

reported lucrative targets, supposedly containing large amounts of cultivated crops and seed-beds, only to find fields abandoned and consisting mainly of wild grass and dead stalks, thus wasting time and herbicide. The problem became even more critical as the enemy reacted to the crop destruction program by concealing cultivation. In deserted rice paddies along the coast, for example, Viet Cong replanted only one out of every eight or nine paddies, leaving the appearance of disuse from 3,000 feet. In the mountains, one or two rows of crop were planted under the edge of the tree line along streams or around the edge of clearings. In cultivated fields, dead stalks of last year's crop were left standing and a new, low-standing crop carefully planted among them. Surveys from higher altitudes failed to spot these hidden cultivations.

The solution arrived at by Major Hank Good, Chief of Targeting, was to fly the survey missions at spray altitude. With permission of the RANCH HAND Commander, Lieutenant Colonel Bob Dennis, low-level survey began in early 1967 and proved highly successful. Surveys were made by flying to the target area above 3,000 feet, informing the applicable radar control site where they were and that they were going low-level, and requesting rescue assistance if they did not check back in within thirty minutes. Survey flights also protected themselves by flying at 160 knots airspeed or faster, instead of the slower spray speed. Whether because of the airspeed, or because the enemy thought the single planes were airlift aircraft, few survey flights were hit by enemy ground fire.³

After these reconnaissance flights over the proposed area, a coordination meeting was held with the Province Chief, local military commanders, MACV and ARVN chemical officers, and representative of Seventh Air Force and RANCH HAND. These meetings were normally held in the field, and details of target requests, psychological warfare (psywar) requirements, intelligence data, and target peculiarities were worked out (complete agreement among the participants on either the need for a particular attack or the extent of the attack area, especially on crop targets was not always achieved). Following the meeting, the formal written target request was prepared and forwarded

Even if they had visibly dispersed, when would spraying have become cost-effective? No idea

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alternate target usually required coordination with TACC to get a FAC and have alert fighters launched for escort; sometimes the originally scheduled escort could be held on the ground or in the air until RANCH HAND reached the alternate target. The primary restraint to good fighter coverage on alternate spray targets was always the jet fighters' limited ability to loiter in the attack zone, but close coordination with fighter units, particularly the F-100 squadrons at Bien Hoa who supported several of the largest alternate target areas, prevented any ~~serious~~ ^{significant} degradation of the herbicide mission.⁵

Typically, show time* for the Alpha lift was 0430 hours and for the Bravo lift, 0515 hours. These early missions were planned to strike their targets at sunrise, and show times were adjusted according to the distance of the target from the launch base. Depending on aircraft availability, Alphalift would be a large formation of six to twelve aircraft and Bravo, three or four. After return from the first target, the Alpha crews would rebrief and relaunch at 0900 to 0930 hours to another target. This second mission could remain a large single formation (Charlie lift) or fly missions on two separate targets by splitting into Charlie and Echo lifts. Bravo lift was turned-around for a second mission at approximately 0800 hours (Delta lift). The number of aircraft on later missions depended on spare availability and the amount of battle damage suffered on the first lifts. The staggered schedule was aimed at avoiding congestion on the ramp between missions; primary restriction was herbicide reserVICING--only three planes could be "re-purple" at a time.⁶

The Da Nang detachment operated on a similar schedule, although the mountainous terrain and crop targets made it important that the crews have full daylight for the attack on the first target. Normally, all available aircraft (three or four) were flown on each mission (Hotel and India lifts). During the "good weather" season in I Corps, the Mountain RANCH was frequently augmented with additional aircraft to fly four missions instead of two, adding Juliet and Kilo

*The arrival time of the aircrews at the flightline.

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lifts. Aircraft at Da Nang were rotated on a regular basis to perform scheduled heavy maintenance and inspections at Bien Hoa. This did not interfere with the herbicide missions since all ferry flights were made in the afternoon, after completion of the day's work.

The move to Bien Hoa caused a change in off-duty activities for RANCH HAND. While at Tan Son Nhut, most personnel above the rank of staff sergeant lived in various hotels, apartments, and villas in Saigon, several of them near "Hundred-P Alley," an infamous area named after the price of its prostitutes. Many RANCH HAND members owned motorcycles and, after a party, often held races up and down the "Alley," sometimes in various states of undress, to the accompaniment of the cheers of the street's habitues. Frequent mishaps resulting from the combination of alcohol and street hazards usually visibly marked the rider with scrapes and scabs--a malady referred to as a "Honda Rash." For a reasonable price, most downtown dwellers hired full-time cooks, cleaning women, and house-boys, putting themselves in the enviable position of going to war in the morning and returning to "civilization" in the afternoon.⁷

Bien Hoa was different. Quarters were large, humid tents or unairconditioned, open-bay "hooches" with louvered, screened sides and concrete floors. Both were hot, dirty, and rat-infested. Da Nang initially was no better, but tents eventually were replaced by concrete-block barracks. At Bien Hoa, RANCH HAND always received second-class accommodations, compared to host-unit fighter pilots. Food service was available from several base messhalls and from the clubs--a step down for those who had good cooks in Saigon. Base regulations concerning motorcycles were strict and enforced. After the initial shock wore off, RANCH HAND began a steady program of scrounging, trading, bribing, borrowing, and "midnight requisitioning" that continued unabated during the stay at Bien Hoa. The buildings in the old French compound were eventually closed-in with discarded flare shipping cartons, airconditioned, and equipped with plywood-paneled lounges featuring well-stocked bars and refrigerators. Comfortable house trailers later became available for senior officers. Large outdoor barbecue grills were built, and became the sites of regular

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parties centering around thick steaks obtained by further judicious trading and "exchange of favors." When missions were cancelled for the day, grills, food, and beer frequently were loaded onto several aircraft and a squadron party was held during the afternoon at one of the more secure coastal beaches.⁸

Neither the growing size of the operation nor the move to military surroundings changed the RANCH HAND irreverence toward military mores; if anything, the aircrewmembers became more elitist in their attitude--assuming that they deserved special treatment on the ground for their efforts in the air. At RANCH HAND parties, it became standard that without regard for rank or the occasion, visitors would sooner or later be greeted with a "hymn," consisting of the entire group intoning in drawn-out chorus, "him.....him.....fuck him." Even occasional female visitors received this treatment, including the Seventh Air Force Commander's personal secretary. A favorite tactic of the champagne-treated "cherry" parties was to fire champagne corks at opportunist² targets while everyone screamed "ground fire," and to liberally douse visitors and hosts alike with sprays from shaken bottles of the frothy liquid.⁹

When they had no other target for their games, the herbicide crews turned on each other. Shortly after the move to Bien Hoa, Major Charley Hubbs, one of the flight commanders, became the first to acquire an airconditioner. By enclosing his portion of the hooch and running a covertly buried electrical wire to the nearby Officers' Club junction box (because of an electrical shortage, the base civil engineer section checked all other junction boxes to catch "electricity cheaters"), Hubbs became the envy of the squadron. Several RANCH HANDS, however, discovered that a smoke grenade dropped into the airconditioner provided suitable revenge, brightly coloring the room and its contents, including the major. From then on, Hubbs was regularly "smoked" by other officers testing the effect of the many smoke grenade colors available. Although the trick lost much of its attraction when airconditioning became more common, occasional "smokings" were reported even after the unit moved into permanent barracks at Phan Rang in 1970.¹⁰

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Of course, spray squadron commanders often were on the carpet for the escapades of RANCH HAND personnel, and relations with host base commanders and personnel were frequently strained by the squadron's excesses. On the whole, however, the sometimes childish activities of the purple-scarved crewmen were usually regarded with a tolerant and forgiving eye, particularly since this wild behavior seemed part of the special mystique which surrounded the unique organization. Senior officers also may have *retard* recognized that men who daily faced the hazards of flying slow, unarmed aircraft at tree-top level over known enemy positions needed a therapeutic release of tension.¹¹

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self-recruiting -
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Other pilots, however, simply regarded RANCH HAND crews as insane. During debriefing following one particularly well shot-up mission, an escorting fighter pilot stood up, carefully examined the faces of the spray crewmen, shook his head, and commented "balls of steel." Knowing the propensity of RANCH HAND for attracting ground fire, fighter units referred to the spray crews as "magnet-asses," and the escort pilots borrowed a fishing term and called herbicide support missions "trolling," with the spray planes as bait.¹²

On at least one occasion, MACV took advantage of the attraction of spray aircraft to enemy gunners. During 1966, a large Viet Cong force moved into the U Minh Forest, but intelligence could not pinpoint its location. Well aware of enemy reaction to herbicide planes, headquarters asked RANCH HAND to act as decoy to cause the enemy to reveal himself. A flight of UC-123s was to fly over the suspected area; if it drew heavy fire, a special strike force would attack the exposed unit. The strike force, which would cover the UC-123s and attack the enemy, consisted of two forward air control aircraft, two flights of fighters, and fourteen Army helicopter gunships, all waiting a short distance from the suspected enemy encampment so as not to reveal the trap. The mission went exactly as planned: RANCH HAND "trolled" for the enemy, the Viet Cong opened fire on the spray planes, and the strike force attacked the revealed positions with bombs, rockets, and machine gun fire. The result was destruction of the enemy camp, with almost 400 VC killed and an unknown number of wounded.¹³ Despite this success, acting as "bait" was not one of the

Virginia, a week at Jungle Survival School in the Philippines, twelve months duty in Vietnam, return home. The duty tour was curtailed at the rate of one month for every twenty missions, if the individual had missions over Laos or North Vietnam. Thus some RANCH HAND crewmen went home as much as three months early (some also extended and served more than a single tour). As the organization got bigger, the turnover increased, not only did old members need replacement, but extra personnel had to be programmed in to fill new authorizations and replace combat losses. If the new assignees had never been to basic USAF survival school, the pipeline was increased by one step--survival school at Stead AFB, in the mountains near Reno, Nevada. As a result, during the winter months, incoming replacements spent several weeks learning to use snowshoes and to survive at zero degrees Fahrenheit, while on their way to jungle war. An excellent example of rote Air Force bureaucracy.¹⁶

Spray training also was not above reproach for unrealistic practices. At Langley, training took place over flatlands, at light aircraft gross weight, with partial loads of water or, occasionally, insecticide in the spray tank. The crews practiced high, sweeping turns at the end of simulated runs--one particularly beautiful course reversal turn involving a 90 degree turn in one direction, immediately followed by a 270 degree turn in the opposite direction, became known as the "plumtree" turn, after Plumtree Island, Virginia, where it was practiced. In Vietnam, the newcomer discovered that the terrain was seldom flat, the aircraft were almost always overloaded, and the "plumtree" turn was a VC gunner's dream. "One pass and get out," or if you had to reverse course, "tight, low-level turns as near to the ground as you could get" were the "real-world" answer to combat survival.¹⁷

The constant turn-over of personnel was not unique to RANCH HAND, it was a problem common to all units in Southeast Asia. The expansion to squadron size, however, coincided with a marked change in the type of personnel coming to the spray organization. Prior to 1967, RANCH HAND pilots and navigators were mostly young captains and lieutenants with approximately five years flying experience--sometimes rash,

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frequently a little wild, always only semi-disciplined. RANCH HAND commanders were senior captains, later junior majors, essentially concerned with operational matters; in actuality, they were little more than the ranking officers of a small detachment on independent duty. Almost all the early RANCH HANDS were volunteers. The challenge of its unique mission and its reputation for hell-raising even caused several officers to pull strings and get transferred to the spray unit after they arrived in Vietnam for duty with another organization. The infrequent non-volunteer assigned to the herbicide was willingly allowed to transfer, if he asked. For example, when a non-volunteer captain who arrived in August 1966 took three hits on his first spray flight and two more on the second, he and another non-volunteer asked Major Dresser, the commander at the time, for a transfer; both were immediately reassigned to an airlift squadron. During his eleven months in airlift duty, the captain picked up only two more hits, and in 1981 still believed that the transfer probably saved his life: "My decision to get of [of RANCH HAND] was the best decision I ever made--otherwise, I would probably not be around to write this."¹⁸

