



AIR UNIVERSITY **Review**

THE PROFESSIONAL JOURNAL OF THE UNITED STATES AIR FORCE

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With General John C. Meyer's article, "The Air Staff," *Air University Review* enters a new year and a new decade by beginning a new series of articles about the Air Staff. In this, the first installment, Comptroller of Air Force activities are the center of interest. Subsequent issues will focus on other Air Staff agencies. *Review* readers will thus be given an up-to-date accounting of some of the important plans and programs coming from the Air Staff.

MISSION: RANCH HAND

LIEUTENANT COLONEL ARTHUR F. MCCONNELL, JR.

THE nature and environment of the conflict in South Vietnam have required the U.S. and its allied military forces to revise many traditional strategic and tactical concepts of operations. Without question one of the most difficult and frustrating problems facing these forces is that of actually locating the enemy. The many densely forested areas throughout the country afford the enemy excellent concealment, which permits him to move personnel and supplies rapidly and with impunity to within striking distance of key government centers, lines of communication, Special Forces camps, and other military installations.

The use of air-delivered chemical defoliants as a tactical weapon to deny the enemy concealment in forest areas evoked considerable interest in Southeast Asia as early as 1945. British forces operating in Malaya employed this tactic with a fair degree of effectiveness during the late 1940s, with helicopters applying the defoliant along lines of communication. It was not until 1958-59, however, that the United States undertook any large-scale defoliation tests. As a result of the tests, several acceptable defoliants and delivery techniques were selected for further consideration.

In late 1961 a test program in South Vietnam was approved for the United States Air Force. With the full concurrence and support of the government of the Republic of Vietnam (GVN) and the Vietnamese Air Force, this project, under the code name RANCH HAND, began trial operations in January 1962 with three specially equipped UC-123 aircraft based at Tan Son Nhut Airport, Saigon. The initial unit designation was "Special Aerial Spray Flight." Because of the newness and uniqueness of this weapon system, the volunteer crews assigned to the RANCH HAND project designed their own concept of operations and an entire range of tactics and delivery techniques.

Constantly innovating and modifying, the crews slowly developed a highly effective defoliant-delivery operation geared to the varied tropical vegetation, foliage, and terrain of Southeast Asia.

By June 1962 the crews of the Special Aerial Spray Flight were ready to fly tactical missions, and it was not long before the merits of the delivery system were proven. A notable effort occurred in October 1962, when the crews successfully completed their first large-scale defoliation mission on the Cau Mau Peninsula in the Mekong River delta. This project was personally observed and evaluated by the Chief of the U.S. Army Chemical Corps as "outstanding."

Even so, defoliation operations in the following months were mostly conducted on a moderate scale. By mid-1964, however, authority had been received to expand project coverage and to establish limited operations from Da Nang Air Base. The program was proving its worth, and new target requests were constantly being received.

As hostile ground fire became more intense, the mission became extremely hazardous. The heroic efforts of the early spray crews were not without cost. Since the need to assign fighter aircraft to escort and support the defoliation project had not yet been recognized, the spray aircraft were entirely defenseless. However, despite the considerable number of problems inherent in their mission, the RANCH HAND crews delivered increasing amounts of defoliant on targets from the Demilitarized Zone (DMZ) to the delta.

Although RANCH HAND aircraft received heavy automatic-weapons fire from the ground with increasing regularity, it was not until January 1965 that approval was granted to prestrike targets with fighter aircraft and to provide a fighter escort for the spray aircraft. From that point forward, close-in fighter support was a vital part of the defoliation pro-

gram and made a significant contribution toward minimizing the effect of ground fire against the defoliation aircraft, although it could not entirely eliminate losses of aircraft and crews.

