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USAF FAC OPERATIONS

IN

SOUTHEAST ASIA

1961-1965

by

Major Ralph A. Rowley

Office of Air Force History

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FOREWORD

This study is the first of a two-part history of Air Force forward air control operations in Southeast Asia. Part II, currently in preparation, will take the story through the years 1965-1970, a period which witnessed many thousands of air control missions flown in support of U.S., South Vietnamese, and Allied ground combat units during operations against enemy forces.

In this narrative, Major Rowley describes the many problems which faced the first air controllers after their arrival in South Vietnam in early 1962. He discusses their efforts to overcome the language barrier and help train Vietnamese Air Force personnel, their role in establishing a centralized air control system, and the tactics and techniques they developed during the years prior to President Lyndon B. Johnson's decision in 1965 to dispatch large U.S. ground forces to Southeast Asia to help thwart the attempted conquest of South Vietnam by the North Vietnamese.

Major Rowley's study is one of a series of historical works currently being written by Air Force historians on air operations in Southeast Asia. His account is based on primary source materials in the Office of Air Force History; the USAF Historical Archives at Maxwell AFB, Ala.; the Air University Library; and the records of the Air Staff and the Office of the Secretary of the Air Force. The author has examined official correspondence--letters, memoranda, and working papers--plus a variety of historical studies and reports, including organizational histories. Interviews with forward air controllers and other key personnel--conducted both by the author and other military historians--also were drawn upon. Transcripts of these are available in the Office of Air Force History or in the collections of the Historical Archives at Maxwell AFB, Ala.

Robert N Ginsburgh

ROBERT N. GINSBURGH
Major General, USAF
Chief, Office of Air Force History

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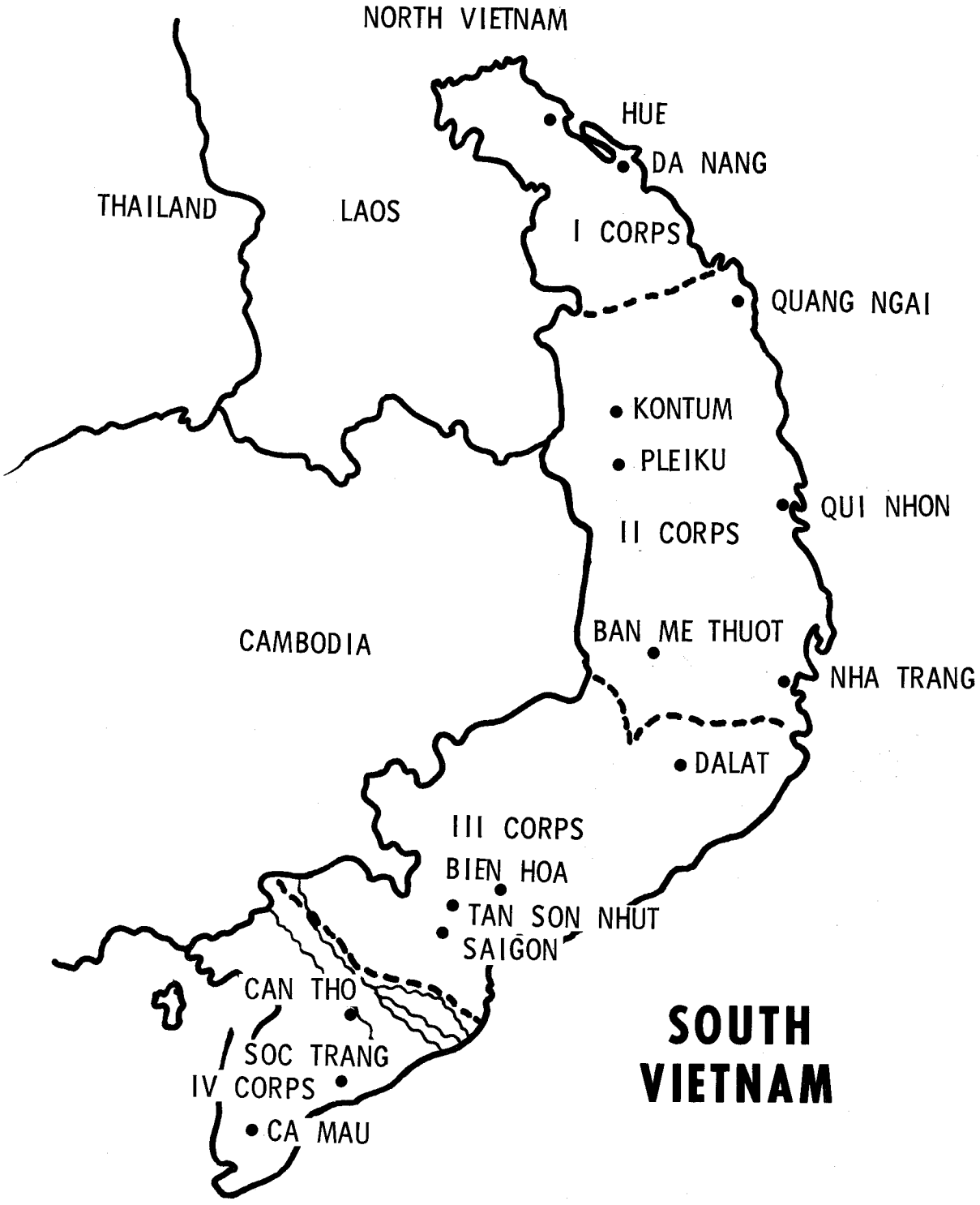
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I. ORIGINS OF FORWARD AIR CONTROL

(U) During the early summer of 1966 Maj. Gen. William E. DePuy, commander of the U.S. Army's 1st Infantry Division, sent a message to Seventh Air Force officials expressing his appreciation for the "tremendously effective close air support received" by his troops during a firefight with the Viet Cong. The strikes, he reported, were instrumental in repelling and helping to defeat the 3d Battalion, 273d Viet Cong Regiment, by providing "extremely close and accurate air support . . . under almost impossible conditions." Although the target area had been obscured by a 200 to 400 foot ceiling, he said Air Force forward air controllers (FAC's) successfully "talked the fighters through their deliveries and their support undoubtedly saved two [U.S.] infantry companies."[1]

(U) The crucial role played by FAC's in Southeast Asia had antecedents in both the Korean War and World War II. Its origins, however, may be said to go back to the year 1794 when balloons were used for the first time for military purposes. During the battle of Fleurus (Belgium), a French officer spent 10 hours aloft in a balloon observing Austrian and Dutch troop movements and relaying the information to his ground commander by means of messages tied to small bags of ballast dropped overboard.[2] At the beginning of the American Civil War, the Army of the Potomac established a Balloon Corps under Thaddeus S. C. Lowe to conduct aerial reconnaissance of Confederate forces. On 18 June 1861 Lowe demonstrated the practicality of using a balloon for observation purposes by taking aloft a telegraphic apparatus connected by a long trailing wire to the White House. Hovering over the Mall, Lowe sent President Lincoln the first cable message in history from an airborne vehicle. "The city," the message read, "with its girdle of encampments, presents a superb scene." Lincoln had to prod his generals to accept Lowe's services in 1861 but they remained unimpressed and the Balloon Corps was disbanded in June 1863.[3]

(U) The use of aircraft to conduct aerial reconnaissance was first demonstrated during the Balkan Wars (1912-1913). With the start of World War I in August 1914, airborne "scouts" began flying observation missions over enemy territory, with the pilots returning to their bases to submit written reports. In September the British sent aloft the first of their new "wireless airplanes," which enabled pilots to communicate with ground stations and direct artillery fire against

German batteries.[4] Because these aircraft were in short supply, other airborne artillery spotters and scouts attempted to signal to ground units with lamps or by firing flares over German positions. In the case of air-to-ground strafing attacks, which also were begun during the first months of the war, control of friendly attack aircraft was a special problem. One technique adopted by infantry units was to spread signalling panels on the ground or to light signal lamps to direct strikes by friendly aircraft. As air-to-ground attacks increased, the need to improve control of air strikes grew in importance.[5] However, the war ended before an effective tactical air control system had been devised.

(U) For the United States, one of the first recorded instances of the application of forward air control occurred in Nicaragua in 1927, involving American troops sent into that strife-torn country by President Calvin Coolidge. When bandits captured a downed aircrew, Marine patrols were sent out to attempt a rescue. One patrol ran into 175 enemy troops and was pinned down by their fire. Spotted by Marine planes, the beleaguered unit laid out panels indicating the direction and range of the enemy and asked for an air strike. The subsequent bombing and strafing was successful in relieving the patrol.[6]

(U) In the 1930's the reconstituted German Army was quick to realize the value of coordinating air power with ground forces. When Wehrmacht units rolled across the Polish frontier in September 1939, they were accompanied by experienced Stuka pilots, equipped with radios, riding in lead tanks or armored cars. These coordinators directed Luftwaffe strikes against Polish troops, thereby multiplying the destructive power of the combined forces.[7]

(U) In December 1940 the U.S. War Department directed the Air Corps to conduct tests aimed at developing techniques and methods for directing and controlling combat aviation during combined air-ground operations.[8] These tests, carried out during the first half of 1941 in Louisiana and North Carolina, led to publication of a regulation establishing Air-Ground Cooperation Parties (AGCP). The AGCP's were to consist of Army Air Forces (AAF)* personnel assigned to army, corps, and division headquarters to advise ground commanders on tactical air employment. Their responsibilities included giving

*The AAF was established on 20 June 1941.

clearance for striking preplanned targets, directing artillery fire, controlling attacks against enemy forces extremely close to friendly troops, and assessing bomb damage.[9]

(U) In April 1942 the Army stipulated in Field Manual (FM) 31-35 that air support commanders would act as aviation advisors to ground commanders. They were also to control and assign "attack missions as the needs of the ground unit(s)" dictated. However, during operations in North Africa in late 1942 and early 1943, AAF officials complained that ground commanders were using tactical air units in a wasteful and inefficient manner, often against fleeting or unsuitable targets. Gen. Dwight D. Eisenhower, commander of the North African invasion, subsequently ordered a consolidation of all air elements under a theater air commander, and cooperation of air-ground elements through a joint air-ground headquarters. This system was formally recognized in FM 100-20, "Command and Employment of Airpower," published on 21 July 1943.[10]

(U) The British, meanwhile, at the Battle of El Hamma in Tunisia had used forward air control to direct massive air strikes against the enemy. In March 1943, during an operation aimed at cracking the Mareth Line, an air controller was positioned in a tank on high ground at a forward site to support a British Eighth Army flanking movement near El Hamma. He directed 412 aircraft sorties against German defensive positions aimed at blocking the British attack. The air strikes produced heavy casualties, forcing the Germans to withdraw, and the Mareth Line was turned. Later in 1943 the U.S. Fifth Army employed a forward air controller at Salerno to direct strikes during the Allied invasion of Italy.[11] As the potential of air controllers on the front lines became apparent, veteran attack-fighter pilots (nicknamed "Rover Joe's" after their British counterparts "Rover Davids") were regularly placed on high ground near the Fifth Army's advanced positions. From these posts they selected targets and directed allied strikes against the enemy.[12]

(U) A technique reminiscent of the German army's coordinated air-armor attack against Poland in 1939 was adopted by U.S. units after the Normandy landings in June 1944. Ten to 14 tanks in each armored division of Gen. George S. Patton's Third Army were equipped with VHF radio sets so they could communicate with covering fighter pilots of the 19th Tactical Air Command. Also, before the successful break through at St. Lo, all Third Army units were given cerise and yellow panels and fresh white stars were painted on tank

turrets so that friendly pilots could distinguish them from German tanks. The close air support subsequently provided played a vital role in the successful drive across France. It was, Patton later wired Maj. Gen. O. P. Weyland, the 19th Tactical Air Commander, "the best example of the combined use of air and ground troops I have ever witnessed."[13]

(U) Before V-E Day, the value of air strike control was further enhanced by the introduction of airborne forward air controllers, then known as tactical air coordinators. Gen. Jacob L. Devers, commander of the Sixth Army Group, cited the successful use of liaison aircraft with signal equipment to guide strike aircraft to their targets. Communicating with the ground as well as air, these "puddle-jumpers" were very successful in directing strikes within the bomb safety line "with no danger to [friendly] ground troops."[14]

(U) American operations in the Pacific theater in World War II resembled, in several respects, those undertaken by U.S. forces in Southeast Asia during the 1960's. The jungle environment of the South and Central Pacific islands required efficient tactical air control whenever U.S. forces were in close contact with Japanese troops. The Australians apparently first came up with the idea of sending air liaison parties with each of their battalions and regiments. U.S. Army units, adopting this procedure, equipped these parties with very high frequency (VHF) radios to maintain contact with supporting aircraft.[15]

(U) Following World War II many of the innovations and lessons learned in tactical air control were incorporated into a revised Field Manual 31-35. It called for assigning tactical air control parties (TACP's) to each corps, division, or other subordinate units as required. Composed of forward air controllers, they would be located near the front lines to direct air strikes and assist ground units. When requested, the tactical air force was to provide experienced pilots trained in staff operational procedure, to act as air liaison officers (ALO's) for units to which they were assigned. Although they would have no command authority to request air support--that remained the ground commander's prerogative--the ALO's could assist and advise in mapping strategy for air support and selecting appropriate targets.[16] The manual also established criteria for setting up a Tactical Air Control System and an Army Request Net and prescribed communication equipment to make the system work. It also

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implied that air controllers could direct strikes from the air, but only under extraordinary circumstances.

(U) The massive post-World War II demobilization of the armed forces, however, affected all military plans, including those relating to air-ground control.* Even more significant as far as future close air support was concerned was the view held by many U.S. officials--civilian and military--that the atomic bomb had made conventional air-ground battles obsolete. Nevertheless, some efforts were made to insure control teams could perform a close air support role if required. When North Korea launched its invasion of South Korea on 25 June 1950, however, the military services--their budgets having been severely reduced--were in a poor posture to fight the unexpected limited war which now ensued. On 26 June, Air Force transports were ordered to Korea to evacuate American dependents from the battle zone. The same day President Harry S. Truman authorized Gen. Douglas MacArthur to repel the North Koreans.[17]

(U) On 27 June Air Force jets--F-80's and F-82's flying cover for the evacuation--went into action over the peninsula and destroyed at least six North Korean aircraft. The following day Brig. Gen. Edward J. Timberlake, Fifth Air Force deputy commander, sent two tactical air control parties to Korea to help control air strikes in support of retreating ROK troops. These two parties--headed by Lieutenants Oliver Duerksen and Frank Chermak--joined U.S. Army elements at Taejon. Each was equipped with an AN/ARC-1 radio jeep and another jeep which served as a personnel carrier. The equipment was old, however, and soon broke down from the heavy battering they received on the rough Korean roads. In addition to this problem, the mountainous Korean terrain made it difficult for the ground control parties to quickly locate the enemy and direct strikes against them. The problem was especially acute because the Air Force's jets were based in Japan, some 350 miles away, and fuel limitations precluded their remaining over the combat zone more than 15 or 20 minutes.[18]

(U) The solution arrived at by the Operations Section, Fifth Air Force, was to dispatch airborne FAC's to Korea to conduct both battlefield reconnaissance and direct close air support strikes. On

*The Army Air Forces, for example, dropped from a peak wartime strength of 2,411,294 in March 1944 to 305,827 military personnel in June 1947.

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AIR GROUND OPERATIONS SYSTEM-KOREA

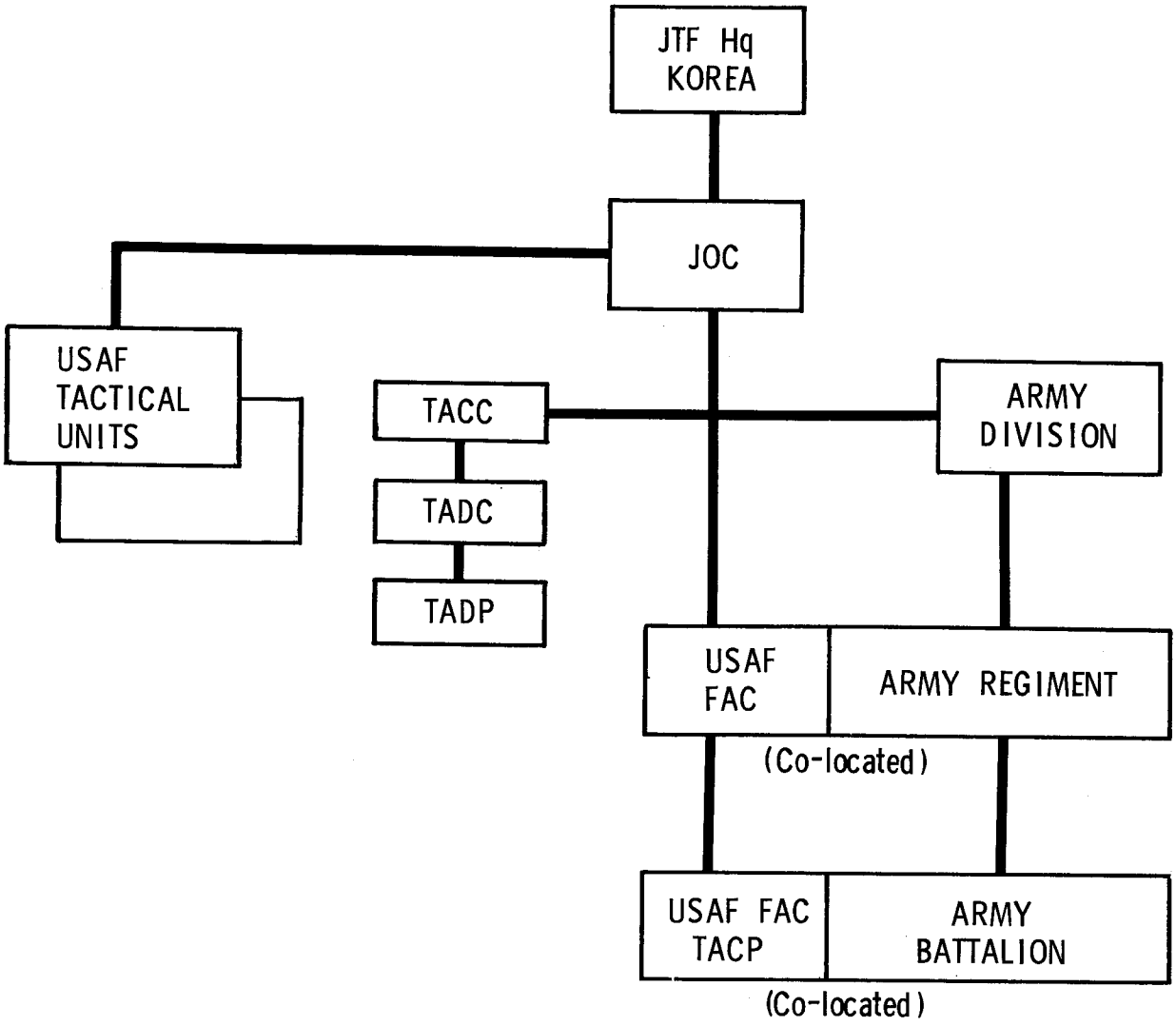

FIGURE 1

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9 July the first tactical air coordination mission was flown in Korea. Lieutenants James A. Bryant and Frank G. Mitchell went aloft in a borrowed Army L-17 and controlled 20 flights of attack aircraft. From this meager beginning a first class forward air control unit--the 6147th Tactical Control Squadron--was set up with the T-6 trainer serving as its mainline aircraft.* Maj. Merrill H. Carlton, the squadron's first commander, outlined the mission of the unit: To conduct tactical reconnaissance, get front-line dispositions, monitor enemy lines of communication, control strikes in the immediate vicinity of friendly forces, and conduct preplanned air strikes.[19] Members of the unit won acclaim as "Tactical Air Coordinators",+ with their T-6's being dubbed "Mosquitos", one of their first tactical call signs.

(U) These airborne coordinators were used extensively and piled up an impressive record during the Korean War. For example, during the first 18 months of the conflict, they directed 93 percent of all close air support strikes, as compared with 7 percent controlled by ground FAC's.[20] They also flew reconnaissance missions deep behind enemy lines, provided transportation for ground FAC's working in isolated locations, and participated in emergency rescue operations. The 6147th, however, was not considered a permanent squadron. It remained without a table of organization and equipment, and no training program was planned for it in the post-Korean war period.

(U) The reason lay, in part, in the "New Look" defense policies announced by President Eisenhower, which emphasized strategic nuclear air power to deter Communist aggression. The President declared in a meeting with the Joint Chiefs of Staff (JCS) that the United States would not employ "the same policies and resources to fight another war as were used in the Korean Conflict." There was, he said, "no sense in wasting manpower in costly small wars that could not achieve decisive results," that such a policy only played into the hands of a

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*The Air Force chose the T-6 over the Army's L-5, considering the latter aircraft too slow and vulnerable for the tactical air control mission.

+The term "tactical air coordinator" was changed to airborne "forward air controller" in Vietnam.

potential enemy whose manpower reserves were endless. In the future, the United States would not allow an enemy to enjoy sanctuaries. Rather, he stated, it would be prepared to strike with "means of our own choosing at the head of the Communist power."[21]

(U) In response to the President's directives, the Air Force concentrated its efforts on strengthening the Strategic Air Command (SAC). No provisions were made to retain either the aircraft or the 6147th Tactical Control Squadron, which was disbanded. In 1954, however, in conjunction with the Army it did initiate a forward air control course at the Air-Ground Operations School (AGOS) at Southern Pines, N. C.,* but there was little updating of concepts. In 1957 the Air Force and Army reached an agreement, whereby the latter was made responsible for providing transportation and communications equipment for the ground control team (later redesignated the tactical air control party). A key provision of this agreement required that the communications gear be compatible with the radios used in aircraft. Between 1957 and 1962--while the Air Force gave its first priority to building up its strategic forces, including the multi-billion dollar acquisition and deployment of intercontinental ballistic missile (ICBM) systems--the U. S. Army exerted primary influence on the forward air control function.[22]

*The school was later transferred to Keesler AFB, Miss.

II. U.S. MILITARY ASSISTANCE TO SOUTH VIETNAM

(U) Even before the Korean War ended in 1953, French forces in Indochina were deeply engaged in a war with Communist insurgents led by Ho Chi Minh. That Southeast Asia conflict reached its climax at the battle of Dien Bien Phu, which fell to Viet Minh forces on 7 May 1954. At the Geneva Conference on Indochina, which coincidentally began the very next day, the French government several months later agreed to a ceasefire and withdrawal of all its troops from Southeast Asia. Under terms of the Geneva Accords, signed on 21-22 July, Laos and Cambodia were recognized as independent states and Vietnam was temporarily divided while the combatants disengaged.

(U) Beginning in August 1954, before the Communist forces took control of the northern part of the country, almost 900,000 refugees fled to the south, many of them transported by U.S. Navy vessels. In Washington President Eisenhower--determined to avoid the loss of all of Southeast Asia to the Communists--sponsored the formation of the Southeast Asia Treaty Organization (SEATO). The SEATO treaty, signed by eight nations in September, declared that "the states of Cambodia and Laos and the free territory under the jurisdiction of the State of [South] Vietnam," if attacked, would be defended by the member states. On October 23, 1954 Eisenhower wrote to Ngo Dinh Diem, then President of the Council of Ministers of Vietnam, pledging U.S. aid to Saigon in resisting Communist subversion or outside aggression.[1]

(U) When French troops began pulling out in 1955* the United States at the invitation of South Vietnam on 12 February strengthened its Military Assistance Advisory Group (MAAG)+ and assumed responsibility for training the army of the Republic of Vietnam (ARVN). U.S. Air Force officers participated as members of the

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*The last French troops left Saigon in April 1956.

+The MAAG was established in July 1950. The 1954 Geneva Accords limited the American contingent to 342 men, the number of U.S. military personnel in Vietnam when the armistice was signed. By December 1960 it had increased to 785 men and to 2,000 by the end of 1961.

advisory group. During the next several years Diem's government seemed to have achieved firm control of South Vietnam. In the late 1950's, however, Communist insurgents began to challenge his rule in the countryside and, by the end of 1960, the situation had become critical. President John F. Kennedy, after taking office in January 1961, decided to increase U.S. economic, military, and political support of Diem's government. On 29 April he approved a series of U.S. military actions to strengthen South Vietnam, including an increase in the MAAG to help train a 20,000-man addition to Saigon's armed forces. In December 1961 he informed Diem that the United States intended to "promptly increase our assistance to your defense effort" so as to "help your people maintain their independence."[2]

The Vietnamese Air Force

[redacted] The American program to assist South Vietnam included provisions for strengthening the Vietnamese Air Force (VNAF). First organized in 1950 as an appendage of the French forces, the VNAF had served as an air auxiliary during the Indochina war. Then known as the Air Department of the Joint General Staff, it was organized into a headquarters unit, an observation squadron, and a liaison squadron. In 1954, a light combat squadron was added.[3]

[redacted] In 1956 the VNAF became a separate operating air arm of the Vietnamese Department of National Defense.[4] At the time the French training mission pulled out, it consisted of four squadrons. The First and Second Liaison Squadrons were based at Tourane and Nha Trang and operated with a total of 32 L-19 observation planes and 23 pilot-observer crews. The First Composite Squadron, stationed at Bien Hoa, had 21 F-8F's and 18 pilots. The fourth unit, the First Transport Squadron at Tan Son Nhut, had 32 C-47's but only nine complete crews. None of these squadrons met U.S. Air Force standards of combat readiness.[5] The Vietnamese airmen were unprepared to support ground forces in a conflict of even small proportions. The VNAF's weakness was depicted in a gloomy Air Force report in 1960, which described its aircraft as:

> ....obsolete World War II types for which supply and support has been, and will continue to be, increasingly difficult. With maximum efforts, the transport squadron could provide airlift and support for about 750 troops. The fighter squadron could afford only local cover and would be ineffective against the superior performance of jet aircraft. It is doubtful that the air capability will improve significantly until modern type aircraft are provided the Vietnamese.*[6]

([redacted]) A 1961 inventory revealed that the VNAF had a total of 141 aircraft, of which only 25 were strike types and 51 L-19 liaison planes. The remaining 65 were transport and cargo aircraft. There was also a severe shortage of well-trained pilots and no functional system for controlling air strikes. A plan for coordinating VNAF close air support strikes with ARVN operations was prepared by the MAAG,[7] but apparently not implemented. Not only was the VNAF deficient in pilots and aircraft, but Vietnamese ground commanders--having had little experience with air power--were inclined to be skeptical of it. Since they also were unfamiliar with a tactical air control system, Pacific Air Forces (PACAF) Headquarters in November 1961 proposed to the Commander in Chief, Pacific (CINCPAC) setting up such a system along the lines called for by the Air-Ground Operations School at Keesler AFB.[8]

([redacted]) CINCPAC approved the proposal, whereupon PACAF directed Headquarters Thirteenth Air Force in the Philippines to develop the "phase-in" program under a plan known as "Barn Door." The objective was to provide the Commander, U.S. Military Assistance Command, Vietnam (COMUSMACV),+ and U.S. Air Force

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*The introduction of jet aircraft into Vietnam was prohibited by certain provisions of the 1954 Geneva Accord. Although not a signatory, the United States carefully followed the rules during the 1950's to avoid violating the agreement. When, however, the Viet Cong insurgency expanded rapidly during the early 1960's, the U.S. government decided to send advanced military hardware to South Vietnam.

+The Military Assistance Command, Vietnam, was established on 8 February 1961, succeeding the MAAG.