After 1967, RANCH HAND replacements were older, more experienced, and, perhaps, more cautious. First majors, and then lieutenant colonels, began getting cockpit assignments to spray duty; some of these older officers were experiencing their third war--having served in World War II and Korea--and several had more recent experience flying a desk than a plane. By March 1968, of sixty-nine officers in operations, sixteen were lieutenant colonels, thirty-one were majors, and only five were lieutenants. Several of them were not volunteers, but with few exceptions, they performed the mission with as much enthusiasm and dedication as their predecessors. These older officers willingly took part in the squadron parties, but were more apt to engage in social drinking than in the riotous behavior of the earlier RANCH HANDS.¹⁹

The growth of RANCH HAND and its activation as a separate squadron also prompted a change in unit leadership. Commanders now were senior lieutenant colonels, who spent most of their time on

administrative detail and in coordination meetings. The size and complexity of the operation was such that the one-year tour became a hindrance at the management level. Commanders, operations officers, maintenance officers, and senior non-commissioned officers barely became experienced with all phases of the mission before they returned to the United States. Even worse, replacements often arrived after their predecessor departed, leaving them to learn the job the hard way--sometimes repeating the mistakes of the past--and hampering continuity of effort. The damage was compounded when the rotation dates of several key personnel occurred within a short period. Again, this problem was not unique to RANCH HAND, but its effect was greater since no similar unit existed anywhere else in the Air Force; unlike other organizations in Vietnam, there was no reservoir of experienced state-side personnel from which senior leadership could be drawn.²⁰

The cockpit experience cycle reversed itself once more in late 1969 when the squadron began receiving large numbers of lieutenants newly graduated from basic pilot training (see Chapter XI). Trained in jet aircraft, using high altitude, electronically assisted navigation, these young pilots were eager and capable, but totally inexperienced in conventional aircraft or low-level operations, and not prepared for the demands of the RANCH HAND mission. The squadron was forced to use these inexperienced pilots in place of a second fully-qualified first-pilot. The lack of two fully-qualified first-pilots on a spray sorties placed an inordinate and hazardous workload on the sole qualified pilot, again demonstrating higher headquarters' failure to understand the problems of the herbicide mission.²¹

Besides the changes in manning composition, activation of the 12th Air Commando Squadron in 1966 was accompanied by one other significant change. In previous wars in the ^rtopics, the malaria-carrying mosquito had proven nearly as deadly as the enemy. The experience was repeated in Vietnam. Within the first two years of combat-force involvement, more than ten thousand Americans were rendered casualties by the bothersome insect, and in particular, by one species of mosquito-borne parasite, plasmodium falciparum, which was highly resistant to traditional malarial drugs. According to a

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United States Navy medical report, in some small units, "the attack rate [of malaria] has attained the equivalent of 100% in two months" of arrival "in-country." Not only was this virulent strain of malaria sweeping Vietnam, but returning personnel were bringing it back to Guam and the United States.²²

Although combat area spraying had originated with World War II insecticide missions and the Vietnam spray cadre was drawn from the Langley insecticide flight, it was not until 1966 that USAF headquarters decided to remodify one of the UC-123 defoliation planes to a malathion-spray configuration to help counter the anopheles mosquito, carrier of plasmodium falciparum. Initial plans called for an insecticide test program in Thailand. On 14 October 1966, a 12th ACS spray plane, thoroughly washed of all herbicides and equipped with the finer orifice nozzles needed for insecticide work, departed Saigon for Bangkok. In addition to the aircrew, the entourage included Navy Captain Richard T. Holway from the Pearl Harbor, Hawaii, medical facility, Major James R. Willman of the Army's 20th Preventive Medicine unit at Saigon, Major Claude T. Adams, an entomologist from Langley AFB, Virginia, and Major Carl T. Marshall, commander of the Langley-based insecticide spray flight, former RANCH HAND commander, and technical advisor on spray operations.²³

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When the test aircraft arrived in Bangkok, it was discovered that unusually dry conditions in the selected spray area had reduced the mosquito breeding areas and the insect population was too low for accurate evaluation. The uncomplaining aircrew spent three ~~carefree~~ days in the Thai capital before being ordered to return to Saigon with their passengers, and an alternate test site in a supposedly secure area of Vietnam was selected for the trials. The 20th Preventive Medicine unit was made responsible for the mosquito count and "bite" tests in the designated area.²⁴

Although reduction of the mosquito population was beneficial to the Viet Cong, as well as Allied forces, apparently not everyone knew this; during one malathion test in a wide river valley, the aircraft received ground fire and took a hit in the chemical tank. Major Marshall, riding as an observer, urged that the mission be continued,

is there a non-operational mission -?
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 hopefully help prevent the aircraft from being fired upon during its insecticide runs).²⁷

The first operational UC-123 insecticide mission was flown on 6 March 1967; by the end of the month, 56,000 acres had been treated with malathion, at a rate of eight ounces per acre. Mosquito missions were preceded by psywar leaflet drops several days ahead of time telling the people not to fire on the silver aircraft and describing the benefits of its mission to the community. On the day of the spraying, a U-10 Helio-Courier "speaker" aircraft from the 5th or 9th Air Commando Squadrons usually accompanied the insecticide aircraft, orbiting overhead and broadcasting to the people that the malathion was for their own good and that it presented no threat to people, crops, or animals. The effectiveness of these precautions was reflected in the very low number of hits taken by the "bug birds." Only rarely in the four-year operation did insecticide crews receive ground fire, and then usually when spraying long-held enemy base-camp areas before major Allied ground assaults. The occasional small-arms hit taken while "debugging" American bases was jokingly attributed to angry GIs routed out of bed at dawn by the roar of the spray plane making repeated passes at tent-top level.²⁸

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 During the remainder of 1967, 118,985 gallons of malathion were dispensed over various base areas and combat zones. Manning the aircraft were volunteers from among the regular herbicide crews; insecticide duty ^{broke} provided a nice break from the normal routine, ~~due to~~ since the ^{one's} varied bases the crews landed at, and ^{made} frequent overnight stays throughout Vietnam. Flight crews took along motorcycles for local transportation and it was not unusual to see the "bug bird" land, taxi to the terminal, drop the cargo ramp, and have a formation of Hondas come roaring out of the aircraft, as the crew, purple scarves flying, made a bee-line for the nearest chow hall or base exchange. On the other hand, many herbicide crewmen were quickly bored with the long, fairly uneventful missions, uninterrupted by the excitement of fighter cover, pre-strikes, or ground fire. Since the mosquito targets were transitory, precise target navigation was not required; the repeated passes back and forth over the area were quite similar to aerial

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spraying in the United States.²⁹

Insecticide sorties in 1968 more than doubled the 1967 total, to 280 from 118, and increased again in 1969, to 390. By this time, the mosquito unit had been designated a separate flight within the 12th ACS, commanded by a major, with two aircraft commanders and two uncamouflaged UC-123s. Copilots for the "bug birds" were selected from among the new pilots in the squadron, usually for a thirty to forty-five day tour; the longer insecticide missions allowed them to ~~build~~ flying time and experience in the aircraft much more rapidly than they could on the relatively short herbicide missions. This practice became especially useful when the squadron began receiving new pilots with no conventional or multi-engine experience, fresh out of flying training. Flight and aircraft commanders normally were assigned to insecticide duty for about one-half of their tour in Vietnam.³⁰

The insecticide flight continued to be responsible to the MACV Surgeon General's Office, with support from both the Army and Navy. Sorties were normally blanket-fragged* through Seventh Air Force TACC; targets were sprayed every eleven days, weather permitting. This busy schedule kept at least one aircraft on the road at all times, although the targets were seldom changed. Malathion reservicing was available at Cam Ranh Bay and Da Nang, in addition to Bien Hoa.³¹

By 1970, fourteen bases and their adjacent cities were routinely targeted for malathion treatment, and the respray interval was reduced to nine days. The insecticide chemical had the same wind and temperature limitations as herbicides, and was effective only through direct contact with mosquitoes or their larvae. Thus, the best times for spraying were just after sunrise and just prior to sunset, when the insects were most active. In early 1970, the Navy chemical support unit at Da Nang was replaced by the Army's 172d Preventive Medicine Unit; the Army's 105th Medical Detachment continued as support unit at Cam Ranh Bay.³²

* Long-term mission orders covering all sorties for a specified period, rather than for a single day.

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The "bug birds" received an unusual assignment in May 1970. TACC directed insecticide missions be flown over two areas south of Da Nang--Landing Zone "Baldy" and Fire Support Base "Ross." Since both were "high threat" areas, two insecticide planes were to be used in formation and fighter escort would be provided by the 1st Marine Air Wing. After a survey flight over the first target on 21 May, the insecticide crews briefed their fighter support at Da Nang. The following day, despite the fighters and psywar support, the two spray planes came under heavy fire shortly after beginning their first run; the mission was aborted and the flight returned to Da Nang. The number two aircraft had been hit seven times, but damage was minor. Seven days later, an attempt was made to spray "Ross" with the same result--the number two aircraft was hit four times before the run was abandoned. Further attempts to "debug" active enemy contact areas were cancelled.³³

When the 12th ACS was deactivated in July, the insecticide unit continued its mission as part of "A" Flight, 310th Tactical Airlift Squadron (TAS), with home base at Phan Rang. The remainder of 1970 was uneventful--the unit history noted only two exceptions. On 14 November a "bug bird" took a hit while innocently returning to base from a mission--hits at cruise altitude over South Vietnam were rare. The other exception occurred in December. Because insecticide corroded the bare aluminum skin of the aircraft, ~~insecticide~~ ^{skin} planes required periodic corrosion control treatments at Kadena Air Base, Okinawa. When one of the insecticide planes came due for treatment in December, it was replaced with a camouflaged herbicide aircraft. In the hope of convincing local inhabitants of its peaceful purpose, Seventh Air Force required the painted temporary replacement to be escorted by extra psywar loudspeaker planes. The tactic was successful. During 1970 insecticide planes took only 12 hits while flying 486 sorties, dispensing 102,440 gallons of malathion.³⁴

Appropriately, RANCH HAND, which had originated from the insecticide mission at Langley, finished with the same mission. After cancellation of the herbicide program in 1971 and conversion of the herbicide aircraft to airlift duties, the insecticide flight continued

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CHAPTER IX

THE YEAR OF GLORY . . . AND DEATH

The buildup of American forces in South Vietnam had reached 389,000 men by the beginning of 1967, and Defense Secretary McNamara had authorized the deployment of another 80,000 men by June 1968.¹ The American increase had been augmented by the arrival in 1966 of more Australian and New Zealand forces, and an additional Korean infantry division. American aviation had been expanded by two F-4 and one F-5 fighter squadrons, plus more AC-47 "Puff" gunships. In the United States, the anti-war movement was gaining strength as increasing numbers of young men felt themselves threatened by the draft (although only 2 percent of eligibles were actually called in 1966) and ^{full color video} ~~extensive video coverage of the war~~ brought scenes of bloodshed and ^{were was brought} ~~agony~~ ^{in a manner and} into American homes ~~at the dinner hour~~ on a scale ⁱⁿ ~~never~~ possible before television. American defense officials, citing intelligence estimates of heavy ⁱⁿ losses among enemy troops, predicted a turning point in the war ~~would occur~~ during spring 1967. The Vietnamese government's control over an estimated 57 percent of the population was expected to increase with a new "pacification" strategy of seizing military and political control of rural areas.²

The matching expansion of RANCH HAND operations in 1966--more planes, additional crews, a new primary location, increased mission requests, more intense enemy opposition--augured an expanded role for herbicides in the conflict. Thus no one was surprised that 1967 was a year of record achievements in sorties flown, herbicide dispensed, and hits taken; even so, the enlarged organization failed to keep pace with the demands of province chiefs and field force commanders, ^{although} despite operating at maximum capacity throughout the year. The new year ~~would~~ also ^{see} ~~be~~ the squadron set an undesired record, ~~the price as~~ ^{led to} ~~for~~ the intensified effort ~~was~~ the loss of a record number of crew members.

