chances in Congress were slim. What was needed, he believed, was a joint resolution, similar to that which Congress had given to Eisenhower during the Quemoy and Matsu crisis in 1955. Bundy drafted a resolution that gave the president the right to commit forces to the defense of any nation in Southeast Asia menaced by communism.<sup>82</sup>

The resolution was ready by June 1964, and the Pentagon had already identified some ninety-four targets in North Vietnam, in case the president should direct military retaliation. Everything was ready but was put on hold. Some sort of provocation would be needed. The Tonkin Gulf crisis was just such a provocation. The administration hustled the resolution through Congress with only two dissenting votes. It was shepherded through the Senate by the chairman of the Foreign Relations Committee, William Fulbright.<sup>83</sup>

The Tonkin Gulf Resolution did not become a political issue until three years had passed. In July 1967, with antiwar passions heating, a reporter for the *Arkansas Gazette* quoted a former radarman on the *Maddox* as saying that North Vietnamese vessels had not been in the Gulf that night and that he believed his radar contacts had actually been reflections of the *Turner Joy*. This article came to Fulbright's attention. This appeared to wipe out the rationale for the resolution, and Fulbright, who was being gradually converted to the antiwar cause, felt that he had been hoodwinked, perhaps deliberately, by the White House in 1964. He began gathering the relevant material, including SIGINT reports obtained from the Department of Defense. When he felt he had enough, he convened a hearing on the Gulf crisis.<sup>84</sup>

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The hearings, held in February 1968, made the Gulf of Tonkin Resolution infamous and converted it into a weapon in the hands of the antiwar activists. During the proceedings, Fulbright managed to cast considerable doubt that the 4 August attack ever took place. Inconclusive radar and sonar hits, mysterious weather conditions, the lack of a single verifiable ship sighting – all were used to beat down the Johnson administration's contention that the retaliatory action and the resolution itself were justified.

But the central contention of the hearings became the SIGINT. When Fulbright brought McNamara to the stand, the secretary of defense kept referring to "intelligence reports of a highly classified and unimpeachable nature. . . ." He meant, of course, the SIGINT reports that, first, indicated that the *Swatows* should prepare for nighttime operations, and, second, contained the after-action reports alleging that aircraft were shot down and the loss of the two boats. The committee kept pressing McNamara and eventually dragged out of him virtually the full texts of the messages involved. McNamara resisted, but it was very hard to defend his actions without resorting again and again to his most convincing pieces of evidence.<sup>85</sup>

These public disclosures damaged the SIGINT source – all the messages had been from decrypted North Vietnamese naval codes which were still in use in 1968. But it did not sell the case to the disbelieving committee, despite McNamara's contention that "No one within the Department of Defense has reviewed all of this information without arriving at the unqualified conclusion that a determined attack was made on the *Maddox* and *Turner Joy* in the Tonkin Gulf on the night of 4 August 1964."<sup>86</sup>

In fact, not all DoD people were sold on this contention. NSA, for one, had failed to fully support the administration's position. It had confirmed the 2 August attack but had never confirmed the 4 August engagement. The Agency had concluded that the two *Swatows* instructed to make ready for action that night had never participated in the action with the *Maddox* and *Turner Joy*. The after-action reports could have referred to the 2 August engagement.

But it didn't really matter. The administration had decided that expansion of American involvement in Vietnam would be necessary. Had the 4 August incident not occurred, something else would have. Another expansion of the war occurred the following February, following the mortaring of an American installation at Pleiku. McGeorge Bundy said at the time, "Pleikus are like street cars. If you miss one, another will come along." He could have been talking about the Gulf of Tonkin crisis.

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## Notes

1. Histories of Vietnam and Southeast Asia abound. Three of the better ones, which were used in compiling this history, are Joseph Buttinger, *Vietnam: A Political History* (New York: Frederick A. Praeger, 1968); Stanley Karnow, *Vietnam: A History* (New York: Penguin Books, 1983); and George Herring, *America's Longest War: The United States and Vietnam, 1950-1975* (Philadelphia: Temple University Press, 1986).
2. Herring, 58.
3. Historical Study of U.S. Cryptologic Activities in Southeast Asia, 1960-1963, 1964, CCH Gerhard collection; William D. Gerhard, *In the Shadow of War*, Cryptologic History Series - Southeast Asia (Ft. Meade: NSA, 1969).
4. CCH Series VI.HH.12.10.
5. VI.H.H.12.10.
6. Ibid.; oral interview with [redacted], 23 January 1986, by Robert D. Farley and Tom Johnson, NSA OH 4-86.
7. Herring, Kennedy Library papers.
8. Beschloss, *The Crisis Years*.
9. Herring, Beschloss.
10. Beschloss.
11. Gerhard Collection.
12. William D. Gerhard, *In the Shadow of War*.
13. NSA Retired Records, 28515, 84-245; Gerhard, *In the Shadow of War*; oral interview with [redacted], 23 December 1992, by Charles Baker and Tom Johnson, NSA OH 08-92.
14. NSA Retired Records, 28515, 84-245; Thomas N. Thompson, Jesse E. Miller, and William D. Gerhard, *SIGINT Applications in U.S. Air Operations*, Cryptologic History Series, Southeast Asia, Part I: Collecting the Enemy's Signals (Ft. Meade: NSA, 1972).
15. CCH Series VI.H.H.23.2-23.5.
16. Ibid.
17. Ibid.; VI.H.H.12.10; [redacted], "NSA in Vietnam: Proud and Bitter Memories," *Cryptolog*, Oct. 1975, 3-6; [redacted] interview: Gerhard Collection; *Essential Matters: A History of the Cryptographic Branch of the People's Army of Viet-Nam, 1945-1975*, United States Cryptologic History, Special Series, Number 5, translated by David W. Gaddy (Ft. Meade: NSA, 1994), 98-111.
18. Herring; MSgt William E. Fleischauer, "History of Project 78," in ASA annual history, 1959, available at Hq INSCOM.
19. CCH Series VI.H.H.12.10.
20. Gerhard Collection.
21. Ibid.; CCH Series VI.H.H.6.22.
22. CCH Series VI.HH.6.22.; VI.HH.12.10; Gerhard Collection; Gerhard, *In the Shadow of War*.

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23. Ibid.
24. CCH Series VI.H.H.18.9.
25. , "Deployment of the First ASA Unit to Vietnam," *Cryptologic Quarterly*, Fall/Winter 1991, 77-93.
26. CCH Series VI.HH.1.10.
27. Gerhard Collection.
28. Gerhard, *In the Shadow of War*.
29. CCH Series VI.HH.15.12; Gerhard Collection.
30. James Gilbert, "The Beginnings of Airborne Radio Direction-Finding" in U.S. Army Intelligence and Security Command, *Historical Monographs*, 1983 Series Vol. 1.
31. Gerhard Collection; CCH Series VI.HH.12.10.
32. Gerhard, *In the Shadow of War*; CCH Series VI.HH.12.10.
33. CCH Series VI.HH.15.1.
34. Ibid.
35. Interview with David Gaddy, February 1993; Jules Roy, *La Bataille de Dien Bien Phu* (Paris: Rene Julliard, 1963); Gilbert.
36. Gilbert; Gerhard, *In the Shadow of War*.
37. CCH Series VI.HH.12.10.
38. Neil Sheehan, *A Bright Shining Lie: John Paul Vann and America in Vietnam* (New York: Random House, 1988), 201 ff.
39. CCH Series VI.HH.12.10; Gerhard Collection.
40. Herring.
41. VI.HH.12.19;  interview; Gen. Pham Van Nhon, Manuscript history of DGTS, available in CCH.
42. Nhon, Manuscript history of DGTS;  interview.
43. CCH Series VI.HH.12.10.
44. Ibid.
45. Gerhard collection; CCH Series VI. HH.12.10.
46. Karnow.
47. Herring.
48. Karnow, Herring.
49. Gerhard, *In the Shadow of War*; Brown; "The CCP"; Gerhard collection.
50. Gerhard, *In the Shadow of War*.
51. CCH Series VI.HH.12.10.

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- 52. Morrison interview.
- 53. CCH Series VI.HH.1.40.
- 54. Gerhard, *In the Shadow of War*; Gerhard Collection.
- 55. Thompson, et al., *SIGINT Applications*.
- 56. Gerhard, *In the Shadow of War*.
- 57. Gerhard Collection.
- 58. Ibid.
- 59. Edward J. Marolda and Oscar P. Fitzgerald, *The United States Navy and the Vietnam Conflict, Vol. II: From Military Assistance to Combat, 1959-1965* (Washington: Naval Historical Center, 1986).
- 60. Ibid.
- 61. Gerhard, *In the Shadow of War*, Gerhard Collection; Marolda.
- 62. Ibid.
- 63. Ibid.
- 64. CCH Series VI.HH.24.10.
- 65. Marolda.
- 66. Marolda; CCH Series VIII.13.
- 67. CCH Series CIII. 13.
- 68. Marolda.
- 69. Marolda; CCH Series VI.HH.24.10.
- 70. Marolda.
- 71. Ibid.
- 72. Ibid.
- 73. Marolda; CCH Series VI.HH.24.10.; VIII.13.
- 74. Marolda.
- 75. CCH Series VIII.13.
- 76. Ibid.
- 77. Marolda.
- 78. Marolda; CCH Series VIII.13.
- 79. CCH Series VIII.13; oral interview with [redacted], 22 Dec 1987, by Robert Farley and Tom Johnson, NSA OH 33-87.
- 80. CCH Series VIII.13.
- 81. [redacted] interview.
- 82. Karnow, 374.