BARNDOOR TACS ORGANIZATION

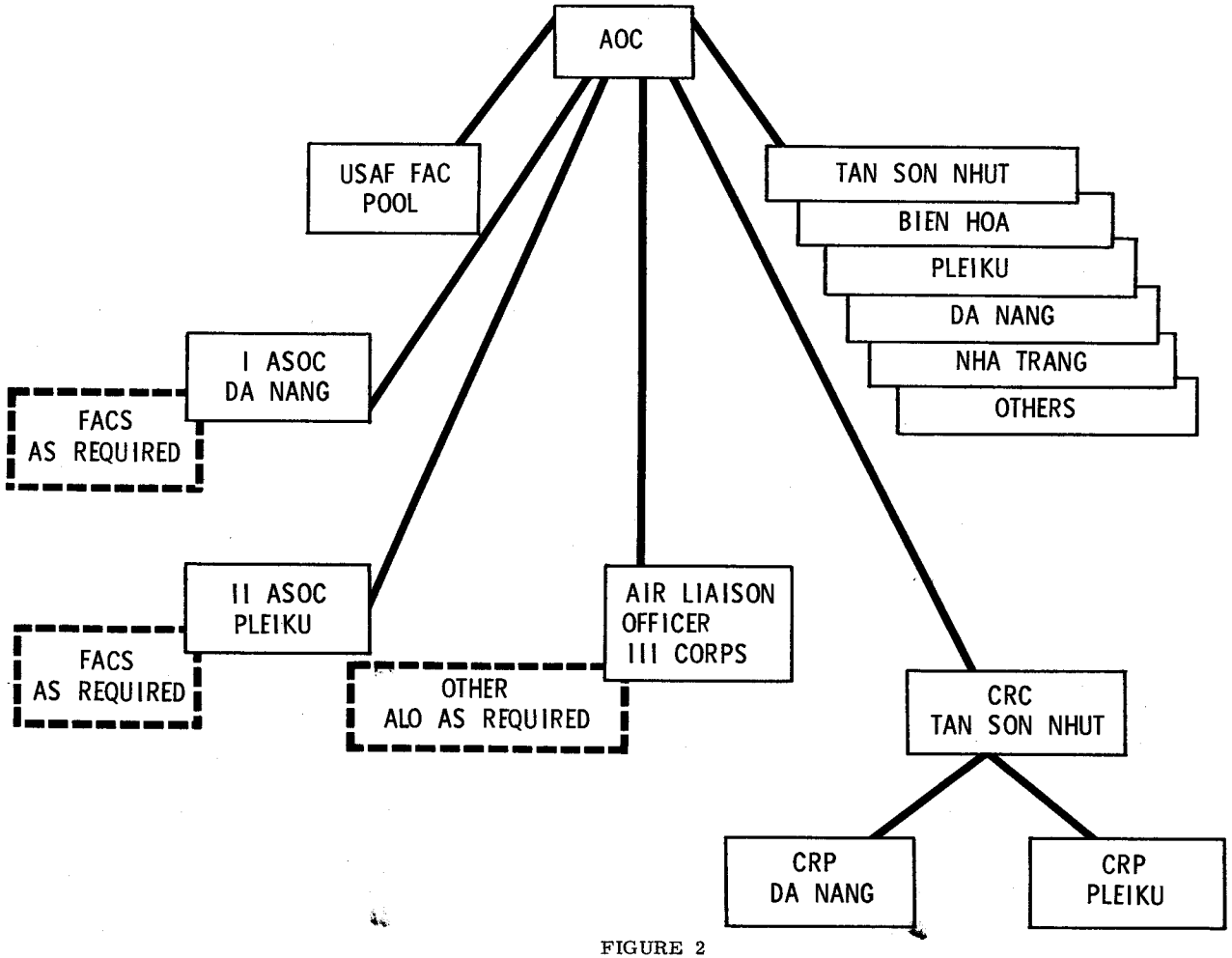

FIGURE 2

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and VNAF commanders with an effective, quick-reacting capability to direct, coordinate, and control close air support operations. The proposed Tactical Air Control System (TACS) also was to be used for training and to conduct counterair interdiction, tactical reconnaissance, air defense, airlift, and special air missions. It was to include: an Air Operations Center (AOC); a Control and Reporting Center (CRC); two Control and Reporting Posts (CRP's); two Air Support Operations Centers (ASOC's); and experienced Air Liaison Officers and Forward Air Controllers.[9]

Establishing the Air Control System

([redacted]) In January 1962 the Air Operations Center was established at Tan Son Nhut AB outside Saigon to serve as the command post for the VNAF and 2d Advanced Echelon (ADVON), the latter a U.S. Air Force element.* The center's director was a VNAF officer. His deputy, an American, was responsible for "continuous planning and control of all USAF air operations, including close air support, tactical air reconnaissance, combat airlift, and special air missions" requested by the VNAF.[10] The center and all elements of the Tactical Air Control System were to be jointly manned by U.S. Air Force and VNAF personnel to facilitate the training of the Vietnamese. It would serve as the hub for coordinating the activities of the two air forces as well as a liaison center for Army and Navy activities.[11]

([redacted]) The Air Operations Center+ consisted of two divisions: Combat Operations and Combat Plans. The former directed

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*Originally the Advanced Echelon, Thirteenth Air Force. To meet CINCPAC's desire for anonymity, PACAF on 15 November 1961 directed Thirteenth Air Force to establish Detachments 7, 8, 9, and 10 at Saigon, Tan Son Nhut, Bien Hoa, and Don Muang. They were part of an organization described as "2d ADVON" (which was originally a meaningless cover designation). However, on 7 June 1962 Detachments 8, 9, and 10 were discontinued and Detachment 7 publicly designated 2d ADVON. In October 1962 it was redesignated 2d Air Division and, after 1965, the Seventh Air Force. [See R. F. Futrell, "The United States Air Force in Southeast Asia, The Advisory Years, 1950-1965," chap IV, pp 165-66ff.]

+In the Barn Door plan, the Center was called the Joint Operations Center (JOC). Between 1962 and 1965 it became known as the AOC and subsequently as the Tactical Air Control Center. It will be referred to as the AOC throughout this study.

[redacted]

current air operations and handled all immediate requests for close air support or tactical reconnaissance, whether they originated with VNAF or ARVN commanders. The latter division was responsible for planning all future air operations occurring more than 3 hours after the AOC received a support request.[12]

([redacted]) Located adjacent to and as a subordinate unit of the Tan Son Nhut AOC was the Control and Reporting Center which handled "control and warning operations within its area of responsibility." Two Control and Reporting Posts, located at Da Nang and Pleiku, provided radar coverage of their respective areas and training of VNAF personnel in air traffic control procedures. The other two elements of the system--the Air Support Operations Centers--were eventually set up at Da Nang to work with the ARVN I Corps Tactical Operations Center (CTOC) and at Pleiku to support the ARVN II Corps CTOC. Reporting to the AOC at Tan Son Nhut, they served as advance operational control agencies for close air support and tactical air reconnaissance. The AOC assigned a daily allocation of sorties to the ASOC's for control.[13]

([redacted]) Under the Barn Door plan, air liaison officers were to work with the III Corps Tactical Operations Center and the ARVN Field Command--both located at Bien Hoa. Other ALO's were to be assigned as needed. A 5-man FAC pool was also to be provided. These officers were to be attached to ground forces whenever commanders expected to encounter the enemy.[14]

([redacted]) Some weeks before the Tactical Air Control System was established, Detachment 2 Alpha--an element of the 4400th Combat Crew Training Squadron (CCTS)* at Eglin AFB, Fla. --was dispatched to Vietnam under the code name Jungle Jim. Its mission was to provide "a self-sustaining across-the-board sub-limited war capability for the USAF" and to prepare "to meet all facets of tactical air operations." The detachment arrived at Bien Hoa on 16 November 1961 with 16 aircraft (four SC-47 airlift aircraft used as flareships, eight T-28's and four B-26's), complete with VNAF markings. The detachment, also known as Farm Gate, was charged with responsibility for training Vietnamese personnel in

*The 4400th CCTS, activated by the Tactical Air Command (TAC) in April 1961, worked closely with the U.S. Army's Special Warfare Center at Fort Bragg, N.C.

[redacted]

offensive operations including FAC tactics and techniques. It also was to test and refine operational procedures and provide offensive air support to ARVN units that the VNAF could not supply.[15]

VNAF FAC Training

[redacted] The Farm Gate contingent included several forward air controllers and radio operators but no light aircraft. They were to work with various ground units when requested. On 5 January 1962 three of these men, Capt. L.R. Egleston and Staff Sergeants J. Garry and C. Larimer, accompanied ARVN troops in a rescue attempt (Operation Nutcracker) in Zone D near Za Ba Da, about 20 miles north of Bien Hoa. They utilized an AN/TRC-7 radio to teach ARVN personnel involved in the operation forward air control procedures. The Americans subsequently were able to acquire two of these radios for use in the VNAF FAC training program.*[16]

[redacted] In addition to Farm Gate advisors, PACAF sent five forward air controllers to South Vietnam in January 1962 for 90 day tours under the Barn Door plan. Initially, their primary duty was in the Offensive Air Section of the newly-established Air Operations Center. Two of these FAC's, Captains Thomas N. Cairney and Douglas K. Evans, when not on duty in the AOC undertook to determine requirements for, and to establish, an active forward air control program. As soon as possible in January, they paid visits to the Farm Gate unit and the VNAF's 1st Fighter Squadron at Bien Hoa. They found there was little emphasis on FAC operations and concluded that an information campaign on the importance of forward air control would have to be initiated.

[redacted] Subsequently, the two captains flew orientation missions on all Farm Gate aircraft in an effort to promote a

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*The lack of good air-ground radio communications proved to be a critical weakness in the FAC program. More than 10,000 PRC-10 FM radios had been supplied to ARVN units by the Army, but neither VNAF nor USAF aircraft were equipped for FM communications. Urgent recommendations were sent to higher headquarters to equip all VNAF L-19's and Farm Gate aircraft with UHF or AN/ARC-44 (FM) radios. [Msg (C), 2d ADVON to 13AF, 2CVC-62-206E, 29 May 62; Memo (S), Cairney and Evans, 17 May 62, pp 5-6].

[redacted]

better understanding of FAC tactics and techniques. They observed VNAF strike and control procedures, flew aboard U.S. Army helicopters to familiarize themselves with airborne/ground operations and the local terrain, and participated in joint field training exercises involving Farm Gate FAC's and ARVN/U.S. Army rangers. In proselyting the need for improved FAC operations, they took part in preplanned strikes, including pre- and post-flight briefings, and visited Vietnamese outposts and villages to discuss air-ground operations with province chiefs. In addition, they held numerous meetings with U.S. Army, ARVN, and VNAF personnel on close air control problems.

([redacted]) Based upon the information they obtained during the above activities, Cairney and Evans submitted a long list of recommendations to the Deputy Director of the AOC. They said there was an immediate need to establish a FAC school for the VNAF and a forward air guide (FAG) training program for the ARVN.* Lightweight, portable communications equipment was needed for the FAC or FAG on the ground. Forward air controllers and FAG's required equipment such as 60-mm mortar and/or rifle grenade-launched smoke and para-flare rounds to aid the airborne FAC in marking targets. They recommended the use of hand gun flares of a specific color for better identification of friendly troops, and suggested a survival training course and physical conditioning program be instituted for VNAF FAC's. They proposed using the Farm Gate T-28's in the FAC role, and installation of rocket rails on L-19's to aid in target marking. The two men also outlined a curriculum for the proposed FAC school and strongly suggested that the program needed full-time U.S. Air Force FAC's.

([redacted]) Although for a while it seemed that the Cairney-Evans recommendations had fallen on deaf ears, almost without exception their suggestions were eventually implemented in one form or another. The VNAF forward air controller training program received first attention. Their course outline submitted on 13 February 1962, was based upon the curriculum of the Air-Ground Operations School. It called for 28 hours of instruction to be given in 25 teaching sessions (see Figure 3, next page).

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*The role of the Forward Air Guide will be discussed in more detail below. His function was to act as a ground aide to the forward air controller in most aspects of close air support.

[redacted]

VNAF FAC COURSE OUTLINE

Period	Subject	Hours
1	ORIENTATION: Purpose of training, Goals, etc.	:15
2	TACTICAL AIR CONTROL SYSTEM: Description, Operation. (Visit to JOC and CRC or ASOC/CRP by all students).	1:00
3	ARMY AIR GROUND SYSTEM: Description, Operation.	1:00
4	GROUND COMMUNICATIONS: Equipment, Capability and Operation.	1:00
5-12	VOICE PROCEDURES AND ENGLISH LANGUAGE: Demonstrations and Practice Sessions	8:00
13	AIRCRAFT RECOGNITION: Friendly and Enemy. (What action if enemy aircraft are encountered).	1:00
14-15	AIRCRAFT PERFORMANCE: All types in this area.	2:00
16-17	AIRCRAFT ORDNANCE: Description, Proper Employment.	2:00
18	TARGET SELECTION: Identification, Types of target, Estimating strike results.	1:00
19-24	FAC TACTICS AND PROCEDURES: Airborne and Ground Operation (normal and emergency).	6:00
25	FIELD TRIP TO BIEN HOA: Ground familiarization with all B/H aircraft, Aircraft ordnance, Aircraft crews and General operating procedures. Demonstration if possible (Trip to be properly coordinated with all agencies concerned).	5:00

FIGURE 3

[redacted] In undertaking to train VNAF personnel, the Americans had to take into account important differences between USAF forward air control operations and those of the Vietnamese. For example, where USAF regulations required that the FAC be an experienced fighter pilot, the Vietnamese required two people to perform the function: a pilot to fly the liaison aircraft and an observer to control the strikes. The pilot of the VNAF FAC team normally had no fighter experience. Almost always a recent graduate of flying school, he was not permitted to direct and control air strikes or to mark targets. The Vietnamese felt that the pilot should devote his full attention to flying the aircraft and that the observer was the real FAC and the only one who should control strike operations. They believed that, by devoting full time to observation and related FAC functions, the observer would insure better coordination and improved results.[17]

[redacted] However, there was a built-in problem with the VNAF observer force. That is, as the war expanded and demands increased for more VNAF pilots, the Vietnamese government drew heavily upon the observer-FAC's for trainees. Such training was eagerly sought by observers, who desired the greater prestige of becoming fighter pilots or air transport commanders.* The result was that VNAF observers frequently did not stay long enough in their jobs to gain competency in directing close air support strikes.[18]

[redacted] Another serious problem affecting FAC training was that ARVN commanders preferred to place their reliance on artillery fire rather than air power. On those occasions when VNAF support was requested, the ground commanders found that, due to the nature of the jungle terrain and poor radio communications, it was extremely difficult to effectively control air strikes. Because they doubted the ability of the forward air controllers to adequately direct the strikes, they sought to avoid blame for attacks which produced friendly casualties by refraining from using them.

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*Col. David S. Mellish, a former III Corps ALO, thought that a part of the reason for the low prestige accorded VNAF observers might have stemmed from the fact that some of them were considered politically unreliable by the Diem government. [Ltr, Col. David S. Mellish to Hq USAF (Off of AF Hist), 23 Jul 71].

[redacted]

The party controlling the strike was usually charged by President Diem with "poor judgment" and faced a jail sentence, or worse.* It was not surprising, then, that ARVN commanders on occasion were heard to direct VNAF strikes to target coordinates too far away from enemy positions to be of any value.[19] VNAF observer-FAC's and pilots also were reluctant to participate in air strikes, for similar reasons, and would often give a variety of excuses for not flying close air support missions.[+20]

[redacted] A different kind of problem--involving some U.S. Air Force advisory personnel who were less than enthusiastic about their assignment--was reported by Captains Cairney and Evans. Such advisors, they observed, spent insufficient time "actually working with the officers and men of their Viet unit;" therefore, their knowledge of the personnel, equipment, mission, and day-to-day activities of the VNAF was "all too often inadequate," and many seemed to be simply counting the days until their tours were over. The Vietnamese, they reported, were extremely sensitive to the attitudes of their American advisors. "They will generally respond wholeheartedly to an advisor who has evidenced a genuine, sincere desire to understand and help them," but on the other hand they might totally ignore "or barely tolerate the indifferent advisor." Consequently, some VNAF personnel tended to distrust American advisors, often preferring to fly with their own people instead. Another USAF forward air controller, Capt. Truman G. Glasscock, reported that the VNAF airmen were very cooperative and willing to learn when they were convinced of the importance of their mission. However, Americans had to learn patience and to develop an understanding of the Vietnamese attitude.[21]

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*As late as the fall of 1964, even after Diem's assassination, several VNAF observers were in prison for directing strikes which produced friendly casualties.

+Among them: the weather was too bad to fly; weapons fire was too intense for target identification; their aircraft engines were "too hot" to fly another mission; they did "not hear the request" for a strike, etc. [See End-of-Tour (EOT) Rprt (C), Capt. Melvin N. Bailey, 10 Mar 65; After Action Rprt (C), RCS: AOV-UI, Lt. Col. Earl Price, Jr., ALO 21st Div, 3 Nov 64 (Action: Dan Chi 83, 27-29 Oct 64, IV Corps, pp 3-4].

[redacted] Another vital, perhaps related problem--which served to inhibit U.S. advisory training efforts--was the language barrier. In no area of combat was ability to communicate clearly so essential as in close air support operations. In an effort to ease this problem, the 2d ADVON FAC's produced a list of basic English words for voice communication, to be taught in the language portion of the VNAF FAC school. Also, in October 1962, the U.S. Air Force instituted an 8-week language school for Vietnamese airmen at Hurlburt Field, Fla.[22]

[redacted] In the interim--until the Vietnamese airmen had mastered the list of key English words--other avenues were explored to ease the communication problem. Lt. Col. Robert L. Gleason, commander of the Farm Gate Detachment 2A, in early 1962 suggested two possible solutions. One involved placing American FAC's in Vietnamese liaison aircraft to direct Farm Gate pilots to a target after the VNAF FAC had identified it. However, this proposal conflicted with the policy of the Vietnamese government. Gleason's second suggestion was to operate Farm Gate aircraft, carrying both an American and VNAF crew member, in conjunction with VNAF strike aircraft. By noting where VNAF strikes were being made, the Farm Gate aircraft could then identify the target and launch its own strikes. This latter method was employed for a time and worked reasonably well as a temporary expedient.[23]

[redacted] The actual training of Vietnamese aircrews was initiated in February 1962, shortly after the curriculum was adopted. The 2d VNAF Liaison Squadron, stationed at Tan Son Nhut, was given the course first. It was followed by the 3d Squadron from Nha Trang and the 1st from Da Nang.[24]

[redacted] To supplement the VNAF training program, an Air-Ground Operations School briefing team was sent to South Vietnam. Between 8-22 February 1962, the team travelled throughout the country conducting seminars for U.S. Army advisors and ARVN personnel on the operation of the Tactical Air Control System and the Army Air Request Net (AARN). Personnel at field command, corps, division, and regimental levels received briefings.*[25]

*The team briefed a total of 691 ARVN and 170 U.S. Army personnel during this tour.

[redacted]

They were considered very successful and helped generate new interest in the FAC program. The 2d ADVON FAC's soon found themselves in great demand as "TACS experts." Invited to an increasing number of planning sessions and meetings, they were requested to brief officials at all command levels.[26] To meet this renewed interest, a second traveling team--composed of one U.S. Army captain, a USAF captain, and six Vietnamese personnel--was formed at Tan Son Nhut in September 1962. It traveled throughout the country and, by the 18th, had briefed between 2,500 and 2,600 people. The American FAC's instructed U.S. Army advisors while the VNAF FAC's worked with the ARVN.[27] Planned as a temporary expedient, the second team proved so successful in arousing interest in close air support techniques that USAF officials considered establishing a permanent briefing unit. However, because its personnel were needed for operational duties, they decided instead to organize a third team which traveled throughout the country between April and July 1963.[28]

[redacted] To supplement and improve the forward air control program while waiting for the first FAC school graduates, the Deputy Director of the AOC proposed assigning VNAF liaison pilots as forward air controllers to each ARVN regiment. However, because of the critical pilot shortage, the Vietnamese were unable to use them as FAC's and they were retained in their liaison pilot role.[29] The forward air control function, despite the increased interest that had been generated by the briefing teams, still had a low priority in the VNAF manning structure. Consequently, 2d ADVON turned its attention to the possible use of specially trained ARVN personnel to supplement VNAF FAC resources.

Forward Air Guides--A Possible Assist

[redacted] Prior to the arrival of extensive American air power in Southeast Asia, the U.S. Army and--to a lesser extent--the Air Force believed that the most effective means of coordinating air-ground activity was through a ground FAC. This viewpoint had influenced a 1960 MAAG decision to sponsor the forward air guide program,* wherein approximately 200 ARVN

*The term forward air guide was used to differentiate them from the VNAF FAC, who under Vietnamese policy had the real responsibility for controlling air strikes.

officers were trained by the Army to serve in that capacity with their respective units. Army advisors believed that they could be of valuable assistance to the forward air controllers in identifying targets and directing close air support strikes. But as it turned out, their training was rarely utilized and they were reabsorbed into their ARVN units and almost lost their identity.* Early in 1962, in light of the need for forward air controllers, USAF and VNAF officials decided to open a VNAF-operated FAG training program in conjunction with the VNAF FAC school. Its first students were to be drawn from among the previously trained ARVN FAG's. The goal was to have the forward air guides assist VNAF air controllers in identifying and marking targets and to report to the FAC on the ground situation and strike results. Also, the forward air guide could be used to send out distress calls whenever his unit came under attack.[30] He would not be authorized to control air strikes, unless the L-19/VNAF FAC was not available and an emergency situation existed.[31]

[redacted] The idea of permitting a FAG to call in air strikes under any circumstances became an issue almost immediately. Although considered to be a temporary expedient only, it nevertheless was not in accord with established U.S. and Vietnamese doctrine concerning air strike control. In the VNAF school, the forward air guide would receive only minimal training in aircraft control techniques; yet under special emergency circumstances, he could conceivably direct strikes in close proximity to friendly troops. In order to locate the enemy, he would have to be in the front lines of all operations. However, because of the nature of the terrain, it would prove extremely difficult to observe enemy activities or to clearly differentiate between them and friendly troops.[32] Thus, the danger of strike aircraft hitting the wrong targets would be increased.

[redacted] Who then would accept the responsibility should such an incident occur? In the U.S. Strike Command this issue was resolved by using a USAF pilot as the FAC. Inasmuch as Saigon's policy precluded U.S. personnel from controlling air strikes, the

*Many of the FAG's were ARVN staff officers who enjoyed the 2-week tour in Saigon. It seems likely that, because of the higher priority of their staff jobs, there was never a serious intent that they would work as FAG's.

[redacted]

AIR GROUND OPERATIONS SYSTEM-US STRIKE COMMAND

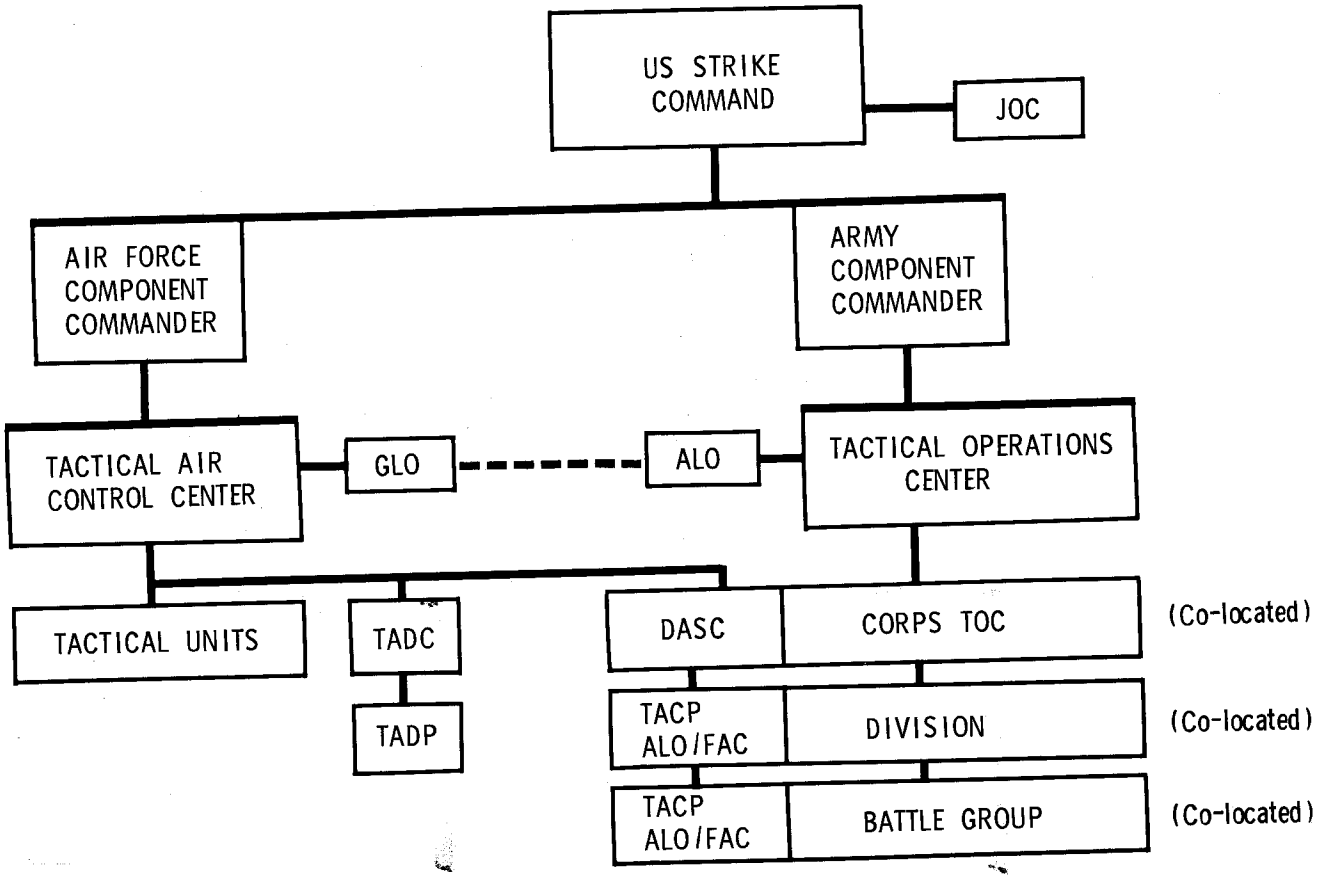

FIGURE 4

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[redacted]

problem of responsibility had to be settled by the Vietnamese. Although the ARVN provided the forward air guide, it was unwilling to accept any liability for errors.[33] VNAF officials, who also were reluctant to take responsibility, finally agreed to do so providing the forward air guides were trained and certified by the VNAF.[34] On the basis of this solution, plans for FAG training moved forward. The first class was begun on 14 April 1962 at Tan Son Nhut under the watchful eyes of American FAC's. By the end of June, 240 students had completed six 2-week classes and graduated.[35]

[redacted] Early indications of success led to the conclusion that the FAG program would be an answer to the FAC shortage; however, it did not develop as hoped. The forward air guides were not always placed in ARVN units where they could participate in joint air-ground operations. Also, many were staff officers without a knowledge of English who, on their return to their units, resumed their old jobs and were not available for battalion and company-level operations. Also, because of their general lack of experience, ARVN commanders were reluctant to place them in the front line units for actual operations. Another factor which made ground commanders hesitate to use the forward air guides was that some U.S. radios had fallen into the hands of the Viet Cong and they feared the Communists might call in strikes against friendly troops. This combination of problems considerably diminished the effectiveness of the FAG program.[36]

[redacted] Early in 1962 the Air Operations Center sought to revive interest in the FAG concept or to drop it altogether. U.S. Army and Air Force advisors in the field were asked to assist in identifying those ARVN officers formerly trained as forward air guides. However, because of the turnover of U.S. Army advisors and the fact that the program had only been infrequently utilized, most of the Americans knew little about it. It was with some difficulty that the AOC was finally able to identify 117 of the 240 men originally trained. This effort by the AOC to find the "lost" FAG's rekindled new interest by MACV in renewing the program. However, enthusiasm once more subsided when on 1 July it appeared that, by the end of 1963, a total of 87 qualified VNAF

[redacted]

observers would be available, sufficient for current requirements.*[37] The FAG concept was dropped, but later it would be resurrected and used with some success in Laos.

Increasing ALO/FAC Resources

(S) Despite the problems associated with identifying targets and directing air strikes from the ground, USAF officials were reluctant to eliminate the ground FAC because of the need to have someone experienced in the use of air power who could advise ARVN commanders. Under the U.S. Strike Command concept, an ALO--who was a thoroughly experienced pilot and preferably a fighter school graduate--performed these duties. This was a new concept for the VNAF, however, and it became incumbent upon the U.S. Air Force to provide the manpower until the VNAF could assume the function.

(S-NOFORN) The first U.S. Air Force FAC's assigned to ARVN corps and division commanders as air advisors arrived in April 1962.[38] In July nine more FAC's, led by Maj. Carl G. Schneider, also were assigned as ALO's to ARVN units. As additional forward air controllers arrived, they were divided between the ARVN divisions, where they served as assistant ALO's, or the VNAF.+ The original intent was to provide three FAC's to each of the three VNAF squadrons, where they could pilot liaison aircraft for VNAF observer FAC's.[39]

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*It turned out that 19 of these were in staff positions and of no value to the field program. Enthusiasm for the FAG program also may have been dampened when a May 1963 decision was announced by VNAF and 2d Air Division precluding FAG's from directing air strikes under any condition. Another factor, according to Colonel Mellish, involved Air Force/Army concerns over roles and mission. Some officials thought use of FAG's might increase service differences over who should control air strikes. [See Ltr, Col. Mellish to Hq USAF Off of AF Hist), 23 Jul 71.]

+In 1962 most of the ALO/FAC's served with ARVN units primarily as ground advisors, whereas those assigned to VNAF flew FAC missions with native observers.