Operations continued to increase during 1965, and the Special Aerial Spray Flight successfully completed defoliation of a number of critical target areas. Particularly noteworthy was the unit's work in the Rung Sat Special Zone, a dense mangrove-covered swamp along the main shipping channels into Saigon. Because of the excellent cover afforded by the mangrove swamp, hostile forces operated with near impunity throughout the area and constantly harassed allied shipping into and out of the capital city. In March 1965 Rung Sat was placed on the list of critical targets, and in the following weeks spray crews flew 42 missions into the area, delivering over 77,000 gallons of defoliant on the target. The results rank as one of the most successful defoliation projects carried out by RANCH HAND crews, enabling friendly forces to sweep the area and secure the shipping channels against further enemy encroachment.

Another vital target during this period was War Zone D. In spite of heavy hostile troop concentration within the target area and almost continuous ground fire, the spray crews returned again and again until the project was successfully completed.

Because of a greatly increased demand for defoliation throughout South Vietnam, the United States and South Vietnamese governments directed that the RANCH HAND program be expanded. On 15 October 1966, the 12th Air Commando Squadron (RANCH HAND-VIETNAM) became an administrative and operational reality. It was initially equipped with 18 UC-123 spray aircraft, and the crews—all handpicked volunteers—quickly established an outstanding reputation for mission accomplishment throughout South Vietnam.

Several important events occurred in the months following establishment of the 12th ACS, including approval to assign one aircraft to Operation Flyswatter, a program designed to deliver insecticides over various populated areas throughout the country, to control ma-

laria mosquitoes and other disease-bearing insects. Using techniques similar to those employed in defoliation, the insecticide crews made an outstanding contribution to the health and welfare of the people of Vietnam.

By late 1966 the 12th ACS had significantly increased its defoliation operations and embarked upon another key project: the southern half of the DMZ was approved for targeting. Flying over flat terrain and visible to the enemy for many miles throughout the target run, the RANCH HAND crews courageously defied great odds to place their defoliant precisely on the briefed targets. As a result of these operations, much of the southern portion of the DMZ was exposed, and the enemy was denied ready access to his hitherto secure infiltration and supply routes into South Vietnam.

In December 1966, as RANCH HAND crews continued their country-wide defoliation schedule, the 12th ACS moved its operational headquarters to Bien Hoa Air Base, where it remains today.

During early 1967 the main areas of activity were War Zones C and D, while Da Nang-based aircraft concentrated on targets along enemy infiltration routes in South Vietnam. One of the highlights of this period was Operation Pink Rose, a jungle-burning project carried out by RANCH HAND crews. They flew approximately 225 sorties and delivered over a quarter-million gallons of herbicide on selected target areas in War Zones C and D, successfully completing their part in the project in April 1967.

Target areas throughout the country were sprayed during the remainder of 1967, particular emphasis being placed on vital targets in the IV Corps area. This accounted for a significant increase in hits received from ground fire during 1967, since the flat terrain of the delta region allowed enemy gunners to see the spray aircraft coming from miles away.

The flexibility of the 12th Air Commando Squadron was severely tested in February 1968, in the throes of the Communist Tet offensive. The unit was directed to assume an airlift role under direction of its parent organization, the 315th Air Commando Wing. The

RANCH HAND team stripped the aircraft of all defoliation equipment, including tanks and spray booms, and reported in, "Ready to go," in the amazing time of 24 hours. During the weeks that followed, crews of the 12th flew 2866 productive sorties in the airlift role, with the same professionalism and zeal which had become the RANCH HAND trademark.

After the Tet offensive was blunted, the UC-123s were restored to their defoliation mission. Again in minimum time, maintenance teams reconfigured the aircraft, and spray operations were quickly resumed.

The remainder of 1968 reflected a continuing increase in the amounts of herbicides dispensed and in the testing of new formations and tactics. So that seasonal weather for spraying priority targets in I Corps might be used to advantage, a significant increase was made in the size of the detachment operating from Da Nang Air Base, and the sortie rate doubled. RANCH HAND crews operating from this forward base flew highly successful defoliation missions against some of the most heavily defended areas in South Vietnam, including the A Shau Valley, Khe Sanh, and as far south as Pleiku. In defiance of the rugged mountain terrain and accurate enemy antiaircraft fire, the defoliation crews frequently went in over these vital targets in order to open them up for aerial observation. The results were always outstanding, as attested to by Army commanders and aerial observers.