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83. Karnow.

84. Ibid.

85. David Wise, "Remember the Maddox!", *Esquire*, April 1968; NSA oral history with Lt Gen Gordon Blake, by William Gerhard and Renee Jones, 5 June 1972, unnumbered.

86. CCH Series VIII:13, contains a full text of the hearings.

87. U.S. Congress, Senate, Committee on Foreign Relations, The Gulf of Tonkin, the 1964 Incidents, Hearings, 90th Cong, 2nd sess., with Hon. Robert S. McNamara, Secretary of Defense, on 20 Feb.1968, in CCH Series VIII.13.

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## Chapter 12

### From Tonkin to Tet - The Heart of the War

#### THE PRESIDENT EXPANDS THE WAR

Retaliation during the Gulf of Tonkin crisis was a one-shot affair, but it indicated that the administration was edging toward more active involvement. It did not, of course, dissuade the North Vietnamese. In November the Viet Cong (VC) mortared the air base at Bien Hoa, only two days before the U.S. elections. Johnson regarded this as a bald affront. Then, on Christmas Eve, they bombed an American officers' billet in downtown Saigon in broad daylight, killing two and wounding sixty-three. This further hardened American attitudes and made direct intervention the following year more likely.<sup>1</sup>

Late in 1964, SIGINT began noting a strange communications pattern for the North Vietnamese 325th Infantry Division. The division headquarters at Dong Hoi opened communications with entities that controlled the infiltration routes into South Vietnam. Sometime thereafter, SIGINT (together with ARDF fixes) showed the 325th moving south, first into Quang Tri Province (just below the DMZ) and later all the way to the Central Highlands. It was the first move of a regular NVA division into the South, and it pointed to a new and considerably more dangerous phase of the war. No longer were the ARVN facing an insurgent Viet Cong movement - they were up against North Vietnamese regulars.<sup>2</sup> The 325th was in South Vietnam to prepare for the rainy season offensive, and it would create a bloody hell for the unlucky ARVN units in its path.

The president now knew what the American people did not - that North Vietnamese regulars were in the South. All that remained was for another provocation to take place. He had not long to wait. On 6 February 1965, the Viet Cong rocketed the American and South Vietnamese facilities at Pleiku, killing 8 Americans and wounding 108, bringing newspaper headlines and extensive television coverage. At the time, press coverage had the effect of pushing the administration into retaliation. (A few years later it would have the opposite effect.) Twelve hours later American A-4 Skyhawks and F-8 Crusaders were launched from the 7th Fleet against Dong Hoi (whence the 325th and other units had staged on their way south).

Twenty-one days later President Johnson institutionalized the pattern of isolated retaliation by starting daily bombings of the North and the Ho Chi Minh Trail in Laos. The operation, called Rolling Thunder, was planned to last eight weeks, but in April Earl Wheeler, JCS chairman, informed the president that it had had no effect at all on the North. So Johnson directed that it continue until it had an effect.<sup>3</sup>

The attack on Pleiku almost shouted out the vulnerability of American troops and equipment. With the initiation of Rolling Thunder, U.S. aircraft were at Da Nang almost

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constantly, and they required protection. The U.S. commander, General William C. Westmoreland, asked Johnson for a defensive force, and the president obliged. On 8 March the first Marines splashed ashore at Da Nang, beginning the American deployment of ground combat troops to the theater.<sup>4</sup>

The commitment of ground forces, once begun, became an inexorable upward spiral. In May, Westmoreland asked for a total of 185,000 by the end of the year, and 100,000 in 1966. Johnson sent Secretary of Defense McNamara to Saigon to find out what was happening. The secretary returned with a gloomy assessment - Westmoreland was actually understating the need, and the U.S. would need an additional 200,000 in 1966.<sup>5</sup>

#### Operation Starlight and the Ia Drang Campaign

SIGINT was still small-time in Vietnam, but it was growing. In August 1965, with new American troops swarming ashore almost every day, ASA SIGINT and ARDF located a new enemy communications terminal near the Marine base at Chu Lai. In Saigon, the NSA representative, [redacted], took the item to Brigadier General Joseph A. McChristian, the J2, who passed it to Lieutenant General Lewis Walt, who commanded the Marines in Vietnam. Walt discussed it directly with his SIGINT people at Phu Bai and became convinced of its validity. He began planning a major entrapping operation. The VC forces, who had hoped to surprise the Marines, became themselves surprised and overcome in the operation, called Starlight. Starlight was a turning point in the direct employment of SIGINT and ARDF in operational planning.<sup>6</sup>

Ia Drang, the first significant campaign by a large force of NVA regulars, began as an attempt by the NVA 325th Division to cut Vietnam in half in the Central Highlands. In the process, the 325th attacked a Special Forces camp at Plei Me, about twenty-five miles south of Pleiku. ARVN forces attempted to rescue the troops trapped inside but were ambushed by two NVA regiments of the 325th, the 32nd, and 33rd, with heavy casualties.<sup>7</sup>

Following the engagement, the NVA retreated up the Ia Drang Valley, with the First Cavalry (Airmobile) in pursuit. Owing to the recent success in Starlight, the American forces had five ARDF aircraft in support. Moreover, for the first time the ARDF crew had the capability to pass fixes directly to the ASA Direct Support Unit (DSU) supporting the ground forces. ARDF fixes followed the 325th elements retreating up the valley until they were cornered at the Chu Pong Massif. The 1st Cavalry, employing helicopters in pursuit for the first time, and supported by B-52 air strikes, devastated the NVA. The two regiments suffered up to 60 percent casualties and were no longer an effective fighting force. The remnants retreated into Cambodia. During the action, the 33rd was so concerned about the Americans appearing to know their location that they concluded that they had spies in their ranks.<sup>8</sup>

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### The SIGINT Deployment

To support American ground forces, ASA built Phu Bai into the largest ASA field site in the world, almost 100 positions. Together with the 3rd RRU in Saigon and the 9th in the Philippines, ASA had substantial fixed site assets.<sup>9</sup>

The fixed sites were augmented by SIGINT tactical assets. ASA tactical units began to arrive with each incoming Army organization. Each unit normally had five manual Morse positions along with short-range DF and VHF intercept equipment.<sup>10</sup>

NSA's concept of direct support was that, since the problem was centrally controlled from Hanoi, the SIGINT effort should remain centralized. NSA continued to exercise overall control from Fort Meade. In Vietnam, collection management authority (CMA) was divided into three areas, roughly corresponding to the division of American forces. USM-626 at Tan Son Nhut was CMA for the southern part of the country, USM-808 at Phu Bai for the northern portion, and USM-604 at Pleiku for the central area.<sup>11</sup>

Following its relocation to Phu Bai, the Marine SIGINT detachment became the DSU in support of the III MAF (Marine Amphibious Force) in the north. Eventually the Marines established DSUs like the Army and wound up with the same sort of a decentralized SIGINT support arrangement, with small detachments composed of only a few positions each collocating with combat units. Lacking their own ARDF assets, the Marines received ASA ARDF support.<sup>12</sup>

Air Force Security Service SIGINT collection from Vietnam itself was more limited. The unit at Da Nang expanded quickly once Rolling Thunder began, but it never equalled the huge ASA contingent. This was not true, however, of the ACRP effort. USAFSS had a contingent of four RC-130s at Da Nang, which expanded to six in 1967, by the device of raiding airborne assets in Europe and Japan.<sup>13</sup>

Beginning in 1967, a new ACRP program began flying in Southeast Asia. This program consisted of the far larger and more capable RC-135s belonging to a new unit at Kadena AFB, Okinawa, the 6990th SS (Security Squadron). With SAC front-end crews and USAFSS collectors, the RC-135s flew very long (often in excess of seventeen-hour) missions into the Gulf of Tonkin. The RC-130s continued to fly out of Da Nang until the end of the year, when the Kadena unit took over the entire mission.<sup>14</sup>

Operational control arrangements continued to cause friction. NSA opposed fragmentation, while the Army insisted that field commanders should directly control all cryptologic assets supporting them. This became a critical issue when Army units began independent operations.