[redacted] After conducting some preliminary studies, the 2d Air Division* determined that 32 USAF forward air controllers would be needed to support nine divisions, three regiments, and the FAC pool at the AOC.[40] Qualified personnel, however, were not immediately available and the last man did not arrive for duty until April 1963.[41] But 32 men soon proved insufficient to provide for the expanding demands of the conflict.[42]

[redacted] For example, when the first Barn Door ALO/FAC's arrived in Vietnam in early 1962, VNAF/USAF strike support for the ARVN averaged between 200 and 250 sorties per month. But by the middle of 1963--with the 32-man ALO/FAC force permitting greater employment of air strikes--the sortie rate had risen to more than 1,500 per month.[43] The situation required more manpower and, by May 1964, the ALO/FAC force goal was revised upward to 75.[44] To meet this and other future requirements, USAF officials considered two possible solutions: (1) to downgrade Air Force standards requiring experienced fighter pilots to serve as FAC's, thereby making available a larger number of pilots; or (2) to replace the American ALO's with VNAF personnel as rapidly as the latter could be trained. The first possibility was dismissed because Air Force regulations precluded the use of non-fighter qualified pilots as ALO's.[45] The second was the favored alternative, since it would hasten the time when the Vietnamese Air Force would be able to run its own show.

[redacted] An obvious advantage in using VNAF ALO's was that it would be easier to coordinate with ARVN commanders because of the common language. However, there were other difficulties which had to be overcome before Vietnamese ALO's would be acceptable to the ARVN. That is, the first eight ALO's trained and assigned in mid-1964 were neither pilots nor qualified FAC's and were unable to perform well in their expected roles. The second group of eight, though recent graduates of pilot training, were not FAC-qualified; they were short on experience and often uncertain how to properly direct the air power available. They had little knowledge of the peculiarities of the different kinds of ordnance, didn't know what to advise in a given situation, and lacked a good

*2d ADVON was redesignated the 2d Air Division in October 1962.

[redacted]

understanding of the overall close air support system. Because the VNAF/ALO's doubted their ability to give meaningful advice, the ARVN commanders--who also had minimal air power experience but recognized their VNAF advisor's hesitancy--were prone to question their judgment.[46]

([redacted]) A key task facing the USAF ALO's--sometimes looked upon by ARVN commanders as "foreigners" who did not understand their problems--was to win the confidence of the Vietnamese not only for themselves but also for the VNAF ALO's. However, their efforts were hampered by a shortage of liaison aircraft and VNAF reluctance to disburse the few they operated. Another factor was the USAF air liaison officers' lack of authority. They had no bargaining power at planning conferences because they possessed no aircraft and were unable to make any air commitments without approval of higher authority. This contrasted sharply with the senior U.S. Army advisor at corps and division level, who "often [possessed] permanently allocated Army aviation which he [could] offer, commit, withdraw, and control according to his participation in the planning."[47]

([redacted]) The ALO's had to convince ARVN commanders that close air support was more than just a support weapon--that it was readily available, could be effective in preventing enemy units from outgunning them, and that it could be the margin between victory or defeat. But perhaps the greatest challenge facing the air liaison officers was to instill ARVN confidence in the accurate control of air strikes. Although ground troops had been mistaken targets on occasion, with proper communications and identification procedures such errors could be minimized or prevented.[48]

VNAF Pilot-Observer Training

([redacted]) The shortage of VNAF aircrews to man liaison aircraft, noted by the Americans in January 1962,[49] increased as demands for fighter and transport pilots siphoned off personnel. Although a pilot training program had been in continuous operation at Nha Trang between 1952 and 1962, it had been unable to keep pace with the VNAF's growing requirements. When the French training mission pulled out in 1956, training fell off drastically, primarily because there were not enough qualified Vietnamese instructor pilots

[redacted]

to continue the program nor sufficient aircraft available. By the time combat-configured American T-28's arrived in late 1961 and early 1962, the few instructor pilots at the training school had been reassigned to operational duties to meet the fighter pilot demand, and the school was closed.[50]

([redacted]) Procedures for pilot and observer training were contained in Vietnamese Air Force Regulation 51-2, dated 27 March 1959. It established refresher training, record maintenance policies, and standardization procedures. Observers received only token training, consisting of 14 hours of flight training and 6 hours of ground instruction. Included in the flying course were 2 hours of instruction in fighter guidance, but none in air strike control. Seven hours of primary flight training consisted of two flights in which the observer doubled as a navigator by guiding the aircraft to a target and taking photographs of it. One 60-minute flight oriented the observer in "fighter guiding" and required him to monitor take-off time, position and timing to rendezvous with strike aircraft, locate targets, and communicate with the strike aircraft.[51] Even with this abbreviated course, the Vietnamese Air Force found it difficult to obtain sufficient applicants to man the liaison squadrons.[52] The obvious solution was for the Saigon government to adjust its policy, and permit American FAC's and/or VNAF pilots to control strikes. But there was little prospect of an early policy change or immediate expansion of FAC team training.[53]

[redacted] In January 1962 Vietnamese and U.S. officials agreed to transfer VNAF flight training from Nha Trang to the continental United States (CONUS). This decision helped ease the strain on VNAF pilot and aircraft resources and released them for operational use.[54] However, for several reasons it did not immediately contribute to an increase in Vietnamese pilot strength. To support the CONUS flight training program, which required many months before the first pilot completed the course, the U.S. Air Force had to provide more manpower slots for the VNAF. This was done, but it took until July 1962 to obtain final approval. Another endemic problem involved the poor physical condition of the Vietnamese serviceman.

[redacted] Situated in a hot, tropical climate, the Vietnamese were susceptible to diseases almost unheard of in the United States. Many of them rendered VNAF personnel physically unfit for flight training. For example, in December 1962, it was

[redacted]

estimated that up to one-half of the population suffered from schistosomiasis, a group of diseases which primarily involved the intestine and liver and which caused dysentery, skin rashes, blood in the urine, and enlargement of the spleen. Almost all Vietnamese were invested with intestinal parasites. Tuberculosis and trachoma--the latter a disease of the eye which caused inflammation, frequent scarring of the cornea and blindness--were major problems. Quiescent malaria also was widespread. Sanitary practices unacceptable by American standards added to Vietnamese health problems. The result of these conditions was that in excess of 80 percent of all Vietnamese flying candidates failed their physical examinations.

([redacted]) Still another hindrance to the CONUS flying program for VNAF pilots was the language problem. Few Vietnamese were proficient in English and a training course had to be established for them. Once a candidate was approved for flight training, he had to possess a Vietnamese security clearance. Since many pilots who qualified had been born in North Vietnam or in areas of South Vietnam not under the control of the government, security checks were often time-consuming and all but impossible to obtain. This problem was not eliminated until after President Diem's removal as chief of state.[55]

([redacted]) In March 1963, CINCPAC recommended to the Joint Chiefs of Staff (JCS) that the in-country pilot training program be reestablished. He proposed that a USAF Mobile Training Team (MTT) of 25 officers and 69 airmen--with O-1's (L-19's), U-17's, or U-10A's--be sent to Nha Trang as soon as possible to reopen the school there. He believed an output of 50 pilots per class every 3 months would bring the liaison squadrons up to authorized strength within a reasonable time and eventually form the basis for a complete in-country training program. The training was to consist of a 1-month preflight course and 80 hours of primary flight instruction.[56] He further suggested that CONUS pilot training continue until the in-country program was well established.[57]

([redacted]) CINCPAC's recommendation was approved, whereupon Headquarters USAF directed the Air Training Command (ATC) to develop the training curricular and personnel requirements for the Mobile Training Team.[58] The Command's 971st Field Training Detachment (FTD) went to work immediately, deployed a team to Vietnam on 14 September 1963 and, by 21 December,

had graduated its first class of 48 pilots from the U-17A school. The second class entered training on 16 December, 48 were graduated in March 1964, with 24 more in June.[59]

[redacted] In addition to the ATC program, PACAF established the 34th Tactical Group, 2d Air Division, at Bien Hoa on 8 July 1963 to support South Vietnam's in-country training in counterinsurgency operations.[60] A subordinate unit of the 34th--the 19th Tactical Air Support Squadron (TASS)--was subsequently activated* and assigned the mission of training VNAF pilots and observers in FAC duty in the O-1F. The 19th also was authorized to fly various support missions involving combat observation, psychological warfare, aircraft and troop escort, and to provide FAC assistance as deemed necessary.[61] With 44 pilots and 22 O-1's, the squadron greatly enhanced the resources available in Vietnam for training VNAF liaison crews.

[redacted] Under the 19th TASS, beginning in 1964, VNAF pilots received comprehensive O-1 training in navigation, FAC procedures, and rocket firing. Observers, in a 17-week course were taught navigation, target and troop identification, intelligence-gathering, visual reconnaissance, and how to direct and control air strikes.[62] The pilots of the 19th also flew operational air support missions but were handicapped by the VNAF requirement for an observer to control actual strikes. Because of the chronic shortage of these men, the VNAF was never able to provide more than 11 observers at any given time for duty with the squadron.[63]

[redacted] The 19th TASS initiated its first pilot class on 2 January 1964, enrolling 48 graduates of the December ATC Field Training Detachment school. This group completed the course on 6 February. In addition to pilot training, 40 students who completed the Detachment's ground training course were enrolled in observer training at Bien Hoa. By 30 June 91 pilots and observers were theoretically available to perform FAC functions.+[64]

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*Activated on 19 June 1963, the 19th did not become operational until 15 September 1963.

+To accomplish this modest production of pilots and observers, the 19th TASS flew 2,717 training sorties in some 2,739 hours between January and June 1964. During the same period its pilots flew 6,543 combat missions, logging more than 8,400 hours, mainly on low-level FAC duty. [See Hist (S), 2d AD, Jan-Jun 64, II, pp 6-8].

[redacted]

Unfortunately, many of the new pilots were subsequently assigned to nonflying jobs and were lost to the program,[65] because the AOC and other VNAF agencies found it easier to fill positions requiring pilots from FAC support activities than from other higher priority pilot resources. Original planning called for the VNAF to assume responsibility on 1 July 1964 for all in-country FAC crew training, using aircraft resources inherited from the 19th TASS. However, the heavy demand for liaison pilots for other duties precluded the 19th relinquishing its responsibilities for them at that time.[66]

USAF Aid Inhibits the VNAF

([redacted]) The intent of the United States, when military aid was first introduced into South Vietnam, was to prepare Saigon's armed forces for successful defense against the Viet Cong insurgency. Hopes were high that this could be accomplished by 1965.[67] At a conference in Hawaii on 15 January 1962, Brig. Gen. Rollen H. Anthis, Commander of 2d ADVON, assured Secretary of Defense Robert S. McNamara that the training program was going well and that he expected the VNAF would be on its way to becoming an "air force" within one year.[68] In March, General Anthis reaffirmed to the Secretary that good progress was being made. However, when asked how long U. S. Air Force personnel would have to continue flying with the VNAF, he replied that if a state of readiness was to be maintained until the VNAF was able to assume the full load, the Air Force would have to continue VNAF training for some time.[69] In July 1962 McNamara declared that it should not take more than three years for South Vietnam to be able to control Viet Cong activity.[70] But then, in October, he noted that if the VNAF was to become a self-sustaining Air Force, pilot training would have to be more than doubled.*[71]

([redacted]) At another conference with the Secretary in May 1963, Brig. Gen. Milton B. Adams, Assistant Chief of Staff, Plans, MACV, assured Mr. McNamara that there would be no problem in phasing out USAF flying units when the time came. But

*At this time there were 130 VNAF officers in flight training. The Secretary desired to see at least 300 in the program, but VNAF pilot training could not keep up with the expanding demands of the war.

[redacted]

he added that support personnel in the technical, communications and supply fields might have to remain somewhat longer in order to effect a smooth transition.[72] Despite these assurances of continuing progress, the Defense Secretary expressed his doubts. He noted that the level of VNAF training was no greater in May 1963 than it had been a year earlier,[73] and he reemphasized that USAF pilots were to disassociate themselves from combat and encourage VNAF pilots to assume the close air support role.[74]

[redacted] From the vantage point of hindsight, it is understandable why U.S. officials misjudged the length of time it would take to prepare South Vietnam to provide for its own defense. Factors of economy and politics heavily influenced its activities. The country depended almost entirely on agriculture, particularly rice farming. It possessed almost no significant industry. Divided into some 40 provinces with nearly self-autonomous chiefs, South Vietnam had almost no experience in the democratic processes. Its health problems, already mentioned, alone significantly slowed progress of the VNAF training program.

[redacted] Another inhibiting factor was the vast amount of American firepower and technical prowess brought to Southeast Asia. Accustomed to a less sophisticated type of warfare, the South Vietnamese people were frequently bewildered by the panoply of American weaponry and technology. Because they were not oriented to technology, it required a great length of time for them to adjust and learn how to function with modern hardware. What appeared to some Americans to be lethargy on the part of the South Vietnamese could be more appropriately considered an overwhelming feeling of doubt about their ability to handle modern military equipment. As a result, they quite frequently tended to let the more experienced Americans do the job for them.

[redacted] The initial flight instruction Vietnamese airmen received proved less than adequate. Before U.S. Air Force personnel became heavily involved in VNAF training, the 14-hour observer flying course did little more than to accustom them to being in the air, let alone qualifying them to control air strikes.*[75]

*When the 19th TASS assumed responsibility for the observer course, training was intensified and expanded to 17 weeks.

[redacted]

Liaison pilots, although somewhat better trained, also did not have sufficient flying experience to be fully qualified. Although given 80 hours of flight instruction, they were not trained to fly at night or in marginal weather. Indeed, the VNAF L-19 was not configured to operate under such conditions. Consequently, the Vietnamese pilots were more than willing to remain on the ground at night or in bad weather. Some American FAC's, as a result, preferred to fly without the Vietnamese observer aboard and recommended screening of all VNAF observers to reassign those who were not fully motivated.[76]

[redacted] In 1962 General Anthis had noted that despite the shortage of pilots, the VNAF was not operating 24 hours a day or 7 days a week, which considerably diminished their flying capability.[77] Similarly, Lt. Col. John J. Wilfong, the first 19th TASS commander, remarked that as soon as the squadron became operational in 1963, VNAF liaison units began cutting back their efforts, forcing the U. S. Air Force to assume a greater portion of reconnaissance and FAC activity.[78]

[redacted] Finally, Saigon's decision to change or relax its policy preventing American FAC's from controlling air strikes also served to inhibit VNAF FAC progress. This change was prompted by an incident which took place on 11 December 1964 involving concentration of 1,500 Viet Cong near Ca Mau (Quan Long) in Chuong Thien Province at the southern end of the Indochina peninsula. Capt. Stanton Musser, a USAF FAC assigned along with a VNAF observer to that area, was dispatched that morning on a FAC support mission for an armed convoy which had come under Viet Cong attack. After flying 2 1/2 hours over the firefight he was forced to land and refuel. When he was ready to take off again, however, the VNAF observer refused to go up again with him. Since the convoy was in desperate straits, Captain Musser requested and finally received approval from the province chief to fly alone. During the next 9 hours he directed 16 A-1E air strikes against the enemy force with extremely effective results.[80] Following this episode Col. Allison C. Brooks, Deputy Commander of the 2d Air Division, recommended abolition of the rule precluding USAF FAC's from identifying and marking targets and controlling air strikes.[81] Although the change was not approved until 1965, more USAF forward air controllers flew solo operations (without the VNAF observer but with VNAF approval) in the weeks after the Ca Mau firefight.

[redacted]

[redacted]) In the spring of 1964 Secretary McNamara expressed concern that introduction of the 19th TASS into South Vietnam the previous year had been a mistake.[82] Rather than preparing the VNAF to assume FAC responsibilities, the squadron was being used more and more to supplement those activities, thereby permitting the Vietnamese to assign forward air control personnel to other tasks.

[redacted]) When the scheduled date for deactivating the 19th arrived, the Vietnamese Air Force was still not able to assume the FAC role. The squadron's life was extended as an operational entity until 8 August 1964, at which time its assets were turned over to the VNAF and its personnel dispersed. This transfer had scarcely taken place when it became apparent that the forward air controller program was in danger of collapse unless the squadron was reactivated. Reactivation formally took place on 21 October, but it was not until January 1965 that the first six USAF FAC's returned to the unit to begin operations.[83]

[redacted]) By the end of December 1964 the four VNAF liaison squadrons possessed 68 combat ready pilot/observer crews.*[84] However, they only had 38 aircraft available for FAC operations. In addition to these Vietnamese resources, the U.S. Air Force had 76 qualified FAC's in Southeast Asia who were functioning as advisors.[85]

Hints of Change

[redacted]) Following the Gulf of Tonkin incident in August 1964, the tempo of the war picked up markedly. This situation, coupled with the U.S. government's recognition that preparing the Vietnamese to defend themselves against the Viet Cong would take longer than earlier anticipated, contributed to the U.S. decision to take a more active role in the conflict. In late 1964 there was much discussion among the Americans about relaxing the rules of engagement to permit USAF FAC's and fighter crews to actively participate in close air support operations to defend U.S. and ARVN troops.

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*The 116th Air Liaison Squadron was organized at Nha Trang during 1964 and shared the 25 U-17's of the 12th School Squadron.

[redacted]

[redacted]

AIR GROUND OPERATIONS SYSTEM-VIETNAM

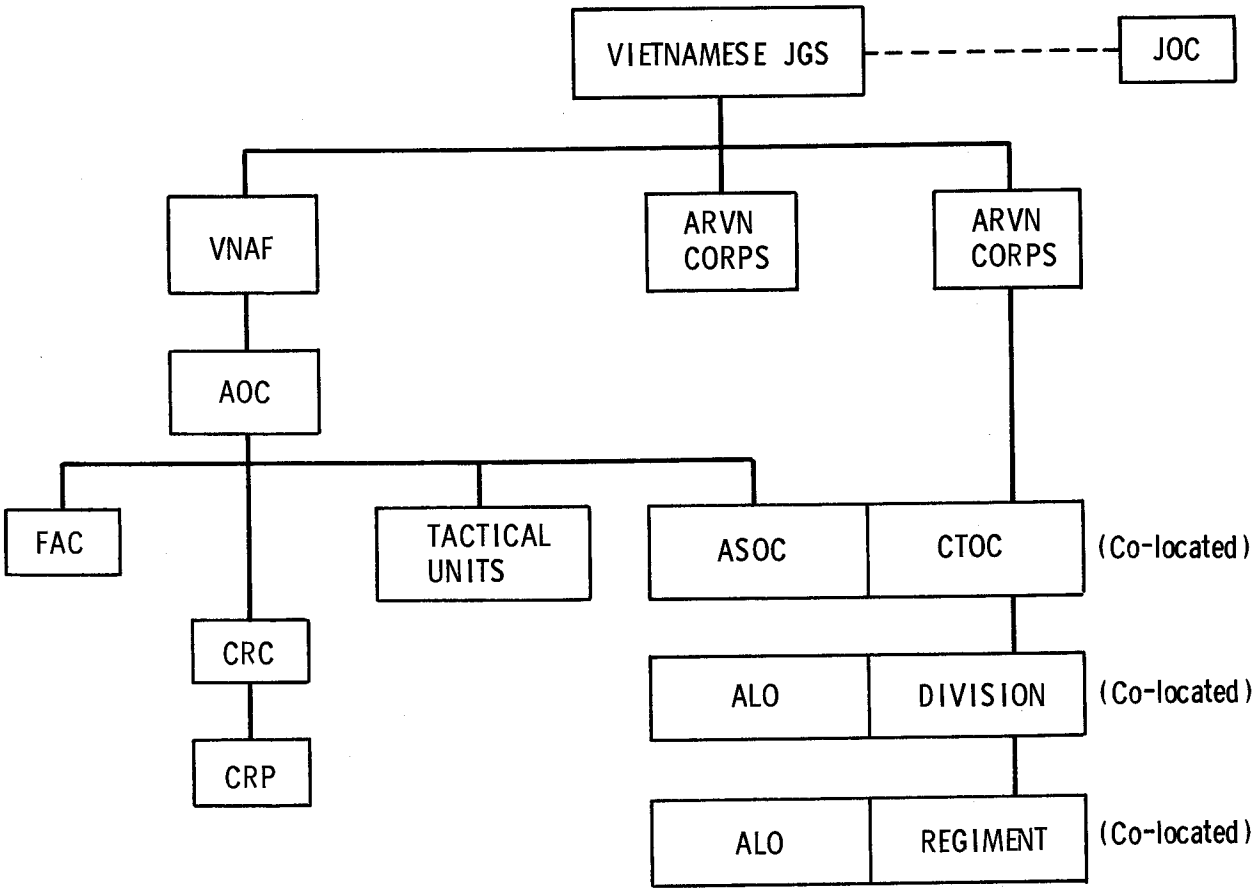

FIGURE 5

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[redacted]

[redacted] Up to this time, the Special Air Warfare Center (SAWC) at Eglin AFB, Fla., had been operating a forward air controller school on a very limited basis. Its major accomplishment in 1963 had been to train 22 FAC's for the 19th TASS. In October 1964 the school--having four O-1E's and four student FAC's assigned for training--was directed to establish an expended training program beginning January 1965. Fifteen additional support personnel were authorized. In December, the Air Force advised the SAWC that its inventory would be increased to 11 O-1's and 40 personnel in order to train an anticipated student load of 125 per year.[86] At the same time, PACAF requested an increase in the VNAF liaison squadron aircraft inventory to 40 for each unit. MACV also approved a recommendation to permit the 19th TASS to increase its inventory to 30 O-1's. Following closely on the heels of these two actions was a recommendation to deploy four USAF tactical air support squadrons to Southeast Asia.[87]

III. EQUIPMENT SHORTAGES HAMPER OPERATIONS

([redacted]) As previously noted, the Air Force had assumed that the Army would provide the equipment needed by the Tactical Air Control Parties in accordance with their 1957 agreement.[1] However, when the Barn Door FAC advisors arrived in South Vietnam, they discovered little or no advanced preparations had been made by the Army and that there was a shortage of essential equipment.[2]

([redacted]) The experiences of a group of FAC officers led by Maj. Carl G. Schneider was typical. Passing through the Southeast Asia Processing Center at Clark AB in the Philippines, they were told that "everything"--including field gear, weapons, and information about their assignments--would be available in South Vietnam. But on their arrival they discovered there not only was a shortage of basic equipment in that country but also that no one could tell them "what the job was...." Schneider's group--all majors and experienced tactical squadron commanders or operations officers--were unable to obtain such basic information as "where half of the ARVN units were located" that they were supposed to advise and support.[3]

([redacted]) Whereupon, Schneider took on the responsibility of collecting what information he could and setting up an indoctrination program for the advisory personnel who followed. He briefed new arrivals, "showed them where the units were located as best we knew and told them to go forth and do good." However, it proved impossible to "do good" without such basic equipment as radios and jeeps or trucks. Although substantial amounts of these had been shipped to South Vietnam, the Saigon government had apparently exercised little control over its supply warehouses. Some military supplies disappeared completely, while others ended up on the black market. As a consequence of U.S. complaints, the Vietnamese belatedly imposed rigorous controls over equipment distribution and almost everything--including bullets*--had to be signed for

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*Having overcome several attempts to overthrow his government, President Diem deemed it advisable to maintain strict control of weapons. Indeed, the presidential palace was strafed by dissident Air Force officers on 27 February 1962.

[redacted]

by receiving agencies or individuals. The new, restrictive policy also had adverse effects: equipment needed by some ARVN combat units was often withheld or issued only in minimal quantities.[4]

Transportation Problems and the Radio-Jeep

([redacted]) Although such large items as trucks, jeeps and aircraft were unlikely to disappear, the newly-arrived FAC's soon discovered that many vehicles on hand were out of commission because of a lack of maintenance and parts. The U.S. Army and ARVN units provided some assistance but could not fulfill all FAC requirements. An advisory team FAC, Capt. James R. Peterson, wrote to the III Corps Air Liaison Officer about his transportation problems. Air Force prestige, he said, was suffering and "sooner or later we are going to lose an air strike due to [our] inability to get to the landing strip [and FAC aircraft]. Both the Army and the ARVN have assisted us in this area, but they have their jobs and we are pulling them away any time they must drive us [out] and pick us up." Capt. Gerald J. Theunissen, another FAC, reported that he was forced to "bum a ride" to and from work with a temporary duty Army captain living in the same quarters. When the captain's tour was up and he departed, so would Capt. Theunissen's transportation. A forward air controller in Tay Ninh Province, Capt. William Leimkuehler, also complained about the problem. He said that when Army advisors were short of vehicles, which was frequent, "the Air Force does more than its share of walking."[5]

([redacted]) How to get radio equipment into the field was another problem the ALO/FAC's assigned to ARVN units found difficult to solve. Some backpack radio gear on hand weighed in excess of 80 pounds, which made carrying them physically exhausting. As previously noted, during World War II and in Korea, air-ground teams had used radio-jeeps and the same technique had been adopted by the U.S. Strike Command and planned for use in Southeast Asia. The first such radio-jeep package was in place in South Vietnam when the Barn Door FAC's arrived in 1962. Designated the VRC-30, this mobile air control vehicle contained a PRC-10 (FM) radio, a TRC-7 (VHF) radio with a single frequency, and an ARC-28 (UHF) unit. Unfortunately, the radios in the package were old and unreliable and the single VHF frequency was considered inadequate for the job.[6]

([redacted]) This situation adversely affected air-ground communications and increased operational risks. For example,

[redacted]

during an operation near Tam Ky on 3 January 1963, an Air Force C-123 and an Army Caribou were almost shot down by friendly ground fire because of a VRC-30 radio equipment failure. Unable to contact the two aircraft, Lt. Raymond Armstrong, a FAC working with the ARVN's 2d Infantry Division, hurriedly requested the Vietnamese artillery units to discontinue firing until the planes cleared the area. Armstrong subsequently recommended that two TRC-7's with dual channel capability be provided so that the ground FAC could have 4 possible frequencies to operate. However, the VRC-30 radio unit had a basic deficiency. That is, its operation depended upon the jeep's engine-driven generator. The engine, which had to be running for the radio to work, frequently overheated and had to be turned off periodically and allowed to cool.[7] Nevertheless, the VRC-30 did provide some air-ground communications and was an asset to the tactical air control teams.

([redacted]) Concerning the FAC transportation problem, there was some discussion in 1962 about the possible use of the radio-jeeps for such purposes. However, a 2d Infantry Division ALO, Maj. William J. Kuntz, thought the idea impractical. The radio equipment, he said, was too sensitive to take the constant pounding it would receive in such a role. In addition, not enough of them were available to take care of all FAC transportation needs. Major Kuntz recommended, instead, that each ALO be assigned a jeep on a permanent basis, with the VRC-30 being used only in emergency situations as a fill-in vehicle. He further recommended that the ARVN be made responsible for supplying and maintaining essential transportation.[8]

([redacted]) This proved infeasible, however, since the ARVN depended upon the U.S. Military Assistance Program (MAP) which itself was having difficulty in meeting the increasing demands of the war. Further, the Vietnamese still were in the process of developing a trained cadre of maintenance personnel and were not yet in a position to provide the support needed to keep a motor vehicle fleet operating.

([redacted]) Air Force advisors in Vietnam became unhappily aware of the difficulties of logistics support inherent in a 10,000-mile-long supply line as they observed the Vietnamese build-up. When part of the responsibility for supplying the tactical air control parties was assumed by the Air Force in 1963, they still experienced the frustration of being unable to get satisfactory radios and transportation for the TACP's.

[redacted] Lt. Col. Kenneth L. Collings, an ALO in IV Corps, reported in October 1963 that the Air Force still had not provided "the equipment required to properly support the ground forces." Despite repeated pleas, the ALO's were forced to "scrounge, scramble and improvise" to insure proper control of tactical air. Until such time as equipment became available, said Colonel Collings, "we fervently hope our efforts prevent an error of omission or commission that could be costly" in lives and hurt the Air Force effort in Southeast Asia.[9] He considered the jeep-mounted FAC package (Mark-104A) of the 507th Tactical Control Group at Shaw AFB, S.C., ideal for field use. Besides having communications capability in the HF, VHF, and UHF ranges, the package also provided its own internal power supply. Unfortunately, the Mark-104A was not available in sufficient quantities in 1963 to fill FAC needs in South Vietnam.

[redacted] Indeed, by the spring of 1964 the communications/transportation shortage had become so acute in III Corps that, when a single radio-jeep--the Mark 95*--was withdrawn from Tay Ninh province, one of the areas in South Vietnam suitable for cross-country vehicle operation, FAC personnel there were left virtually without transportation. Because much of the equipment used was still owned by other agencies, it was subject to no-notice withdrawals. Thus ALO/FAC efforts to provide adequate TACP support continued to be severely handicapped.[10]

(U) Logistical problems were not satisfactorily resolved by the end of 1964. Even as late as 1967 ALO's reported the Air Force, which by that time had full responsibility for providing for its tactical air control parties, had difficulty satisfying supply requirements. Lt. Col. Frank M. Eichler, ALO for the 3d Brigade, 1st U.S. Infantry Division in III Corps, reported that the 19th TASS had been unable to keep its many outposts well supplied. Colonel Eichler said that much of his support--even aircraft--had to be borrowed.[11]

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*The reference here is more probably to the Mark-94 and the original report is in error. The Mark-95 was a lightweight single sideband HF transceiver, which became the VC-102 when mated with a jeep. The Mark-94 was a 6-passenger truck-mounted communications unit having HF (TRC-75), VHF (TCP-101), and UHF (ARC-27) capability.