Herbicide shortages continued to plague the TRAIL DUST program in 1967. The effect was most noticeable in the RANCH HAND operation, as

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The spray squadron held a memorial service for their comrades, but there was little time to brood over their loss. In addition to continuing activity throughout South Vietnam and along the Ho Chi Minh Trail, February marked the start of the previously authorized project to defoliate the southern half of the buffer zone created in 1954 to separate North and South Vietnam. The first missions took place on the fifth, following charges by the South Vietnamese government to the International Control Commission that NVA forces had repeatedly violated the zone to infiltrate men and supplies into the South. The South Vietnamese already had protested the inability of the ICC to adequately patrol the zone twice earlier, in September and October 1966. Defoliation of the DMZ was only part of an ^{proposed} ~~by~~ ^{proposed} ~~fire~~ ^{multi-b. line} ~~break~~ ^{scheme} to front the blocking forces of the 3d Marine Division along Route 9 with a "fire break" . . . of ground swept clean of vegetation and sown with barbed wire, mines, and sensors," which the press was to label the "McNamara Wall." A retired senior Marine officer later noted: "The North Vietnamese were not greatly inconvenienced."⁶

The arrival of two UC-123s in February and another in March, with the crews who brought them, helped provide the 12th ACS with some breathing room. Although RANCH HAND was authorized twenty-seven crews, no more than twenty-two complete crews were ever available during the January-June reporting period. Flight crews were not the only personnel shortage; program documents allocated over 460 officers and airmen to the squadron, but actual manpower authorizations never reached half of this number. In spite of the shortage of personnel and planes, the squadron launched more than 500 sorties per month for each of the first three months.⁷

The number of hits decreased dramatically in February, to 61, but the respite was only temporary and hits totaled 157 in March. The flight crews were naturally interested in acquiring any protective equipment they could, to supplement the sparse armor-paneling installed in the aircraft. In addition to standard flak vests, most crew members had helmets similar to those normally issued to jet aircraft crews, although one individual managed to come up with a vintage German flak helmet from World War II. Interest in head and

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face protection was stimulated by the increasing number of injuries in this area. For example, Captains Clyde Picht and John Beakley both sustained numerous wounds in the face and arms from flying glass when cockpit windshields or windows were hit during missions on 11 November and again on 1 December 1966. Dual-visor ballistic helmets provided for evaluation in February 1967 met enthusiastic acceptance.⁸

Also replaced at this time were the Air Force issue flak vests, a type developed during the Korean ^{War} "~~Police Action~~." Tests by Technical Sergeant Harold C. Cook, personal equipment NCOIC, and Major Henry K. Good, flying safety officer, proved the vest vulnerable to hits from an M-14 rifle, an M-16 rifle, and a .45-caliber pistol ^{at what ranges?}. On the other hand, plates of ceramic armor worn by Army helicopter gunners withstood anything fired at them. Cook and Good submitted pictures of their tests and a proposal for a ceramic vest to the Seventh Air Force Surgeon's Office. Within an unusually short time, an Air Force project officer arrived with ten experimental vests for evaluation, and RANCH HAND soon became the first to receive the new silicon carbide body armor. Despite the weight of the new vests, few complaints were heard, especially after the ceramic vests began proving their worth by stopping shrapnel and small arms rounds. On 13 March, Staff Sergeant Donald White was flight mechanic on the number three aircraft on a valley target approximately forty miles inland from Chu Lai. On the second pass, a 12.7-millimeter Chinese Communist-made armor-piercing projectile came through the right wheel-well of the aircraft, then through the right side of the armored "flight-mech's" box, and hit Sergeant White in the left-center of the chest; the spent round ended up in the left pocket of the protective vest. Brass fragments from the shell wounded White in his unprotected right arm. After treatment at the Navy hospital at Chu Lai and the Air Force hospital at Cam Ranh Bay, Sergeant White returned to Bien Hoa and completed the remaining five months of this tour, thanks to his protective vest.⁹

In April sorties dropped below 500 (499) for the only time in 1967, while hits reached the highest monthly total (164) of the year. Ironically, as sorties increased during May (610) and June (697), the

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1953-58 -
"Complot"

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number of hits went down, to 88 and 67 respectively. The high June sortie total was assisted by the arrival of three more UC-123s, giving the squadron nineteen herbicide aircraft and one plane configured for insecticide.¹⁰

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The reality of the risks they ran was emphasized once more to the RANCH HANDs on 21 May, when Captain Tom Davie, a survivor of the Iron Triangle crash, was killed in a freak incident. The mission was a routine project in Vinh Binh Province. During a banked turn which left the pilot more exposed than usual, a single shot entered the cockpit through the window, striking Davie in the neck; it was the only shot reported by any aircraft during the entire mission. The copilot, with the aid of the navigator, made an emergency landing at Binh Tuy for medical assistance, however, the pilot had been killed almost instantly. The tragedy was made more poignant because Captain Davie was flying one of his last missions--he was due to return home in only two more weeks. Davie's death led to modification of the new armor vest with a neck protector, ~~a protector~~ that later saved at least one other pilot's life.¹¹

Enemy projectiles were not the only danger RANCH HAND crews faced. On more than one occasion, a mistimed suppression pass by an escorting fighter resulted in CBU (cluster bomb units)* damage to spray planes. In one instance, sheet metal specialists from the 3d TFW worked alongside 12th maintenance personnel all night long to repair 104 holes in a UC-123 caused by one of their fighters. By morning, the aircraft was in-commission and a report to higher headquarters was avoided. On another occasion, a shaken fighter pilot responsible for damaging two spray planes with an errant pass left his apology in the form of prepaid drinks at the Bien Hoa Officers Club bar for the RANCH HAND crewmembers.¹²

The spray squadron concealed these incidents from higher headquarters because they did not want to lose the use of CBU, which was considered highly effective in suppressing enemy fire. Moreover, when laid alongside the planned spray track, smoke from CBU explosions hid the UC-123s from enemy gunners on either side of the run. Again, the tactic had disadvantages when the CBU was laid improperly--several

* define

times, RANCH HAND formations flew into billowing CBU smoke and discovered the thrill of blind flying in formation at treetop level, a maneuver guaranteed to age young pilots rapidly.¹³

Another hazard to all aircraft in Vietnam, not just spray planes, was the extensive use of artillery. Several times RANCH HAND aircraft observed artillery rounds striking in the target area while they were spraying. In his End-of-Tour Report, Brigadier General William G. Moore, Jr. ⁶ called attention to the artillery hazard, noting that aircraft were not warned of fire trajectories below 7,000 feet, although most airlift and all RANCH HAND sorties were flown below this altitude. General Moore's concern was later justified when a C-7A "Caribou" transport on approach to Ha Thanh had its tail blown off by "a single artillery shell, destroying the aircraft and killing three crew members." A duplicate tragedy nearly occurred while the commander of the 12th squadron was leading a road defoliation mission along Route 13, when a 155-millimeter round exploded between the lead and number two aircraft, damaging both with shrapnel.¹⁴

A danger to low-flying aircraft at any time are bird-strikes, which can have serious, even fatal, consequences, but in Vietnam RANCH HAND faced a unique hazard in the form of giant fruit bats. These bats were especially common to IV Corps, and on one mission into An Xuyen Province, near an area later known as "Batville," fighters scared up a flock of over two hundred bats directly in front of the spray flight. Despite extensive damage to engine cowlings and wing leading-edges, all aircraft returned safely to base, but remaining missions for the day had to be cancelled. One aircraft brought back evidence of their "assailants" in the form of a bat with a five-foot wingspan and a red-furred, fox-like head, spread-eagled against the nose of the plane. On another mission, an aircraft returned with part of the windscreen and the instrument panel damaged; their trophy ended up in the cockpit with the crew--again a fruit bat with an almost five-foot wingspread.¹⁵

Even the simple act of take-off presented spray planes with the potential for disaster. The original C-123B transport was designed for a maximum take-off gross weight of 56,000 pounds. The modified

Done

See Cecil

Lewis,

Sagittarius

Prising

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plus change...

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UC-123B configuration, despite stripping the aircraft of all unnecessary equipment, ^{frequently} resulting ⁱⁿ frequent take-off weights approaching 60,000 pounds; loss of an engine immediately after take-off at these overweight conditions meant a certain crash unless weight was rapidly reduced by an emergency "dump" of the herbicide load. The installation of a large valve allowing the entire five tons of chemical to be dropped in only thirty-seconds was a welcome improvement, but only when it worked. The crew of Captain Roy E. Smith, Major Henry K. Good, and Airman First Class Arthur H. Gack had a close brush with death on the day they lost an engine on take-off at Bien Hoa and the dump-valve failed to operate electrically. While the pilots struggled to keep the aircraft airborne, the fast-thinking flight mechanic grabbed a fire axe and forced the valve open. Meanwhile, ground crewmen watched in horror as the UC-123 disappeared into the trees off the end of the runway. Fortunately, the ~~crew~~ ^{plane} managed to gain flying speed as ~~it~~ ^{it} staggered between the trees, and ^{the pilots} nursed the stricken plane back to an emergency landing. Captain Smith's crew transferred to a waiting spare plane whose engines had already been started, took-off a second time, and caught-up with the formation in time to complete the assigned mission. Not until return to Bien Hoa for debriefing did the ~~reality~~ ^{realization} of their near-crash catch up with them.¹⁶

As if they did not face enough threats to their safety, RANCH HAND crews were not immune to creating some problems on their own. At two to four week intervals all aircraft and TDY crew members were rotated from Da Nang to Bien Hoa, and were replaced by another TDY detachment from Bien Hoa. While ferrying between bases, crews usually took the over-water route just off the coast, and some of them delighted in diving down to "buzz" every fishing vessel and Navy ship they saw. In at least one case, the spray plane was just about to roar past a US Navy warship when the vessel's main batteries fired a salvo toward the nearby land; obviously the ship was on a fire-support mission. The shaken flight crew immediately returned to formation position, where they contritely remained for the rest of the flight.¹⁷

Some of the crews also took advantage of the ferry flights to

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under

realization - the reality was there at the time

"test" their issue M-16 rifles, and any other weapons they had managed to acquire, by firing them into the water. One aircraft commander, yielding to the pleas of his flight mechanic, descended to wave-top level to allow the young airman his chance to "shoot." After several minutes, the pilots decided that they could enjoy the action by making a series of s-turns, which would let them see the bullets kicking up spray as they hit the waves. The sergeant was not finished emptying his first clip of ammunition when the startled crew heard the familiar sound of bullets impacting on the aircraft, and learned about the unpredictability of bullets ricocheting from water. When the plane landed at Da Nang, two "hits" were quietly repaired without being entered on the maintenance records of the unit's hit summary sheet.¹⁸

A more legitimate hazard sometimes occurred due to the errant throwing aim of the flight mechanic. When ground fire was taken at low-level, the co-pilot would order "smoke-out," while the pilot notified the FAC and fighters with an appropriate radio call, for example, "Alpha three, automatic weapons fire on the right." The flight mechanic's job was to take one of the colored smoke grenades (usually red) hanging along the front of his armored box, pull the pin, and throw the grenade out one of the rear troop doors, which were secured open for this purpose. When done properly, the grenade provided a distinctly visible smoke mark about three hundred meters down-track from the enemy weapons position, so fighters could attack the site after the spray run was complete. If, however, the flight mechanic missed the open door, the spewing grenade filled the aircraft with dense, colored smoke. The airflow pattern in the plane caused most of the smoke to exit through the open cockpit windows, forcing the nearly blinded pilots to abruptly pull-up off target with colored smoke streaming from various opening in the fuselage. This maneuver was known as a "Smokey the Bear," and led more than one aircrew to experience one of those "moments of sheer, stark terror" which are a characteristic of flying.¹⁹

Despite such ~~ever-present~~ danger, the spray crews managed to maintain a high level of morale and sense of humor, although the latter often exceeded the bounds of good taste and military

The danger
of having
separate
services ?