In mid-1965 a new arrangement was hammered out between Rear Admiral Schulz of NSA and Brigadier General Eddy, deputy commander of ASA. Under this Schulz-Eddy agreement, when DSUs were in active support of an ongoing tactical operation the field

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commander would control them. When they were back in garrison, control would revert to ASA's designated field site (either Saigon, Pleiku, or Phu Bai). NSA continued to control all fixed field sites, to the loud disapproval of MACV.<sup>15</sup>

The second control issue to arise in 1965 concerned the air problem. Brigadier General Rocle "Rocky" Triantafellu, the deputy chief of staff for intelligence at 7th Air Force, proposed that an organization be established in Saigon which would produce a daily recap of the status of North Vietnamese air and air defense systems. But what Triantafellu wanted and what NSA was prepared to deliver were very different. Triantafellu had in mind an Air Force Security Service organization, all blue-suiters working for 7th Air Force. NSA countered by proposing an NSA unit, manned only partly by uniformed Air Force people. This nasty scrap continued until NSA won in March 1966. The resulting organization, called the SIGINT Support Group (SSG), consisted primarily of Air Force people, but was under NRV control.<sup>16</sup>

The very next year, MACV itself got into a struggle with NSA over the positioning of cryptologic assets. In this case, MACV requested that a SIGINT processing center be established in Vietnam, to bring processing closer to the fighting. By 1967, however, MACV was swimming against the tide. NSA had moved processing back to Okinawa (JSPC) and Fort Meade and was not about to change directions. SIGINT centralization was "in," and MACV did not get its processing center.<sup>17</sup>

#### ARDF and the Two-Front War

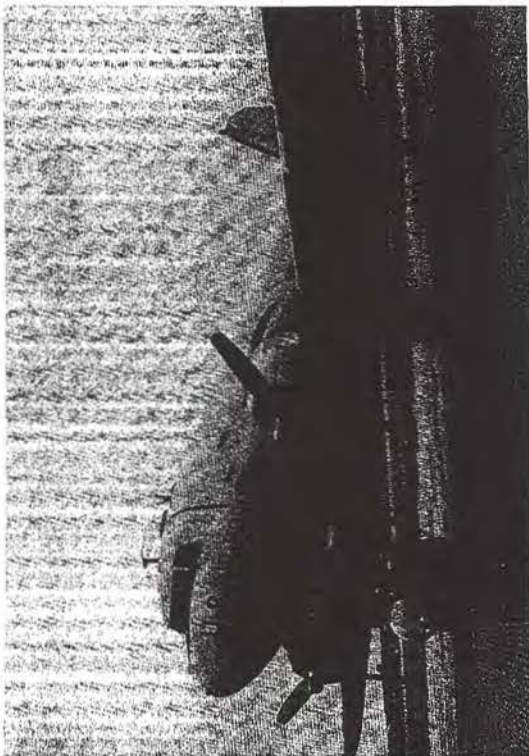
In the beginning, ARDF was the exclusive domain of the Army. Starlight and the Ia Drang campaign had demonstrated the benefits of close ARDF support, and ASA expanded its assets rapidly. By the end of the year, there were four aviation companies in Saigon, Da Nang, Nha Trang, and Can Tho. The first two supported I FFV (First Field Force Vietnam) in the north, while the second supported II FFV. ARDF had clearly become a coveted asset.<sup>18</sup>

In 1966 the ARDF picture became suddenly complicated. The Air Force deployed a new ARDF program, called PHYLLIS ANN. The Air Force considered ARDF to be an EW asset, and even in the test phase in 1962 had refused to submit to any sort of central control from the SIGINT system. The Air Force eventually conceded to bring its ARDF testing under cryptologic control, with USAFSS back-end operators and ASA technical support. (At the time, an ASA unit, USM-626 at Tan Son Nhut, was the tasking and technical support authority for Vietnam, and this made the pill doubly bitter.) But since the equipment was unsatisfactory technically, the issue of command and control became moot with the departure of the test aircraft.<sup>19</sup>

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PHYLLIS ANN EC-47 ARDF aircraft

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PHYLLIS ANN was different. The equipment, mounted in C-47s, was good - just as accurate as the ASA systems, but because of technical factors, the C-47s (now called EC-47s) could shoot more DF shots in an hour than the Army aircraft. The Air Force Security Service activated the 6994th SS on 15 April 1966, at Tan Son Nhut, to man the ARDF positions. Soon they had detachments at Da Nang, Nha Trang, and Pleiku. A total of forty-seven EC-47s were deployed to the theater.<sup>20</sup>

When PHYLLIS ANN aircraft arrived in theater, the issue of control and tasking of ARDF assets erupted into a three-cornered donnybrook. Seventh Air Force continued to regard them as EW assets and demanded complete tasking control. Westmoreland was equally insistent that all ARDF assets should be tasked centrally (i.e., by MACV). NSA was willing to see central tasking in theater, but insisted that ARDF was a cryptologic asset whose ultimate owner was itself. In the Agency's opinion, it had simply delegated temporary operational control to the commanding general of ASA in 1961.<sup>21</sup>

By June of 1966, MACV had won the fight for in-theater control. EC-47s would be tasked by a central ARDF tasking center called the ACC (ARDF Coordination Center), collocated with Westmoreland's J2 in Saigon. Seventh Air Force continued the struggle throughout the war, but it could not get support from even PACAF (Pacific Air Force) for its position.<sup>22</sup>

The struggle for control went all the way to the deputy secretary of defense. In 1966, Cyrus Vance ruled that ARDF was an EW asset and would be controlled by Westmoreland through his J2. The victory was only temporary, however. Two years later, Deputy Secretary Paul Nitze reversed Vance, holding that ARDF was actually a cryptologic technique and that it would be placed in the CCP. In the meantime, the ARDF controversy had spawned a compromise document, MJCS 506-67, an effort to cut the SIGINT Gordian knot (see p. 475).<sup>23</sup>

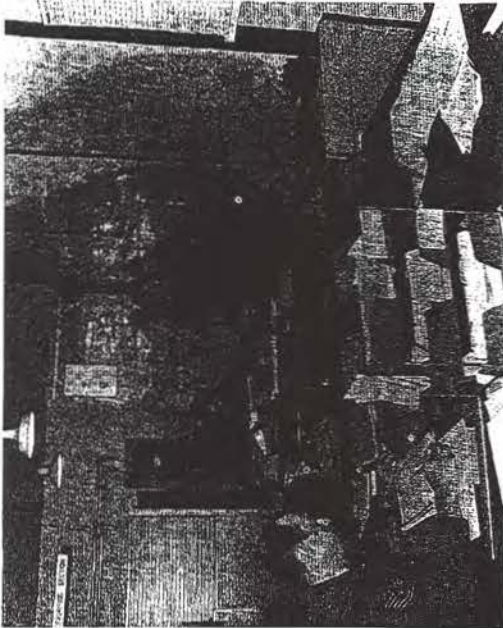
### Search and Destroy

Westmoreland's strategy was to get American troops out of a defensive posture and out into the countryside on search and destroy missions. This placed a premium on unit mobility. The SIGINT support for these sweep operations consisted basically of ASA tactical units with small numbers of Morse positions, supplemented by low-level voice and short-range DF. To this mix was added the ARDF fixes flashed from aircraft to the ASA units on the ground and intercept from major SIGINT stations like Pleiku and Phu Bai. This pattern, initiated in 1965 during the Ia Drang campaign, became the dominant system in 1966 and 1967, during the height of tactical operations.

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The ARDF control center in Saigon.  
Shown in 1969, it was a joint Army-Air Force facility.

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ASA tactical SIGINT units provided direct support for a bewildering number of military operations during 1966. They came in all flavors: Masher/White Wing, Paul Revere, Nathan Hale, John Paul Jones, Geronimo, Attleboro, and many more. One was like the next.

An example was Paul Revere II, an operation in the Central Highlands in July and August. SIGINT support consisted largely of ARDF fixes from aircraft that were, for the first time, allocated, based, and flown in a direct reporting, close support role from the command post of the supported commander.<sup>24</sup> The historical debate over the effectiveness of Westmoreland's strategy should not obscure the significant contributions of SIGINT. Some of the tactical operations were initiated based on SIGINT information, and most were prosecuted using updated SIGINT.