[redacted]

The reasons for this persistent inadequate supply situation was attributable, in part, to the difficult jungle terrain of that part of Vietnam, which enabled the Viet Cong to easily interdict road and rail transportation. The demands placed on airlift resources, which played a continuing vital role in supplying outlying regions, made it impossible to fulfill all equipment needs. In addition, there was the continuing problem of theft, which reduced available supplies.

The Aircraft Shortage

[redacted] As was noted in Chapter I, during the Korean War the Air Force relied primarily on the T-6 "Mosquitos" to conduct airborne FAC operations (and also briefly used the L-5). After the war, the T-6's were retired and the remaining light spotter aircraft in its inventory were transferred to the Army.[12] Subsequently, the Army procured the O-1 liaison aircraft (originally designated the L-19 Bird Dog) for use as an artillery spotter. When the first Air Force FAC's arrived in South Vietnam, they had no aircraft. A minimum of four L-19's were requested from the Army by Air Force officials at Bien Hoa.[13]

[redacted] However, of approximately 140 aircraft in South Vietnam, the Army owned about 40, needed them for its own activities, and often could not spare them for the FAC's.*[14] When they received no affirmative answer to their request for the four L-19's, the FAC's sought permission to fly as instructors on operational VNAF L-19 missions.[15] They were authorized to do so but found it difficult to work closely with ARVN units because the VNAF operated the liaison planes out of distant air bases rather than from forward areas.+[16] Thus, neither the Air Liaison Officers nor the ARVN division commanders and their staffs had planes immediately available to them to reconnoiter their areas for possible enemy activity, except when they could borrow them from the U.S. Army.

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*USAF policy also precluded airborne FAC's from flying in Army planes.

+VNAF reluctance to stage the aircraft from forward areas was based primarily on inadequate security. Another factor was that pilots did not receive per diem away from their home stations.

[redacted]

At the urging of Air Force advisors, in the fall of 1962 the VNAF finally agreed to deploy some of their L-19's to forward locations to provide immediate support to ARVN commanders. But this move created a shortage and adversely affected FAC training, strike control, reconnaissance, and liaison activity.[17]

[redacted] It was against this background that Gen. Walter Sweeney, commander of the Tactical Air Command asked Headquarters USAF in June 1962 to relax its restrictions on the use of other than Air Force aircraft for FAC operations. He requested authority to use Army aircraft when there were insufficient USAF planes to support forward air controllers.[18] Gen. Curtis E. LeMay, the Air Force Chief of Staff, gave his permission on 24 July. He emphasized, however, that his decision did not change the requirement for assigning tactical air advisors to ground commanders nor limit the FAC in performing essential duties as an air strike controller.[19]

[redacted] In September, TAC sought and reached an agreement with the Continental Army Command (CONARC) which allowed Air Force FAC's to use any available Army air or ground vehicle to "enable him to perform his mission of air strike control."[20] Published on 16 November 1962, this joint TAC-CONARC agreement set forth the Army's obligations to Air Force tactical air control parties.[21] The agreement came at a critical time for the faltering forward air control program in South Vietnam. In Saigon, arrangements were hastily made by 2d ADVON to borrow some Army O-1's and prepare them for action as rapidly as possible. An expensive modification program was required, but the aircraft were used to the maximum extent possible during the process.[22]

[redacted] Meanwhile, the Air Force was investigating other aircraft for possible FAC use. The first Barn Door FAC's, having flown in the T-28, were impressed with its versatility and they suggested it be used as a substitute and supplement to the O-1. The T-28 had earlier been used briefly in Korea in the FAC role with satisfactory results.[23] However, because the T-28 had been modified to serve as a strike aircraft and was in great demand in the Farm Gate program as well as for VNAF operations, the recommendation was shelved. Arguments favoring its use were not completely forgotten, however, and were later revived when the 19th TASS faced deactivation.[24]

[redacted]

Liaison Plane Shortages Intensify

([redacted]) Although VNAF liaison aircraft resources increased to 49 by the end of 1962, the Vietnamese were unable to keep up with demands for close air support. During 1963 U.S. Army advisors echoed Air Force FAC complaints about the O-1 shortage. Col. Wilbur Wilson, Senior U.S. Advisor to ARVN III Corps, advised MACV headquarters on 21 March that the unavailability of O-1 type aircraft assigned in direct support of ARVN infantry divisions was having "a detrimental effect on the conduct of successful ground operations in III Corps...." He said the manner in which the VNAF had been assigning them piecemeal to ARVN units "unnecessarily handicaps units of this corps in their ground combat operations against the Viet Cong."[25] Col. Donald H. Ross of the 2d ADVON informed Col. Huynh Huu Hien of the VNAF that the lack of FAC aircraft in III and IV ASOC areas of responsibility made it impossible to meet all demands for close air support, whereas I and II ASOC's were able to fulfill their requests almost 100 percent. He attributed the success in I and II ASOC's to the greater concentration of VNAF liaison aircraft placed in those areas.[26]

([redacted]) While the aircraft shortage continued, an Army-Air Force difference developed over how the liaison planes should be used. The Army was anxious to prove that deploying its own aircraft into the field--under the direct control of the ground commander--was the most expeditious means of improving close air support response. The Air Force, on the other hand, insisted the FAC function was its responsibility and that central coordination was necessary to employ available aircraft resources most effectively. The Air Force also believed that surveillance/visual reconnaissance in support of ground troops fell within its domain. But, of course, the Air Force did not possess the hardware to fulfill these roles, for the reasons previously discussed.* The 1962 agreement permitting Air Force FAC's to fly Army liaison planes still left them dependent on Army support. In the meantime, they needed aircraft to augment the VNAF liaison fleet.[27]

([redacted]) After an in-country survey of aircraft resources was completed, CINCPAC determined that two additional American air units should be deployed to South Vietnam. The Air Force, willing to oblige but having no liaison aircraft, once again

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*See pp 6-7.

[redacted]

was dependent on the Army to provide them. The Army, on the other hand, believed the two additional units would engage in the type of air activity performed by its liaison flight companies and therefore recommended that it should provide both. While the matter was being examined, Gen. Earle Wheeler, Army Chief of Staff, on 14 March 1963 wrote to General LeMay to express the Army's strong feelings about the subject. It was essential, he said, for the Army to continue its surveillance/visual reconnaissance operations so ground commanders could be kept informed of changing tactical conditions. He felt that some of the Army surveillance roles would not be covered by Air Force FAC's and consequently Air Force operation of the two proposed liaison units was unacceptable.

[redacted] General LeMay replied that he was more interested in supporting the war effort against the Communists than worrying about the "source of light aircraft." Subsequently--after consulting with Mr. McNamara--the Joint Chiefs of Staff reached a compromise decision. They determined that, because a large percentage of the air activity of the two units would be in a non-FAC role, the Army should provide one aviation company (the 73rd) and the Air Force a liaison squadron (the 19th TASS). The Army agreed to transfer 22 O-1's to the Air Force to fill its commitment.[28]

[redacted] The Air Force had hoped creation of the 19th TASS and the Army aviation company would resolve the liaison plane shortage. It did not. By the end of 1963, although there were more than four times as many aircraft of all types in-country than there had been in 1961, the number of "L" types available to the Air Force and VNAF had barely doubled.*[29] Moreover, the assignment of ALO's and liaison aircraft to ARVN units encouraged ground commanders to make greater use of their services. The VNAF, as was noted in Chapter II, then exacerbated the shortage by withdrawing many of its liaison aircraft from the field following the arrival of the 19th TASS. This move made life more difficult for the American FAC's and impaired their ability to fulfill the growing needs of troop commanders.[30]

*At the end of 1961, there were approximately 140 aircraft in South Vietnam. By December 1963 there were 680.

[redacted]

([redacted]) A 2d Air Division historian, commenting on the difficulties facing ARVN troops in IV Corps when the planes were not available, wrote:

> With up to five operations of battalion, regimental, or brigade size taking place simultaneously on an almost continuous basis, an O-1F assigned to the ALO/FAC people in this area of operational surveillance would be invaluable. In these flat paddy lands of IV corps, the man on the ground could rarely see beyond the first dike or tree line and the only person who could observe action was the man in the air.[31]

([redacted]) The lack of sufficient liaison aircraft continued to act as a brake on the close air support program during 1964. Less than 50 percent of ground troop requests for air support could be answered and some bitterness was expressed over this, especially in IV Corps, where some of the heaviest fighting took place. In the entire Corps area, there were only four or five O-1's available at any given time--far short of what was needed.[32] In June 1964, for example, only 39 percent (43 of 110) of requests received for airborne FAC coverage were satisfied. For the entire year, the liaison squadrons could only provide enough O-1's to fill 35 percent of the requests received.*[33] For the American ALO's of the "most powerful air arm in the world," it was embarrassing to have to explain to ground commanders that support "couldn't be provided because the lowly liaison aircraft was not available."[34]

([redacted]) Such was the situation when the Air Force was directed to inactivate the 19th TASS and turn over its assets to the Vietnamese. The idea was to enable the VNAF to expand from three to four liaison squadrons. The 19th TASS and the U.S. Army's 73d Aviation Company were the most likely units from which the aircraft could come to form the fourth VNAF squadron. The decision as to which unit should be deactivated rested with MACV. Over the objections of the Chief, Air Force Section, MAAG, and the Commander of the 2d Air Division, MACV decided

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*In addition to the low percentage of FAC aircraft requests filled, only 63 percent of strike requests in IV Corps were satisfied during the same period.

[redacted]

the 19th would deactivate.* The 2d Air Division, believing that much of the support for the FAC training program would be adversely affected by the squadron's deactivation, in April 1964 proposed retaining the unit and permitting its pilots to fly excess VNAF T-28's. These aircraft were being made temporarily available to the 1st Air Commando Squadron pending arrival of newly-procured A-1E strike aircraft.+[35] The T-28's, however, were not declared excess and the Division's proposal was not acted upon.

[redacted] When Secretary McNamara visited Saigon in May 1964, plans to expand the VNAF were approved and ordered implemented. At this time the 2d Air Division again sought to retain the 19th with its O-1's;[36] COMUSMACV approved the request which he forwarded to CINCPAC. At the same time, PACAF suggested an alternate plan under which certain VNAF RT-28/RC-47's would be made available to Air Force FAC's when the O-1's were turned over to the VNAF.[37] However, this proposal also was not implemented. As was noted earlier, the 19th TASS resources were transferred to the Vietnamese and the unit deactivated.‡

[redacted] The shortage of FAC aircraft was keenly felt in the aftermath of the Gulf of Tonkin incident in the summer of 1964, which saw the Viet Cong initiate large-scale attacks against South Vietnamese forces and identification of North Vietnamese troops in the field. As a consequence, VNAF liaison squadrons and its 12th School Squadron had to take on an ever-increasing role in directing strikes.[38]

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*A factor influencing the decision in favor of the 73d Aviation Company was that the Army O-1 aircraft appeared to be more successful than the 19th's in getting reconnaissance and photo information. This was primarily due to Army rules permitting them to fly at lower altitudes to find the enemy. [See Ltr (S), Colonel Mellish to Hq USAF (Off of AF Hist), 23 Jul 71].

+The Air Force grounded all its B-26's following a fatal accident at Eglin AFB, Fla., in which a B-26 lost a wing. It subsequently ordered all B-26's withdrawn from South Vietnam.

‡See Chapter II, p 34.

[redacted]

([redacted]) The aircraft shortage showed up in the IV Corps area during a clash between an ARVN regiment and enemy battalion near Cau Mau on 22-23 October 1964. The regimental commander requested strikes against 59 camouflaged houses and 120 enemy sampans. Before dispatching the fighters, the ASOC scrambled a VNAF O-1A reconnaissance aircraft to confirm the report the enemy was in that location. But the liaison crew was unable to identify the target. Yet the ground FAC assigned to the regiment knew where the targets were, had obtained the province chief's approval for the strike, and needed only an O-1F and strike aircraft to attack the enemy. But no O-1F's were available to the FAC, who could have taken a plane aloft while the fighters were en route to the target area. As a result, only eight Viet Cong killed and 11 sampans destroyed in the operation.*[39]

([redacted]) USAF officers continually complained about the plane shortage. Maj. William R. Covington, an ALO in the Binh Lam Special Zone, reported that during July 1964 "our air support by the O-1 series aircraft has been one VNAF O-1A per day. . . Consequently, the value of visual recon has been almost a total loss for the month." Capt. Franklin D. Peschel, ALO at Ben Cat, saw at least two operations cancelled by an ARVN regiment for lack of O-1 coverage. Captain Theunissen, ALO at Thu Dau Mot, noted that many immediate air requests to have "an L-19 airborne" had to be denied because of lack of aircraft. Maj. Earl D. Jameson, ALO 5th Division, complained about "too much delay in getting the strike aircraft on target," caused primarily by "the slow reaction time of FAC aircraft" which, in turn, was "due to the shortage of O-1 aircraft."[40]

([redacted]) With reactivation of the 19th TASS in October 1964, COMUSMACV requested the squadron authorization be increased from 22 to 30 aircraft, and PACAF sought approval to expand the four VNAF liaison squadron allocation to 40 O-1's each. Meanwhile, VNAF officials again began deploying their liaison aircraft into the field, which was a step forward.[41] By year's end

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*Incidents such as this strengthened the Army's conviction Army helicopters should be responsible for FAC's and FAG's and control of air strikes in such situations. But for U.S. Air Force restrictions, USAF FAC's could have done much the same thing. [See Ltr, Col. Mellish to Hq USAF (Off of AF Hist), 23 Jul 71].

[redacted]

the 19th TASS had regained its 22 O-1's but only 12 of them were combat ready and their operation depended upon the availability of the forward air controllers, who slowly returned to the squadron.[42]

([redacted] Maintenance facilities remained inadequate in South Vietnam, however, and continued to adversely affect the availability of the aircraft. Although USAF training of VNAF maintenance personnel had been under way for several years, they had not mastered the work well enough by 1964 to do a satisfactory job on an aircraft as simple as the O-1.[43] A primary reason for this was their meagre technical background. Also, the maintenance problem was compounded by a shortage of parts for most of the older model aircraft.

Operational Problems of the O-1

([redacted] Originally a civilian aircraft, the O-1 had been modified by the Army to serve as an observation platform for artillery adjustment and spotting. Its deficiencies--which some Air Force pilots felt should have precluded its use in FAC operations[44]--included no armor protection for either the engine or the cockpit. It also was without self-sealing fuel tanks and consequently was very vulnerable to small arms fire, such as from .30 and .50 caliber guns. This circumstance forced pilots to fly too high, which decreased their ability to identify targets.[45] Also, the plane's one engine was not sufficiently powerful to carry all necessary equipment and still provide for satisfactory flying characteristics. Occasionally it was operated beyond its recommended design limitations. Climb performance at sea level averaged between 500 and 750 feet per minute, which was grossly inadequate. The high wing hampered air-to-air visibility during turns, with a loss of as much as 70 percent visibility.* This proved a special problem when a FAC was orbiting a target while directing air strikes. Lack of

*Air-to-ground visibility was not a problem, however. The large side windows could be opened in flight to enhance ability to see. The air-to-air visibility problem, however, contributed to substantial numbers of inflight collisions with fighters and other aircraft. Great emphasis consequently had to be placed on "see and be seen" procedures.

[redacted]

adequate radio communications also was irritating. The aircraft had no navigational aids except for the automatic direction finder (ADF). Its only armament consisted of four target-marking smoke rockets and racks for these had to be installed.

([redacted]) A major handicap was the O-1's low airspeed (100 mile per hour or less) which made it unduly slow in situations which required a quick FAC response.[46] This problem was pointed up during an operation on 29 February 1964. An HU-1B helicopter was hit by enemy fire while crossing a ridge during a resupply mission near Kontum City in Kontum province. The chopper's pilot contacted the 22d Division, which in turn called for immediate air support. VNAF T-28 strike aircraft scrambled to the target within 20 minutes but the O-1--which had been alerted at the same time--hadn't arrived. Fortunately, an Army O-1 accompanied by an armed HU-1B was in the area and was able to direct an air strike. When the VNAF O-1 finally reached the scene, the action was over.[47]

([redacted]) The O-1 had some supporters, however. It was the most suitable aircraft that was available for the FAC role; it could take off from short, rough runways and also was easily maintained under austere support conditions. Its generally good visibility and slow airspeed made it a satisfactory aerial platform from which to control air strikes. It also was relatively easy to fly and had an endurance of about 4 hours.[48] The Chief of the ALO/FAC Section at 2d Air Division in 1964, Lt. Col. Clarence R. Osborne, Jr., felt that, while not the perfect aircraft, it served adequately in the environment of South Vietnam. Inasmuch as the primary Air Force mission was to help develop VNAF skills, the primary consideration was the ability of the Vietnamese to handle the aircraft. Colonel Osborne believed that the VNAF pilots and support personnel were mastering the O-1 and could maintain it easier than they could a new aircraft, which would require extensive retraining.

([redacted]) He recognized that the O-1 was vulnerable to enemy ground fire, but he pointed out it was highly survivable. That is, because of its slow speed and good maneuverability, it could crashland under difficult circumstances without serious injury to the pilot. He cited such an incident in October 1964, when an O-1 crashlanded on top of a 200-foot jungle canopy, and the FAC climbed down and walked away unharmed. If the United States

[redacted]

became more deeply involved in the war, however, Colonel Osborne considered it advisable to replace the O-1 with a more specialized and versatile aircraft better suited to FAC needs.[49]

The Search for an Improved FAC Aircraft

[redacted] In 1962 and again in 1964 Air Force officials in South Vietnam had recommended using the T-28 as a FAC aircraft. Its performance characteristics compared favorably with those of strike aircraft then in Southeast Asia, which gave it certain advantages over the O-1. That is, because it possessed a performance capability compatible with strike aircraft in South Vietnam, rendezvous problems would be eased and time-to-target cut. Also, it had both VHF and UHF radios and could carry an AN/PRC-10 or AN/ARC-44 for FM transmissions. It could fire smoke rockets from high angles at high speed, make a diving final approach which increased chances for a successful mark, and be used as either a FAC or strike aircraft as needed.[50] Its deficiencies included a single engine and low wing, which hampered visibility;* it was war-weary and problems of maintenance and spare parts were mounting. Also, there was a potential problem in the fact that the T-28 was being used by the VNAF as a strike aircraft and the Air Force might be criticized for participating too actively in the war.

[redacted] American officials in Saigon proposed other aircraft for possible FAC use. Lt. Col. Charles V. Breakfield, III ASOC Deputy Director in 1964, thought that the T-6 might be reintroduced in that role. During the Korean War it had been an effective FAC aircraft and he thought it would do as well in South Vietnam.[51] However, the plane had been out of production for some time so that his suggestion was unfeasible.

([redacted] Another aircraft, the A-1E, was favored by the commander of the 19th TASS in 1964. It could be used in the dual role of forward air control and as a strike aircraft. It

*Either a high or low wing is detrimental to good, all-around visibility if the wing is not placed far enough back of the fuselage.

[redacted]

also possessed a good communications capability, was well suited for firing marking rockets singly or in pairs, and its higher performance and armored protection made it a more satisfactory FAC vehicle than the O-1.[52] Unfortunately, it could not be spared from its combat role (although later, in Laos, it was effectively employed on FAC missions).

([redacted]) The T-33, an older single engine jet trainer, for a time also was considered for the FAC role. It had more than adequate speed, and was capable of loitering for long periods of time. According to one advocate, good loiter capability permitted the pilot to locate targets more effectively.[53] With the introduction of jet fighter aircraft into South Vietnam in the latter part of 1964, the T-33 appeared even more desirable as a compatibility match for them. On the other hand, the plane had certain deficiencies. It had only a single engine, its wing precluded good visibility, and it was no longer in production, which would create a replacement parts and maintenance problem. But, in addition, it could not be spared from training programs in the United States.

([redacted]) Other aircraft, such as the RC-47 and various helicopters, also were examined as possible successors to the O-1, but were deemed impractical.* The Air Force concluded that the only lasting solution was to begin from scratch and design an aircraft particularly suited to a counterinsurgency (COIN) environment and which still could serve in several roles. If such an aircraft could be developed for all the services, then its attractiveness to the Office of the Secretary of Defense (OSD) would be enhanced.

(U) At the end of World War II and again after the Korean War, the Air Force had recognized the need for a special warfare aircraft. In 1946 it visualized this aircraft as being capable of taking off from a 500-foot runway over a 50-foot obstacle and having a minimum speed of 40 knots and a maximum of 250 to 300 knots. For a number of reasons, including budgetary cuts, the aircraft was not built, although requests for such a vehicle surfaced

*Both the RC-47's and the helicopters were subsequently used as FAC platforms, but in special situations well suited to their capabilities.

periodically throughout the 1950's. By 1962 it was clear that a new aircraft was needed which not only could serve in a forward air control role but in support of COIN operations.

[redacted] In August 1962, the USAF Tactical Air Support Evaluation Board suggested that a new COIN aircraft designed to fit a multiple role should, as a minimum, be able to operate from austere bases including unprepared runways. The Board visualized it as a flexible, 2-place, multi-engine plane--protected by armor--that could operate in any type of weather. The Board agreed that its range should exceed 200 miles and be capable of cruising at .55 mach. With maximum gross weight, they projected a takeoff capability within 1,500 feet over a 50-foot obstacle. Ejection seats were mandatory. The year 1965 was set as the target date for the aircraft to enter the inventory.[54]

(U) The U.S. Navy had different requirements for its version of a multi-service aircraft. It desired one that could carry up to 2,400 pounds of armament, have a top speed of 275 knots, a loiter time of 2 hours, and a combat radius of 50 nautical miles. The Navy version was expected to cost $200,000 to $250,000 compared to an estimated $100,000 for the Air Force model.[55] The U.S. Marines, on the other hand, desired a small fixed-wing plane to serve as an escort to troop-carrying helicopters. Marine aviators believed that such an aircraft could provide more effective and cheaper fire support for helicopters than the Army's new helicopter gunships.[56]

[redacted] While the various proposals for a COIN aircraft were being scrutinized by the services, pilots in Vietnam also were discussing the needs of a FAC aircraft and offering their ideas. One FAC officer suggested such an aircraft should have the following characteristics:

1. Armor for protection of crew and essential components.

2. Armament for both target marking and pinning down a mobile target until heavier guns could be brought to bear.

3. Self-sealing fuel tanks.

[redacted]

4. Multi-engines.

5. Good climb performance to at least 5,000 feet.

6. A broad flight envelope to permit loiter and reconnaissance at low airspeeds and to permit fast reaction to distant locations.

7. A mid-wing set back from the cockpit to enhance all-around visibility.

8. At least 2 crew positions in tandem arrangement with bulbous canopy or windows for maximum possible visibility to the front and sides, particularly straight down the sides.[57]

[redacted] Mr. McNamara's decision was that a single aircraft should be procured not only to fill all the services' requirements but also to provide a cheap, all-purpose plane for young emerging nations. He selected the Navy to serve as executive agent for the project. In December 1963 proposals were sought from the aircraft industry for an all-purpose Light Armed Reconnaissance Aircraft (LARA).[58] Patterned after the Marine specifications, it was projected as a small, 2-man vehicle which would be easy to maintain. Beginning in March 1964 a joint service board evaluated several aircraft industry designs, and in August it selected the North American Aircraft Corp. to build and test a prototype.[59] The North American design called for an armor-protected aircraft with a carrying capacity of 1,500 pounds, having a radius of 300 miles, a speed of 250 knots, and twin 650-horsepower T-76 turboprop engines. It would have five racks for carrying ordnance and four fixed 7.62-mm guns internally mounted in sponsons attached under the fuselage. Large low-pressure tires were to be included to facilitate landing in primitive areas. To afford as much visibility of the terrain as possible, the contractor proposed mounting the fuselage to the wing at shoulder height and positioning the pilot and observer ahead of the propellers. The plane's tricycle landing gear was convertible for amphibious landings.[60]

(U) Because of various production difficulties and delays, the Air Force version of the OV-10 did not enter its inventory until 1968, 3 years after the original target date. In the interim,

[redacted]

the O-2A--an off-the-shelf aircraft*--was procured to supplement the O-1. But even this plane did not become available to the Air Force in significant numbers until 1966.

Radio and Communication Difficulties

(S) The problem of air-to-ground communications, mentioned earlier,+ inhibited close coordination between ground troops and aircraft throughout the 1961-1964 period. The PRC-10 (FM) radio, provided in large numbers to ARVN units by the U. S. Army, was of little use in communicating with VNAF liaison aircraft which used VHF frequencies. The Air Force had not equipped its incoming FAC teams with radios, having assumed the Army would provide the necessary units for the tactical air control parties. As a result, the first Barn Door FAC's had been forced to improvise as best they could. It took them 6 weeks to acquire two complete AN/TRC-7 radios, including a hand generator and a 30-foot antenna, which were immediately set up at the Air Operations Center for field use.[61]

(S) Unfortunately, both the TRC-7 and PRC-10 were of limited value, having an insufficient number of channels and limited frequency spread. They also were too heavy, too complicated to change frequencies, hard to maintain, and too fragile for the rugged use they would be subjected to.[62] Although the PRC-10's limitations should have made it impractical for use in the L-19, it was pressed into service as an emergency measure until a better radio could be found. The predominant jungle terrain, acting as a cushion, produced a high attenuation effect, thereby limiting the radio's range to about 10 miles (some thought only 3 miles). Consequently, the aircraft had to be almost directly overhead in order to maintain ground contact. Designed for ground-to-ground communications, the size of the PRC-10 also caused problems in the cramped interior of an L-19. Strapped to the back of the pilot's seat, it interfered with the VNAF observer's movement in the rear seat.[63]

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*A version of the Cessna 337 Super Skymaster.

+See Chapter II, p 15n.

[redacted] 2d Air Division officials realized that, unless compatible radios could be found, close air support operations would be substantially hampered. During their search for alternatives, they learned that more than 130 TRC-7 radios were scattered throughout the ARVN battalions and regiments which might serve their purpose. Whereupon, the Division asked MACV to release enough of them to outfit the tactical air control parties. MACV agreed to do so, but when the U. S. Army advisors in the field were contacted about them, many did not know of the radios' existence. This was partly attributable to the fact that some ARVN regimental commanders closely guarded their sets at headquarters, refusing the TACP's permission to use them because there were "only" two or three in the regiment and they were saving them as backups for the other sets. The result was that the tactical air control parties received very few TRC-7's.* [64]

([redacted]) During 1962 the Air Force also sought to alleviate the air-to-ground communications problem by ordering installation of AN/ARC-44 (FM) radios in all liaison aircraft. But this work would not be completed until September 1963.[65] Until then, FAC operations continued to suffer from inadequate communications. The VHF set in the VNAF liaison planes, for example, had eight preset transmitting frequencies and was operated by a hand crank.[66] The airborne FAC, therefore, had to be a "one-man band"; in the heat of battle, while attempting to keep track of the ground and air action through the window, he had to simultaneously operate the obsolete radio.

([redacted]) Liaison air crews performing convoy escort duty frequently found they could not communicate with the convoy because it lacked radios or the ones they had were the wrong kind.[67] Airborne FAC's repeatedly experienced similar difficulties of incompatibility in air-to-ground communications.[68] Eleven months after the first Barn Door FAC's arrived in-country, the problem

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*Possession of a radio was an important status symbol for Vietnamese officers during 1964-1965. One former FAC noted that ARVN and VNAF jeeps, staff cars, and offices had tactical radios, many of them inoperative, which contributed to the shortage outside Saigon. FAC's often had to use flashlight batteries, soldered together, to operate the few radios in their possession since battery packs quickly disappeared after their arrival in South Vietnam. [See Ltr, (S), Col Mellish to Hq USAF (Off of AF Hist, 23 Jul 71].

[redacted]

remained largely unresolved. According to a December 1962 Farm Gate study:

> The VHF-UHF-FM complex causes much confusion and reduced effectiveness. Particularly in Joint Operations, such as heliborne escort missions, the incompatibility of the various radios becomes a critical factor. The communications backbone of air support of ground forces in SVN is the PRC-10-ARC-44* combination. Although these radios permit air-to-ground contact, the quality of communication is only fair at best... It is strongly urged that the development and procurement of a compatible COIN air-to-ground radio system be given the highest priority.[69]

([redacted]) The incompatibility of communications equipment also posed a safety problem between L-19/0-1's and Army helicopters. The liaison fleet was equipped with VHF radios, but many of the choppers were not. The latter had FM radios but used frequency bands below the capabilities of the PRC-10's in the liaison craft. Some helicopters (H-21's) did have UHF radios in 1963, but most liaison aircraft did not. As a result, during operations involving both airborne FAC's and helicopters, the former had to fly high in order to remain clear of the choppers. This problem was partially alleviated after the ARC-44 FM radio was installed in liaison and strike aircraft.[70]

([redacted]) In the spring of 1963, in a further effort to alleviate the communications problem, the 2d Air Division turned to the Collins KWM2A single sideband set as a possible ground-to-ground system. A table model requiring permanent antennas and a stable 110 volt AC current (generally not available in Vietnam), it did not have the mobility of a battery-operated backpack. It was selected for issue to TACP's down through division level. Though cumbersome, it could be used at field headquarters during field operations, thus improving ground-to-ground communications. It also became a primary point-to-point radio in the VNAF Direct Air Request Net. 2d Air Division justified its use as an operational necessity. Its plans called for all ground ALO's to have one by April 1964.[71]

*The ARC-44 was used by the Army in ground operations.