? MP slay →
* ...

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branches with...

discipline. One Da Nang crew spent several days preparing a large streamer, made from cloth and two-by-fours, which they planned to tow across Da Nang on their return from a Laos mission; in large, bold letters the sign said: "Fuck Communism". Fortunately, when the crew extended the sign as a test while still over Laos, they discovered that it was upside down and that they could not pull it back into the aircraft because of the drag force; the sign was cut loose, to float down somewhere over central Laos.²⁰

The increased numbers of spray planes at Bien Hoa in 1967 gave RANCH HAND another opportunity to show off. Spray pilots took as much pride in demonstrating precise formation spacing during taxiing and engine run-up as they did during in-flight maneuvers. The early morning eight-ship mission, in particular, attracted the attention of base personnel and the frequent civilian airline crews, especially the stewardesses. To insure everyone knew who was manning the lumbering spray aircraft, it became customary to fly a large flag with the RANCH HAND insignia from the top hatch of the lead aircraft until just before taking the runway. Before long another flag appeared, this time flown by the last aircraft in eight-ship formations. Equally large, this flag was yellow, with large purple letters spelling out "Fuck Communism." After the latter phrase was sighted one morning by a senior officer, the 3d Wing Commander ordered the offensive flag removed. It became legend among RANCH HAND veterans that the next morning, when the eight-shipper taxied out, "tail-end Charlie" was flying a large yellow flag which defiantly proclaimed "FUCK THE 3RD TFW COMMANDER."²¹

"Flying the flag" led to another incident of note at Da Nang Air Base. Captain Bill Borkowski lost one of the RANCH HAND flags out the top hatch and into the spinning propeller of his plane. Neither the flag nor engine survived the accident (which was probably reported as "combat damage"). The Da Nang aircrews immortalized the event at the next party by presenting Borkowski with a special award--a box of toothpicks and a mass of yellow, green, and brown strings (the colors of the RANCH HAND insignia on the flag).²²

Once when a four-ship spray flight was planned into the always

These were fairly common in VN, were they not? (usually in hangars, shops, etc.) True.

Done

dangerous A Shau Valley, the Da Nang fighter pilots tried out their own brand of humor on the RANCH HAND crews. Because of expected enemy resistance, a double force of fighters was scheduled, with half of them positioned to attack known "hot fire" areas just before the spray run began. As the herbicide aircraft approached the target area, the fighter pilots struck up a conversation pre-planned for the benefit of the spray crews"

"The woods are full of troops!"

"Wow! Look at those tracers!"

"There are several fifty-cals in that bunker!"

"Joe, you get that quad-fifty on the left and I'll get the one on the edge of the woods!"

The fighter pilot's radio drama came to an abrupt end when a voice dryly asked: "Cowboy Lead, this is Cowboy Four. Do you suppose that our escort has that flight of MIG-21's in sight?"²³

It was fortunate that the RANCH HAND crews were so light-hearted since demands on them were about to increase. In June approval was given to defoliate the northern half of the demilitarized zone. The Department of Defense also announced that five million gallons of herbicides had been purchased for \$32 million in fiscal year 1967, which would end on 30 June (compared with \$10 million spent on herbicides in fiscal year 1966), and revealed it planned to increase purchases to \$50 million for the next fiscal year, if the war continued.²⁴

In the first six months of 1967, RANCH HAND had flown 3,207 sorties, dispensing nearly 2.1 million gallons of herbicides, while taking over 600 hits. In addition, the malathion aircraft dispensed nearly 200,000 gallons of insecticide. These records were achieved despite the loss of 756 sorties to weather and 155 due to battle-damage which could not be repaired in time. For its efforts, the 12th Air Commando Squadron was awarded the Presidential Unit Citation for extraordinary heroism, the first of four such awards. During this period, the squadron also was awarded the Air Force Outstanding Unit Award with "V" device for valor. This was the third award of this decoration for RANCH HAND, having previously earned two AFOUAs with

*As it says
the northern half
of the zone.*

"V" while part of the 309th squadron.²⁵

The heavier workload pushed the spray crews to the limit. Although all training was now concentrated at Hurlbert Field, Florida, the number of new crews was not keeping up with the demand. The loss of six crew members killed and several invalided home for wounds, in addition to normal rotations due to end of tour, forced the 315th Wing to seek pilots for the 12th squadron. Each of the four airlift units was levied for two volunteers. With one exception, all were co-pilot-qualified captains or lieutenants; the 19th Air Commando Squadron received permission to transfer a volunteer Major, who was an instructor pilot. Although spray training and checkout usually took two months, in addition to Langley training, the Major's flight log revealed the urgent need of the herbicide squadron for crews:

last airlift mission - 23 July
 first spray mission - 24 July
 spray qualified - 3 August
 mountain qualified - 18 September
 spray instructor pilot - 19 September

In the first seventy days in RANCH HAND, the Major had eight non-flying days and accumulated over two-hundred hours flying time.²⁶

Although the Major's example reflected his previous eight months experience in Vietnam, and was not typical of the volunteers, all were fully utilized by the spray squadron. The need for extra pilots increased even as the volunteers arrived; on 21 July another aircraft and its entire crew was lost. This time the fatal target was in II Corps, forty-five miles northeast of Pleiku. The Da Nang-based UC-123 was on a crop mission and had just crested a ridge-line; by the time number two aircraft crossed the ridge, smoke was already rising from the burning wreckage on the downslope of the next valley. In addition to the four-man American crew, the Vietnamese observer, a VNAF non-commissioned officer, was lost.²⁷

Tragedy stuck the spray squadron again on 4 September. During an earlier spray mission, an aircraft had the control cables to one aileron shot apart and had to make an emergency landing at Nha Trang. By the fourth, the aircraft had been repaired and a volunteer crew

estimate totally inadequate. Instead of seven additional aircraft, the 834th analysis called for a total of thirty-four herbicide aircraft by 1 July 1968 and recommended that crop destruction and mosquito control missions be assumed by the Vietnamese, possibly by converting VNAF-operated C-119 transports to spray configuration. The report likely reflected concern over the growing anti-herbicide outcry in the United States, noting that one advantage in giving the VNAF these responsibilities would be "placement of a politically sensitive and post-war controversial mission under the full responsibility of the RVN." With the exception of the increase in aircraft, the recommendations apparently were not acted upon by Seventh Air Force, to whom the report was forwarded.³²

Done

The following month, a RAND Corporation evaluation of crop destruction was published which was highly critical of the program, calling crop destruction in Vietnam "dysfunctional" and "counter-productive"--responsible for arousing negative, anti-government feelings among the Vietnamese farmers toward the Vietnamese and United States governments. Although the report apparently refuted critics' claims that the crop program had caused civilian starvation, it also concluded that the existing program did not provide significant benefit to the South Vietnamese government or significant harm to the Viet Cong.³³

A companion statistical analysis of crop spraying in Vietnam, also produced by RAND, recommended discontinuing the crop program, despite admitted shortcomings in both data and methodology used in the study. Even in the areas of heaviest crop destruction by spraying (approximately 23 percent destroyed), the study found the effect on VC rations to be only a 5 percent reduction. On the other hand, the analysis indicated the civilian population carried "very nearly the full burden of the results of the crop destruction program."³⁴

When both MACV and Seventh AF took strong exception to the RAND studies, a civilian advisory group from CINCPAC Headquarters was sent to Vietnam to review 1967 crop destruction activities. Using captured enemy documents and an analysis of 622 crop sorties flown by RANCH HAND in 1967, the advisory group disagreed with the RAND findings,

CHAPTER X

NEW AND OLD: K MODELS AND AIRLIFT DUTY

At the end of 1967, nearly 490,000 American servicemen were in South Vietnam. General Westmoreland had reported to the President, and to the National Press Club in Washington in November, that the war was being won--the tide had turned. An estimated 38,000 Viet Cong had deserted and surrendered during 1967. On the other hand, the cost of the war was approximately two billion dollars per month, and growing, and American losses since 1961 were almost 16,000, with 9,353 in 1967 alone. In the United States, the antiwar movement had grown dramatically, and ~~President Johnson~~ could not travel to any major American city without facing a crowd of chanting demonstrators. Congress, too, began to question the unilateral decisions of the executive branch on Southeast Asia. The new year held little prospect of abatement in the clamor of domestic discontent.¹

Done
in government
spokesmen.

For RANCH HAND, 1968 was a year of contrasts. During the first five months, no crop destruction missions were scheduled because of a large backlog of high priority defoliation missions and the unusually dry weather--Vietnamese agriculture was hit hard by the drought and there were few good crop targets available. Twice during the year spray aircraft were diverted to airlift duties, further hampering accomplishment of the herbicide mission, and in April the squadron started converting to the jet-assisted K model UC-123 aircraft. As a result, for the first time since the program was established, acreage sprayed and herbicide sorties flown did not double the previous year's total, but instead fell by over 13 percent. More welcome was the dramatic reduction in hits on spray planes, down by nearly 28 percent.²

Part of the reduction in hits was due to concentration on defoliation; crop targets normally were "hotter" targets, and exposure time usually longer than against single-pass defoliation targets, although there were exceptions to this rule of thumb. Another possible factor was, ironically, the greater number of targets

Unexpectedly? ~~contingent projection?~~

January and another 69 the first week of February, dispensing a total of 601,000 gallons of defoliant. Surprisingly, only thirty hits were taken during this period, possibly because the enemy was preparing to launch an all-out offensive effort during the Tet holiday.⁵

Done

On 21 January 1968, North Vietnamese Defense Minister General Vo Nguyen Giap, victor over the French at Dien Bien Phu fourteen years earlier, began his offensive with a major assault on the Marine outpost of Khe Sanh in northwestern I Corps, the first in a series of attacks on the position which would last for nearly two and one-half months. Allied leaders, aware of the buildup of NVA forces by Giap, were mesmerized by the parallels between Dien Bien Phu and the isolated, mountain-surrounded Marine base, but General Westmoreland was confident that the result at Khe Sanh would be different. Nine days later, while attention was focused on this northern bastion, North Vietnamese and Viet Cong forces made simultaneous attacks throughout South Vietnam against thirty-six of the forty-four provincial capitals, five of the six autonomous cities, sixty-four district capitals, twenty-three airfields, and numerous other government-controlled urban areas. This nationwide, coordinated offensive was particularly shocking to many Americans at home and in Vietnam due to widely quoted speeches by United States government and military officials suggesting that the allies were winning the war and the enemy was nearly beaten. This impression had been enhanced by inflated success reports by field forces and skewed reporting by the media. The shock was further intensified because it followed by only five days ^{after} the startling seizure of the American intelligence ship U.S.S. Pueblo by North Korea, both events seemingly revealing serious failures by American intelligence-gathering agencies and American inability to cope with direct communist acts.⁶

Done Done

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I can't say this - Sorry!
see Hooper's friends
Palmer, & Summers!

through anticipated
in Vietnam by US
and South Vietnam
commitments, and ultimately
a tactical defeat
for the NVA-VC,

??
what does
this mean?
Threats to American
interest (security)?
(e.g. Liberty,
1967)

The Tet Offensive meant a return to a mission RANCH HAND had not performed for several years, airlift. The month-long Tet attacks created an extraordinary demand for airlift to support beleaguered friendly forces throughout the country, while fighter units were totally occupied in providing close air support for allied forces in contact with the enemy, and thus not available for RANCH HAND escort.