A second type was the riverine operation. Used primarily in the Mekong Delta and other low, marshy areas of the country, it was basically a waterborne search and destroy mission. But the difficult terrain, and lack of large-unit VC operations, made riverine operations frustrating and largely ineffective. This went as well for the SIGINT support. Working with the Navy and Marines, ASA would deploy low-level voice intercept (LLVI) and short-range direction finding (SRDF) teams on boats. Because of a lack of good linguists, the LLVI teams were generally ineffective. The SRDF operations proved to be no more successful on water than on dry land. Bearings were divergent and frequently produced no intersection at all.<sup>25</sup>

Army Security Agency was willing to go wherever it was necessary to collect and support. Sometimes units would be choppered to the tops of mountains. One such operation placed an intercept team on top of Black Widow Mountain, an aptly named peak in a remote corner of Tay Ninh Province at the Cambodian border. This was VC territory, and it turned out to be one of ASA's most dangerous operations. As if enemy operations were not enough, the weather was atrocious - winds as high as eighty knots, heavy rain, low ceilings (which prevented helicopters from landing most of the time), and high humidity that would destroy intercept equipment in short order. But after only a four-day test cut short by hostile fire, NSA concluded that it was the only way to get Cambodian [redacted] VHF air/ground communications aside from leaving a TRS in the South China Sea. Since TRSs were on the way out, Black Widow Mountain was on the way in. So in May 1968 the ASA team was back, this time supposedly permanently. E.O. 13526, section 1.4(c)

The second time around the team lasted two weeks. At that point, a VC attack killed one ASA operator and wounded another, and caused numerous casualties to the collocated Special Forces unit. The operation was withdrawn by helicopter at the first break in the weather.<sup>26</sup>

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A riverine operation with an AN/PRD-1 SRDF set

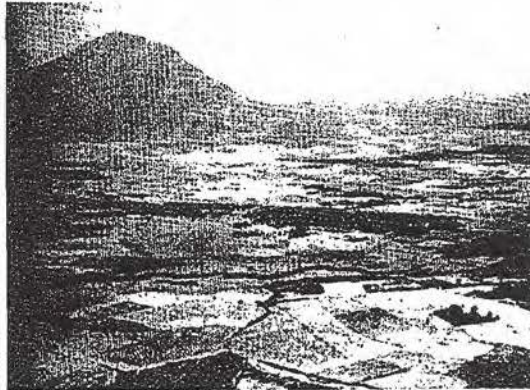
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However, the value of operations like Black Widow Mountain spawned an effort to locate intercept equipment on mountain tops and to remote the signal to a safer location. That way, only the equipment would be exposed. The effort, called EXPLORER, was developed at NSA in only three months, with [redacted], Donald Oliver, and [redacted] being the key players. The first EXPLORER operation lasted for almost a year before it was destroyed. But during its lifespan it was highly effective. In ideal conditions ASA could intercept the traffic from the EXPLORER system, forward it to NSA for decryption, and have the decrypted text back in country in some four hours.<sup>27</sup>



Black Widow Mountain

Another successful technique was wiretap. NSA developed various wiretap systems, but they were uniformly dangerous to install. American or ARVN soldiers had to penetrate VC territory (especially risky in Laos, where most of the landlines were), find the landline, attach the tap to the line, and get out of the way. The VC would periodically sweep the line, and early wiretap systems required the Americans or ARVN to stay in the vicinity and, when a sweep came by, hurriedly detach the tap and get back into the bush. Later versions did not require a stay-behind person. Some taps looked like Vietnamese insulators and thus would not be viewed as possible taps. Still later, the U.S. developed poles that could be dropped by helicopter into the jungle near a landline.<sup>28</sup>

**Predictions**

The highest intelligence art form is prediction. One of the most intensive activities in the war was the attempt to predict VC and NVA offensives – when, where, and how many.



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But in 1964, concurrent with increased NVA involvement in the south, ASA began to intercept Morse communications pertaining to VC military operations. As the Morse nets expanded, NSA began to recover the VC/NVA military structure through traffic analysis. The Agency identified the formation of five new organizations: MR TTH (Military Region Tri-Thien-Hue), NVA 3rd Division, B3 Front, Headquarters Southern Subregion, and VC 9th Division. The Binh Gia campaign at the end of 1964 showed the first extensive use of Morse to set up and coordinate a local campaign.<sup>30</sup>

From then on, through painstaking traffic analysis and DF, the cryptologic community was able to discover communications patterns that indicated attacks. By 1967 it had become an art form, and many NSA seniors contend that past a point (probably in 1965 or 1966), the SIGINT system predicted every major VC or NVA offensive. This included date, point of attack, and units involved.

Indicators varied from battle to battle but almost always included the activation of a "watch net," contingency communications which indicated that the headquarters would soon deploy to a different location. Concurrently, a forward element would be activated, and would establish communications with the headquarters, which, until it moved, would become the rear element. It became important to locate the forward element and to track the movement of the headquarters. At a point in the operation, it would disappear from communications. When it reappeared, it would be in the area of the battle, and it would then be critical to locate it, usually through ARDF.

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Other indicators would usually be present, including the use of unusual cipher systems, changes in message volume, the appearance of operational planning messages [redacted], indications of increased intelligence collection, and heightened logistics activity. Plain text and the decryption of low-level ciphers were important, but most of the work was done solely through a combination of ARDF and traffic analysis. Greatly aiding this effort was the fact that the VC and NVA used the same call sign book throughout the war. The U.S. had the book completely recovered and used this to identify the units involved.<sup>31</sup>

### Infiltration

A second resounding SIGINT success was in tracking North Vietnamese infiltration on the Ho Chi Minh Trail. Until the fall of 1967, this was done through a combination of photography, SIGINT (primarily traffic analysis), prisoner interrogations, and the like. It was a complex problem, which admitted of no easy answers. The U.S. did not, in fact, have a good handle on infiltration.

Then, in October 1967 RC-130 intercept operators began picking up LVHF voice [redacted] [redacted] passing logistics information. The messages emanated from Vinh,

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a key logistics center on the Trail, just above the DMZ. Most of the messages pertained to [redacted] which NSA decided must represent groups of infiltrators on the Trail.

NSA eventually broke out the entire Trail group system and was able to determine with fair accuracy virtually every group moving onto the Trail, where it was headed, and when it would probably arrive. Some of the groups proved to be specialists like medics, while others were simply combat soldiers, augmentees for an offensive or replacements for casualties. Late in the war, infiltration numbers were assigned to integral units rather than individuals. The surprising bonanza came to be called the "Vinh Window."<sup>32</sup>

The Vinh Window was very big news. MACV now knew where the biggest strategic push would come based on projected augmentees to a given frontal area or military region. The White House thought it had unlocked the key to the magic door, and David McManis, NSA's representative to the White House Situation Room, spent much of his time explaining the intricacies of trail groups. CIA cast aside much of its methodology of determining infiltration numbers and simply accepted the SIGINT numbers as virtually the final answer.<sup>33</sup>

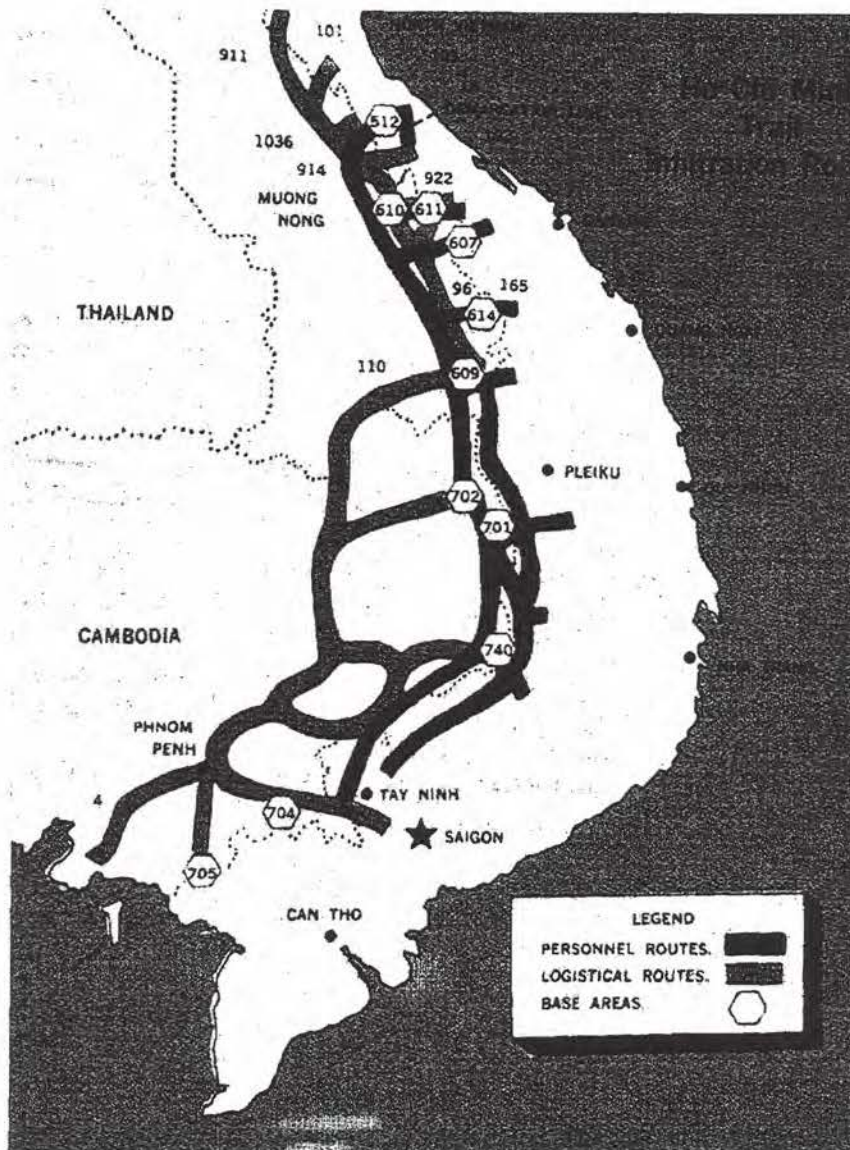
In Asia, the ACRP program was swept up in a tidal wave of requirements relating to the Vinh Window. The RC-135 unit which had only recently formed at Kadena was pressed into premature service. The RC-130 program, which was eliminated in favor of the RC-135s by the end of the year, was replaced in the fall of 1968 by a new program called COMFY LEVI, RC-130s with roll-on SIGINT suites for the back end. The Air Force Security Service received authority to transcribe the most critical tapes in the aircraft and downlink the information to the Security Service unit at Da Nang in midflight. Untranscribed voice tapes began to pile up at Kadena, as demands overwhelmed resources.<sup>34</sup>