([redacted]) During the first half of 1963, ALO's and FAC's were using three different types of portable radios--all having various limitations. The AN/PRC-47 was a single sideband set used by ground ALO's to call in immediate requests for air support. Weighing more than 80 pounds, it was difficult to carry, had poor propagation reliability in the jungle, and its batteries became exhausted after 2 hours exposure in the sun. Its reliability also was questionable beyond 100 kilometers. The AN/PRC-41 UHF radio was not used extensively because many aircraft were not equipped with UHF. Like the PRC-47, it was too heavy for field operations. The AN/PRC-25 was an FM set, superior and more reliable than the PRC-10. Its greatest disadvantage was that the operator had to use a headset because it lacked a monitoring speaker.[72]

([redacted]) The 2d Air Division also tried the AN/PRC-71 FAC-PAC, and for a time thought it would be the answer to the communication problem. A single sideband set with FM/UHF/VHF capability, the unit weighed approximately 50 pounds and could be carried through the jungle terrain and used to make quick contact with the airborne FAC. But after some experience with it, enthusiasm for the set dimmed. It had only two crystal-controlled channels, one each on VHF and single sideband, and four on UHF. It also proved to be more cumbersome than originally believed. With the subsequent shift of emphasis from the ground FAC to the airborne team, requests for the radio dropped, although some were ordered and used after 1964.[73]

Supply and Maintenance

([redacted]) Supply and maintenance problems plagued the USAF effort in Vietnam throughout the early 1960's. Before 1961, when Air Force personnel were serving in advisory capacities only, all support for USAF units in South Vietnam was furnished by Clark AB in the Philippines. This arrangement worked well while the war remained on a small scale. But with the arrival of Farm Gate and Barn Door personnel in 1961 and 1962, Clark's supply facility became overburdened and severe shortages followed.[74] As noted earlier, Barn Door personnel who passed through Clark were issued no personal equipment and felt the pinch immediately.

[redacted] Supply and maintenance problems were further compounded because liaison aircraft and support equipment used during the first years of U.S. involvement in Southeast Asia were aging and rapidly becoming obsolete. A bench stock of supply parts for replacement was almost nonexistent. The loss of supplies through theft in South Vietnam, and the length of time it took to repair broken items, intensified the shortages.[75] Part of the logistic support problem stemmed from the fact that it was difficult to develop accurate planning factors because of the age of aircraft in service, the many different models being used, length of the supply lines, and the lack of facilities.[76] Also, prior to 1961, few people had anticipated the deployment of substantial numbers of air units to South Vietnam. When it was decided to increase the Air Force role, the Army and Air Force needed time to sit down and coordinate their activities and requirements. The Air Force, which had expected the Army to provide the equipment for the tactical air control parties, in accordance with their previous agreement, was forced to use the old equipment until such time as newer material could be procured.

([redacted] A time lag of up to 30 days occurred before replacement parts could be obtained. This, of course, constituted an unacceptable delay. Subsequently, Speed Through Air Resupply (STAR) procedures were modified and introduced into Southeast Asia in mid-August 1963, cutting the time lag almost in half.[77] Unfortunately, O-1 parts were not on the STAR list and stocks dropped to near zero as demands for increased flying rates continued. The consequence was a skyrocketing cannibalization rate.[78] Shortages in personnel equipment also became critical. For example, when the 19th TASS prepared for combat in 1963, it found there were no crash helmets available for its personnel. By the end of the year only 10 percent of the pilots had them. USAF FAC's working with ARVN units often had to be equipped through U.S. Army advisory team sources.[79]

([redacted] As a growing number of supply items became scarce, requisitions for top priority STAR procedures increased and began to encumber the system and slow it down.[80] The STAR system soon was so abused that top priority requests became merely "normal" requests. In February 1964 PACAF requested that the O-1F be placed under modified STAR procedures, thereby easing its parts shortage, but this action did not resolve the maintenance problem completely.[81]

IV. THE AIR REQUEST NET

[redacted] As has been noted, between 1962 and 1965 operation of the Tactical Air Control System in Vietnam was handicapped by poor logistical support and personnel shortages. It also was adversely affected by the inexperience of Vietnamese military men in working with it. The system's primary purpose was to "provide the commander of the U.S. Military Assistance Command, Vietnam, and U.S. and RVN air commanders an effective and quick-reacting means for planning, directing, coordinating, and controlling air operations in the Republic of Vietnam."[1] However, the Barn Door FAC's who arrived in South Vietnam in 1962 soon discovered that ARVN commanders had little or no experience working with air units and were improperly using or did not know how to use the U.S. Army radio equipment which they possessed. Further, many were ignorant of procedures for requesting air support through their Army Air Request Net, having received no instructions on how to operate it.[2]

[redacted] One of the first tasks undertaken by the Air Force FAC's was to teach ARVN officials about the net and the Tactical Air Control System. The two Air-Ground Operations School briefing teams which travelled throughout South Vietnam in 1962 succeeded in alleviating much ARVN apprehension about the use of close air support and the TACS. They were, however, not entirely successful in convincing Vietnamese commanders that the operation of the Army Air Request Net was their responsibility. ARVN officers had not accepted that fact partly because U.S. Army advisors had failed to emphasize the net's importance. Since some of these advisors were highly critical of the net for the inadequate air support received,[3] their attitude did not help foster ARVN confidence in it. The interest generated by the AGOS briefings, however, did result in some improvement in the operation of both the net and the TACS.[4]

([redacted]) The Army Air Request Net--based upon the Air-Ground School system but modified for South Vietnan--provided for two types of requests for air support, the preplanned, and the immediate. Each called for using a different procedure. Thus, in the case of preplanned air requests, aircraft were to be on target 3 or more hours after the request was received by the Air Support Operations Center. Since most ARVN operations were conceived at the division level, the preplanned request originated

[redacted]

[redacted]

ORGANIZATIONAL CHANNELS FOR REQUESTING PREPLANNED AIR SUPPORT
COMMAND POSTS DEPLOYED

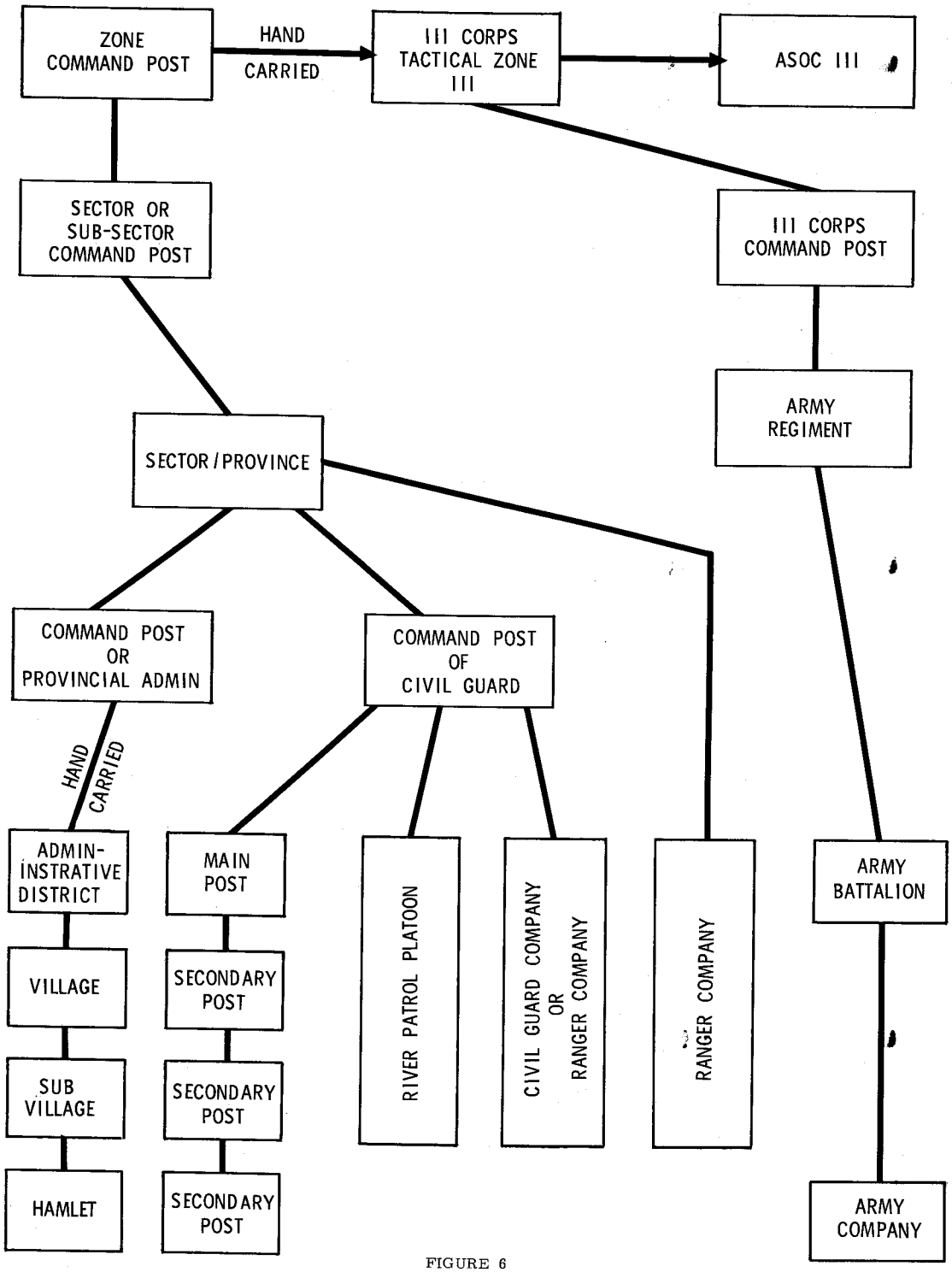

FIGURE 6

[redacted]

there, although it could be initiated at any level of command, down to battalion.[5] A preplanned request from a battalion commander would pass through Army S-3 (Operations) air channels to the regiment S-3, who would bring it to the attention of the ARVN regimental commander. If the latter had artillery support, he might "kill" the request and inform the battalion commander that artillery would be used. If artillery was not available, then the regimental commander--if he did not refuse it for political reasons*--would pass the preplanned request to the division commander. If the latter approved, he would send the request to the corps commander, who would repeat the process. If the request was not blocked by political or operational obstacles, it was then forwarded to the VNAF Air Support Operations Center for execution.[6] The entire process could take from 3 hours to more than a day.[7]

[redacted] The immediate air request travelled a slightly different route. If an infantry company encountered severe enemy opposition which required an immediate air strike or artillery support, its commander would send the request to the S-3 (air), normally located at the battalion Fire Support Coordination Center. This call for air support was then subjected to the same decision-making process as the preplanned request. If the decision was to launch air strikes, the request was sent on to regimental headquarters. Prior to 1 May 1963, the regiment had to obtain division approval before forwarding the request. But after that date, it was authorized to bypass the division and to send the request directly to the Corps Tactical Operations Center (CTOC). The division could only monitor the request and had no authority to disapprove it. The system's response under this procedure could take from 15 minutes to 3 hours, depending on the availability of aircraft to the ASOC. The critical factor was to have a FAC ready in a liaison aircraft. The longer it took to place an L-19 over the target, the less effective the air strike would be.[8]

[redacted] Another distinction between preplanned and immediate air requests was that the former was coded, but immediate air requests were sent in the clear. Since the Viet Cong were already aware of the operation, there was no need for secure radio communications in the latter instance.+

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*Often the ARVN military commander and the province chief were the same man, and it might be to his political advantage to refuse a request. That is, he had to constantly keep in mind the position of his superiors in the government.

+In recent major conflicts, immediate requests for air support have always been transmitted in the clear. In an extremely dangerous tactical situation, there is no time for the sender to encode a message or the receiver to decode it.

[redacted]

The Vietnamese Command System

[redacted] The Vietnamese command system also hampered early TACS efforts to provide effective air support because of its inefficiency and inflexibility. A primary reason for this situation was that few Vietnamese military men in the upper echelons of command had authority to approve air requests. In I Corps, for example, only three officers--the corps commander, his chief of staff, and the assistant chief of staff--were authorized to do so. ARVN commanders were reluctant to delegate this authority to duty officers, not only because they feared being blamed should they approve an air strike which caused friendly casualties, but also because of the turbulent political situation in South Vietnam. The Vietnamese government found it difficult to weed out those who secretly opposed it or who might be Communist agents. Authority to approve or disapprove air strikes was therefore a powerful weapon which, in the wrong hands, could cause great havoc and damage to the government. Consequently, only the most trusted individuals were authorized to approve air attacks.[9]

[redacted] The result was that it was frequently difficult to obtain authorization for air strikes in time to achieve the greatest military effect.*[10] According to Maj. Gen. Rollen H. Anthis, commander of the 2d Air Division (1962-1964)--commenting on the difficulty of getting air strike approvals--"for the VNAF to send a strike airplane out and hit a target, they had in many cases to go directly to the President." VNAF personnel in the AOC had no authority to approve or direct air strikes, but in some cases they could get that authority from the Vietnamese Joint General Staff (JGS). General Anthis noted further that:

> In order to meet immediate requests you had to wait until they [VNAF personnel in the AOC] could dig somebody out of bed in the middle of the night somewhere, or ten o'clock in the morning to give the approval on something that was needed right away, particularly when the airplanes were in the air adjacent to the spot [of a ground action].[11]

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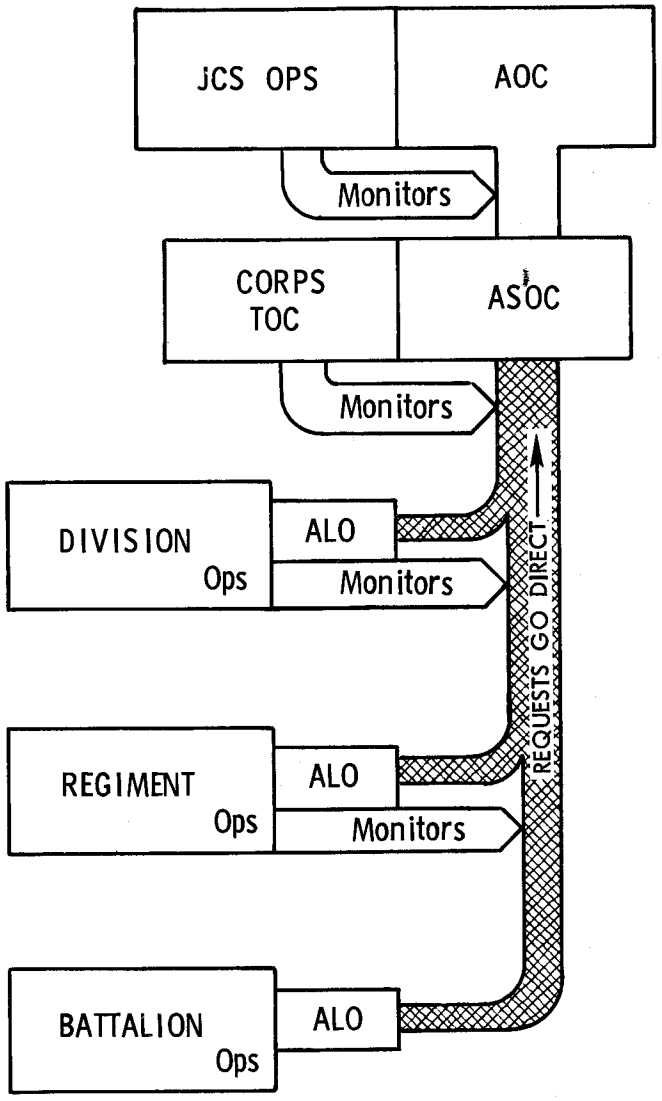
*In one episode in 1963, a FAC flushed more than 200 Viet Cong into the open and immediately called for air support. It took only 25 minutes for fighters to respond, but the enemy had quickly faded into the jungle. In the environment of Vietnam an almost instantaneous air response was frequently vital.

[redacted]

AIR FORCE IMMEDIATE AIR REQUEST NET



FEATURES : 1. REQUESTS GO DIRECT TO ASOC
2. INTERVENING ECHELONS MONITOR
3. IF NO DISAPPROVALS ARE HEARD IN 5 MINUTES, REQUEST IS CONSIDERED APPROVED.

FIGURE 7

([redacted]) In I Corps there were occasions where a preplanned request would remain unsigned in headquarters overnight because no one on duty had authority to approve it. Consequently, when it finally reached the ASOC the next morning, it became an "administrative" immediate air request.[12] The authorization problem also affected immediate air requests. Instead of taking 15 to 30 minutes to fill an urgent call for air strikes, it often took more than 90 minutes. The average in I Corps in 1962 was 1 hour 40 minutes.[13]

([redacted]) A year later the situation had not changed much. An Air Force study undertaken in late 1963 analyzed reaction time and aircraft control procedures over a 3-month period between 1 June and 31 August 1963. It was found that, although the average time for the involved TACS elements to plan, coordinate, and direct action for each request was 7.3 minutes, the overall reaction time from the moment a ground commander initiated the request until aircraft reached the target was 1 hour 40.9 minutes. It took an average of 44.7 minutes to process the initial request through the Army air-ground net and 48.9 minutes for aircraft to scramble, rendezvous, and fly to the target.[14]

([redacted]) Delays in obtaining authority to launch air strikes were compounded by the reluctance of ARVN and VNAF officials to properly utilize the request net. Some duty officers were not sufficiently familiar with procedures for processing requests. Still others were found, on occasion, asleep on duty and did not hear requests coming in. From all appearances, it would seem that the Vietnamese lacked motivation to do their job.* In the early years of the war, having been repeatedly frustrated by the difficulty of getting their air requests approved, the Vietnamese became discouraged and

*Concerning Vietnamese attitutdes, one American ALO/FAC has commented: "...the Vietnamese never did anything stupid--they only appeared stupid or inept because...of the inner issues at stake." Their apparent lack of motivation often stemmed from the problems they faced getting requests cleared. Also, an abundance of Army firepower inhibited ARVN commanders in calling on the VNAF for close air support. [See Ltr (C), Col Mellish to Hq USAF, Off of AF Hist, 23 Jul 71.]

consequently did not put forth a maximum effort.[15] Some ARVN commanders, their requests for air support having been repeatedly ignored, just stopped sending them in. An American ALO/FAC reported that:

> We have found that many air requests are never submitted because the ARVN representatives will make a phone call to the higher headquarters trying to get a feel for whether air will be available. If he is told that air probably will not be made available then he will seldom follow up with an air request... There have also been cases where an air request had been shortstopped somewhere along the line. It has been hard to track down these stumbling blocks.[16]

([redacted]) There were numerous occasions when an ARVN commander would send in a request for air support and--contrary to established procedures--would not be notified whether it had been approved or not. His request might have been stopped at regimental, division, or corps levels. He would not be told about a disapproval, or even if his request had reached VNAF channels, unless he initiated an extensive follow-up action of his own.[17]

([redacted]) These basic deficiencies in the Vietnamese system were seemingly endless. A III Corps USAF FAC stationed at Baria in Phuc Tuy province in 1963 noted that during his entire tour, many ARVN requests had been forwarded through the net asking that a VNAF L-19 be staged at Vung Tau for visual reconnaissance and FAC air cover. However, not a single one of these requests ever reached the VNAF Air Support Operations Center. Nor was the ARVN commander informed that the requests were disapproved.*[18] It therefore was not surprising that ARVN commanders remained apathetic and skeptical about the air request system and it was difficult to convince them to use it.[19]

([redacted]) With the Army Air Request Net unresponsive to the needs of the ground troops, there were occasional efforts to circumvent it. This was particularly true in the case of U.S. Army and ARVN Special Forces which did not possess artillery.

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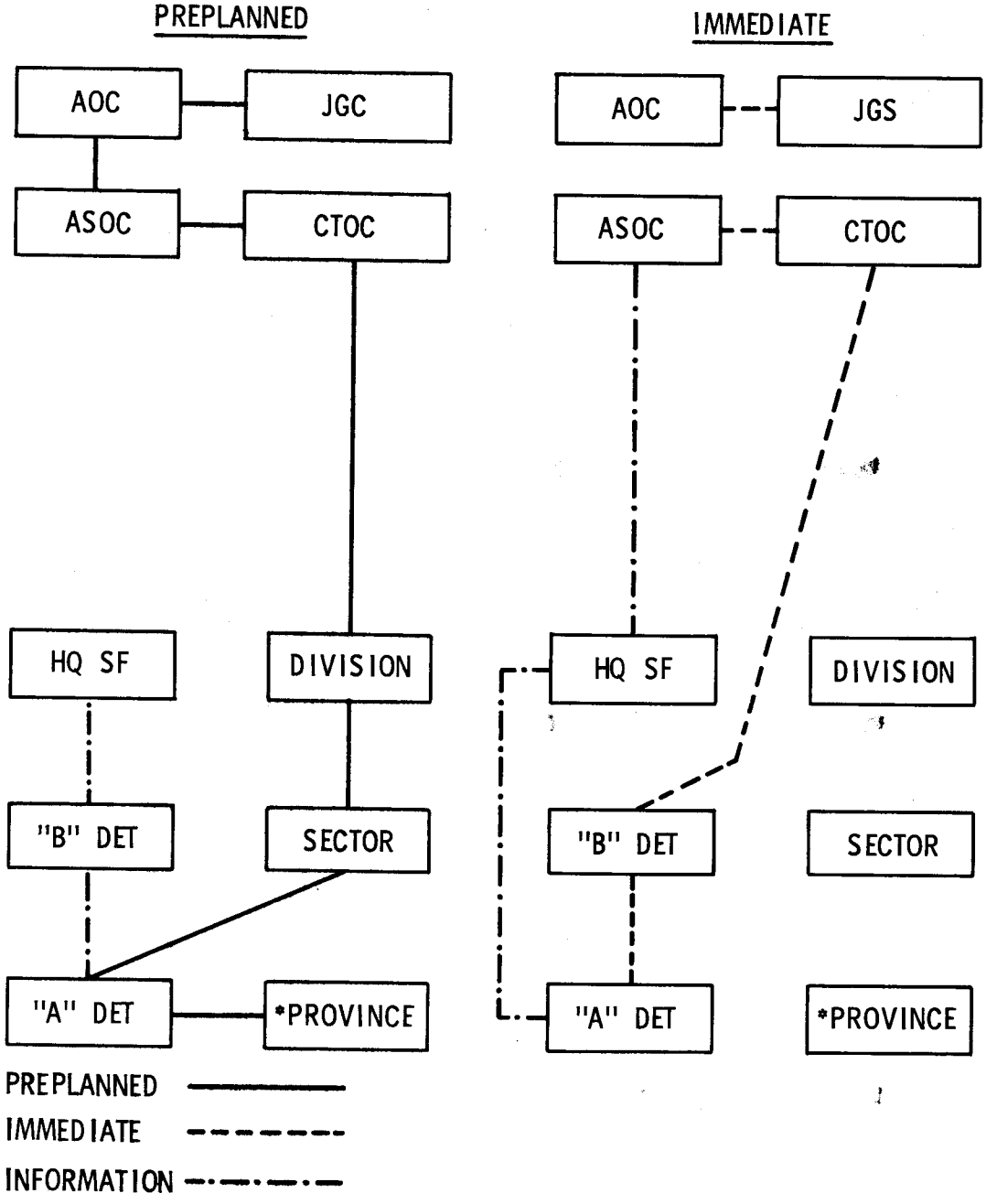
*A Tactical Air Command letter to the author, dated 23 July 1971, advised that L-19's were not available at the time of this incident. However, the ARVN commander at the very least should have been informed.

ARMY AIR/GROUND-SYSTEM

SPECIAL FORCES



•ALL AIR SUPPORT REQUESTS MUST HAVE APPROVAL OF THE RESPECTIVE PROVINCE CHIEF OR HIS COMPETENT REPRESENTATIVE.

FIGURE 8

They were often confronted by larger enemy forces and had no time to wait for their air requests to traverse through the net. Consequently, they established a quasi request net of their own which bypassed division and sector headquarters. Thus, a Special Forces unit request originating in the field was sent directly to the base team camp and from there to an AOC in the U.S. Embassy* and then on to the operations centers (CTOC and ASOC). The latter, in turn, ordered Farm Gate aircraft to provide immediate strike support.[20]

([redacted]) The system worked so effectively that it finally got the Special Forces in trouble. In the spring of 1963, a IV Corps province chief decided to occupy an area called the Seven Mountains Region. The corps commander disapproved the proposed operation, but the province chief decided to proceed with it anyway. The Special Forces within his jurisdiction called for air support through their own net and Farm Gate units responded with 2 days of activity which produced the surrender of a large number of Viet Cong prisoners and sympathizers. The Vietnamese Joint General Staff was disturbed after learning of the operation, partly because the Special Forces had bypassed part of the established air request network. As a result, the Special Forces net was ordered discontinued and, thereafter, the number of air requests from those units diminished because of the slow response to immediate requests.[+21]

The Air Force Tries to Improve the Request Net

([redacted]) Seeking to improve the air request system, the Air Force reappraised the techniques used and studied possible

*The Combined Studies Division (CSD), which was attached to the U.S. Embassy in Saigon, had an Air Operations Center. Radio operators on duty around the clock were responsible for monitoring continuous wave (CW), coded transmissions. The Special Forces base camp would contact the CSD Operations Center at the same time it contacted the ASOC. The CSD unit would call Detachment 2, the Farm Gate unit, to generate the aircraft and also would try to expedite clearance for the strike. [See Intvw (S), author with Maj. Charles W. Brown, Air Ops Officer, Combined Studies Div (Aug-Nov 62), 28 Apr 71].

+By 1964 the Special Forces began operating within the Tactical Air Control System. Detachment 2A's 1st Air Commando Group served as the primary agency for providing them close air support.

[redacted]

alternatives. One proposal called for adopting the method used by Strike Command. Under the Strike Command system, an immediate air request originating with a unit commander would pass to the Air Force ALO, who immediately contacted the Air Support Operations Center. Other ALO's at intermediate army command levels would monitor the radios and inform their respective commanders of the request. If the latter did not disapprove within 5 minutes, the request was automatically approved and strike aircraft scrambled. The Air Force would know that a request had been initiated and would have ample time to respond with the most suitable aircraft. Unfortunately, in Vietnam there were insufficient single-sideband radios for the ALO's to effectively use the Strike Command system and it would take until April 1964 to have them in place.[22]

[redacted] In August 1962 a 2d ADVON MAAG Symposium recommended the introduction of a new request format and numbering system. Under this system, the disposition of a request at each level of command would be recorded and the requesting unit would be kept advised of its progress.[23] This suggestion was not acted upon at that time but reappeared in recommendations made a year later by the Anthis team (see below). In the meantime, initiators of requests were still not always being advised about the disposition of their petitions for air support.

[redacted] Also in 1962, in an effort to decrease response time and improve the coordination of immediate requests, ALO's began monitoring all air requests. When they heard one coming through, they would alert the Air Support Operations Center to expect it from the battalion or regiment. If it took 3 or 4 hours, as it sometimes did, they would try to find the bottleneck, which might be someone not monitoring their radios or perhaps a duty officer with no authority to approve the request. Occasionally, officers on duty simply did not know how to handle the requests after they arrived.[24]

[redacted] To eliminate such bottlenecks, the ALO's sought to impress upon ARVN commanders that immediate requests had to be processed without delay and that it was essential to delegate their approval authority. Grudgingly, they did grant the authority to their duty officers and immediate requests began taking precedence over other close air support missions. If the ASOC had an airborne aircraft performing a lower priority mission, it could be diverted through the Control and Reporting Post. If an aircraft was not available, another could be scrambled from alert.