In addition, Vietnamese herbicide handlers were unable (or unwilling) to report for work to refill the herbicide servicing system. On 5 February, in the midst of the Tet Offensive, the 12th squadron was ordered to convert to an airlift role. Remaining on-board herbicide was emptied ~~from the aircraft~~ by the simple expedient of flying a thirteen-ship ~~formation~~ against a nearby War Zone D target, the largest single spray formation to date, and proof that spray crews were not superstitious. The changeover was expected to take several days, but within twenty-four hours the RANCH HANDS had stripped their aircraft of all herbicide tanks, spray booms, and plumbing, and reported themselves "ready to go." In a reversal of the pilot situation of the previous July, the 12th squadron also sent eleven pilots on temporary duty to various ~~airlift~~ ^{the other} squadrons.⁷

Most spray crew members were only minimally prepared for ~~the~~ ^{this new} kind of flying, ~~they faced in airlift~~, having received only brief airlift training in Florida on their way to Vietnam and no subsequent in-country airlift practice. Nor did the squadron have loadmasters, normally a required member of an airlift flight crew. Nevertheless, RANCH HAND crews established an outstanding record; ~~during their~~ airlift service, between 5 February and 20 March, 12th Air Commando planes flew 2,846 airlift sorties, moving cargo and passengers at a rate comparable with ~~their~~ more experienced sister squadrons. While the cargo-haulers of the 315th Wing faced significant hazards during steep approaches and assault landings on short, dirt, forward airstrips ~~(in Vietnam)~~, the difference in mission hazards between spraying and airlift was reflected in the fact that no RANCH HAND aircraft ~~was~~ ^{was} hit from enemy ground fire during the almost three thousand airlift sorties; RANCH HAND's average for the previous twelve months of herbicide operations was approximately one hit every six sorties.⁸

On the ground, however, it was a different story. Bien Hoa, home base of the 12th squadron, was ~~one of the~~ ^a primary targets ~~of~~ ⁱⁿ the Tet attacks, ~~and was~~ ^{and was} hit repeatedly with mortar, rocket, and ground attacks. On 28 February, during a rocket attack at 0200 hours, several 122-millimeter missiles landed in the RANCH HAND officer's

Done Done

a record, I think a bit more satisfactory, possible, I think

Done

this new

Done
where else?

Done Done Done

quarters area, setting fires which completely destroyed four buildings and heavily damaged five others, including the community latrine. Although thirty-three officers lost everything but the clothes they were wearing, and twenty-seven others salvaged only a few of their personal possessions, no RANCH HAND personnel were killed and only one officer was slightly wounded. The men of the unit housed directly across the street from the spray quarters were not as fortunate--their bunker took a direct hit, killing fourteen men.⁹

One of the luckiest members of the squadron was Sergeant Ed Frambie, temporarily detailed to the Security Police unit as an augmentee and assigned as a perimeter guard. Frambie had just stepped out of a jeep when he was suddenly knocked to the ground by a blow to the chest. A sniper, apparently firing from maximum range, had hit the young airman, but the force of the nearly spent bullet had been cushioned by a shirt pocket filled with a pair of sunglasses, a cigarette lighter, and several pencils, saving Frambie from anything more serious than a bad bruise and a scare. The bullet was found in the airman's fatigue pocket and was worn on a neck-chain as a good luck charm for the rest of his tour.¹⁰

Some RANCH HAND personnel were convinced that the Vietnamese beer stand (Bam-me-bam stand) directly outside their compound was a good "early-warning" indicator of Viet Cong attacks on the base. Several airmen noted that if candles, rather than the regular lights, were used and there were few girls around, the base usually was hit. On the positive side, the Tet attacks benefited morale since several Red Cross girls found it too dangerous to return to Saigon and elected to spend some time as "guests" of the RANCH. A young lady of Norwegian lineage also reportedly enjoyed the hospitality of the spray officers, moving from one hooch to another over a period of two months.¹¹

As the Tet Offensive ebbed away, RANCH HAND returned to its primary mission on 16 March, much to the relief of the crews. Through an all-out effort, the squadron flew 284 sorties and dispensed 220,000 gallons of herbicide in the last two weeks in March, despite having to reinstall spray systems on all aircraft. The credit for this record went to the long-suffering and seldom-praised ground maintenance

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AF Saigon?

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crews. Working without shelter on the open ramp in all kinds of weather, often by flashlight because other lights drew enemy fire, uncomplaining crew chiefs kept the spray planes flying in spite of the conditions.¹²

Although the Air Force had abandoned attempts to start forest fires after the failures of the previous year, in March 1968 nature proved a more effective arsonist. The drought in Southeast Asia in the first three months was the most severe in a quarter century, and major fires broke out in the forests of Vietnam, Malaya, Cambodia, and Thailand. One of the biggest fires was in the U Minh Forest, an insurgent stronghold on the southwest coast of Vietnam since the 1930s. Many sections of this large mangrove forest had been defoliated by RANCH HAND in attempts to expose enemy camps. When the initial fires broke out, dry vegetation and strong winds helped it spread rapidly. The explosion of a large VC ammunition dump and several new ignition points frustrated Viet Cong attempts to make firebreaks to contain the fire.¹³

Realizing the military value of the massive fire, MACV directed Air Force FACs to use white phosphorus marking rockets and grenades to set more fires, while fighters added to the conflagration with bombs and napalm. Navy vessels also joined in with shell-fire. Allied attacks not only started new fires, but interrupted VC attempts to control fires and to evacuate endangered supplies. The extent of VC losses was indicated when observers reported hundreds of secondary explosions in ~~the~~ fire areas, during one period occurring at a rate of one every twenty minutes. Previously defoliated areas burned particularly well, although the weather deserved more credit than RANCH HAND did. By the end of April, when the fire finally stopped spreading, approximately 80 percent of the 1,100 square-mile forest had been destroyed, with heavy damage to Viet Cong forces in the area.¹⁴

In April, the first UC-123s equipped with auxiliary jet engines arrived at Bien Hoa--the 12th squadron was the last of the five units in the 315th Wing to get the improved aircraft. The new planes, designated "K" models, were reworked B models with a powerful J-85-17 jet engine on each wing outboard of the conventional engines, improved

Realized just MACV HQ

Set all?

engine armor plating, a strengthened windshield to reduce shattering from hits, a larger spray pump, and a flow-meter to assure a constant chemical flow rate of three gallons per acre despite airspeed variations. Because of the extreme hazard associated with not being able to feather a propeller, the K models also were modified to use engine oil in the feathering system, rather than a separate oil supply. The jet engines provided a tremendous increase in safety on spray missions, particularly on mountain targets. Aircrews no longer had to fly target areas such as the A Shau Valley knowing the loss of an engine probably meant no escape. In return, the crews had to accept the disadvantages of the K model--the extra weight on the wings reduced the maneuverability slightly, and the high fuel consumption of the jet engines reduced the combat range significantly.¹⁵

In practice, the new models proved their worth. Full jet power was used on take-offs, almost eliminating the danger from one of the most hazardous phases of flight for the overloaded spray planes. This point was graphically demonstrated in August when a fully-loaded UC-123K had a conventional engine explode just as the plane passed the end of the runway on take-off. For various reasons, cockpit confusion caused the remaining, undamaged conventional engine to be mistakenly feathered; however, the aircraft remained airborne and circumnavigated the airfield to a successful emergency landing on jet engines alone.¹⁶

To save fuel, once safely airborne the jets normally were shut down until arrival in the target area. During low-level runs, jets were run at 60 percent power so they would be immediately available if needed. Full power was used to climb away from the targets, thus reducing the always dangerous exposure time between tree-tops and 3,000 feet altitude. The jets were shut down during return to base to conserve fuel, unless needed because of a battle-damaged conventional engine. For landing, the jets were run in idle, again to be available during this critical phase of flight. There was little doubt as to the worth of the modification; RANCH HAND commanders' end-of-tour reports for 1968, 1969, and 1970 all stated that several aircraft would have been lost while on-target, due to engine or propeller-dome hits if not equipped with the jet auxiliary engines.¹⁷

*What came all
the modifications?
K systems? C-123?
K-123?*

*11
It's downed
by Jolly
Greens!*

normal usage

*And Done
NO
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thing!*

The arrival of the jet-equipped spray planes was overshadowed by another development concerning the herbicide program. Even while spraying was being resumed in Vietnam, ~~the~~ vice-president of ~~an~~ ^{the} airline called "Air America," ^{the} thinly disguised CIA (Central Intelligence Agency) ^{operation}, revealed to the press that ~~the cover firm's~~ ^{its} aircraft had sprayed defoliants in Thailand, exposing Thai insurgents on the Isthmus of Kra. These operations, however, were not directly associated with the Vietnam project or the RANCH HAND unit. April also was the first full month of renewed spray missions in Vietnam, with 662 sorties dispensing over one-half million gallons of defoliant. Enemy gunners, ^{apparently} no longer concentrating on ground attacks, hit the spray planes sixty-six times.¹⁸

In May, the NVA again launched a nationwide offensive against 109 cities and military installations, including 21 airfields. Bien Hoa once more was a target, and, on 5 May, rocket attacks at 0300 and 0600 hours were accompanied by a ground assault, which was beaten back with 192 enemy killed. The second rocket attack took place as the RANCH HAND crews boarded their aircraft, and several missiles exploded in the ramp area, damaging three aircraft. Colonel George Hench, Deputy Commander for Maintenance (DCM) of the 315th Wing, was making an inspection visit to the squadron and had planned to fly as an observer on the Alpha lift with Major Ed Ridgeway. Hench was standing beside the aircraft when the rockets hit; he received shrapnel wounds in the shoulder and eventually was air-evacuated ^{from Vietnam} out of the country. One other officer received minor injuries.¹⁹

Twice during the month, RANCH HAND aircraft were on the runway for take-off when mortar rounds hit on or adjacent to the runway. Although no planes were damaged, considerable debate raged in the squadron as to whether it was best to attempt take-off while the shells were still landing, or to abandon the aircraft ^{and run to} for the nearest ditch until things quieted down. Agreement was never reached. Despite these assaults and frequent sleep-interrupting night attacks and false alarms, spray crews flew 750 sorties in May; however, the amount of herbicide dispensed--575,000 gallons--increased only slightly over April's figure. The disparity between sorties and

Dne

Dne

one cannot
be sure of
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could be ammunition
priority on
the HMC Trail

indirectly then?
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Dne

herbicide was due to numerous airborne cancellations because of weather or lack of fighter support. Several times, fighters which had been assigned to RANCH HAND escort were diverted to support ground forces in contact with the enemy, forcing herbicide planes to return with unexpended loads since Seventh AF directives now required fighter escort during spray missions. Another problem was that some missions were beyond the limits of the spray planes' combat range, forcing a stop for fuel at an intermediate base; thus each plane flew two sorties, but dispensed only one load of herbicide. These longer missions also forced the first lift to launch well before daylight, while the FAC had to wait for daylight to take-off from his forward airstrip to check weather in the target area. This sequence frequently meant that spray crews were more than half-way to the target area before finding out that both the primary and alternate targets were weathered out, again causing the planes to return with loads intact.²⁰

Done

- what level? 7 AF? MACV? CINCPAC?

? some at all levels.

Some higher headquarters officials, not fully aware of the RANCH HAND program and oriented in their thinking to the "tonnage-hauled" method of measurement of mission accomplishment in airlift, were disturbed by these "unproductive" sorties. The eventual solution was to order RANCH HAND to schedule a tertiary target--when other targets could not be sprayed, the aircraft resprayed the Rung Sat Special Zone. The result was an improved "mission effectiveness" rate on a headquarters wall chart, and a lot of expensive herbicide unnecessarily wasted.²¹

Can't give typical # situation in VN...