The significance of the Vinh Window could not be overemphasized. Every intelligence agency adopted its own interpretation of the figures, and infiltration estimates varied to some degree depending on what agency one listened to. CIA's counts were probably the most accurate, but were not the only ones reaching the White House. The National Indications Center, in a 1968 study of the phenomenon, stated that "... the SIGINT material which is now available is not only of value for estimating the strengths of Communist forces in South Vietnam, but also is a significant factor in assessing their future plans and intentions."<sup>35</sup>

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The Ho Chi Minh Trail

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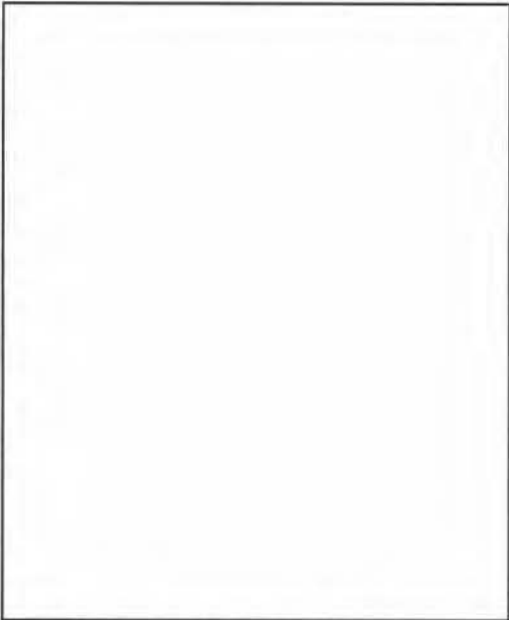
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**The Dancers**

The cryptologic community in Southeast Asia had been overwhelmed with Vietnamese voice long before the Vinh Window. The problem began in late 1964, when the first voice intercepts began to flood the SIGINT system. What had been entirely a Morse problem suddenly had a new dimension to it.

The services had very few Vietnamese linguists, and those they had were little better than school trained. In 1964 USAFSS requested authority to establish native-born South Vietnamese as linguists to transcribe voice tapes to be collected at Da Nang in support of 34A operations. After studying the problem, NSA concurred with a Vietnamese transcription operation, but established it, not at Da Nang, but in Saigon. The DANCER project (as it was called) was established in January 1965, using 3rd RRU SABERTOOTH spaces, with three South Vietnamese linguists.<sup>36</sup>



By May 1965, USAFSS was processing Vietnamese voice off [redacted] nets being collected by the ACRP program at Da Nang. The program in Saigon was [redacted] the only female Dancer not productive, partly because ASA could hear no Vietnamese voice from that location. Since Da Nang was the ground processing point for ACRP intercept, it was decided to move the DANCER program north - ultimately it wound up at both Da Nang and Phu Bai (selected because NSA believed [redacted] communications could be heard from that location). DANCER recruits came from the SABERTOOTH program and were vetted by General Nhon's South Vietnamese SIGINT organization.<sup>37</sup>

Originally employed to transcribe voice tapes, DANCERS eventually became qualified in a wide variety of skills. They proved to be skilled at various traffic analytic recoveries, and they were soon an absolutely essential asset to any SIGINT operation in South Vietnam. By 1966, ASA units were intercepting LLVI communications and needed DANCERS to go to the field with them. This effort became Project SHORTHAND. Because the U.S. had run through the supply of linguists available from the South Vietnamese SIGINT Service, ASA, under SHORTHAND, obtained authority to recruit from other sources within the South Vietnamese government.<sup>38</sup>

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### The SIGINT Role in the American War

During the period of maximum American involvement on the ground, SIGINT developed from an arcane art form to a day-to-day bulletin on enemy dispositions. Most commanders interviewed after the fact estimated that SIGINT comprised anywhere from 40 to 90 percent of their intelligence, depending on the availability of POWs. Every sizeable unit deployment had its ASA Direct Support Unit (DSU), which gave it access to ARDF and a pipeline into the national SIGINT system. Many commanders used the information for daily battle planning.<sup>39</sup>

A properly employed DSU thus became an essential resource. But it had warts. As in Korea, the LLVI effort was sometimes fruitless because of the difficulty of getting good linguistic support; an insufficiently trained linguist was sometimes worse than no linguist at all. South Vietnamese linguists under the DANCER and SHORTHAND programs were spread very thin and were often not available.

Moreover, short-range DF proved a dubious asset, especially in the Delta, where there were fewer targets. To the extent that DF was successful, it was generally ARDF.

ARDF sometimes overwhelmed other intelligence sources. Tactical commanders used it for daily targetting, and it became the primary source for targetting information in the entire war. Used effectively, it was irreplaceable. But sometimes a commander would blast a patch of jungle just because a transmitter had been heard there. The VC and NVA eventually became skilled at remoting their transmitters, just because of such American tendencies. There was still no substitute for understanding the source.

And much of the difficulty that the SIGINTers found themselves in stemmed from an unappreciative audience. Very few commanders had any training in SIGINT. In the 1950s it had been kept closeted, a strategic resource suitable only for following such esoteric problems as Soviet nuclear weapons development. Now that it was "coming out of the closet," a generation of officers received OJT under fire.

Some did well; some not so well. For every example of the proper use of tactical SIGINT, there was the opposite instance, where the source was either not believed or not used properly. No intelligence source was so technically complex or so difficult for the layman to understand. The lessons from the "American War" (1964-1968) were still being absorbed more than twenty years later.

### The Air War

The air war began with the daily bombing of the North in March 1965. Like the ground war, the air war was a messy business organizationally. It involved three different air elements.

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Seventh Air Force was the largest component. It had six tactical fighter wings and a tactical reconnaissance wing spread around Southeast Asia. Headquartered at Tan Son Nhut, 7th AF had a Control and Reporting Post on a hilltop called Monkey Mountain, near Da Nang. This was where command and control of tactical missions were executed, and this was where Air Force Security Service chose to set up shop.<sup>40</sup>

In the Gulf was Task Force 77, a carrier task force belonging to 7th Fleet. The Navy launched Rolling Thunder missions from the carrier decks, and it had its own control authority, called Red Crown.<sup>41</sup>

The First Marine Air Wing, under III MAF, operated out of airfields in northern South Vietnam. Although used almost exclusively for close air support in South Vietnam, they also flew some missions over the North.<sup>42</sup>

Finally there was SAC. The Strategic Air Command launched B-52 strikes over both North and South Vietnam, flying out of Andersen Air Force Base, Guam; U-Tapao, Thailand; and Kadena, Okinawa.<sup>43</sup>

In response, the North Vietnamese, with a third-rate air force and practically no technological sophistication, had fashioned a competent if not overwhelming defense. Proceeding from the visual observer stage in the late 1950s, North Vietnam had introduced Soviet radar systems, and by the mid-1960s it had some 150 radar sites and 40 radar reporting stations. The North Vietnamese navy also had radar sites along the coast, primarily to keep track of enemy ships. They had a small group of MIG-17s and MIG-21s which they carefully husbanded. They also introduced hundreds of AAA sites across the country and in late 1965 began installing SA-2 sites. American air strikes by no means went unimpeded.<sup>44</sup>

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#### Fashioning the SIGINT Warning System - HAMMOCK

Following the Gulf of Tonkin crisis, 7th AF (then called 2nd Air Division) requested SIGINT support for air missions north of the DMZ. Security Service began planning an

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expansion of its unit at Da Nang (6924th SS, or USA-32) to provide some sort of Tactical Report (TACREP) service.<sup>46</sup>

What developed initially was a system called HAMMOCK, which became operational in December 1965. HAMMOCK consisted of five manual Morse intercept positions at USA-32, copying North Vietnamese air defense communications which reflected MIG activity. USA-32 could pass warning information to 7th AF when, and only when, the tracking fell within the theoretical range of American radar. (There did not actually have to be a radar located at the hypothetical point; the postulated existence of such a radar was enough.) The information was supposed to be validated at the Tactical Air Control Center (TACC) at Tan Son Nhut, which would convert the SIGINT plot to a geographical coordinate and then send it on to the Control and Reporting Post (CRP) at Monkey Mountain. The CRP could warn the aircraft in jeopardy and would also pass the information via KW-26-secured circuit to Red Crown in the Gulf.