On 1 August 1968 all units in Southeast Asia with an "Air Commando" designation were renamed "Special Operations," and RANCH HAND became the 12th Special Operations Squadron.

Between the date of the first RANCH HAND flight in January 1962 and 1 January 1969, defoliation crews made more than 19,000 combat sorties, all of which were flown under the extremely difficult and hazardous circumstances associated with defoliation work. With rare exceptions, target areas were occupied and/or utilized by unfriendly forces, consisting primarily of hostile base camps and lines of communication.

In this hostile low-level environment the RANCH HANDS received more than 3500 hits

from all types of enemy ground fire. Yet, without hesitation, with complete disregard for personal safety, and in outstanding displays of courage and determination, combat crews daily flew their four-minute target runs—the "run of terror"—and laid the defoliant with near-perfect precision.

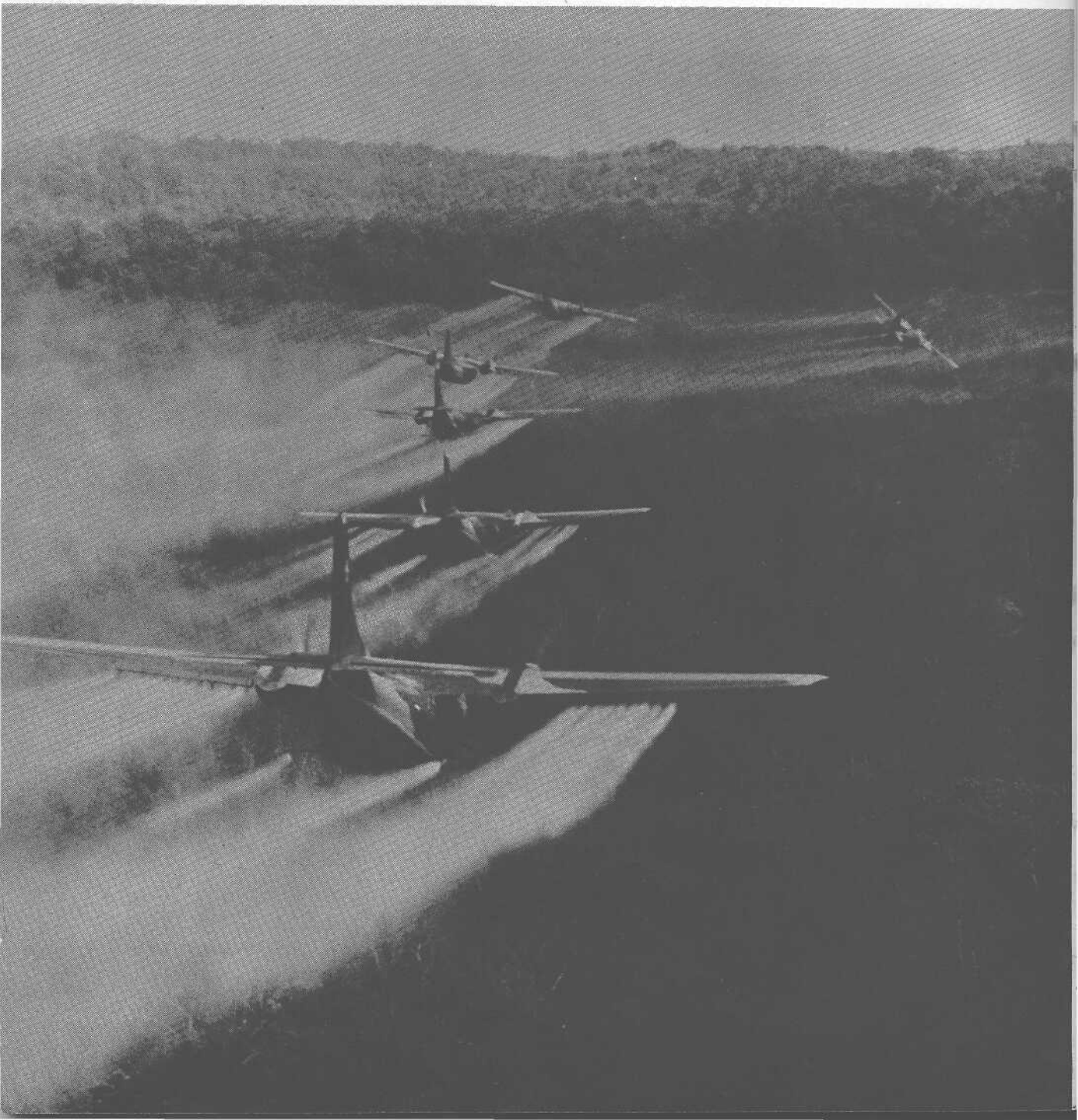
The enemy has testified to the effectiveness of RANCH HAND operations. A Viet Cong prisoner of war observed that after a base area had been sprayed the camp would be moved. Each man would pick up his hammock and backpack and walk about three hours to a new camp site. Another POW stated that defoliated areas hampered the VC in moving and stationing troops. These areas had to be avoided for nearly a year before they could be reused.