Modified UC-123s continued to arrive in the squadron in May, and a program was established to return B models to the United States for conversion. The trans-Pacific movements were made by regular ferry crews, rather than RANCH HAND crews, as in the past. It was fortunate that the new aircraft were arriving faster than the old ones were departing, because the 12th Commandos lost another crew and aircraft to enemy fire in May. On the twenty-fourth, Lieutenant Colonel Emmet Rucker's crew was flying the number two aircraft in a six-ship Alpha lift against a heavily forested enemy base camp area target at the extreme southern tip of Vietnam (target number 4-20-3-67#2). The

All ready explained in SW

mission had taken heavy ground fire, including automatic weapons, and was just reaching the safety of the coast when number two's left engine exploded. The crews in the following aircraft watched in horror as the nacelle fuel tank was jettisoned from the burning engine and then the plane rolled over and crashed into the shallow South China Sea just off the shoreline, the tail of the aircraft remained sticking up out of the muddied waters. The remaining planes circled the site as a nearby patrol boat was summoned, but the crew had been killed instantly.²²

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The tragedy was compounded when an A-37 fighter escorting the Bravo lift was shot down during an initial pass, just as the spray planes descended to the start-spray point. The spray crews and the pilots of the A-37 unit (604th Air Commando Squadron [Fighter], known by its call-sign, RAP) were particularly close since both were stationed at Bien Hoa. On 29 May, a joint service for the four airmen was held in the Bien Hoa Chapel.²³

Again, "Dame Fortune" intervened to trade one man's life for another's. Staff Sergeant Billy D. Rhodes was scheduled as flight mechanic on Rucker's crew, while Sergeant Herbert E. Schmidt was assigned as duty driver for the day. Schmidt, however, had an appointment to have a tooth pulled in the afternoon. Since the Alpha lift would be back in time, ~~for the dental appointment~~ and Schmidt would ~~then~~ have the rest of the day off to recover, he asked Rhodes to trade duty assignments. With the approval of the Chief Engineer, the trade was made, and Rhodes missed the fatal sortie.²⁴

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Despite the losses of the twenty-fourth, by June, the squadron had increased to twenty-one aircraft and maintenance was kept ~~extra~~ busy removing spray equipment from out-going aircraft and installing it on new arrivals. On 13 June, the first "all-jet" spray mission was flown against target number 3-2-1-66#1, near Ham Tan, using three UC-123Ks. Most of the time, however, the two models were intermixed; they were totally compatible, with the exception of the shorter range of the K models due to the higher fuel consumption. Even the range problem was partially solved in June as herbicide reservicing and refueling facilities were established at Nha Trang and Phu Cat. Now the

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squadron could fly a mission out of Bien Hoa or Da Nang into the central highlands, turn-around at the new facilities, and fly a second mission during the return. Due to the backlog of targets, this was a long overdue improvement.²⁵

On 16 June, the 12th ACS nearly suffered another fatal flight, this time along the Saigon River. The attack involved heavy suppression, with cluster bomb units (CBU) planned along the right side of the spray track to help protect the six-ship spray formation with weapons effects and billowing white smoke; however, the smoke drifted onto the spray route and when the herbicide planes broke into the clear, they came under heavy fire. The number five aircraft took seven hits, mostly in the cockpit area. The flight engineer in the rear console box heard the co-pilot say that the pilot had been hit, and then the co-pilot began making gagging sounds. Thinking he was the only one alive, the flight engineer left his armored box and ran forward to the cockpit, hoping to keep the aircraft airborne. He found both men alive; the pilot had been struck by flying glass fragments and the co-pilot had been hit in his ceramic vest by a bullet which then glanced off and struck him in the throat-protective collar, a device developed as a result of the loss of Captain Davies the year before. The effect was as if the officer had received a hard blow to the Adam's apple, ^{had} temporarily rendering ^{ed} him unable to speak. The life-saving vest, with the slug still stuck in the collar, was prominently displayed in the RANCH HAND personal equipment area, and the badly shaken crew ~~was~~ given several days to rest and recover in the more serene surroundings of Clark Air ^{Force} Base in the Philippines.²⁶

Dave In June, the squadron temporarily said good-bye to the still uncamouflaged "Patches" when the symbolic aircraft left the insecticide flight to return to the United States for modification as a K model. At the same time, a VNAF C-119 "gunship" squadron moved onto the west ramp with RANCH HAND. Together with an A-1 fighter refit program which occupied the spray squadron's only hanger, this further jammed an already overcrowded aircraft parking area, forcing senior officers to begin planning for a new facility to house the herbicide unit. Despite the problems on the ground, the squadron

Dave
Bob
Bob

managed to fly 677 sorties spraying 485,000 gallons of chemicals, and collecting another 47 hits.²⁷

3 *Done* The June hit total was well below the squadron average, but the potential for a large increase ^{was} had nearly ~~been~~ realized; ^{plan} the Da Nang detachment almost attacked one of the most hazardous targets in Vietnam. The A Chau Valley, along the Laotian border, was completely under enemy control and headquarters decided that it should be completely resprayed in June. Extra planes were sent north to give the detachment a six-ship formation. Intelligence reports identified 37-millimeter anti-aircraft gun sites and heavy automatic weapons along the entire run on both sides. The RANCH HAND crews prepared to go, but for once they showed little enthusiasm and there were no jokes or humor at the morning briefing; the crew members seriously expected that no more than one of the six aircraft would make it back from the valley target. At the last minute, Seventh Air Force cancelled the mission; Major John Stile, the squadron flying safety officer, had called herbicide representatives at headquarters and finally convinced them of the extreme danger ^{vs opposed to} the reduced importance of the target. The cancellation was not greeted with cheers, but the emotional relief among the airmen was obvious.²⁸

Done As the crews found out in July, the recent low ratio of hits to sorties was not because the Viet Cong were not trying. On the second, a six-ship formation on a target near Ca Mau in IV Corps took twenty-nine hits. Another six-ship mission met a water-mounted enemy weapon. The target was a river bank and the formation was part way through the run when Lead reported taking fire from a .50 caliber weapon on a boat in the river. Lead was hit; then, in order, Two and Three reported being hit, as did Four and Five. As the crew of Number Six, which was closest to the river and most vulnerable, made themselves as small as possible in preparation for their share of the enemy missiles, ^{one of an} ~~one of~~ the escorting F-100s put a 500-pound bomb right into the middle of the boat, and the ground fire stopped. ~~It was~~ [≡] missions like these that added another 131 hits to the squadron total in July, causing the total recorded hits to exceed 3,000.²⁹

The large amount of ground fire in IV Corps, in spite of heavy

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American Marines moved into the area. Not all of the ordnance used by the 366th fighters had gone off; when a Marine kicked an unexploded CBU-2 bomblet, he lost a leg.³¹

On 1 August 1968, the 315th Air Commando Wing was redesignated the 315th Special Operations Wing (SOW), a title which more clearly described the multitude of tasks assigned to this organization. The subordinate units, including the 12th, were also retitled as Special Operations Squadrons (SOS), but there was no change in the spray squadron's mission. Justification for continuation of the herbicide program was again provided to CINCPAC by another MACV report citing field commanders who, "without exception, state that herbicide operations have been extremely effective in assisting in the Allied combat effort."³²

Because weather in northern South Vietnam was usually better than in the south at this time of year, on 18 August the Da Nang detachment was increased to eleven aircraft. The plan was to fly eighteen sorties a day from Da Nang and only six from Bien Hoa; but nature was not cooperative. Only five sorties got on target the first day of expanded operations, twelve the second day, and five again on both the ~~third and fourth days~~. By the time the weather improved, the detachment was being ~~hampered~~ ^{hindered} by frequent enemy rocket attacks ~~on the base and~~ an epidemic of flu among the aircrews. On 23 August, a major rocket attack against Da Nang was coordinated with a ground assault against the city. Although the attacks were beaten back, Vietnamese personnel did not come to work on base for several days, severely ~~hampering~~ ^{hamp}ing a number of operations, including the herbicide storage and servicing facility. ~~The spray crews also found themselves taking~~ ^{came under} ground fire immediately after take-off from Da Nang--an unsettling experience. By the twenty-fifth, seven pilots and three navigators were grounded with the flu; there were not enough crew members to man all the aircraft. Even some of those who continued flying should not have done so--complications from the flu caused Lieutenant Colonel Larry Waitt, the squadron navigator, to hyperventilate in flight, and he was carried off the plane gasping for air.³³

In the meantime, the aircraft left at Bien Hoa also faced nightly

rocket and mortar attacks. When the VNAF bomb dump was hit on 22 August, an estimated 800 bombs blew up; the concussion tore doors loose all over the base and threw shrapnel into quarters and aircraft ramp areas two miles away. Later the same morning, four rounds landed next to the runway just as a RANCH HAND flight taxied into position for take-off. On the thirtieth, a large napalm storage area on the north side of the base was hit and burned furiously. Overall, for the month of August the two spray locations managed to launch 572 sorties, but sprayed only 367,000 gallons of herbicides.³⁴

September was an even worse month for the spray crews--539 sorties put only 273,000 gallons of chemicals on target. More rocket attacks and heavy battle damage to aircraft at Da Nang reduced the number of planes the detachment could launch, and the situation was complicated on 4 September by the arrival of Typhoon "Bess". Even with tie-downs and sandbags on the wings, one aircraft was damaged by being blown around in its revetment. Most effected by the storm were the maintenance personnel, ~~who were~~ housed in tents--the typhoon winds literally tore these flimsy shelters apart. Despite living in make-shift quarters in the operations building, maintenance crews had the planes ready to go when the weather abated four days later.³⁵

Bad weather continued to plague the Da Nang detachment and on the twenty-ninth it was decided to return six aircraft to Bien Hoa. To the consternation of RANCH HAND personnel, they were ordered to reconfigure* these six aircraft and two others for airlift duty for an estimated thirty days. A critically large backlog of air cargo had developed, primarily due to the same bad weather that hindered spray operations, and 834th Air Division officers felt that the UC-123s could be more effectively used in an airlift role. The spray officers disagreed. Although the February airlift conversion was obviously an emergency, the October change was regarded as unnecessary and disruptive to the squadron's primary mission. During the actual forty-five days of airlift, the eight converted spray planes flew 1,141 sorties. One aircraft was heavily damaged when it landed gear-up at a forward airstrip. RANCH HAND commanders whose tours included this period were extremely critical of the airlift diversion and of

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the effect it had on spray operations.³⁶

OK → Criticism of a secondary airlift role for RANCH HAND seemed to have considerable validity. During the summer, Phase II airlift training for pilots destined for the spray squadron had been eliminated at Hurlbert AFB, and in October in-country airlift training for spray pilots also was stopped. This meant that in a very short time the 12th squadron would no longer have any pilots even marginally trained for this mission. The changes in the training program made it appear that Air Force Headquarters did not intend for spray crews to augment the airlift force, but a clear directive to that effect was not forthcoming, and the issue remained confused.³⁷