If communications were down, USA-32 could go directly to a Security Service detachment at the CRP, where the information was converted from the grid system and passed to an uncleared CRP controller. This was much faster, but everyone was nervous about security because there were so many uncleared people in the facility.<sup>47</sup>

Needless to say, this convoluted system was less than satisfactory. It relied, in the first instance, on manual Morse tracking passed within the North Vietnamese air defense system, which introduced a delay of several minutes. It was burdened by so many communications relays and authorization authorities that it had little chance to get anywhere in time. HAMMOCK plots generally reached someone who could warn a fighter pilot anywhere from twelve to thirty minutes after the fact. The average time of receipt to Red Crown was nineteen minutes. The Navy was profoundly unimpressed and chose to rely on its on-board cryptologic detachments. The Navy operators had little experience with North Vietnamese air defense systems, but at least they could warn within a few minutes of real time.<sup>48</sup>

Despite this, HAMMOCK was better than nothing. On 27 April 1966, the U.S. got its first confirmed MIG shootdown based on warning information provided by HAMMOCK. But the requirement to check everything with the TACC in Tan Son Nhut got the Air Force Security Service in the middle of a jurisdictional dispute between 7th AF and its subordinate CRP on Monkey Mountain. It was not the right way to run a war.<sup>49</sup>

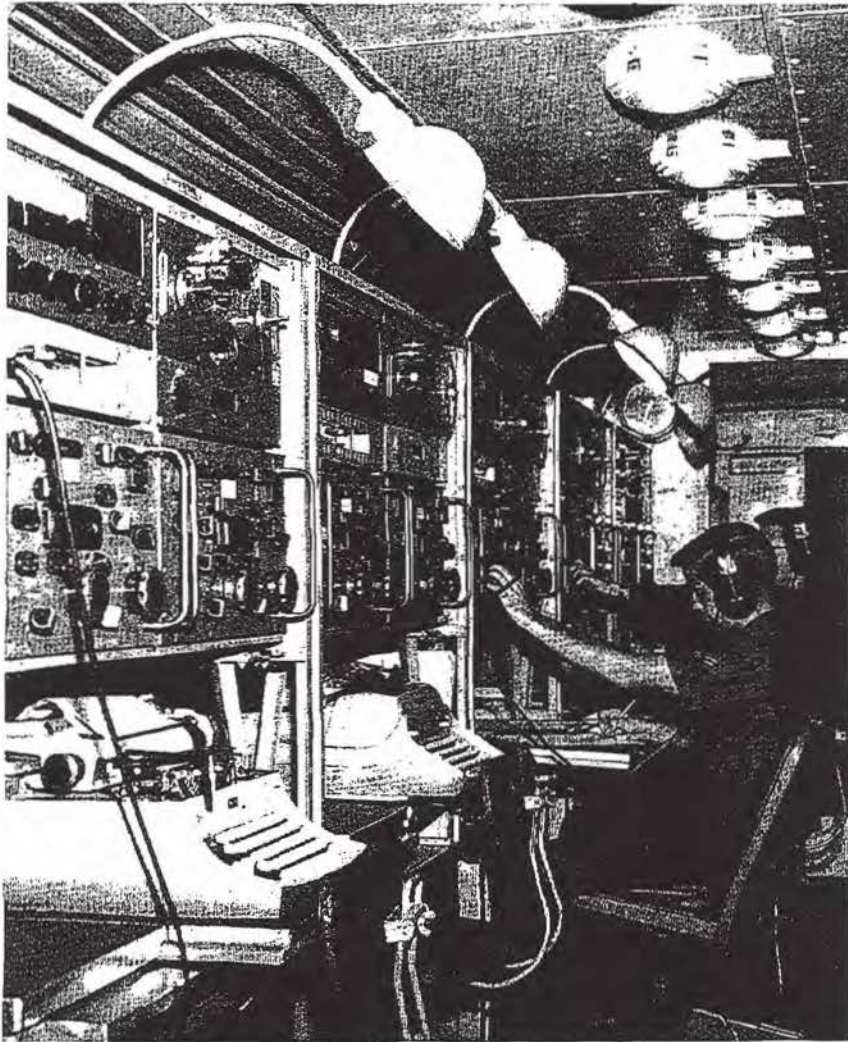
The ultimate answer was not manual Morse tracking, anyway - it was intercept of VHF air/ground communications by the RC-130 QUEEN BEE DELTA aircraft flying in the Gulf of Tonkin. The ACRP often had the information that pilots needed to avoid being shot down, or to do some shooting down themselves. Security restrictions, however, prevented its use.

The cropper came in April 1965, when two F-105s were shot down by MIGs. The orbiting ACRP had had information that would have been useful, and it was obviously

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Voice intercept operators at work, USA-32

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imperative that a system be devised to incorporate their intelligence.

Pacific Security Region (the region headquarters for the Air Force Security Service) had devised a brevity code that could be used by the ACRP back-end crew to warn pilots in imminent danger, but it did not withstand COMSEC scrutiny. The only solution appeared to be a secure link between the ACRP and USA-32. A device called a URC-53 already existed. Priority was so high that the installation and use of the URC-53 at Da Nang was approved the same day it was requested, and the circuit was installed and operational within a month.<sup>50</sup>

But this was still not fast enough. General Moore, commander of 7th AF, proposed putting his own controllers on the QUEEN BEE aircraft, clearing them, and having them pass MIG alerts directly to Rolling Thunder aircraft, using the callsign of another aircraft in the Gulf (COLLEGE EYE, an EC-121) as cover. Reversing the normal procedure, Morse tracking would be passed uplink from Da Nang to the ACRP, where it would be integrated with the voice data. Moore's weapons controllers were flown to Bangkok (whence QUEEN BEE flights then originated), and three days later the ACRP issued its first MIG alert.<sup>51</sup>

Then Moore tried to get control of the ACRPs themselves. He felt this was necessary to insure that there was always an ACRP aloft during Rolling Thunder missions. Here Moore ran into a buzzsaw. The aircraft he wanted control of were national assets. NSA successfully opposed 7th AF on this issue. Even PACAF refused to back 7th AF, stating at one point that there had never been an instance when the ACRP had failed to respond to a 7th AF request.<sup>52</sup>

The autumn of 1965 brought a new threat - the appearance of SA-2 surface-to-air missiles (SAMs) in North Vietnam. The North Vietnamese began employing SAMs against high-flying, nonmaneuverable targets like B-52s, while using AAA for the lower-flying Rolling Thunder aircraft. To counter SAMs, 7th AF introduced a procedure in which SAM activations acquired by the ACRP aircraft (now renamed SILVER DAWN) would be passed to 7th AF (through USA-32), which would direct Iron Hand (SAM suppression missions) against the offending SAM.

At this point Security Service ran into an Air Force mind-set regarding the use of intelligence that proved to be destructive of its own interests. Air Force doctrine was to launch suppression only if the SAM site had been documented by photography, and 7th AF refused to launch Iron Hand in cases where this had not been done.<sup>53</sup>

#### **The Border Violation Incident**

On 8 May 1966, a flight of RB-66s escorted by F4Cs strayed over the border into Communist China and was attacked by four MIG-17s. One of the MIGs was shot down in the engagement, which occasioned an impassioned diplomatic protest from the PRC. The communists released photos of the downed MIG well north of the international barrier.<sup>54</sup>

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The off-course Americans should have been warned. [redacted] None, unfortunately, reached the American pilots. The Navy EC-121 that was supposed to act as a communications relay had aborted, and the warnings from Monkey Mountain went off into the ether.<sup>55</sup>

This incident led to a full-scale Pentagon investigation of command and control procedures in Southeast Asia. The "Pearl Harbor question" kept coming up - why, if SIGINT was available, wasn't it used? The proceedings, headed by Marine brigadier general Robert G. Owens Jr. were marred by mutual recriminations between the SIGINTers, who were sure of their facts, and the operations people, who were determined to defend their pilots. [redacted]

[redacted] This claim was rejected by the full panel. In the end, Secretary of Defense McNamara reported to the president that "this account, derived from communications intelligence, is unequivocal. A thorough review of intercepted [redacted] North Vietnamese messages reveals no significant discrepancies. . . . I am convinced that our aircraft penetrated Chinese airspace before they were attacked by the MIGs."<sup>56</sup>