When it was necessary to cross a defoliated area en route to an objective, the VC waited for nightfall or crossed singly—either course of action delaying the movement. When it was necessary to cross small defoliated areas, they crossed in daylight, provided the unit could assure itself that no aircraft were in the vicinity. With regard to the defoliation along GVN lines of communication, the VC published orders making the removal of brush and trees along roads and waterways a punishable offense: they used the cover for hiding places from which to spring ambushes. Our defoliation and subsequent removal of vegetation along such lines were therefore a prudent exercise.

Definite advantages accrued from the defoliation program, particularly along the lines of communication in South Vietnam. In one instance, no ambushes or hostile incidents occurred after defoliation. In another, there were only eleven in a four-month period. In a third, the number of incidents decreased from six in four months to four in six months. During this same period, the amount of traffic along the roads remained constant or increased. Thus defoliation resulted in a dramatic decrease in the incident rate, and the potential for ambush was greatly reduced. Defoliation along one river caused the VC to evacuate their sheltered positions there. Along another river, defoliation caused at least three

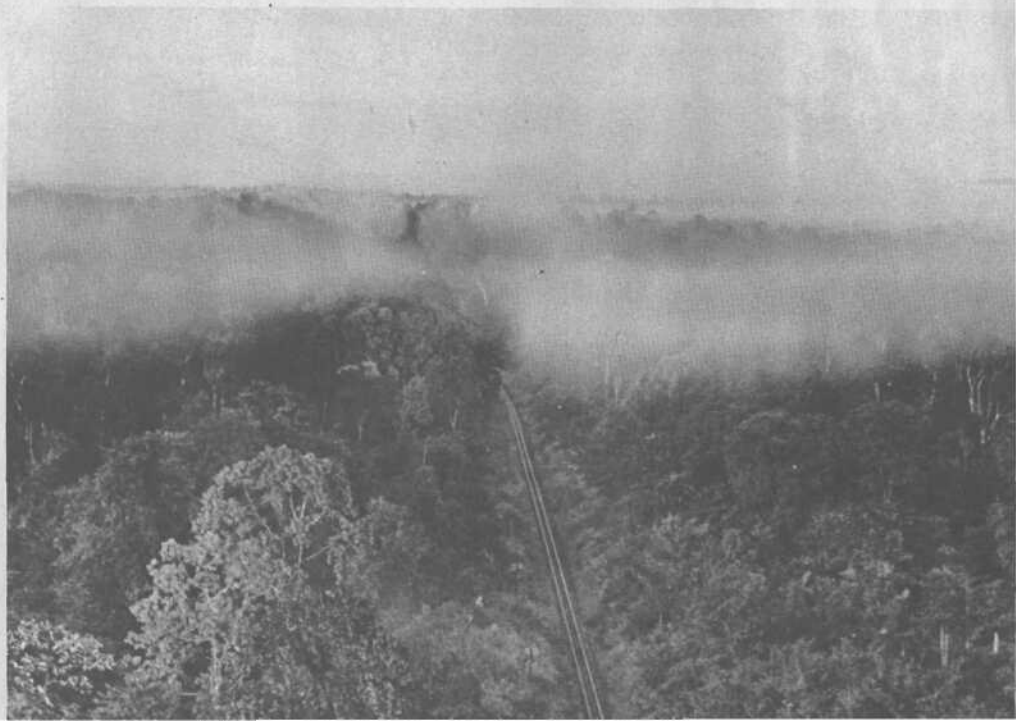
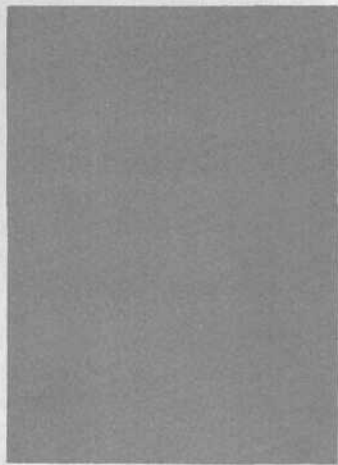
Defoliation Operations