On the brighter side, at a press conference in Washington at the end of September, officials termed defoliation "a complete success" and reported it "unquestionably saved allied lives," while announcing that about 3,500 square miles of South Vietnam (approximately 5 percent of its area) had been defoliated thus far. On 15 October the spray squadron celebrated this testimonial to their work, and the second anniversary of the squadron, with a "RANCH-In" at Bien Hoa. Even the personnel from Da Nang flew in for the occasion, after their lifts were completed. Guest of honor was the new Seventh Air Force Commander, General George S. Brown. The herbicide squadron also invited Premier Ky, but the invitation was discreetly withdrawn when it was suggested that it might be interpreted as supportive of Ky in his power struggle with President Thieu. Traditionally RANCH HANDS did not allow speeches at their dining-ins, by the simple expedient of shouting speakers down with rude remarks and drenching them with whatever liquid was most handy. In deference to General Brown, however, the RANCH HAND Commander, Lieutenant Colonel Arthur F. McConnell, by threatening almost every penalty up to and including the firing squad, managed to convince the unruly squadron members to remain on their best behavior. Unfortunately, the General had been warned of the RANCH HAND tradition and, in the expectation of being shouted down, had not prepared any remarks; when called upon to speak, General Brown gave a less than inspiring talk as the spray crewmen silently waited for the after-dinner toasts to begin.³⁸

a comment on
American traditions
of military
discipline...?
not intended
to be

Even while toasting their anniversary, crew members knew they were about to return to the hazards of spraying the Ho Chi Minh Trail in Laos after a nine months' absence. On 17 October, seven UC-123s staged through Pleiku for an attack on the trail just south of Attapeu. At Pleiku the crews briefed with pilots of the 6th SOS, who were to provide heavy suppression with six A-1 fighters. Normally the rules of engagement for A-1s prevented them from expending ordnance at the low level required by the spray planes, but an exception was made in this case by Seventh Air Force. Clearance for the mission had been arranged by the US Ambassador to Laos, William Sullivan, and only six herbicide planes were authorized to proceed over Laos; the seventh UC-123K took off as an airborne spare and orbited just short of the Laotian border during the mission.³⁹

Despite the heavy suppression tactics of the fighter escorts, shortly after starting the run, the formation flew over an anti-aircraft battery whose fire damaged all six aircraft. The flight also took intense small arms fire from a NVA regular regiment camped along the road. Heaviest hit was Major Frank Moore's plane, which lost an engine and later had trouble extending landing gear, at Pleiku. Number Four's right engine quit just after landing at Pleiku and it had a two-foot hole in the right wing; three aircraft had flat tires from hits. One of the A-1 escorts also was hit and had to nurse his fighter back to ~~Pleiku~~ ^{base} with a rough-running engine. Despite the damage, all herbicide aircraft made the complete spray run. Five of the most heavily damaged UC-123s were left at the central highlands base and the crew members piled on board the spare aircraft for return to Bien Hoa, and a party. The planes were later repaired and returned to their home base.⁴⁰

In an attempt to reduce enemy ground fire, someone suggested dropping tear gas bombs ahead of the spray planes to blind enemy gunners. Of course, this forced the spray crews to wear protective masks during the run, a hindrance to communication and to aircraft control, in addition to being miserably uncomfortable. More importantly, the irritant gas failed in its purpose when a trial run in October on a target near Vung Tau still took hits; the scheme was

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quickly abandoned.⁴¹

On 31 October 1968, RANCH HAND returned to the An Xuyan target area where Lieutenant Colonel Rucker's crew was lost. The squadron had attempted this target only once since the fatal mission in May; on 2 July a six-ship formation again came under extremely intense ground fire and was hit twenty-nine times, in spite of heavy suppression by escorting fighters. For the October return, even heavier suppression was planned, with ten F-100 fighters from the 90th Tactical Fighter Squadron at Bien Hoa striking pre-assigned targets just before the spray formation flew over the sites, and delivering heavy ordnance at minimum safe distance in front of the spray planes throughout the run. The tactic worked; no ground fire was reported and none of the planes were damaged.⁴²

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modification →

The continued arrival of K models and departure of B models left the 12th squadron with only four unmodified aircraft by the end of October. To the great joy of the RANCH HANDS, one October arrival was "Patches," still without the mottled camouflage of the other aircraft, but proudly sporting the jet engines of a K model. (Rumor had it that an ~~incredible~~ number of strings were pulled to insure that the beloved aircraft was not painted while undergoing modification.) "Patches" was temporarily returned to flying defoliation missions, and on 17 November, while leading a formation spraying a VC-controlled island off the delta (target 4-20-1-68), hit a fruit bat and sustained a broken nose. The distinctive silver plane, always the lead aircraft on herbicide missions, added several more hits to its substantial total before being returned to safer mosquito control duty.⁴³

November also found the squadron involved in a highly classified mission into Laos, at the covert invitation of the Laotian government. The mission began when Lieutenant Colonel Phillip Larsen, OIC of the Da Nang detachment, and his targeting officer, First Lieutenant Lloyd West, were ordered to Udorn Air Base, Thailand, for a special briefing, where they learned the ~~special~~ target was a large area of rice fields approximately forty miles north of Vientiane, Laos, in the Nam Sane and Nam Pa valleys. In civilian clothing, the officers boarded an Air America transport plane for a survey flight over the

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area. On 5 November, the spray crewmen flew another aerial survey of the target, this time using an unmarked RANCH HAND aircraft. Noting the sparseness of crop in the designated area, the targeting officer assumed the mission was more a political gesture than a military necessity.⁴⁴

On 11 November, Colonel Larson returned to Udorn with four UC-123Ks. For the next four days the spray planes attacked various targets in the Laotian complex. Some friction developed between the Forward Air Controllers and the RANCH HAND navigators, however, with the FACs refusing spray clearance on some excellent crop targets and directing attacks on other targets that were not within the briefed area. During the eight lifts, the spray planes were hit four times. After the final mission, the detachment returned to Da Nang, where they put on a demonstration on arrival by trailing purple smoke from their tail booms as they made an echelon fly-by and then tossing out drogue chutes on landing, in parody of fighter planes. Although the crews questioned the effectiveness of their mission to Laos, they enjoyed the almost state-side atmosphere of the base in Thailand; before leaving, they threw a party in the officer's club which left no doubt among the permanent party officers that RANCH HAND had been there.⁴⁵

By December the squadron had increased to twenty-five aircraft, almost all K models. On the thirteenth, the worth of the jet modification was proven once more on a target only fifteen miles north of Bien Hoa. Just as the formation finished spraying and began climb-out, the lead aircraft came under intense automatic weapons fire. Almost immediately the aircraft started a hard roll to the left, which could be corrected only by full deflection of the ~~aileron~~ ^{aileron} control by both pilots and full power on the left jet engine, with the right jet in idle. A check by the flight mechanic found that the left ~~aileron~~ ^{aileron} was deflected full up and the control cable was severed. Eighteen hits in the forward section also had knocked out the nose steering hydraulic mechanism and the left main tire. After the crew determined they could keep the wings level by using full ~~aileron~~ ^{aileron} trim, full right ~~aileron~~ ^{aileron}, a large amount of right rudder, and differential power, they

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*The moveable flight surface that causes roll around the longitudinal axis of the aircraft, thus providing lateral control.

decided to attempt a landing at Bien Hoa. On touchdown, the crew discovered the normal braking system also was inoperative, but judicious use of emergency brakes and reverse power on the right engine kept the aircraft on the runway after a partial ground loop. The skill of the crew and the fact they were using a K model saved this sortie from a fatal conclusion, although the aircraft was so badly damaged that it was out-of-commission for twenty-five days. Realizing what the result would have been if the plane had been a B model, the squadron suspended further use of the few remaining unmodified aircraft for spray missions.⁴⁶

On 20 December 1968, the Seventh Air Force Commander personally decorated the squadron with the Presidential Unit Citation during change-of-command ceremonies in which Lieutenant Colonel McConnell was replaced as squadron commander by Lieutenant Colonel Rex K. Stoner. During the year, RANCH HAND had flown 5,745 herbicide sorties, 280 mosquito control sorties, and 3,987 airlift sorties. Over 4.6 million gallons of herbicides had been used to clear lines-of-communication, reveal enemy base camps and staging areas, and limit enemy ambushes and assaults on friendly forces. Attacks on enemy food supplies also continued during 1968; however, the emphasis away from crop targets became evident as the number of sorties used on this mission dropped during the last half of 1968, from 15 percent of the total effort to 5 percent.⁴⁷

Although ^{The} total herbicide sorties ~~decrease~~ ⁱⁿ from the previous year, ~~this~~ ^{was} partially due to the diversions to airlift. Requests by field commanders for defoliation missions continued to increase. There was every indication that the herbicide program would remain a viable part of the war effort, with operations maintained at least at the 1968 rate. The annual cost to RANCH HAND had been one aircraft destroyed and three crewmen killed. The 733 hits ~~was~~ ^{represented} during 1968 a significant decrease from the previous year, but Major General Blood's end-of-tour report reminded officials that the increasing number and size of automatic weapons and anti-aircraft guns in South Vietnam "will continue to increase the hazard of Ranch Hand operations."⁴⁸

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CHAPTER XI

THE LAST YEARS

Militarily, 1968 had been a victory for the Allies in Vietnam as they defeated major VC/NVA offensives in February, May and June, although additional American forces had to be rushed to Vietnam to bolster General Westmoreland's forces. Heavy losses were inflicted on the attackers by Allied ground troops, aided by 840,117 USAF combat sorties during the year. By mid-year, North Vietnam had agreed to begin peace talks in Paris aimed at ending the war, and the United States had begun a "Vietnamization" program, to build up the South Vietnamese Armed Forces to ~~where they could~~ assume a greater role in the security of their country, allowing the ~~United States to start withdrawing~~ American combat troops, ^{withdrew} Politically, however, the year was a disaster for the American administration. Facing a rising tide

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of criticism of the war, and embarrassed by the Pueblo incident, President Johnson ordered a halt to American bombing of the North and announced that he would not run for a second full term as president. In November, Richard Nixon defeated the Democratic nominee, Hubert Humphrey, in the presidential election, having pledged in his campaign to bring American troops home and to win an honorable peace, although he warned that the United States might first have to make a greater effort. To American fighting men stationed in Vietnam, the 1969 New Years Day seemed little different than the previous year.¹

main reason: set back in New Hampshire primary; Tet

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Neither the change in administrations nor increased Vietnamization seemed likely to affect RANCH HAND, particularly since the VNAF had no equivalent unit with which to assume herbicide responsibilities. The departure of the last B model aircraft in January 1969 left the squadron only the safer K model UC-123s, and the programmed arrival of more modified aircraft from the United States implied an increasing role for herbicides in Vietnam.²

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RANCH HAND's permanence seemed further confirmed by the occupation of improved facilities at Bien Hoa. In January 1969, after two years of "making-do" with marginal facilities on the west ramp,

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continuity

Doe squadron operations and command sections moved into a new, air-conditioned building, designed especially for RANCH HAND. An adjoining facility was under construction for the maintenance section, together with a parking ramp for the herbicide aircraft that included a special hydrant system for servicing herbicides. This new parking area was badly needed, ^{since} Bien Hoa had 515 aircraft assigned to various base units--over one-fourth of the total aircraft stationed at the ten primary air bases in South Vietnam. Unfortunately, construction delays precluded completion of the ramp for almost a year, leaving the operations section and the aircraft parking area over two miles apart. The aircrews remained in substandard quarters, midway between the two sites.³

Doe Parking space and housing were not the only problems the herbicide squadron faced. Virtually every RANCH HAND commander complained at one time or another that the UC-123, despite its splendid ability to absorb punishment and continue flying, was too slow and vulnerable to increasingly sophisticated enemy weaponry. If herbicide operations were to continue, a more efficient delivery system was needed. A hint of USAF research and development in this area occurred in January when F-4E "Phantom II" fighters, equipped with modified 370-gallon fuel drop-tanks, were used experimentally to spray several swaths in Laos. At 550 ~~kn~~^{kt} airspeed, the F-4Es covered a 100-foot-wide, 16 kilometer~~x~~-long area in only 70 seconds; it was assumed that with this brief exposure time they would not need other fighter escort. During the tests, however, one F-4E spray plane was shot down by enemy ground fire--evidence that speed was not the total answer.⁴