[redacted]

As a last resort, the Air Operations Center could direct the transfer of an aircraft from another corps.*25

([redacted]) In the spring of 1963 Generals Anthis of 2d Air Division, Nguyen Khanh of ARVN, and Howard K. Eggleston of the U.S. Army, toured the III Corps area to determine ways to improve the air request system. One recommendation resulting from their tour was that Army divisions should establish a separate communications net in order to separate immediate close air support requests from command and administrative traffic. They also recommended to the Joint General Staff that, when battalions were operating independent of their regiment, the request should be forwarded "from battalion direct to division, with regiment monitoring. Division should forward the request to the AOC/ASOC by the fastest communications available, preferably by voice transmission in the clear for immediate requests."26

([redacted]) To improve Vietnamese ability to handle immediate air requests, the team of generals suggested practice sessions be conducted in submitting requests. This would enable top officials to evaluate the processing and handling procedures at each headquarters. They further proposed certain procedures be adopted to inform lower echelons of the status of their requests and to trace requests by faster and easier methods. The latter could be done by assigning one number to each request, retaining these numbers through all channels of command, and logging them at each headquarters. As a feedback, requesters were to be informed of air strikes undertaken as a result.27

([redacted]) The team recommended to the JGS that ARVN units be encouraged to draw upon the experience of the ALO's and FAC's and permit those "highly qualified specialists" to participate in planning sessions and to assist in preparing requests for air support. They suggested that U.S. Army advisors and ARVN personnel be encouraged to attend the AGOS indoctrination team presentations and that ARVN commanders be urged to provide more information on the circumstances surrounding a given air request

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*In situations where American lives were in danger, ALO's were instructed to ignore the Army Air Request Net and call for air support directly from the ASOC. An ARVN unit in dire straits similarly was to alert the center through the ALO of an incoming emergency request.

[redacted]

so a more accurate decision could be made about the number of aircraft needed for a specific support operation.[28]

[redacted] In the latter part of 1963 the Air Force Test Unit-Vietnam* undertook a study of the Tactical Air Control System problem to determine ways of improving it. In its report submitted on 25 February 1964, the unit basically corroborated the findings and recommendations of the Anthis team and those of the 1962 2d ADVON MAAG Symposium. It recommended that the Air Support Operations Center be notified of a request as it was initiated. Thus, early action could be taken to alert aircraft before the request arrived through channels, which would be especially helpful for the slow FAC aircraft. The test unit also recommended that requests for immediate air support go directly from the field commander to the corps.[29]

A New VNAF Air Request Net

([redacted]) Lt. Gen. Joseph Moore, who succeeded General Anthis as commander of the 2d Air Division on 31 January 1964, adopted the basic recommendations of the Anthis team and the Test Unit report when he established a new VNAF Air Request Net on 15 May 1964. Using streamlined methods, the ASOC had time to get aircraft airborne and ready to strike the target upon approval.[30] By 1 December the VNAF net had been established. It was manned by 50 ALO/FAC's, 17 ALO's, and 4 ASOC's, with radios and operators supporting the Tactical Air Control Parties in the field.[31] ARVN commanders, however, still sensitive about their prerogatives, remained concerned about being bypassed in the request system and were therefore reluctant to implement it. However, as results began showing the value of the improved system, their opposition dwindled.[32]

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*Originally consisting of 12 men, the Air Force Test Unit was organized in November 1962 for the purpose of conducting tests aimed at improving USAF operations in Southeast Asia. In October the U.S. Army had established its own test unit in Vietnam. [See Herman S. Wolk, USAF Plans and Policies: R&D for Southeast Asia, 1965-1967 (Off of AF Hist, Jun 1969), p 7.]

[redacted]

[redacted] The new VNAF Air Request Net, operating with more personnel, adopted the Strike Command procedures which had been suggested in 1962. The net was supported by the TACP's, consisting of both U.S. Air Force and VNAF Air Liaison Officers who were equipped with FM, UHF, and SSB radios. Located at regimental or battalion command posts, these tactical air control parties were in direct contact with the Air Support Operations Centers, which would prepare to act upon the immediate air requests even as they travelled through the ARVN net. The 5-minute limitation for intermediate level approval/disapproval was established. The system worked well for immediate air requests, cutting response time perceptibly (in one instance reducing it from the average of 48.9 minutes to 8 minutes).[33]

[redacted] Soon after General Moore implemented the VNAF net, a 2d Air Division briefing team travelled throughout South Vietnam to explain the new system to U.S. Army and ARVN commanders, province chiefs, and sector advisors. The briefings proved successful and field commanders who had been skeptical of getting a response subsequently began to use the net more often.*[34]

([redacted] Although the VNAF Air Request Net was a bright hope for improving close air support, problems remained. Some difficulties still were encountered in getting requests approved rapidly and the originators were not always notified of the disposition of their requests. For example, Lt. Col. William R. Eischelberger, Deputy Director of the I Corps ASOC, reported in July 1964 that Army advisors in his area still were having problems convincing ARVN officials to use the net because the latter were not being notified of the status of previous requests.[35] Nevertheless, the system improved as VNAF and ARVN officials became better acquainted with it.

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*That the VNAF net was more readily accepted may have been due, in part, to the fact that--after President Diem's overthrow--ARVN commanders were more willing to delegate approval authority without fear of reprisals.

[redacted]

V. THE ARMY-AIR FORCE DISPUTE OVER CENTRALIZED AIR CONTROL

[redacted] Although the new VNAF Air Request Net did improve the efficiency of close air support, it compounded another problem which had been festering since 1961--a difference of views between the Army and Air Force over centralized control. By the end of 1963 four air organizations were operating in South Vietnam simultaneously: the Vietnamese Air Force, U.S. Air Force, U.S. Army aviation, and U.S. Marine aviation, with the Army operating the largest air force in the country.*

[redacted] There also were three independent chains of command and control: the VNAF's, which extended through ARVN channels to the Joint General Staff; the U.S. Air Force's, whose 2d Air Division was subordinate to COMUSMACV; and U.S. Army and Marine aviation units, operating through U.S. senior corps advisors to MACV. In addition, two separate systems had developed for controlling air power: the VNAF/USAF Tactical Air Control System, with its Air Operations Center, Control and Reporting Posts, and Air Support Operations Centers; and the Army's Air-Ground System, which controlled Army and Marine aviation through separate aviation headquarters established by MACV on 8 July 1963 in each corps area.[1] Also, for a time in 1964, the VNAF Air Request Net constituted a third control system but it was created to supplant the other systems.

[redacted] From the beginning of its involvement in Southeast Asia, the Air Force had urged establishment of a centralized air control system. In December 1961 Gen. Emmett O'Donnell, Jr., Commander in Chief, PACAF, recommended--and Secretary McNamara had approved--establishment of a joint operations center and tactical air control system. All air units were to be "coordinated and directed through the JOC,"[2] although forces were to be committed and controlled nationally.

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*Of the 681 airplanes and helicopters in South Vietnam in December 1963, the U.S. Army had 325 or 47 percent of the total. The Air Force had 117, the VNAF 228, and the Marines 20. [Jacob Van Staaveren, USAF Plans and Policies in South Vietnam, 1961-1963 (Off of AF Hist, Jun 1965), p 46.]

[redacted]

([redacted]) The Army, however, which by the end of 1963 was the largest American service in Vietnam,* was strongly opposed to a system of centralized air control. It believed improved air support could be provided through a decentralized system similar to that used by the U.S. Marines during the Korean War. That is, a Marine air wing with about 75 aircraft was assigned to each Marine division for no other purpose than close air support. Because Marine air and ground units conducted constant practice sessions using compatible radio equipment, they had perfected a high degree of coordination.+ The Army decided to work toward a similar close air support system.[3]

(U) But there was another reason behind the Army's opposition to central air control, which had to do with its long-term efforts to increase the mobility of its troops. As early as 1947, Maj. Gen. James M. Gavin, a paratrooper commander during World War II, had visualized that airborne troops in the future would

> ...fly in vehicles designed to land on roads and in fields and if their plan requires a withdrawal, troops will move to prearranged take-off areas after they have accomplished their ground mission and will there be picked up and flown back to their bases.[4]

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*Of the nearly 16,000 U.S. military personnel in South Vietnam at the end of 1963, 10,119 were Army, 4,630 Air Force, 757 Navy, and 483 Marines.

+However, during the Korean War Army Generals Walton H. Walker and Mark Clark both stated categorically that the Marine system was not valid for the Army. Walker, Eighth Army commander, stated on 25 November 1950 that he agreed Marine air support was excellent, but said that "if the people who advocate that would sit down and figure out the cost of supplying air units for close support only, in that ratio to an army of the size we should have, they would be astounded. Why, even if our economy were many times as strong as it actually is, we couldn't support such a program." General Clark, Commander in Chief, Far East, made the same point on 11 August 1952 in a letter to all his major subordinate commanders. [Walker Intvw, 25 Nov 50, in Barcus Board Rprt, vol 1, bk 2, pp 227-228; ltr, Clark, CINCFE to CG, 8th Army, et al., subj: Air-Ground Ops, 11 Aug 52].

(U) Following separation of the Air Force from the Army in 1947, however, the latter became dependent upon the Air Force for tactical air support, tactical airlift, and long range air transport. More than a decade later, Gen. Maxwell Taylor, a former Army Chief of Staff, wrote that the Army had been "a dissatisfied customer," that the Air Force "has not fully discharged its obligations undertaken" at the time of separation. He noted that:

> As a result of the controversies arising from the dependence of the Army on the Air Force, the two services have been constantly at loggerheads. They have been unable to agree on a doctrine of co-operation in battle... Because of the very high performance of their airplanes, designed primarily to meet the needs of the air battle today, the Air Force is not equipped to discharge its responsibilities to the Army in ground combat ...I am convinced that the Army must be freed from this tutelage and receive all the organic means habitually necessary for prompt and sustained combat on the ground. It should have its own organic tactical air support and tactical air lift.[5]

(U) The Army, which had begun to experiment with new concepts of tactical air mobility and to study ways aviation could be substituted for conventional ground transportation, in 1961 found a sympathetic ear in Secretary McNamara. The Defense Chief authorized the Army to reexamine its requirements for organic aviation. In April 1962 a U.S. Army Tactical Mobility Board (the Howze* Board) was formed to conduct tests to determine what new organizations and/or air vehicles were required to exploit the air mobility concept.[6]

([redacted] The Howze Board subsequently recommended three new types of units using aircraft be incorporated into the Army structure--an air assault division, air transport brigade, and air cavalry combat brigade. But even while these concepts were being tested in the CONUS, two U.S. Army helicopter companies, which had arrived in Vietnam on 11 December 1961, were

*Lt. Gen. Hamilton H. Howze

operating against the Viet Cong.* On 18 July 1962 a MACV letter of instruction outlined the Army's policy for helicopter-borne operations. Responsibility for coordinating helicopter-borne and fixed-wing strike operations was placed upon the participating organizations, with the commander of the area of operations determining the forces and facilities required. He would coordinate with and obtain the approval of the Senior U.S. Army Advisor and U.S. Army helicopter unit commander. During the combined operations, the helicopter commander was to act as the Tactical Air Coordinator.[7]

[redacted] The MACV letter did not mention the necessity for coordinating with the Air Operations Center, as required by a CINCPAC Instruction of 6 June 1962. The latter designated the Air Operations Center as the coordinating authority for air units not assigned to or made available to the Air Force, but which were operating in the area of responsibility delegated to the Air Force Component Commander.[8] However, when the 18 July MACV letter was brought to his attention, Adm. Harry D. Felt CINCPAC, on 3 August wired Gen. Paul D. Harkins, COMUSMACV, to express his concern over the Army's disregard of the requirement that it coordinate its helicopter operations through the AOC. "Much more progress is required in the area of developing an efficient air-ground team," Admiral Felt said, and "if there are individuals in SVN who are not team players, I wish to be informed of their identities."[9] On the 18th General Harkins complied, directing the Air Force Component Commander (General Anthis) to coordinate for COMUSMAC all "VNAF activities and all U.S. air operations of air units operating in the COMUSMACV area but not assigned or attached to the AFCC [Air Force Control Center] in accordance with CINCPAC policy."[10]

[redacted] Several months later, as the number of U.S. aircraft continued to increase in South Vietnam, Admiral Felt

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*During fiscal year 1963 Army aviation units flew 100,000 sorties and transported 275,000 troops and 9,000 tons of cargo. Army helicopter companies, using CH-21 and UH-1B aircraft deployed reinforced Vietnamese rifle companies into battle. They were escorted by armed UH-1B helicopters or Vietnamese T-28's. [See Annual Report of the Department of Defense, FY 1963, pp 110-111].

[redacted]

on 12 November 1962 reemphasized to General Harkins the importance of using the Tactical Air Control System to improve coordination of the overall air effort. He said: "We must not embark on programs which would result in two separate air wars being conducted simultaneously. Strike missions must be closely coordinated and centrally controlled."[11]

[redacted] Army officials, however, continued to chafe under CINCPAC's directive. For example, the Senior Army Advisor to the ARVN III Corps, Col. Wilbur Wilson, complained that although the O-1 was one of the most versatile tools available to a ground commander, under the centralized control system, the planes were not located in the field. This was an almost untenable situation in his view, because the O-1's were not always available to ground commanders when and where they were needed most. Centralized control, he argued, was "too cumbersome and antiquated to cope with the decentralized responsiveness essential to counterinsurgency operations.[12] Colonel Wilson's solution was to allocate three VNAF O-1's to each infantry division where they could be used in controlling direct air support of ground operations. If this could not be done, then he believed the Army was justified in establishing its own air support units, and using armed helicopters for the instantaneous air response the Army demanded.[13]

[redacted] In March 1963 General Harkins decided to try to win the support of Gen. Le Van Ty, Vietnamese chief of the Joint General Staff. In a letter to General Ty on 19 March, Harkins stated he believed the system of centralized control was a restriction upon ground commanders, who became dependent upon intermediate agencies--both in and outside the chain of command--for final approval of VNAF helicopter support missions. U.S. Army leaders, he said, believed that placing tactical support elements, such as helicopter units, in direct support of the tactical ground commander, was the most effective method of acquiring essential control, flexibility and response. He therefore recommended that the JGS consider using VNAF helicopter elements in direct support of ARVN tactical ground units.[14]

([redacted] General Harkins also wrote to General O'Donnell, CINCPACAF, several days later to make the same point. He said:

> The hard fact is that the geographical extent of this country unequivocably [sic] rules out any concept of direct centralized control of the total air effort from the JOAC [Joint Air Operations Center]. Air Strike teams must, are, and as additional resources permit to an even greater extent, will be deployed to outlying air areas where their strike potential is required. These deployed strike teams must be responsive to the support requirements of the Corps and they must be under the direct control of ASOC's of which we now have four, one in each Corps area, and in direct response to the requirements established by the support commander. ASOC's can and should keep the JAOC informed of actions planned if time permits, but after the fact if time is too short. The JAOC cannot effectively exercise centralized control.[15]

[redacted] General Ty, meanwhile, had forwarded Harkins' recommendation to Col. Huyn Huu Hien, JGS Deputy Chief of Staff for Air. Hien replied on 17 April 1963 that the TACS was "very efficient for directing and controlling all tactical air operations in Vietnam," and that its efficiency lay in the centralization of command and control. "Should we follow MACV recommendation," he said, "both helicopter squadrons would be put outside the aforecited TACS," direction and control of VNAF components would pose a difficult problem, and VNAF helicopter mobility for combat support would be impaired.*[16]

[redacted] In July 1963 General Harkins took a different tack, directing that an aviation headquarters be placed in each of the four Corps Tactical Zones to "plan, direct and control the employment of all U. S. Army and Marine Corps aviation units and aircraft operating in direct support of a given Corps." These aviation headquarters would be responsible for controlling operations of all nonorganic elements allocated to the Corps. The headquarters did not report to the AOC or the ASOC's but were under the operational control of the Corps Senior Advisor. The aviation headquarters commander became the principal aviation staff officer

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*Unlike the American situation, where all four military organizations operated various types of aircraft, the Vietnamese Air Force was responsible for all air vehicles in the country, including helicopters.

[redacted]

(assigned to the senior U.S. Army advisor) and air advisor to the corps.[17] This arrangement was in line with Harkins' view that U.S. Army aviation advisors "should be responsible for advising the ARVN commanders on the employment of VNAF Army type aviation," while U.S. Air Force advisors remained responsible for "advising the VNAF on the technical training, aircraft operation, and maintenance of VNAF Army type Aviation."[18]

[redacted] The Army's drive to set up its own independently-controlled air operation caused concern among Air Force officials about the possible loss of Air Force missions. In November 1963 General Anthis informed Gen. Jacob E. Smart, CINCPACAF, that the Army did not hide the fact that it wanted greater participation in close air support. He noted that:

> In operations, in testing and in the publication and dissemination of their concepts, they have gone on record that they want to own and control at least two major areas of air resources; close air support and division air transport... The Army [wants] to install its own crews, aircraft and concepts to fulfill these missions.[19]

The Army, General Anthis said, had gone to great efforts to gain a larger influence in air power and, in this connection, he noted there were few senior Air Force officers in key positions on either the MACV or MAAG staffs. He also remarked that a number of Army reverses in clashes with the Viet Cong had occurred because the Air Force had not been called in to provide close air support. He further noted that Army requests for air support came in so late that "there was inadequate time to prepare for them."[20]

[redacted] Although the Harkins directive setting up aviation headquarters in the four corps areas was supposedly aimed at enhancing the total VNAF/American air effort, it created in effect an air control system separate from the TACS, patterned after the Army's concept of decentralized control. The Army was soon flying independent, uncoordinated missions, which caused U.S. Air Force ALO's and FAC's to express concern over the overall efficiency of air support. "U.S. Army aircraft do not respond to the ARVN Air Request Net," one ALO/FAC explained, and they did not come under the TACS. As a result, he said that

[redacted]

> ...the ASOC in each corps area and the AOC have no idea what Army aviation is doing in either the corps area or the country. There have been three reported incidents where an Army Mohawk [OV-1] blundered into an area being struck by a B-26 or T-28's. Since they don't even operate on the same frequencies as the Tactical Air Control System aircraft, the only way they could be diverted from their line of flight was by diving the L-19 at the aircraft and forcing him to turn.[21]

([redacted]) When the Air Force Test Unit-Vietnam studied the TACS in 1963, it reported that the system was capable of centrally directing and efficiently controlling all air resources in Vietnam. The unit emphasized that it had found no instance of interference or lack of coordination between USAF and VNAF operations. It also pointed out, however, that less than half of the 680 military aircraft in Vietnam were committed to or controlled by TACS, that the uncommitted number was growing, and that

> ...the large number of sorties not controlled by the TACS constituted a flying safety hazard and frequently interfered with tactical operations. It is contrary to accepted principles of unit command to have air forces operating in the same area under separate and unilateral command. MACV Directive 44 . . . denotes cognizance of the need for unity of command; however, it established decentralized organizations with air resources which duplicate and contravene TACS functions.[22]

([redacted]) The test unit's report cited 18 instances when lack of coordination by Army aviation units resulted in either near-accidents, hazardous flying conditions, or accidental firings on friendly troops. The Air Force Test Unit advised that military air resources controlled by the Army in Vietnam be coordinated with the Tactical Air Control System.[23]

([redacted]) The Army-Air Force disagreement over centralized versus decentralized air control was distressing to the troops in the field. Confronted with the problems of combat, the issue seemed to them to be inconsequential. One pilot thought the

Army-Air Force relationship could be eased simply through the use of more efficient communications. Another feared that the continuing dispute was causing needless casualties. "Our Vietnamese friends see this [differences of opinion]," concluded one Air Force pilot, "and they wonder 'are we here to help them or only to increase the status of our own particular branch of service?'"[24] The situation, however, was much more complicated than the pilot or platoon commander realized. The development of two separate air control systems, with air forces operating independently of each other, could create an intolerable situation, as the incidents of near-accidents indicated.

([redacted] Indeed, the Joint Chiefs of Staff on 1 February 1964 queried Admiral Felt about the development of two separate air control systems. It was unexpected, they said, "in view of the emphasis being placed by CINCPAC on coordination of USA air and ground operations." They expressed their concern about the lack of coordination between the different air organizations. They asked about U.S. Army representation in the AOC or ASOC's. If the Army was not represented, why not? They asked whether ARVN commanders knew where to go to obtain aviation advice, who provided the information, and to what extent did the existing situation permit conflicting advice to be given to the Vietnamese armed forces.[25]

([redacted] Admiral Felt, in forwarding the JCS questions to General Harkins, commented that, while cooperation and coordination at the fighting level was excellent, in Saigon there were differences at the command level over methods of control and military priorities. He agreed that the air request net was too slow--as the Army advisors stated--when the problem was to hit fleeting targets. He also recognized that airborne communications were complicated by the incompatibility of radios used for ground support, that there were not enough Air Force ALO's to assign them to regiments and brigades where they could do the most good, and that there were no qualified ground liaison officers in the Air Operations Center or at Farm Gate headquarters.[26]

([redacted] But inasmuch as CINCPAC's clear direction on centralized air control had been circumvented by the Army, General Harkins was placed in the uncomfortable position of justifying the dual control system.

[redacted] In a long and carefully worded reply to Admiral Felt on 17 February 1964, Harkins restated the Army's position favoring centralized control. He said that the TACS was capable of providing for both centralized and decentralized control of VNAF/USAF resources. But because the bulk of U.S. Army and Marine aviation resources were assigned to ARVN corps in a direct support role, he contended that it was necessary that separate aviation headquarters manage all Army and Marine air units operating in direct support of Army corps. Aviation units not assigned to the aviation headquarters--such as one flight of OV-1 Mohawks and the Utility Tactical Transport (UTT) helicopter company--could be managed through the AOC.

([redacted] He noted that the Vietnamese force structure concentrated all air resources in its air arm and explained that it was one of his missions to "insure the air arm will be trained to operate effectively when U.S. special assistance is terminated." This, he said, was being accomplished "by the 2d Air Div and the Air Section, MAAG, in combination." He concluded that because the U.S. Army/Marine aviation units were wholly U.S. special assistance and had "no role in the development of the Vietnamese air structure, I have been free to employ them as I see fit to maximum support of the ground effort." U.S. Army and Marine concepts were "peculiarly well suited to the requirements of the counterinsurgency effort here in Vietnam."[27]

[redacted] Harkins admitted that neither Army or Marine aviation were represented in the Air Operations Center. This was because an Army pilot in the AOC could provide no operational information that was not already available to the center.* The 2d Air Division ALO's and FAC's at corps, division, and regimental level advised ARVN commanders about the use of VNAF/USAF resources, while senior Army advisors advised on the use of U.S. Army/Marine aviation. Below regimental level the Army advisor normally had the closest contact with the ARVN. Harkins admitted that, in instances where ALO's were excluded from ARVN planning conferences--because of oversight or absence--the Army advisors had taken on the responsibility of discussing tactical air support.[28]

*Even though the ASOC's in the four corps areas may have had knowledge of Army/Marine operation, the lack of a representative in the AOC still impaired coordination.

[redacted]

[redacted]

ARVN AIR/GROUND SYSTEM

REGULAR FORCES (ARVN)

AIR/GROUND COMMUNICATIONS

STRIKE AIRCRAFT-UHR-VHF-FM

LIAISON AIRCRAFT - FM-VHF

GROUND UNIT - - - FM-VHF

ARMY COMMUNICATIONS

FM-AN/PRC 8, 9, 10

VHF - AN/TRC-7

AM - AN/GRC-9

UHF - AN/VRC-30 JEEP

HF - AN/GRC-26

1. DOTTED LINES SHOW IMMEDIATES.
2. SOLID LINES SHOW PREPLANS.

A BATTALION OPERATING UNDER DIVISION CONTROL WILL BY-PASS ITS PARENT REGIMENT ON IMMEDIATES AND GO THROUGH DIVISION THEN TO CTOC. PREPLANS FOR THE SEPARATED Bn WILL GENERALLY ORIGINATE AT THE DIVISION IN CHARGE OF THE Bn.

NOTE: COMMUNICATIONS DETAILS OF THE NET ARE IN APPENDIX C.

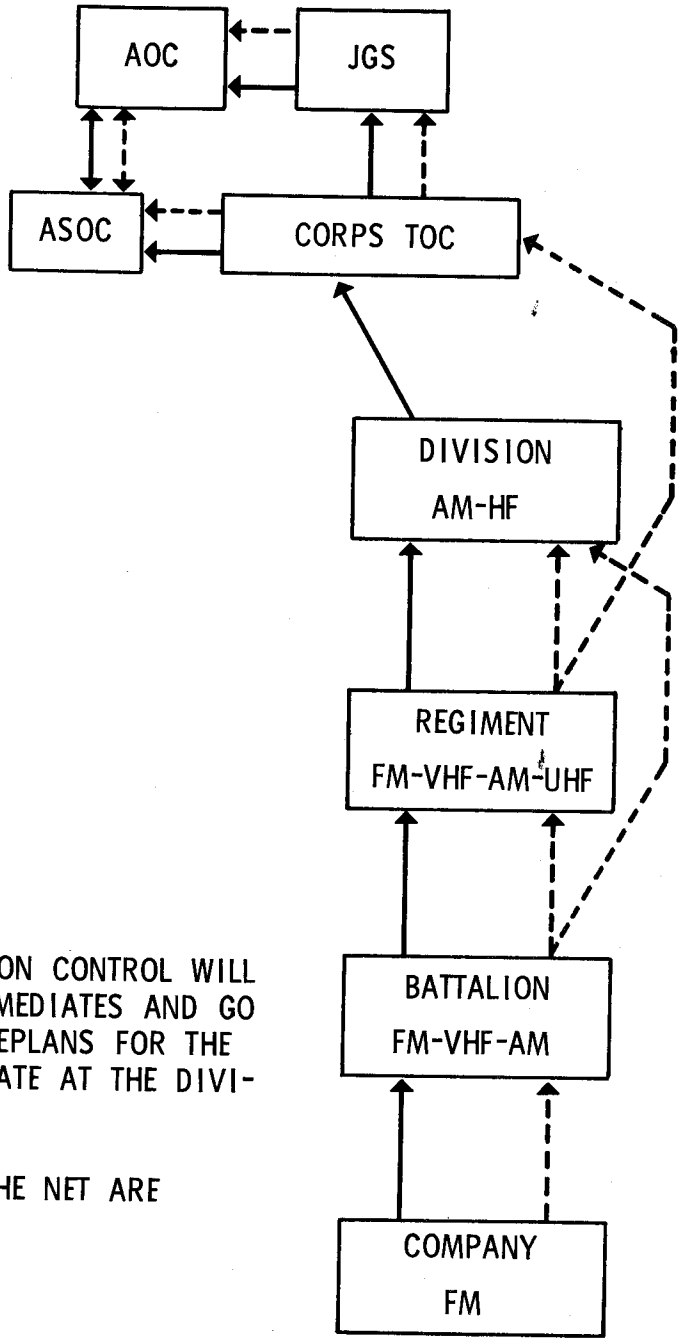

FIGURE 9

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[redacted]

[redacted] General Harkins, however, oversimplified the last point. ALO's were excluded from ARVN planning sessions for a number of reasons, including not being invited or informed of the meetings and being pointedly refused permission to participate. An example of poor planning coordination occurred during a battle at Ap Bac, a village about 30 miles southeast of Saigon. On 2 January 1963 a combined armored and heliborne operation was launched against the Viet Cong which resulted in the loss of five U.S. Army helicopters, damage to five others, and the loss of 65 Vietnamese troops and 3 Americans killed. U.S. Air Force advisors had been excluded from the planning phases of the operation and were not called upon to provide fixed-wing cover, although they were prepared to do so.[29] The hard lesson learned from the Ap Bac operation was that armed helicopters could not provide adequate firepower when opposed by heavily armed enemy forces capable of knocking the slow-moving craft from the sky.

([redacted]) General Smart later brought this issue to the attention of Secretary McNamara and other military leaders at Keehi Beach, Hawaii. He said he could document several battles for which air support had not been planned or, if planned, was not used. Some of the ambushes of ARVN units and attacks on trains could have been prevented or minimized, he said, with more Air Force participation. Admiral Felt also thought that Army-Air Force cooperation could be improved, commenting that the Army tended to rely too much upon its own aviation resources.[30]

([redacted]) The decision to use the Army or the Air Force control and air request systems depended upon a ground commander's estimate of how quickly air cover could be provided. Since the ARVN-operated net, working through the ASOC's, produced a slower response than that provided by Army and Marines, ARVN officers usually preferred the latter. General Harkins felt that the delays in processing air requests, the communication problem, and the lack of sufficient ALO/FAC's in the field degraded the Tactical Air Control System. In his view, the fundamental problems of air control were operational, not organizational, and were found within the framework of the ARVN and the VNAF.[31]

([redacted]) A change of leadership may have contributed to a new approach toward the entire problem. On 20 June 1964 Gen. William C. Westmoreland succeeded Harkins as COMUSMACV. Six months earlier General Moore also took over as commander of

[redacted]

the 2d Air Division. General Moore took immediate steps to obtain an increase in ALO/FAC strength to 75 by the end of the year, which would enable him to assign air advisors down to the regimental level.* Liaison planes also were deployed into the field to improve their availability to ground commanders. Special efforts were also under way to obtain compatible radios to improve communications. While differences over centralized versus decentralized control still remained, there was a noticeable upswing in Army-Air Force cooperation.[32]

[redacted] This led, in July 1964, to issuance of a joint directive prepared by the 2d Air Division and Army officials establishing new procedures for improving Army/Marine and USAF/VNAF air coordination. U.S. Army aviation elements at corps level were to be collocated with the Air Support Operations Centers. Aircraft sorties provided by USAF/VNAF resources were to be allocated to the corps ASOC within the Tactical Air Control System for operational missions in Corps Tactical Zones (CTZ's). The corps commander would determine the priorities for air support and air units of the various services would provide it. Daily joint meetings at division and corps level would include Army as well as Air Force elements. In controlling strikes, the FAC would be expected to direct strikes in any type of control aircraft best suited for a given situation. If a forward air controller was unavailable, then the ground commander could assume responsibility for directing strike aircraft to the target, using any means of communication or target direction available.[33]

[redacted] The directive also specified that Army aviation communications were to be tied into the Tactical Air Control System for better coordination of air activities.[34] Although the Army continued some air activities without coordinating with the Air Force, as a whole the July 1964 directive fostered better cooperation and helped eliminate many problem areas. However, a uniform and coordinated air-ground system would not be realized until after 1965.