The boundaries of a defoliation objective must be carefully observed, to ensure maximum concentration of the herbicide on Viet Cong areas. The formation leader and following aircraft keep lateral distance so as to cover the proper swath. . . . The Hayes AA-45 internal defoliant system . . . A C-123 modified for defoliation operations . . . Spray as seen from the tail.





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ambush attempts to fail in a region where they had regularly succeeded.

There was a vivid improvement in the ability to find enemy routes of travel, bunkers, structures, and defenses after the foliage cover had been removed. Ground commanders reported increased visibility from 40 to 60 percent, while forward air controllers reported improved aerial visibility from 70 to 90 percent.

War Zones C and D were heavily defoliated. Prior to defoliation, seven brigades were necessary to maintain U.S./GVN presence in War Zone C; after defoliation, only three were required. In War Zone D, only one brigade was necessary after defoliation. In one instance plans called for a 2½-division effort to be conducted. Defoliation made this operation unnecessary. These examples emphasized the value of the defoliation operations and underlined the need for continuation of the program.

IN SUMMARY, the defoliation program did what it was intended to do. Viet Cong routes of movement were revealed, and their hiding places were eliminated. They were forced to divert resources to noncombatant tasks—moving base camps, waiting for hours of darkness, etc. The number of our trucks and troops lost in ambushes decreased because of defoliation operations.

The unique role played by RANCH HAND

in Southeast Asia bred an *esprit de corps* among its members that became respected throughout the area of operations. Taking immense pride in their mission, their aircraft, and their purple scarves, RANCH HAND crews displayed gallantry and courage of the highest order. With full knowledge of the importance of their work, as well as its hazardous nature, they continued on countless target runs while receiving intense and accurate hostile ground fire. They significantly increased the ability of aerial observers to monitor the movements of hostile forces and to direct fighter-bomber strikes against them. More important, they provided allied ground forces with protection against sneak attack by depriving enemy troops of valuable ambush positions, resulting in many allied lives saved. In totality, they enhanced the combat effectiveness of allied air and ground forces fighting in Vietnam.

The obvious corollary to a successful air mission is a reliable ground operation. The dedication of the maintenance crews of the 12th Special Operations Squadron in preparing the aircraft for flight, in continually repairing battle-damaged aircraft, and returning them to operational status in minimum time is equally responsible for the success enjoyed by the RANCH HAND mission. The 12th has written a new page in the history of aerial warfare.

Ent Air Force Base, Colorado