In the meantime, RANCH HAND had to rely on the obsolescent twin-engine transports. In addition to continuing attacks throughout South Vietnam, on 17 January seven spray planes flew to Ubon, Thailand, to attack a target in Laos the following day. The mission was uneventful, and the planes returned to Vietnam without being hit.⁵

By mid-February intelligence reports pointed to another major attack on Bien Hoa. To prevent damage to spray aircraft and disruption of the mission, on 22 February all in-commission aircraft

were moved to Phan Rang Air Base, a wise move since a four-hour mortar attack on Bien Hoa destroyed two US aircraft and damaged eight others the next day. Three days later, the "24 hour Battle of Bien Hoa" began. Two enemy battalions dug in just east of the base were attacked by units of the US 11th Armored Cavalry and RVN Marines, Rangers, and cavalry. Around-the-clock close air support was furnished by Army "Cobra" helicopters, USAF F-100s and F-4s, VNAF A-1Es, and numerous gunships. The allied force drove ^{off} the enemy ~~off with~~ ^{who} ~~lost~~ ^{of} 141 dead and 50 captured.⁶

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The spray aircraft remained at Phan Rang until 3 March, although the base lacked herbicide servicing facilities. Thus the first lift had to take-off from Phan Rang, attack the first target, and then recover for refueling and reherbicide at Bien Hoa. After the second lift the spray planes again landed at Bien Hoa to reload herbicide, before proceeding to Phan Rang for the night, a workable but inconvenient procedure which reduced time available for maintenance of the patched-up aircraft. One aircraft taking part in the daily rotation was "Patches." In December the silver UC-123 had gone to Taipei, Formosa, where an IRAN (Inspection and Repair As Necessary) contract facility had been established for the assault transports, and it returned to the RANCH on 1 February, resuming duty as the "Bug Bird" just in time to participate in the Phan Rang shuttle, since that base also did not have malathion facilities.⁷

In addition to time lost on the Phan Rang rotation, weather continued to have a serious effect on spray operations--sortie losses varied from 12 percent in the best weather month to 52 percent in the worst. Battle damage in the first three months of 1969, however, was surprisingly light, with only ninety-five hits confirmed for the entire quarter. A total of 1,485 on-target sorties sprayed 1,237,535 gallons of herbicides; but the amount could have been higher--240 sorties were non-productive air aborts.⁸

The low hit rate of the first quarter did not last long. When the Tet holiday offensive tapered off, enemy resistance to the spray planes increased, a pattern established in previous years. An example occurred on the priority defoliation target at Truc Giang in the

young officer had not been aware of his close call.¹¹

The tail-end aircraft did not always take the most hits. Considerable debate took place among crew members as to which position was most vulnerable, and the flyers incessantly badgered scheduling officers to assign them to the position each thought most likely to take the most hits. The squadron hit board, which indicated each man's current total, was consulted as avidly as any stockbroker ever checked the progress of market quotations. The aim of Viet Cong gunners, however, was unpredictable. Only two days after the severe damage to the rear aircraft at Truc Giang, another RANCH HAND formation also took heavy fire. In this instance, the lead aircraft took all twenty-four hits. Although the pilot, Captain Larry Phillips, was wounded about half-way through the run, he continued the mission to the end of the target, refusing to relinquish the controls until the aircraft was safely at altitude. Phillips had a moment of the mission. The bullet which passed through his oxygen quantity gauge and wounded him, struck the front of his armor vest and fell into the vest's front pocket.¹²

Heavy battle damage in April reduced the spray squadron to an average mission availability of only twelve aircraft, a figure which would have been even lower except for the outstanding efforts of maintenance crews. Inadequate spare parts forced maintenance personnel to use time-consuming expedients, such as cannibalizing fuel tanks from one aircraft to another in order to make one operational aircraft out of two out-of-commission planes. In one instance, the entire right wing of one aircraft was exchanged with another. Lack of parts grounded some aircraft for more than three months. Nevertheless, around-the-clock efforts in April resulted in a total of 806 sorties, an unusually high ratio of 65.0 sorties per plane. Neither the aircrews nor the maintenance men could sustain this effort, however, and total sorties during May and June dropped sharply.¹³

For the second quarter, the heavy April workload kept the quarterly total at a respectable 1,427 herbicide sorties dispensing nearly 1.2 million gallons of chemicals. Hits, however, were nearly five times the first quarter total--to 437. More importantly, the

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at a shortage of spare parts

with CBU only seconds ahead of the spray planes. In spite of this unusually heavy protective coverage, "the four aircraft took 62 hits, inflicting damage to engines, nacelle fuel tanks, landing gear, hydraulic systems, cockpit and cargo compartment." The Number Four aircraft had an engine shot out and Lead had its windshield shattered. All three officers in the cockpit of the lead plane were wounded.¹⁶

Partially because of the Hoi An damage, Seventh Air Force began restricting RANCH HAND from certain targets due to "high threat." The spray squadron commander disagreed with this decision, noting that "100 feet altitude, 130 knots is high threat at any time in SVN." He argued that most damage came from only four of sixty current targets, and that RANCH HAND knew the targets were "hot," but that pressing military needs made it worth the risk. The herbicide leader pointed out that despite enemy efforts, only one aircraft had been lost in 1969, calling this a "little price to pay for the military gains which were made as a direct result of these missions." Against the wishes of RANCH HAND, however, in August Seventh Air Force declared the entire I Corps region "high threat to herbicide" and the spray planes were briefly withdrawn from Da Nang.¹⁷

Maintenance problems received some indirect relief through the continuing addition of new aircraft to the squadron in mid-1969, while sortie requirements remained static. By the end of June, twenty-nine UC-123Ks were assigned to the squadron, although not all were actually present. Some aircraft were enroute from the United States, while others were undergoing IRAN at Taipei or corrosion control treatment at Kadena Air Base in Okinawa.¹⁸

RANCH HAND faced another crisis during the second quarter of 1969, when Cambodia once again charged that United States and Vietnamese aircraft had intruded over its territory, spraying chemicals on Kompong Cham Province (the so-called Fishhook area) and destroying 15,152 hectares (37,440 acres) of rubber plantations. According to Cambodian Ambassador to the United Nations Huot Sambath, most area residents suffered from diarrhea, colitis, and vomiting due to herbicide exposure, and local vegetation was badly damaged or destroyed. The United States Department of State denied both the

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different in that the experience, skill, and judgment requirements for copilots were considerably greater than in airlift," by late summer, 65 percent of the pilots assigned to RANCH HAND were lieutenants, many newly graduated from the Undergraduate Pilot Training (UPT) program. Trained only in high-altitude, electronically-assisted navigation, and in jet aircraft, these young pilots were eager and capable, but hardly prepared for the demands of the RANCH HAND mission. Unlike their predecessors, the new graduates lacked operational flying experience of any kind, had never flown multi-engine conventional aircraft, and were abysmally ignorant of the principles of low-level navigation and basic map-reading.²⁶

The shortage of senior pilots delayed in-country qualification of the new officers even more, and the squadron was forced to use "copilot only" qualified personnel in the lead and deputy lead aircraft, instead of having fully qualified pilots in both seats in these critical formation positions, as in the past. Careful selection of the best of the young officers for these assignments, together with extra training and rotation of the copilots through the "bug bird" program to gain additional experience, kept the problem from affecting the primary mission, but it did make the missions more hazardous and put an additional workload on the more experienced pilots in the squadron.²⁷

On 31 August, RANCH HAND once more deployed five UC-123Ks to Udorn Air Base, Thailand, for a special mission. At the request of the Commander of Military Region V in Laos, with the concurrence of the Laotian Prime Minister and the American Embassy at Vientiane, the target was a group of enemy-held rice fields in central Laos. Twenty-eight sorties were flown from Thailand in a seven-day period, using blue herbicide against the Laotian crop targets. During the mission, the five spray planes were hit forty-two times by hostile fire. This operation was so politically sensitive that the unit historical report, classified "Confidential," gave no details of the event, other than to note the deployment to Thailand and remark that "higher headquarters prohibits the documentation of this mission in this report." Even the mission statistics were left out of the quarterly Statistical

mission was the decision of the Defense Department to restrict Orange herbicide to "areas remote from population." Continued use of White and Blue herbicides was permitted, but "large scale substitution of BLUE for ORANGE" was prohibited.³²

Dave

Ordering reductions in the program was easier said than done. Allied troops were still in contact with the enemy, and commanders continued requesting defoliation missions to help protect their personnel and camps. Despite TACC's attempt to reduce the monthly mission maximum to 280, as ordered by MACV, scheduled herbicide sorties for the last three months of 1969 averaged 403. Overall, in its last full operational year, RANCH HAND flew 5,274 sorties, dispensing 4.3 million gallons of herbicides; the cost was 1,014 hits and a single aircraft destroyed. RANCH HAND's main effort in 1969 was on defoliation, with less than 5 percent of total sorties used for crop destruction. A major share of the crop missions (42 percent) took place in I Corps, primarily in Quang Nam and Quang Tin Provinces.³³

On 1 January 1970, the 315th Special Operations Wing was redesignated as the 315th Tactical Airlift Wing (TAW). The four airlift squadrons were also renamed, but the 12th Squadron, in recognition of its unique mission, retained its Special Operations Squadron title. The first of January also was a holiday for RANCH HAND due to a twenty-four-hour truce, but a return to targets in IV Corps after the truce was over quickly reminded the crew members that enemy gunners were not on a holiday. A five-ship attack on the U Minh Forest took fourteen hits and a three-ship defoliation run over a canal target counted twenty hits, with one aircraft making an emergency landing at Bien Tuy with an inoperative engine. In February a four-ship formation, also on a canal defoliation mission, took thirty-one hits; the number three aircraft lost complete electrical power, but safely returned to Bien Hoa with the rest of the formation. The casual attitude of the spray squadron toward enemy fire was reflected by the unit historian--after documenting a list of missions with heavy damage in his quarterly report, he noted that spray planes had been hit on other missions too, but he did not list them specifically because

"they totalled less than ten hits on any one mission." Apparently being hit less than ten times on a mission was too frequent an occurrence to warrant special attention. The 144 hits on 753 sorties during the January-March period brought the RANCH HAND total to 4,622.³⁴

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In April the emphasis turned to crop destruction. One of the most challenging missions of the quarter was flown on 10 April against enemy crop targets in the Song Be Valley in Quang Nai Province. Using three extra aircraft especially deployed from Bien Hoa on the previous day, the Da Nang detachment put seven planes on target. Heavy enemy resistance was expected, and the formation was supported by four F-100 fighters, six "Huey" helicopter gunships, and ten "Cobra" helicopter gunships. Despite this impressive escort, the formation received continuous ground fire throughout the run. After about two minutes, Lieutenant Colonel Warren Fisher, in the lead aircraft, had his right engine shot out, forcing him to dump his remaining herbicide and make an emergency landing at Chu Lai. The other six aircraft stayed on target and completed the run, although all were hit. The flight took a total of thirty-seven hits, including twelve on Fisher's plane, but no one was wounded. A week later, a three-ship attack on a II Corps target added another fifteen hits--equitably distributed five per plane--to the squadron's ever-growing total.³⁵

In an attempt to reduce the amount of fire taken by the herbicide planes, heavy suppression with irritant gases was tried once more in early 1970. On 25 January, a five-ship attack on the Rach Lang/Rach Duamoi Canal in IV Corps was preceded by "stun gas,"^{*} but the lead aircraft still took twelve hits. On several other missions, CBU-30, a tear gas munition, was dropped along the target axis approximately ten minutes ahead of the spray run. This was followed by another flight of fighters dropping CBU-24 fragmentary bomblets ten to fifteen seconds ahead of the herbicide formation while they were on target. After a brief trial, however, the use of gas as a tactic was again discontinued as ineffective.³⁶

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Another attempted response to increased ground fire was better

*quote from
9th report
without amplification*