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*Not long after ALO/FAC advisors were placed at ARVN regimental level it became clear that provincial headquarters was a more advantageous location. Consequently, FAC's gravitated more and more toward the sector where provincial clearance authority and S-2 intelligence was more immediately available. Later, the SEA TACS concept changed to permit ALO's and FAC's to work at sector levels operating under a Division Tactical Zone.

[redacted]

VI. DEVELOPING FAC TACTICS AND TECHNIQUES

[redacted] In a JCS talking paper prepared for a meeting of Gen. Lyman L. Lemnitzer, the Chairman, with President Kennedy on 9 January 1962, the role of the Farm Gate crews was described as "instructing the Vietnamese Air Force in combat air support tactics and techniques."[1] However, before they could do so, the USAF airmen needed guidance on the rules governing air strikes. Shortly after their arrival in South Vietnam, they discovered that--except for restrictions placed on the VNAF to avoid crossing the borders of Cambodia and Laos and certain limitations on the use of ordnance--the Vietnamese Air Force had few rules to go by. A VNAF pilot was free to strike a target once the Air Operations Center or higher authority approved.[2]

Rules of Engagement

[redacted] In early January 1962, this situation having been brought to his attention, CINCPAC directed the MAAG to offer the Vietnamese assistance--if they desired it--in developing an updated set of rules of engagement. The offer was accepted, and the Americans proceeded to help draft new rules. Submitted to the Vietnamese Joint General Staff, these rules were approved in late April 1962, and placed into effect almost immediately.[3] But, meanwhile, the Farm Gate crews, who were under certain political wraps in connection with their mission, still had problems.

([redacted] These related to Washington's sensitivity to international opinion concerning U.S. observance of the Geneva Accords. In 1962 the International Commission for Supervision and Control in Vietnam--which had been created in 1954 to observe compliance with the Geneva agreements--charged both North Vietnam and the United States with violations. It reported the Communists had sent arms, munitions, and other supplies into the South and was encouraging "hostile activities...aimed at the overthrow of the Administration" of President Diem. It also stated that the United States had sent increased numbers of military personnel into South Vietnam, along with substantial quantities of war material, "in contravention of Articles 16 and 17" of the Accords.[4]

[redacted] The legalities of the situation troubled the President and State Department. At least one American official thought the policy of trying to keep secret the extent of U.S. Air Force participation in South Vietnam operations should be revised. The State Department, he later wrote, "had made too much of the political costs of a violation of the Geneva accords that was in truth fully justified by Communist aggression, and the President had made too much of adverse press reaction."[5]

[redacted] But as air operations in South Vietnam proceeded, there was adverse press reaction. Thus, during the early months of 1962 the Vietnamese Air Force--presumably having followed the precepts of their USAF instructors--was charged with indiscriminate bombing.[6] One incident involved a misdirected strike against a Cambodian village on 25 January. An Associated Press release on 8 February reported that B-26's and T-28's, with American pilots on board, had strafed and bombed an enemy concentration, and then followed up with napalm which did widespread destruction to crops. The State Department, concerned about alienating the Vietnamese if such reports continued, decided to look into the matter.[7] General LeMay also personally investigated the charges during a visit to South Vietnam between 16-21 April. In his subsequent report, he concluded that there was no basis for the allegations of indiscriminate air strikes.* Citing the continued exercise of caution by U.S. airmen to prevent such errors, he reported, as an illustration, an incident during which a VNAF FAC did not arrive to mark the enemy target. Under the rules of engagement, his presence was essential. USAF instructor pilots flying with VNAF pilots in the strike aircraft--although orbiting the fire fight below and observing an officer in a jeep point to the location of the enemy--refused to authorize the strike but instead directed that their ordnance be salvoed into the ocean.+[8]

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*The charge of indiscriminate bombing did not take into account the possibility of error, which is almost impossible to avoid in war.

+Air Force FAC's could not clear strike aircraft in, only VNAF FAC's. Ground troops no doubt were frustrated at seeing armed USAF aircraft overhead and needing air support; however, the American crews were not authorized to launch strikes. [See Ltr (S), Col. Mellish to Hq USAF (Off of AF History), 23 Jul 71].

[redacted]

[redacted] General LeMay's report led to development of the rules of engagement for American airmen. On 24 November 1962 MACV established operational restrictions for U.S. aircraft flying combat support missions. As a general policy, the U.S. Air Force was not to undertake a mission unless it was beyond the capability of the VNAF to perform. The Farm Gate aircrews were ordered not to fly combat missions without a Vietnamese crew member on board, and their aircraft were to bear VNAF markings. Under normal conditions, the USAF crews could not fly closer than 3 miles to the Cambodian border. All targets had to be approved by the Vietnamese and had to be identified and marked by a VNAF FAC. Finally, USAF planes were to be used strictly in a defensive role, i.e., the Americans had to be fired upon first.*[9] Special Forces working with Air Force Air Commandos, however, were exempt from the requirement to have a VNAF FAC aboard on all air strikes. In lieu of a FAC, Special Forces teams on a mission tried to have a hand-picked representative of the Vietnamese government accompany them, who was "in effect an AGOS system in himself." This individual could approve a target for a strike and contact the AOC for support aircraft through the Special Forces net. Under these conditions, Farm Gate aircraft could strike a target without the presence of a VNAF FAC.[10]

[redacted] These rules remained basically unchanged through 1964, although some exceptions were made as the situation dictated. On 25 January 1963 CINCPAC authorized COMUSMACV to waive certain rules under especially grave conditions,[11] specifically the requirement that a Vietnamese be aboard all USAF strike aircraft. This had hindered USAF operations because not enough VNAF pilots or observers were available to man all strike missions. To ease this problem, the 2d Air Division was authorized to permit

*Initially, USAF pilots were not permitted to shoot back. Until this instruction was partially lifted in late 1962, ground troops often had to rely on Army helicopter gunships, which were authorized to fire when fired upon. However, the N. Y. Times quoted McNamara, on 16 January 1962, as saying there were instances when American aircraft did fire back as early as that date. [See Ltr (C), Col. Mellish to Hq USAF (Off of AF Hist) 23 Jul 71].

USAF pilots to launch air strikes without a VNAF FAC under two conditions:* (1) in support of outposts attacked at night, providing they were directed by a C-47 flareship which could maintain continuous contact with the ground and the strike crew; and (2) when dropping ordnance within a free fire zone.[12]

[redacted] Although this relaxation of the rules of engagement should have made them more flexible, other operational restrictions were imposed which continued to frustrate the FAC's. In April 1964 Colonel Mellish, III Corps ALO, commented that newly-announced restrictions precluding reconnaissance by VNAF and USAF liaison planes below 500 feet were unrealistic "and make us look bad in the eyes of the U.S. Army and VNAF." He said:

> In particular, I am concerned about the effect of this latest set of restrictions on our ALO/FAC's ability to do effective reconnaissance over their areas of responsibility...Neither my ALO/FAC's nor I have ever been able to find a VC from altitudes above 500 feet over wooded areas. Indeed, 150 feet over [such] areas is a safer altitude and one from which concealed VC are more likely to be discovered.

Colonel Mellish felt Army liaison pilots were doing a better job in finding and photographing the enemy because they were permitted to fly as low as 50 to 100 feet. Their losses were higher, but their effectiveness was much greater.[13]

[redacted] Suggesting that a certain rule be suspended when American lives were in danger, Mellish cited, as an example, the predicament of a Ranger force on a training foray in April 1964, which was trapped by the Viet Cong. A report was received that six men had been either killed or wounded. USAF T-28's rushed to the scene, but could not engage the enemy because a VNAF FAC was not present, although an Army L-19 was in the air. The T-28's were forced to jettison their ordnance elsewhere. Had it

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*These conditions were set forth in 2d Air Division Regulation 54-4, dated 22 Jan 63.

[redacted]

not been for the presence of armed Army helicopters--which were not restricted when they could fire--the entire Ranger unit might have been destroyed.[14]

[redacted] Indeed, U.S. Army aircraft were not required to have VNAF markings, they could fire back when fired on, and they did not have to have either a Vietnamese pilot or FAC on board to do so. The rationale for the differences in the rules enforced upon the two services was that Army functioned in direct support of ground troops, both logistically and as military advisors. Much of the Army's transportation was by helicopter, which originally had been unarmed. When enemy troops began concentrating more accurate ground fire at the helicopters, MACV authorized Army pilots to "fire defensively" if fired upon first. On the other hand, the Farm Gate contingent was strictly assigned an advisory and training role and remained under tight combat wraps. At the end of his tour in January 1965, Col. Allison Brooks, a 2d Air Division official, commented that, while he understood all the political considerations involved, he thought it was "time to take a hard look at self-imposed handicaps that serve only to vitiate the modest capability we now possess." He suggested that

> ...except where VNAF/ARVN personnel were required to perform a specific useful function, i.e., VNAF navigators on flare missions, remove the mandatory requirement for them to be aboard...Delete the rule requiring that a VNAF FAC must identify and mark a target. Any trained man on the ground or in the air - ARVN, VNAF, US Army, or USAF, should be permitted to identify, designate, and mark a target whenever combat conditions so require.[15]

Acquiring and Identifying Targets

[redacted] Target acquisition and identification became increasingly more difficult as the Viet Cong developed remarkable ability to camouflage their activities from airborne observers. When USAF and VNAF observation aircraft first began flying extensively over Vietnam, the Viet Cong paid them little attention while carrying on their own activities. When air strikes swiftly followed, they initially did not know how to react.

[redacted]

At the first sight of an airplane sometimes they ran, or lay flat on the ground, or sought to hide under bushes or in rice paddies. Some would stand still in hopes of avoiding detection, but their black clothing against the green landscape invariably gave them away. In the early days, they also did not realize how well their jungle trails could be seen from the air. In time, however, the Viet Cong began to camouflage themselves and their trails, the latter being done by planting clumps of grass in the middle and spreading leaves and foliage along the way.[16] They built back frames which they covered with leaves and branches. When they heard aircraft overhead, they would simply lie down and merge with the landscape.[17] Supplies were carried in oxcarts, beneath farm produce. False graves became ammunition caches. Bridges at river crossings were built under the water's surface. Dummy installations were erected. Cooking fires were placed in a hole big enough only for the pot to sit over the coals. Smoke from such fires was diffused through small bamboo flutes angling through the ground away from the fire. Buildings in villages were used for supply caches. False bottoms were built in sampans to hide supplies. Oftentimes supplies were floated just beneath the surface of the water.[18]

([redacted]) In the delta area, where sampans were common, the Viet Cong would push the little boat ahead of them, hiding under it when aircraft flew over, hoping to give the impression it was unoccupied and not worth striking. Where there were many targets in the area, this ruse worked well.[19] The Viet Cong very quickly became so adept at camouflaging their presence, that it was not uncommon for some USAF pilots to complete a year's tour of duty--and have more than 100 strike missions to their credit--and never see their adversary. Targets they attacked were usually in a free fire zone or the wisp of smoke of a target marker.[20]

([redacted]) Caught in the open, the Viet Cong would often place children upon water buffaloes and follow closely while they eased toward the safety of the jungle. A second ruse, as reported by a captured Viet Cong officer on 15 January 1964, was used when they spotted an O-1 flying overhead. Instead of seeking the cover of the jungle, they would dive into the deep grass in clearings, which invariably led to their escape from the ensuing air strike targeted for the trees.[21]

([redacted]) The Viet Cong also made good use of trenches and foxholes along various paths and trails. Hearing an

approaching aircraft, they would jump into the holes and cover themselves with foliage, then would fire upon the plane after it passed.[22] Learning that the VNAF and USAF airmen hesitated to strike target areas inhabited by women and children, the enemy quickly adapted the subterfuge of dressing in women's clothing and carrying children in their arms.[23]

([redacted]) VNAF FAC's frequently hesitated to direct air strikes if they were uncertain of the validity of the targets, or if they thought civilians were in the area. One such incident involving a 21st VNAF Division operation in Ba Xuyen province occurred on 3 August 1964, when a U.S. Army L-19 reported camouflaged structures and called for air strikes. The VNAF O-1 FAC placed the strike 500 meters south of the structures because he feared there might be civilians in them. Later, two monks were seen walking out of a pagoda in the target area and the remaining strikes were cancelled. During an air strike in IV Corps on 24 September 1964, the VNAF FAC directed strikes into vacant fields. Afterward, he tearfully reported that he had seen women and children in the target area and therefore had directed the strikes elsewhere.[24]

([redacted]) The Viet Cong became so adept at melting into the local population that one USAF FAC stated that he had never seen anyone on the ground that he could have positively identified as a Viet Cong. "We saw people in VC areas," he reported, who did not run or try to hide or "do any of the things" which might betray them as the enemy. People often waved at the aircraft, or stopped work and watched the planes fly over their villages.[25] The difficulty Air Force observers had in locating and identifying the enemy was illustrated by an incident on 21 July 1964, when a force of 700 Viet Cong badly mauled an ARVN battalion in Chuang Thien province, killing or wounding 318 of the 400-man force. Just prior to the attack, an Army O-1 had flown over the area at 30 feet and saw no signs of the enemy who sprang the ambush.[26]

([redacted]) To counter enemy camouflage tactics, VNAF and USAF FAC's were forced to learn to read carefully signs of Viet Cong activities and to become conscious of every detail as they flew over potential target areas. Suspicious signs were double-checked. If an observation plane was fired upon, the source of such fire was considered hostile. If groups of people were observed edging toward a jungle cover, they became suspects. In fact, any deviation from the normal routine was cause for suspicion.

A large number of boats assembled for no apparent reason, a lack of people in a market square when it usually should have been crowded, no signs of activity in a village or hamlet, new trails leading into a village or new structures and fortifications--all these were considered possible indications of the presence of the enemy.*[27] American FAC's had to learn to think "little" in terms of enemy targets. Seldom was the enemy to be found in a group of more than 10 or 20 people.[28]

([redacted]) One technique used to nullify enemy camouflage was to assign FAC's to a specific area where they could become intimately acquainted with every part of it. First initiated in Vinh Binh province, the plan required that the same observers fly over the same area daily in a well-ordered pattern to spot unusual activity more easily. Five aircraft were used to cover the province, each flying three half-hour missions. When they discovered the Viet Cong, these FAC's became controllers for strike aircraft.[29] This continual surveillance had a psychological impact on the enemy, and the FAC's gained more confidence in their ability to ferret out the Viet Cong.

Marking Targets

([redacted]) One of the most important jobs of airborne FAC's was to verify and mark a target conspicuously so that strike aircraft could drop ordnance with telling effect. In 1962 the VNAF FAC's most common method of marking was simply to drop a smoke grenade out the window of an O-1 or to request a smoke round from ARVN guns. Ground troops, however, usually were not equipped to mark targets and there was also the possibility that the Viet Cong might steal smoke rockets and send false signals. One technique adopted by FAC pilots, when they had either expended their marking devices or none were available, was to instruct the strike pilot to watch the shadow of his O-1. When directly over the target, he would alert the strike crews.[30] A major disadvantage of this method, however, was that the strike aircraft had to be almost on

*One USAF FAC noted grass floating and trailing mud on a canal. On closer observation, he saw Viet Cong walking on the bottom of the stream holding the grass over their heads. The mud gave them away. [See Intvw (S), Capt. Rhein, p 11; Farm Gate Tactics and Techniques (S), Jan-Dec 1962, p 71].

MARKING THE TARGET AND CONTROLLING THE STRIKE

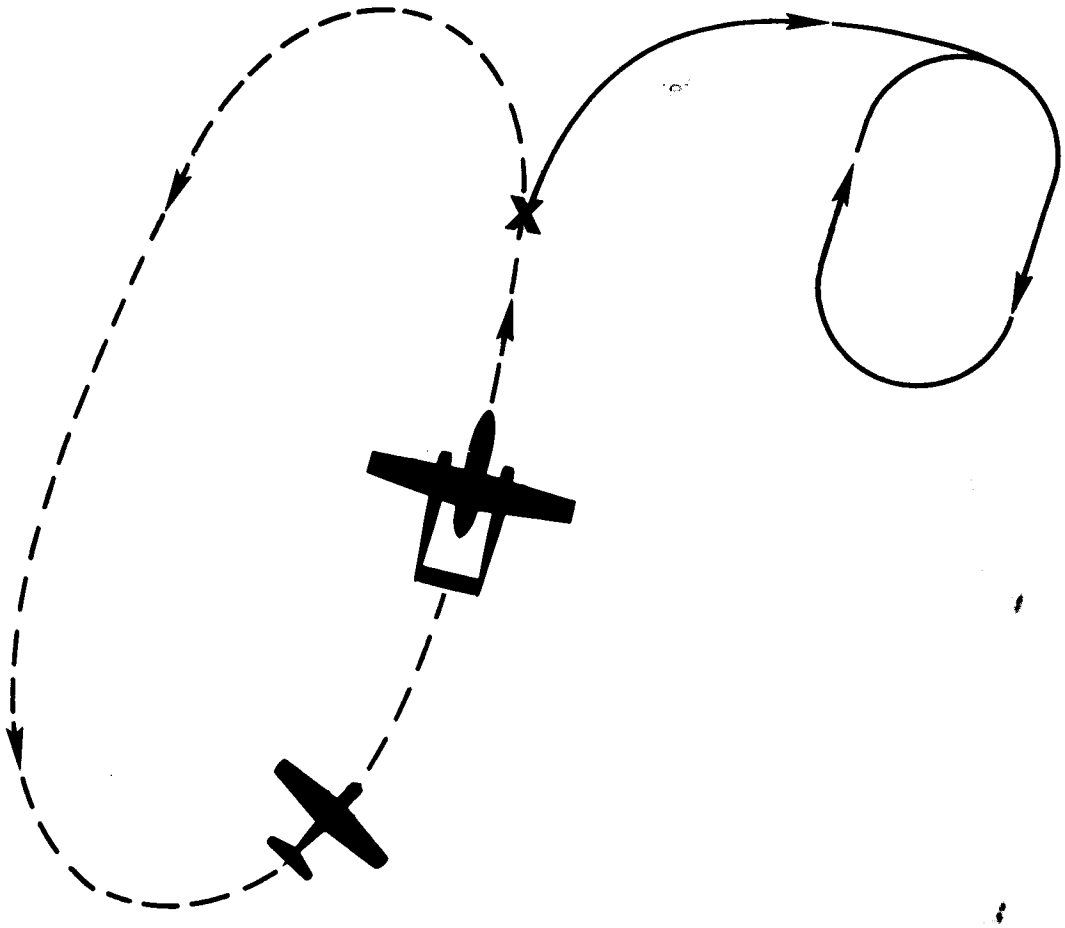

FIGURE 10

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top the O-1. Otherwise, perspective was distorted and the wrong point attacked.

([redacted]) Hand-dropped smoke grenades were inaccurate as markers, unless the marking crew was willing to fly on the deck (below 50 feet). Released above 5,000 feet, smoke grenades were worthless.[31] Early in 1962 one officer recommended that the FAC's be provided 60-mm mortar and/or rifle-launched smoke grenades and paraflare rounds to aid airborne O-1's mark targets for strike aircraft. Another suggestion, which was adopted, proposed the installation of a rocket-type launcher on liaison aircraft to mark targets with greater accuracy and safety.[32] At first VNAF FAC's did not like to fire marking rockets because they believed they had less control over them than over the hand-dropped smoke grenades.[33] The Vietnamese government also had feared that liaison crews would be tempted to engage in combat with the grenades. Initially, the rocket launches were not used because marking accuracy was little better than older methods. There was also a shortage of rockets for them.[34] A problem with both the smoke rocket and grenade was that the smoke was often trapped under the umbrella of trees and could not be seen by the strike aircraft. Furthermore, they frequently failed to detonate in the mud of the jungle floor. Air bursts were tried but if they prematurely detonated above tree level--as they sometimes did--the marking effort failed.

[redacted] Of all the target-marking methods tested by the Combat Development and Test Center-Vietnam unit, the MK-6 parachute flares were determined to be most effective in the jungle environment of South Vietnam. Released from the O-1 external racks, they were deployed by parachute to treetop level and detonated by a preset fuse. A thick pillar of smoke and high intensity light emitted by the flares lasted for about 3 minutes at a distance up to 5 miles.[35]

([redacted]) The ideal marker, according to the 19th TASS commander in 1964, would be a flare which trailed smoke in descent, floated on water, and continued to burn even when submerged for at least a minute--preferably up to 10. He visualized it as being lightweight and small enough for 10 to be carried in an O-1.[36] Such an improved flare, however, was not available before the end of 1964.

[redacted] As Viet Cong antiaircraft fire improved, the O-1 was forced to fly higher in order to survive and this made a rocket-powered marker a necessity. The O-1 could fire high explosive (HE) marking rockets accurately from 1,500 feet with minimum danger from enemy fire. The best firing altitude, 800 feet, exposed the O-1's to automatic weapons fire.[37] For marking targets the Air Force adopted the 2.75-inch rocket motor to carry three different types of warheads. White phosphorus smoke or high-explosive rockets were most commonly used. In late 1964 the 3.5-inch white phosphorus rocket head was fitted to the 2.75-inch rocket motor and together they made an effective marking device.[38] By the end of 1964, however, USAF air crews still did not have a completely reliable target marker.

Controlling Air Strikes

[redacted] No matter how effective identification and marking of targets were, the real payoff in forward air control was the air strike. Success in striking a target could be achieved by proper coordination, planning, and efficient execution of air requests. When any of these ingredients was missing, air support suffered.

[redacted] In the CONUS, Strike Command FAC's normally participated in planning missions and operations and were therefore acquainted with battle plans. In Vietnam, on the other hand, the VNAF FAC's initially were not attached to ARVN units and often directed strikes without prior briefing on the ground action, except for what knowledge they gleaned from monitoring their radio.[39] Indeed, it was rare that all the commanders involved in an operation were brought together for a formal briefing. This situation led to poorly executed missions and time-consuming delays.[40] Consequently, USAF ALO's during 1962 and 1963 urged the VNAF FAC to depart his station early and to stop at division headquarters for a mission briefing from G-3. Many VNAF FAC's, however, were not convinced they needed such a briefing and the effort produced limited success. An alternate solution was to attach FAC's to Army units in the field,[41] a practice adopted in the latter half of 1964.

[redacted] In 1962 FAC missions were normally scheduled by the AOC, a function later taken over by the several ASOC's. The Frag Order, originating in the center, normally

determined the time of take off. During close air support missions, the FAC would rendezvous with the fighter aircraft some distance from the target so as not to warn the enemy of the impending strike. From the rendezvous point they proceeded to the target area,[42] at which point the FAC would drop to an altitude of 150 to 800 feet--depending upon the tactical situation to look for the target.[43] He would then work his way toward the target hoping to surprise the enemy. After spotting the target, he would contact the ground command post to reconfirm the air strike. Following a report to the fighter aircraft that approval had been received, the FAC marked the target and prepared to provide additional adjustments as required.[44]

[redacted] Having fighter experience aided forward air controllers since they would know capabilities and limitations of the fighter bombers. Any pilot, observed one FAC,

> can fly the L-19 but it would help him a lot if he knows the fighter pilot's problems. For example . . . a fighter pilot can't make a run straight into a hillside or into a boxed canyon or something like that. There are times when it just isn't feasible for fighters to hit targets in a certain place. The FAC should know this.[45]

The FAC's also had to take care not to direct strike aircraft into too steep a dive angle and to work to advantage various terrain features.[46]

([redacted] To determine the most efficient technique for target marking and strike control, FAC's tried various experiments. They attempted, for example, to fly alongside a target rather than directly over it, to mislead the enemy, then suddenly dart across, drop the marker, and break out. Normally, the FAC alerted the fighter pilot as he was about to run in on the target, using the same heading he anticipated for strikes. There were other times when the FAC stood aside and talked fighter-bombers on to the target. After the mark, he would usually begin circling to the side of the target and give directions for adjustments. When the strike was completed, he would descend--sometimes as low as 20 to 30 feet--to assess strike success.[47]

MARKING TARGET USING SURPRISE

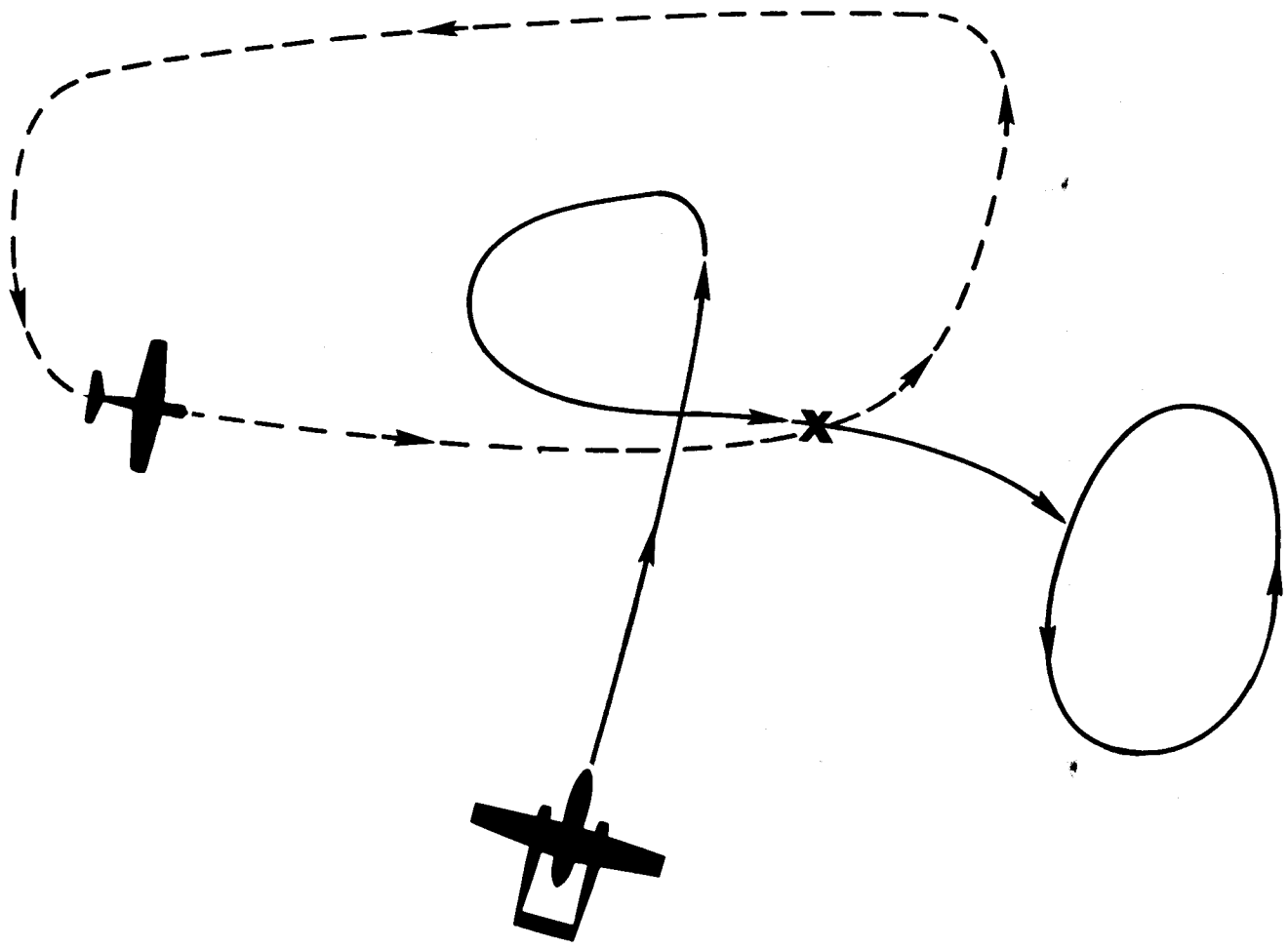

FIGURE 11

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[redacted] As each side sought to gain the advantage, a game of "hide and seek" ensued. Viet Cong tactics, such as the use of camouflage, were very flexible. Sophisticated devices to detect enemy movements and hiding places were generally not available to aircrews during 1961-1964.* One of the primary efforts of USAF and VNAF airmen was to try to achieve the element of surprise. One technique involved the ruse of launching a preliminary strike, after which the aircraft would leave the target area as if the mission had been accomplished. The strike aircraft, however, would orbit out of sight and hearing of the enemy troops. When the Viet Cong came out in the open, the bombers would be recalled by a FAC aircraft penetrating at low altitude. This tactic produced good results, especially in the delta.[48]

[redacted] The problem of language and communicating between USAF and VNAF FAC's was touched upon in Chapter II. It continued to trouble USAF/Vietnamese relations all through the early years of the conflict. Until VNAF English language school graduates arrived, the FAC's developed their own methods of coping with the problem. When a communication problem arose, the USAF O-1 pilot would often relay instructions to the strike aircraft for the observer. Most observers could write English better than they could speak it; consequently, it was not unusual for them to write their instructions on the window of their aircraft with a grease pencil for the benefit of the USAF pilot.[49] By the end of 1964 the VNAF had begun placing VNAF Air Liaison Officers in the field alongside USAF ALO/FAC's which helped ease the language problem.[50]

FAC Flexibility

[redacted] The O-1 Bird Dog was one of the most versatile tools available to a ground commander and the crews flying it were charged with a number of tasks besides forward air control.[51] Although a large percentage of reconnaissance missions were flown by

*Such devices as infrared radar, sidelooking airborne radar, laser beam radar, starlight scope, sensor devices of various types, people sniffers, etc., did not come into the inventory in any significant numbers until after 1964.