The Owens report laid bare the inadequacies of command and control and the disjointed way that SIGINT was introduced into the operational system. Owens demanded, and got, a thorough reorganization of the system in Vietnam. Authority to control operations was summarily removed from 7th AF in Saigon and placed where it should have been all along, on Monkey Mountain. The Tactical Air Control Center (TACC) at Tan Son Nhut was cloned on the mountain and called TACC/NS (North Sector). The control facility on the mountain was upgraded from a CRP to a CRC (Control and Reporting Center) and was given two subordinate CRPs at Udorn and [redacted]

The Owens report also recommended that 7th AF have operational control over the ACRPs. This occasioned another huge fracas between the Air Force and NSA. The Agency won again, partly because it could certify that the ACRPs were already as responsive to 7th AF as they would be under that organization's direct control.<sup>58</sup>

During the Owens deliberations, it became clear that factors other than operational control affected ACRP capabilities. The biggest problem was fighter CAP (Combat Air Patrol). Many ACRP missions were scrubbed because of lack of fighter CAP, or had to abort in midmission because the fighters went home early. Following the Owens report, JCS approved unescorted missions in the gulf at night (because of known North Vietnamese reluctance to fly at night). As time went on, the rules were relaxed even more.<sup>59</sup>

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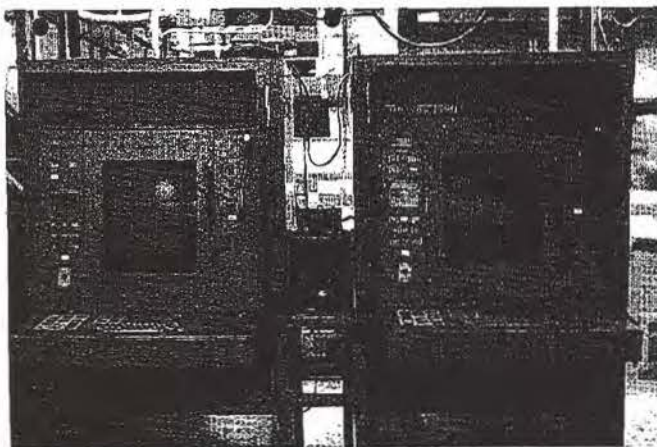
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The reforms permitted SIGINT to focus its input at one geographical point - Monkey Mountain. This shortened the chain of organizations through which a warning had to pass and simplified the task of the SIGINTers in Southeast Asia. It did not, however, provide a direct link-up between SIGINT and the operations people. That necessary step would not come for another five years.

**IRON HORSE**

In 1967 the SIGINT system improved the speed of its support to air operations by a quantum leap. The creaky manual system, HAMMOCK, was replaced by IRON HORSE, a flashy new automated system which could deliver information in seconds rather than minutes. Designed by NSA, IRON HORSE simply linked the electronic output of an AG-22 intercept position, through a computer, to a radar scope. Instead of using a plot-tell system for calling aircraft positions to the TACC or CRC, the computer would convert the grid plot to a geographical coordinate and display it on a radar scope. An Air Force Security Service analyst carefully selected the plots that were sent to 7th AF. Those that were passed went into the BUIC II air defense computer at TACC/NS and were integrated with radar plots from the U.S. system. Plots from SIGINT that went to the CRC, Task Force 77, and the Marines had a unique signature that identified them as not derived from American radar. USAFSS put a team of SIGINT experts in the collocated TACC and called it the Support Coordination Advisory Team (SCAT) - in effect, a CSG to help 7th AF interpret the data. SCAT integrated manual Morse data as well as VHF reflections from the ACRP, the Navy's EC-121, and a variety of other sensors.<sup>60</sup>

IRON HORSE decreased throughput time from twelve to thirty minutes to anywhere from eight seconds to three minutes.<sup>61</sup> It was state-of-the-art and about as fast as Morse tracking could be displayed.



IRON HORSE consoles, USA-32

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~~TOP SECRET UMBRA~~**BIG LOOK**

The introduction of SAMs into Vietnam complicated the air warning picture. Special airborne warning systems to detect the SAM-associated Fan Song radars were thwarted when the North Vietnamese introduced the tactic of putting the Fan Songs on lower power except when they went into a track and destroy mode. Navy engineers devised a counter for this, a system that could intercept and DF very low power signals. They mounted these systems on EC-121 airframes allocated to VQ-1 for fleet support. The ELINT crews came from the home squadron [redacted] while the four voice intercept operators were supplied by USN-27 at San Miguel, Philippines.<sup>62</sup>

E.O. 13526, section 1.4(c)

BIG LOOK was supplemented by WEE LOOK, an EA-3B fleet support aircraft outfitted with ELINT positions. WEE LOOK was also used for threat emitter warning. Although the EA3B was designed to operate from carriers, WEE LOOK did not because of aircraft weight. Like BIG LOOK, it launched from land bases.<sup>63</sup>

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**Weather and SAR Warnings**

One obscure but vital SIGINT contribution was weather. Early in the war, 7th AF flew weather reconnaissance missions prior to operational launches, but it was an Operational Security (OPSEC) nightmare. Weather reconnaissance was the surest indicator that the North Vietnamese could have that a strike was imminent.

In 1965 NRV proposed to 7th AF that USA-32 at Da Nang begin furnishing "special weather" information intercepted on North Vietnamese nets. Da Nang initiated a two-week test and within a month had become the sole source of COMINT-derived weather information on North Vietnam. Special weather was relayed to Task Force 77 as well as 7th AF, and an Air Force historian, with pardonable exaggeration, called this perhaps the "premier contribution" of SIGINT in Southeast Asia.<sup>64</sup>

When the Air Force and Navy began losing pilots over Vietnam, SIGINT was once more called in. A special program was designed for reporting indications (through VC or NVA communications) of downed pilot locations and capture attempts. The reports, called SONGBIRDS, were actually TACREPs, which went out at the noncodeword level to a wide group of organizations. Security Service averaged about ten SONGBIRD reports per month. There was very little feedback on SONGBIRD effectiveness, although one historian estimated that, because of the time required to translate the Vietnamese voice transmissions, most SONGBIRDS did not arrive in time.<sup>65</sup>

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**PURPLE DRAGON**

President Johnson . . . expressed concerns over the number of aircraft being lost on Rolling Thunder missions. Between January and September 1966, a total of 228 fixed-wing combat and support aircraft had been lost during missions against North Vietnam. The question in Washington was, did the enemy have prior warning of U.S. raids against North Vietnam? . . . The answer was yes, they did.

Stephen J. Kelley in *PURPLE DRAGON: The Origin and Development of the United States OPSEC Program*

On Christmas Day 1969, a team of the First Infantry Division, on a sweep in Binh Duong Province near Saigon (part of Operation Touchdown), stumbled on an NVA COMINT unit. They captured twelve of the eighteen people assigned along with some 2,000 documents and the unit's intercept equipment. It was the COMINT "find" of the war.

NSA sent in a TAREX team to evaluate what the soldiers had found. The result confirmed an earlier, and generally ignored, Agency assessment - that the NVA employed 4,000 to 5,000 COMINTers and that this was their chief source of intelligence. Their intercept effort was targetted at ARVN and American communications, from which they could do fairly sophisticated traffic analysis, DF, and even some cryptanalysis. Brevity codes were especially vulnerable. But their main target was unenciphered tactical voice, and the easiest pickings were from the U.S. Air Force.<sup>66</sup>

It was obvious from studying the Touchdown material that NVA COMINTers were a source, probably *the* source, of predictive information on SAC Arc Light (B-52) strikes. But the Defense Department knew that already.<sup>67</sup>

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The story had begun in 1965. NSA had uncovered a communications net supporting Chinese forces in Vietnam. [redacted] analysts noticed that some of the messages contained an unusual Morse character - a barred echo. They remembered that [redacted] used this character to flag uncommonly urgent messages. On a hunch, the division chief, [redacted] suggested that they might compare barred echo messages with Rolling Thunder operations. The result was a direct hit. The barred echo message appeared almost every time a Rolling Thunder mission was flown over the northeast quadrant of North Vietnam. The PRC appeared to be obtaining predictive alerts on 80-90 percent of the missions in the northeast quadrant.<sup>68</sup>

At about the same time, NSA found that ground control stations [redacted] were alerting air defense forces [redacted] as much as twenty-four hours in advance of SAC photo drone missions, called (at the time) Blue Springs. As a result, approximately 70 percent of the drones were being lost to hostile fire. A check of existing traffic showed

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that [ ] had been issuing alerts on SAC reconnaissance missions as early as mid-1965, and on Arc Light strikes, by late 1965.<sup>69</sup>

NSA released its report in May 1966. The effect was immediate and dramatic. Within days, NSA analysts found themselves standing in the Pentagon briefing four-star generals. In August, after pulling together the full story (including indications of foreknowledge of SAC operations), General Marshall Carter briefed the JCS and, later in the month, the PFIAB.<sup>70</sup>

As a result, DIA was tasked to find the problems and correct them. The director, General Carroll, named Rear Admiral Donald M. (Mac) Showers to head the effort. Showers put together an interagency committee which included NSA, the JCS staff, and the SCAs. The group was divided into two subcommittees, counterintelligence and communications security.<sup>71</sup>

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The counterintelligence group quickly concluded that the problem was enemy infiltration, but they could come up with no good way to stem the outflow of information. The COMSEC committee concluded that communications were the problem and that they were probably closer to the truth. But in addition, the COMSEC group came up with a methodology for investigating the problem and plugging the holes.<sup>72</sup>

The COMSEC committee adopted a multidisciplinary methodology for looking at the problem in which all facets, including communications, would be studied. NSA had been working on the methodology for several years, and the Navy had already tried it with some success in surveying maritime operations in the Gulf of Tonkin (called Market Time).<sup>73</sup>

The committee also borrowed from a COMSEC study of Arc Light operations done in 1965, called the Guam Area Study. Although the Guam study looked at the communications of all three services, it concluded that most of the insecurities came from SAC communications. Traffic analysis of encrypted messages yielded much pre-operations information, including probable launch times. They also discovered voluminous plaintext voice by logistics people an hour before the launch. Finally, they

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found that prestrike weather flights twenty hours before launch were dead giveaways (as they had been in World War II). In July 1966, Admiral Sharp (CINCPAC) ordered a broader COMSEC study of the problem, encompassing operations throughout the Pacific.<sup>74</sup>

#### The PURPLE DRAGON Task Force

The CINCPAC and DIA studies joined in September. Sharp agreed to adopt the broader DIA multidisciplinary approach, and he named his J3 to head the effort. The new study, called PURPLE DRAGON, would encompass Rolling Thunder, Arc Light, and Blue Springs. Teams of experts would be dispatched throughout the theater. They would first interview all people involved in the three operations. They would then observe the operations, following that up with observations of support activities, including logistics and intelligence. They would build a database for their information and would build three profiles: operations, communications, and counterintelligence. An NSA person, Robert Fisher, served on the CINCPAC PURPLE DRAGON staff, and there was heavy infusion from the SCAs, primarily for COMSEC monitoring.<sup>75</sup>

The first PURPLE DRAGON study concluded in April 1967. It had a big impact on operations in Southeast Asia, none more significant than Blue Springs. They discovered that the major leak was the encrypted single sideband messages from Bien Hoa to Da Nang prior to every mission. Using traffic analysis of that link alone, the team was able to predict eighteen of the twenty-four missions. As an almost direct result of introducing communications security on the link, drone recovery increased from 35 percent to 70 percent by November 1977.<sup>76</sup>

Arc Light was much more complex and harder to solve. One of the main culprits proved to be the information fed to the Manila and Saigon air control centers. This information was released all over Southeast Asia as NOTAMs (Notice to Airmen) giving flight routes, altitude reservations, and the estimated time of arrival at Point Juliette, the aerial refueling spot, hours in advance of the mission. SAC tightened up by curtailing much of the information in the NOTAMs and by delaying that which was passed until a time closer to takeoff.<sup>77</sup>

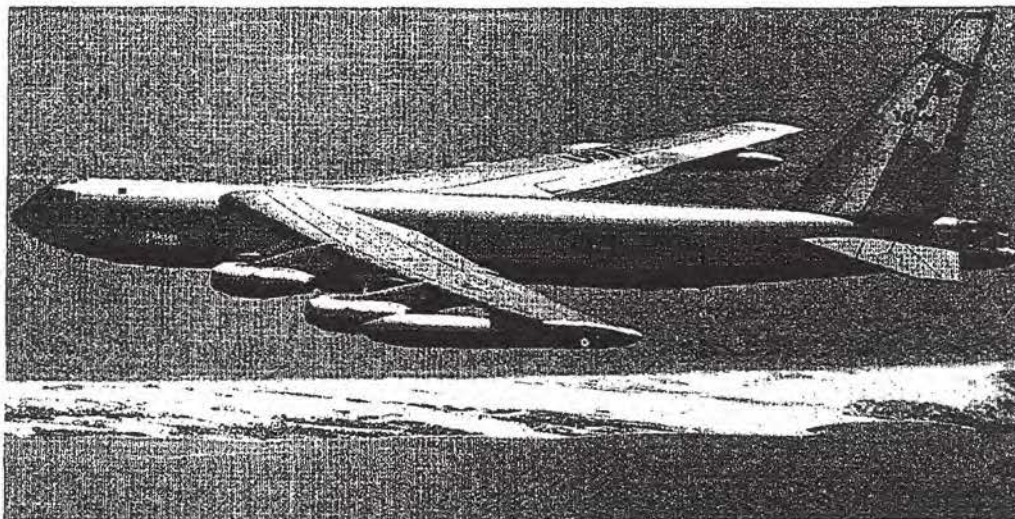
MACV had been passing warnings to villagers in the targetted area. This procedure was modified by simply declaring certain areas as free fire zones and discontinuing the advance notification program.<sup>78</sup>

Of the three, Rolling Thunder was the most difficult to plug. PURPLE DRAGON investigators found that many of the enemy's sources of warning consisted of tactical information obtained after the planes were launched. They determined that between 80 and 90 percent of the missions were being alerted, with an average warning time of thirty minutes for Navy missions off the carriers and forty-five minutes for Air Force missions

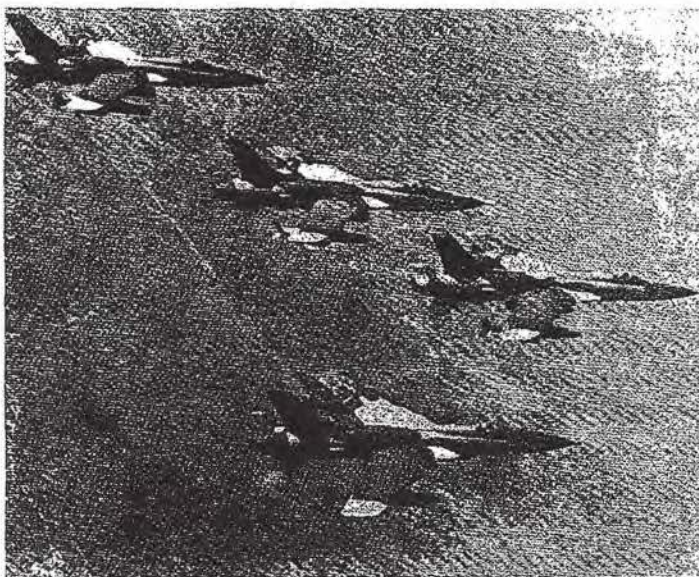
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B-52



Air Force F-105 fighter-bombers on a Rolling Thunder mission

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from airfields in South Vietnam. EB-66s accompanied many of the missions (those expecting hostile fire in particular), and those aircraft used distinctive callsigns. Rolling Thunder frag (read "operations") orders were distributed to 120 different organizations, and those in turn often issued information that could be tied to the takeoff of bombing missions. MACV cut down on the number of organizations getting gratuitous copies of the operations orders, and the Air Force changed callsigns for some of their operations.<sup>79</sup>

Much of what needed to be done simply could not be because of outside factors. MACV never did alter stereotyped operations (such as takeoff times, refueling points, and ingress routes) sufficiently to confuse the North Vietnamese. Tanker operations remained highly stereotyped throughout the war and in fact represented the most vulnerable aspect of Rolling Thunder.<sup>80</sup>

### **The Permanent Staff**

Following the initial blush of success, Admiral Sharp made a permanent place on his staff for the PURPLE DRAGON operation. He placed it in the J3 (operations) directorate, and NSA assigned a permanent representative (once again, Robert Fisher).<sup>81</sup>

There was obviously a need to educate people about the concept and about the methodology and specific information that PURPLE DRAGON uncovered. This generated the first worldwide OPSEC conference, hosted by DIA at Arlington Hall Station in May 1968. Following the conference, General Wheeler directed that all Unified and Specified commands establish OPSEC organizations. He also created an OPSEC organization on the Joint Staff. Meanwhile, OPSEC conferences continued annually and helped to focus activity for the U&S commands. Cryptology continued to be a major player, and in 1988 NSA was given the job of worldwide OPSEC training under the newly published NSDD (National Security Decision Directive) 298.<sup>82</sup>

The OPSEC concept in use in the defense department of the 1990s was largely an outgrowth of the PURPLE DRAGON study. It was a significant factor in prosecuting the air war in Vietnam, although neither it, nor anything else the United States tried in Vietnam, was a panacea. The CINCPAC OPSEC team would periodically resurvey operations in Southeast Asia, and they found that, as the U.S. tightened up procedures, the North Vietnamese would find another leak, and their warning time would float back up to where it had been. Like cryptology in general, OPSEC proved to be a constant struggle to stay ahead.<sup>83</sup>

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