[redacted]

jet aircraft, the O-1 FAC was often called upon for battlefield reconnaissance and area surveillance. Indeed, an estimated 50 percent of all liaison missions consisted of visual reconnaissance.[52] When ground commanders urgently required information concerning enemy movements, the request was usually levied upon an airborne FAC in the area. The O-1 could come in low and ferret out targets that the higher flying jets might miss. Viet Cong activity was lessened by the presence of the FAC's overhead. A FAC on reconnaissance duty, moreover, was on the scene, ready to control incoming air strikes, thus decreasing reaction time.

([redacted] The O-1 also was used for night reconnaissance, but its value for such purposes was questionable. With the successful testing or infrared sensing devices in the RB-57 in the fall of 1964, U.S. night reconnaissance improved and the O-1 FAC's were released from this role.[53]

[redacted] Other tasks, equally unusual for the O-1's were assigned such as flying cover for ground troops. Surprise attacks by the Viet Cong diminished perceptibly when airborne FAC's began to fly cover missions for ARVN troops during sweep operations. Normally the O-1 would fly slightly ahead (50 to 60 yards) of the advancing troops at about 800 to 900 feet altitude. They would weave back and forth across the path of the sweep, and the Viet Cong would retreat from the advancing ARVN. The FAC's would attempt to halt their retreat by dropping grenades or buzzing until the ARVN could arrive.[54]

([redacted]) The high rate of ambushes of Allied convoys led in January 1962 to a decision to use the O-1 FAC's as convoy cover. On this type mission the FAC's often flew as low as 100 to 150 feet in a pattern similar to the one used on troop or train convoys, except that they preceded the convoys by 1-2 kilometers. They also weaved back and forth across the rear for additional protection. As a result of these escort services, convoy and train ambushes markedly decreased by the end of 1963.[55] In addition, the O-1's were used in psychological warfare, dropping leaflets when needed. They also flew combat support liaison missions, served as artillery spotters for the Army, and ferried commanders--tasks all incidental to their primary FAC role.

([redacted]) Besides the above duties and functions, the forward air controller usually found that he had still other responsibilities when he arrived in the field. If serving as an ALO, he

became in a sense a commander: he was responsible for flying safety, decorations and awards, officer effectiveness reports, FAC discipline, ground safety, and morale and welfare. He also frequently was involved in supporting Army/ARVN efforts with airlift, medical evacuation, and civic actions.[56] He was, in fact, a "jack of all trades."

SUMMARY

(U) The period 1961-1964 was one of numerous frustrations for the Air Force in Southeast Asia as it sought to build an effective Tactical Air Control System. After the Korean War, the system was not maintained as the Air Force shifted in the mid-1950's--in accordance with President Eisenhower's decisions--to a policy of strategic deterrence and massive retaliation. But with the inauguration of President Kennedy in January 1961, a new policy of flexible response was announced with the goal of strengthening of U.S. general purpose forces. The President stated that non-nuclear wars and "sublimited or guerrilla conflicts have since 1945 constituted the most active and constant threat to free world security." Mr. Kennedy expressed his determination to prevent the free world's "steady erosion" through such conflicts.[57]

(U) When Communist activity increased in South Vietnam, the President pledged American support to the Saigon government and, at the end of 1961, he authorized the deployment of U.S. combat forces --including Farm Gate crews--to that country. In establishing a TACS to coordinate air operations there, the Air Force soon discovered that conditions in Southeast Asia precluded developing a forward air control program along traditional lines. Except for South Pacific island experiences in World War II, forward air controllers had not previously operated over thick jungle terrain. In North Africa, parts of Italy, and western France, they flew over relatively open landscapes where they could see actions some distance away. During the Korean conflict, although they faced greater challenges due in part to the rough, mountainous nature of the terrain, the airborne Mosquito FAC's developed techniques highly suitable for that environment.

(U) In South Vietnam the enemy, frequently indistinguishable from the general populace, would easily fade into the jungle, making detection extremely difficult. The country also was politically unstable, its population torn between the contending forces, and there were no clearly definable battle lines. To avoid alienating the South Vietnamese people, the United States imposed strict rules of engagement, which served to minimize civilian casualties but inhibited Air Force operations.

(U) Initially, U.S. military personnel served in advisory roles and worked with and through the Vietnamese political and military structure to help thwart the enemy. However, VNAF/USAF relations faced many handicaps. The language barrier, and the Americans' general lack of knowledge of Vietnamese society, produced misunderstandings and problems. Modern warfare was a novelty to most South Vietnamese and they were slow to embrace its techniques, especially since the Americans were impatient and sometimes found it simpler to do the job themselves. The consequence was that their ARVN and VNAF counterparts often would let them carry the main burden.

(U) However, the problems encountered in Southeast Asia were not all attributable to political-military-geographic conditions. The bald fact is that the United States had not been prepared for a lengthy guerrilla war against an ingenious enemy whose greatest asset was his jungle environment. The Army and Air Force were forced to improvise as they sought to develop improved techniques to support the ground war. Old equipment was modified and refurbished, the concept of the ground FAC was dropped in favor of the airborne forward air controller--the Air Liaison Officer assuming the ground FAC's duties--and tactics concerning identification and marking of targets and controlling air strikes were tailored to the environment. Differences between the services over centralized air control remained a problem but were nearing resolution by the end of 1964. By continual improvisations and experimentation, USAF and VNAF forward air controllers gradually developed techniques to counter the enemy's efforts to camouflage its activities. The FAC program was on a firm footing and the forward air controller had become an integral part of the close air support team.

[redacted]

APPENDIX 1

O-1 Bird Dog*

A light, single engine aircraft with dual-tandem seating and dual controls, the O-1 was initially designed for the U.S. Army to replace the aging L-5 light observation aircraft. Developed by the Cessna Aircraft Company, Wichita, Kan., it was delivered to the Army in December 1950 as the L-19. Production was continued until 1959, at which time a total of 2,281 had been produced in six basic models (A, C, D, E, F, and G). Cessna was awarded a new contract in early 1962 and, by March 1964, total production had increased to 3,431. The models were basically the same, with minor modifications in each. The Air Force utilized primarily the O-1E and O-1F.

Specifications

Power plant	213 horsepower Continental O-470-11 six cylinder horizontally opposed, air cooled engine.
Wing span	36 ft 0 in
Length (overall)	25 ft 10 in
Height (overall)	7 ft 4 in
Maximum gross weight	2,430 lb
(combat)	2,600-2,800 lb
Maximum speed	115 mph
(combat)	100 mph
Cruise speed	104 mph
(combat)	75-95 mph
Service ceiling	18,500 feet
(combat)	10,000 feet plus
Initial rate of climb	1,150 fpm
(combat)	500-700 fpm
Range	530 miles
(combat)	405 miles
Fuel capacity	41 gallons

Its communications package normally includes: 1 AN/ARC-44 FM radio; 1 AN/ARC-73 VHF Command radio; 1 AN/ARC-45 UHF Command radio; 1 AN/ARN-59 Low Frequency ADF set for navigation; 1 AN/ARN-12 Marker Beacon for navigation. It is capable of carrying four 2.75 inch rockets for target marking and two MK-24 flares, or eight rockets, or four flares.

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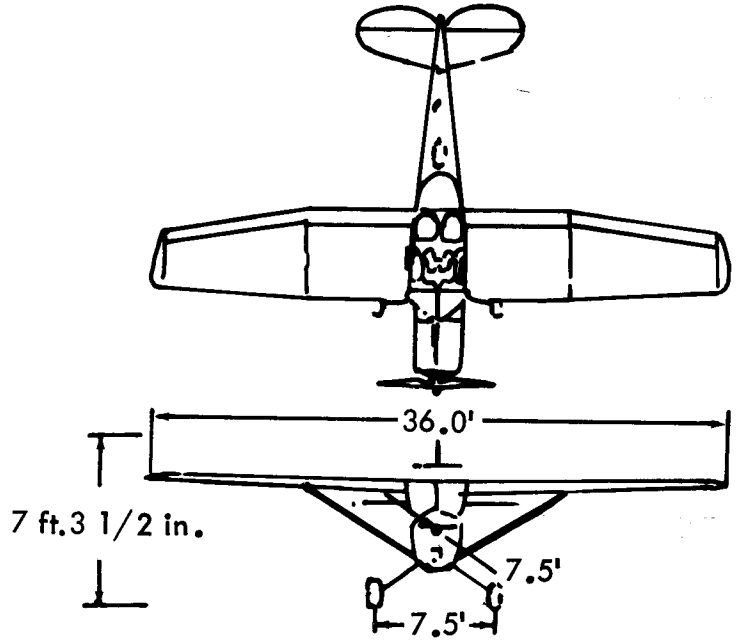
[redacted]

O-1 AIRCRAFT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7 ft.3 1/2 in.
7.5'
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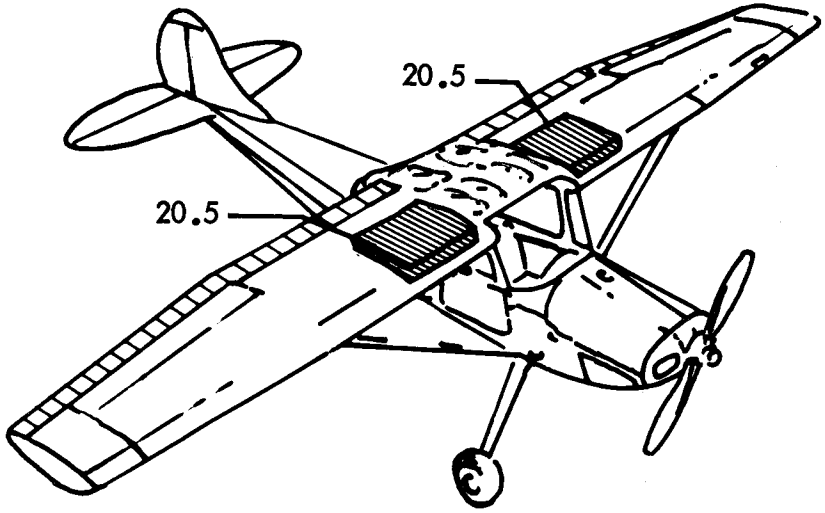
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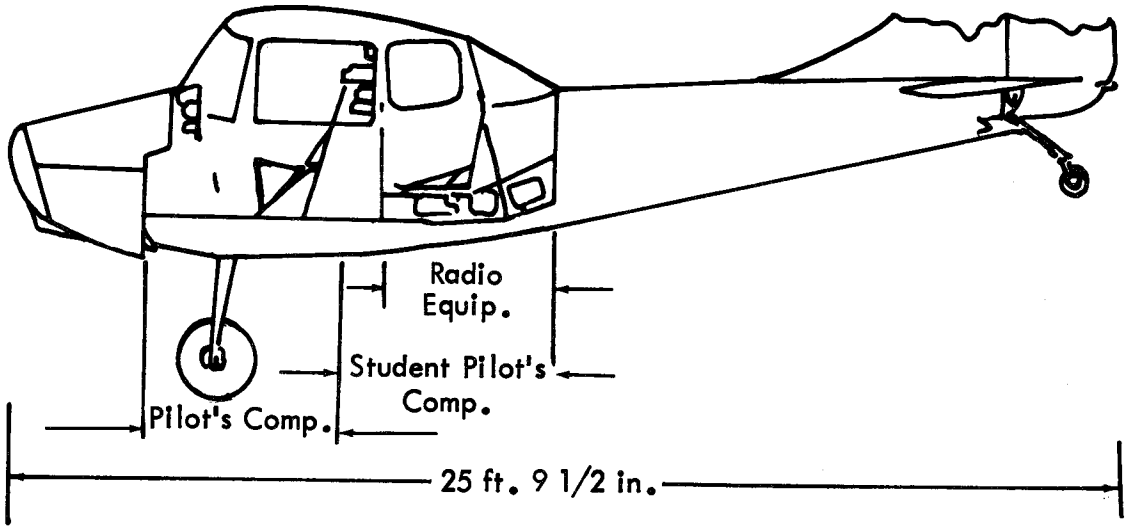

Radio Equip.
Student Pilot's Comp.
Pilot's Comp.
25 ft. 9 1/2 in.

APPENDIX 2

O-2A Super Skymaster*

The O-2A was purchased by the Air Force as an interim FAC aircraft to replace the O-1 unitl the newer OV-10 became available. In April 1966 the Cessna Aircraft Company submitted an unsolicited proposal to the Air Force, suggesting that its 337A model could serve as a replacement. Following an Air Force evaluation of the aircraft in July-August 1966 at Hurlburt Field, Fla., a contract was awarded to the company. The O-2A is a twin-engine, in-line, pusher-puller aircraft with two-place side-by-side seating. A twin-tail boom aircraft, it is equipped with a retractable landing gear. Through February 1970, the Air Force had ordered 406 O-2A's.

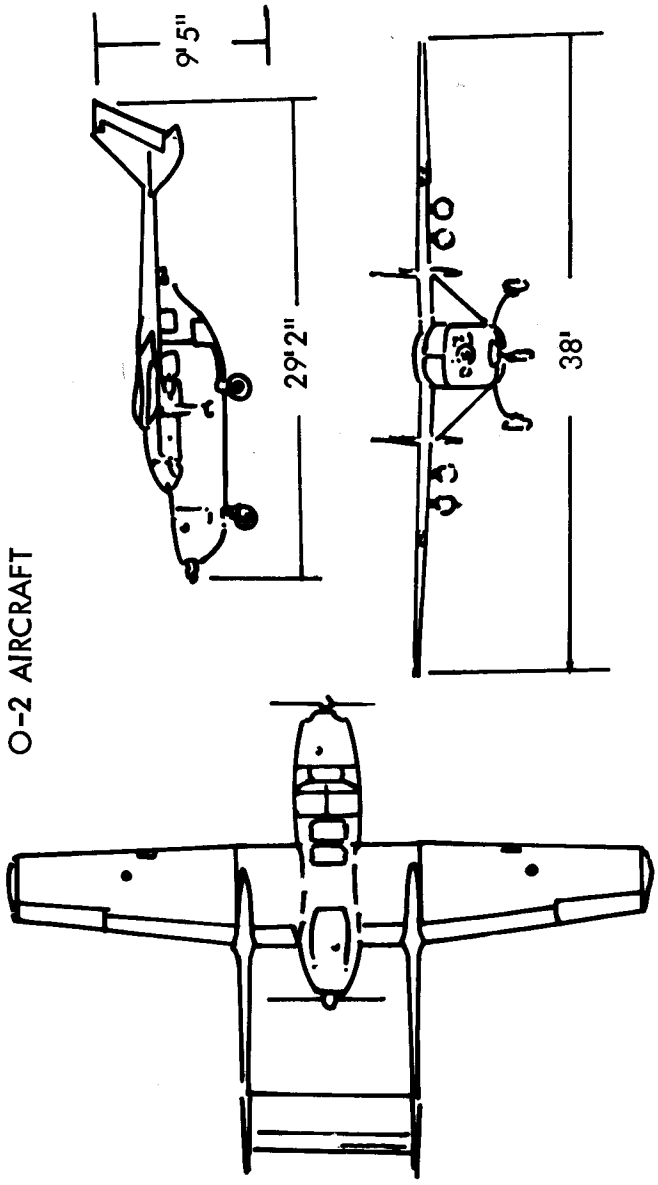
Specifications

Power plant	2 engines (210 horsepower) IO-360-D Continental mounted in tandem
Wing span	38 ft 0 in
Length (overall)	29 ft 2 in
Maximum gross weight	4,850 lb
Maximum speed	161 knots
Cruise speed	151 knots
Service ceiling	14,200 ft
Initial rate of climb	1,250 fpm (rear engine only--380 fpm front engine only--300 fpm)
Range	708-820 NM
Fuel capacity	122 gallons

The communication package includes: 2 UHF/AM command radios (Wilcox 807) and an AN/ARC-51BX); 2 VHF/FM sets (Magnavox FM-622); 1 LF/ADF navigation system (AN/ARC-83); 1 tactical air navigation system (AN/ARN-52); IFF/SIF system (AN/APX-64); and a crash and/or ID beacon (Motorola SST-181).

The O-2A has four underwing armament pylons capable of carrying 350 lbs. each, 2 minigun stations capable of handling 2 guns (7.62 mm SUU-11) each.

*Aeronautical Systems Division, Standard Aircraft Characteristics, Vol 2, Sec II (Observation Aircraft), Sep 71.



O-2 AIRCRAFT

APPENDIX 3

OV-10 Bronco*

The first aircraft built specifically for counterinsurgency operations, the OV-10A is a two-place tandem aircraft with twin 715 shaft horsepower turboprop engines. The Air Force purchased 175 planes from the contractor, the North American Aviation Company. It is a twin-boom aircraft with high vertical stabilizers and a top-mounted horizontal stabilizer. The wings are shoulder-mounted, with the cockpit protruding well in front of the engine mounts to provide good visibility.

Specifications

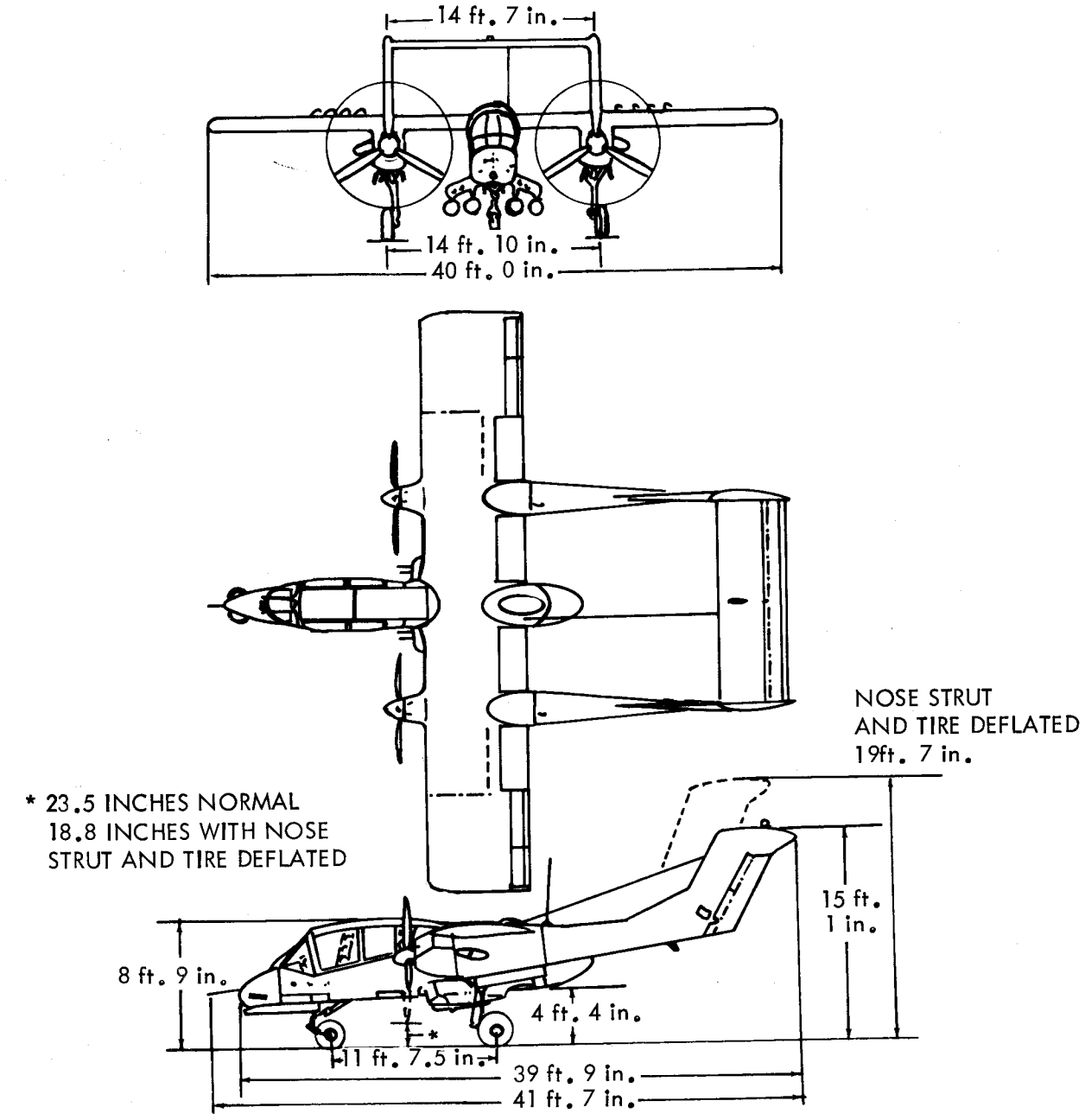
Power plant	2 engines (715 horsepower) T-76 AiResearch engines.
Wing span	40 ft 0 in
Length (overall)	41 ft 7 in
Maximum gross weight	14,450 lb
Maximum speed	244 knots
Cruise speed	177 knots
Service ceiling	19,200 feet
Initial rate of climb	2,300 fpm
Range (ferry)	1,200 nm
Fuel capacity	402 gallons

Its communications package includes 1 UHF/AM radio (AN/ARC-51BX); 1 VHF/AM (Wilcox 807A) and 1 VHF/FM (FM-622A[2]) radio; HF/SSB (HF-103) radio; TACAN (AN/ARN-52 [V]); 1 UHF/ADF (Automatic Direction Finder; AN/ARA-50); 1 LF/ADF (AN/ARN-83); 1 VOR (51R-6); ILS Glide Slope (51V-4A); IFF/SIF (AN/APX-64 [V]).

It is capable of carrying up to 3,300 lb of ordnance, including 7.62 mm miniguns, bombs, rockets, gun pods, and flares. It has five store stations; the four outboard stations are capable of handling 600 lb each and the center-line station permits it to carry an additional 1200 lbs of munitions or an external fuel tank.

*Aeronautical Systems Division, Standard Aircraft Characteristics, Vol 2, Sec II (Observation Aircraft), Sep 71.

OV-10A AIRCRAFT



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GLOSSARY OF TERMS AND ABBREVIATIONS

AARN	Army Air Request Net
ABCCC	Airborne Battlefield Command and Control Center. Usually a C-130 deployed in support of out-country air operations, it was an extension of the Seventh Air Force command center
AD	Air Division
ADF	Automatic direction finder
ADVON	Advanced Echelon
AFAC	Airborne Forward Air Controller
AFCC	Air Force Communications Center
AFEO	Air Force Eyes Only
AFLC	Air Force Logistics Command
AGCP	Air-ground Control Party
AGOS	Air Ground Operations School
ALO	Air Liaison Officer
AM	Amplitude Modulation
AOC	Air Operations Center. Prior to 1962 it was known as the Joint Operations Center. Subsequent to 1965 its nomenclature was again changed to the Tactical Air Control Center
ARVN	Army of the Republic of Vietnam
ASOC	Air Support Operations Center (redesignated the Direct Air Support Center after 1965)
ATC	Air Training Command
Barndoor/ Barn Door	The code name for the first element of the Tactical Air Control System, introduced into South Vietnam in January 1962, for the purpose of establishing an effective network

Birddog/ Bird Dog	Nickname for the O-1 (L-19)
CALO	Civic Action Liaison Officer
CAS	Close air support
CCTS	Combat Crew Training Squadron
CHECO	Contemporary Historical Evaluation of Combat Operations
CINC	Commander in Chief
CINCPAC	Commander in Chief, Pacific Command
CINCPACAF	Commander in Chief, Pacific Air Forces
Cmdr	Commander
COIN	Counterinsurgency (military, paramilitary, political, economic, psychological, and civic actions performed by a government to defeat subversive insurgency)
COMUSMACV	Commander, U. S. Military Assistance Command, Vietnam
CONARC	Continental Army Command
CONUS	Continental United States
CRC	Control and Reporting Center. A subordinate air control element of the AOC from which control and warning operations within its area of responsibility are conducted
CRP	Control and Reporting Post. One was deployed by PACAF to Tan Son Nhut Air Base in October 1961 to provide radar coverage of the southern part of South Vietnam
CSA	Chief of Staff, Army
CSAF	Chief of Staff, Air Force
CSD	Combined Studies Division
CTOC	Corps Tactical Operations Center
DASC	Direct Air Support Center (new name for the ASOC subsequent to 1965)
Dir	Director
DOD	Department of Defense

DTG	Date Time Group
EOT	End-of-Tour
FAC	Forward air controller
FAG	Forward air guide
Farmgate/ Farm Gate	Covert USAF mission established for training VNAF personnel beginning December 1961
FM	Frequency modulation
FTD	Field training detachment
FRAG Order	Fragmentary operations order which is the daily supplement to standard operations order governing conduct of air operations
G-2	Army Intelligence Division
G-3	Army Operations Division
GVN	Government of South Vietnam
HE	High explosive
HF	High frequency
Intvw	Interview
JCS	Joint Chiefs of Staff
JGS	Joint General Staff (Vietnamese High Command)
JOC	Joint Operations Center
JOAC	Joint Air Operations Center
Jungle Jim	Original covert combat and training unit deployed to South Vietnam in November 1961
LARA	Light Armed Reconnaissance Aircraft

MAAG	Military Assistance Advisory Group
MAAGAF	Military Assistance Advisory Group, Air Force
MAAG-V	Military Assistance Advisory Group-Vietnam
MACV	Military Assistance Command, Vietnam
MAGAF	Military Advisory Group, Air Force
MAP	Military Assistance Program; Mutual Assistance Program
Mosquito	Nickname for T-6 forward air controller aircraft flown during the Korean War
MTT	Mobile Training Team
N/F; NOFORN	Not releasable to foreign nationals. Classification term with special handling required
NVN	North Vietnam
ODC	Deputy Commander for Operations (term used commonly in 2d Air Division)
OSD	Office of the Secretary of Defense
PACAF	Pacific Air Forces
Psywar	Psychological warfare
ROE	Rules of engagement
Rover David	World War II term for British forward air controller
Rover Joe	World War II term for American forward air controller with the U.S. Fifth Army
RVN	Republic of Vietnam
SAWC	Special Air Warfare Center, Hulburt Field, Florida

SCAR	Strike Control and Reconnaissance. It also applied to forward air controllers without tactical fighter experience who were not authorized to conduct strikes with U. S. troops in contact. They were assigned to the out-country war
SEA	Southeast Asia
SECDEF	Secretary of Defense
SR/Sr	Senior
STAR	Speed Through Air Resupply procedures in the logistical support of SEA
STOL	Short takeoff and landing
STRICOM	Strike Command
SVN	South Vietnam
TAC	Tactical Air Command; tactical air coordinator, which was a term used in World War II and Korea for airborne forward air controllers
TACC	Tactical Air Control Center
TACP	Tactical air control party. In Vietnam, this is a subordinate operational component of the TACS which provides air liaison functions and coorindation for control of strike aircraft. It operates at corps, field force, division, brigade or cavalry squadron, and battalion levels--as well as province and regiment levels of ARVN forces. It consists of ALO's, FAC's, radio operators, and other personnel as required
TACS	Tactical Air Control System. It provides organization and equipment for planning, directing and controlling tactical air operations and coordinates air operations with other services. It is comprised of control agencies and communications-electronic facilities which allows centralized control and decentralized execution of missions

TASS	Tactical air support squadron
TDY	Temporary duty
TG	Tactical Group
TOC	Tactical Operations Center (Army)
TSN	Tan Son Nhut
UHF	Ultra high frequency
UMD	Unit Manning Document
USAF	United States Air Force
VC; Viet Cong	South Vietnamese Communist forces
VHF	Very high frequency
VNAF	Vietnamese Air Force
VSTOL	Vertical short takeoff and landing

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