

1. INTRODUCTION: \_\_\_\_\_ to brief you on the defoliation mission of the 12th Air Commando Squadron, or Ranch Hand, and especially how you as FACS can best help them accomplish their job. The code name for Fraggings purposes is TRAIL DUST, and the call sign for the spray equipped 123's is always COWBOY. HADES

2. MISSION: The mission of the Ranch Handers is to defoliate lines of communication: roads, trails, water ways, railroads and areas around Special Forces Camps, thus denying the VC ambush potential and opening up these areas for improved aerial observation. One of our most publicized projects has been the Ho Chi Minh Trail complex, a project that is still current and probably will remain so as long as it is being used for infiltration and movement of supplies from the north. A second mission is that of CROP DESTRUCTION, or "resources control". These missions are always in areas under VC control. Crop Destruction isn't too popular locally or internationally, so you won't hear it mentioned as often as our straight defoliation mission. Mission fulfillment requires the close coordination of Vietnamese civilian and military authorities, MACV chemical personnel and American Embassy personnel. However, we are mostly concerned with the close coordination between Ranch Hand, the FACS and the Fighter Air Support.

3. OPERATION: No two targets are exactly the same, but the ideal spray environment is flying at 130 knots indicated airspeed, 150 feet over the target area. Usually 3 or 4 aircraft will be in a loose trail formation, and each aircraft will spray a swath 80 meters wide and about 16 kilometers in length. If the spray pattern is one straight run, the entire "Spray On" time will be about 4 minutes. However, in the event of mountain crop targets, always hard to get at, the mission usually runs about 45 minutes while flying up and down the mountain side. Here the FACS can be of great help to the Ranch Hand crews by telling them where the most lucrative crop is located in the overall target complex.

4. CHEMICAL: Three types of defoliant are now in use:

Orange: Used on a broad spectrum of foliage, composed of 24D and 245T.

White: Sometimes called Tordon, a little heavier than orange and more reliable when used near areas of friendly crop or plantations.

Blue: Best chemical for use against narrow leaf crop (Rice) and composed of acacodyllic acid base.

I would like to emphasize that the defoliant is completely non-toxic and not harmful to any form of animal or human life. The aircrews get slopped with it daily, and our ARVN loaders have been exposed to it for several years with no ill effects. For demonstration purposes, Ranch Hand personnel have actually drank the stuff. The VC of course have exploited the chemical warfare connotations of the spray mission to the utmost. Last month the Hanoi newspapers claimed that over 20,000 South Vietnamese were killed or maimed on one single spray mission in the delta. The VC tell their troops that if sprayed, rub dirt and urine on their skin which will counteract the effect of the chemical. This antidote doesn't exactly win their hearts and minds. Whenever you are discussing any facet of our operation, please make mention that it is harmless to the troops, and you might

save us from some friendly ground fire.

5. LIMITATIONS: All three chemical agents now being used have the same operational limitations. A wind velocity of over 8 knots will cause undesirable drift and could cause damage to friendly crops or plantations. A temperature of over 86 degrees causes the chemical to dissipate and lose some of its effectiveness. In some cases the high temperature causes the chemical to actually rise rather than fall. (In some mountain targets this is actually desirable as the valleys can be sprayed and the defoliant floats up the mountainside) finally, rainfall will lessen the effect of the chemicals on the foliage.

6. FRAGGING THE MISSION: You will notice on the frag sheets you receive prior to your Trail Dust mission that the FAC and fighter coordinates will be different. The FAC is fragged for a set of UTM coordinates just adjacent to the target area, usually near where the Ranch Hand aircraft will start to spray. The FAC should look over the target vicinity, check it for weather, surface winds, and if possible, determine the temperature. This information and any pertinent intelligence he will pass on to Cowboy flight when they come up on the pre-arranged frequency. The fighter aircraft are fragged about 15 miles from the target area, usually with a Tacan bearing and a good ground fix. There they will join up with the Cowboy aircraft and proceed to the target area. We find that this tactic does not alert the ground forces more than necessary, and enhances our element of surprise.

7. TACTICS: Depending on the target terrain, wx, and amount of ground resistance expected, one of two approaches may be made to the spray on point. The cowboy flight may remain at 3000 feet or above and rapidly descend at 2500 feet per minute to the target. Otherwise, especially if weather is a factor, a tree-top level approach may be more desirable to reach the spray on point. If the target size and terrain permits, it is obviously best to make one 16 kilometer pass thru the target and get out. If this isn't feasible, a race track pattern may be used, or a "Plum Tree" (90-270 degree turns at the end of the target area) tactic may be employed. In the mountains, its contour work, starting at the high ground and spraying around the mountainside. If it's an exceptionally "hot" target, one pass may be made thru, then if there is sufficient chemical left in the tanks, another nearby target may be hit. Regardless of the spray tactics used, it is important that the FAC be in a position to watch the spray runs. When ground fire is received, the flight mechanic who sits in a bulletproof box in the rear of the UC-123 will throw a smoke grenade out the rear door of the aircraft. It will usually emit red smoke, but could be almost any color. During first daylight, it's not too difficult to pinpoint the source of ground fire due to the muzzle flashes and the tracers being fired. If not visible, the aircrews can usually hear from which side of the aircraft the ground fire is coming from. The pilot will make the radio transmission "ground fire from there right, or left". Due to the lag factor with the smoke grenade, if the FAC will direct the fighters to a point 300 meters behind the smoke, it should be fairly accurate.

8. FIGHTER TACTICS: Once again, determined by the amount of resistance in the area. On a cool target the fighters may fly top cover for Cowboy flight over the area, conserving their fuel for a more lucrative target. On other targets, low level dry runs are sufficient to keep the guns quiet. In the

event of a hot target in a free bomb zone, we may call for a prestrike with either CBU, Napalm, 20 MM or all three. If we prestrike at target, the spray aircraft like to start their run just a few seconds after the strike takes place to get maximum benefit from the ordnance. Most frequently, the FAC will call in a post strike on the positions marked after the spray aircraft have left the scene. We seem to be the most shot at unit over here, having taken 1400 hits in the past 3 years. 60% hits have been received thus far in 1966 for an average of 6 spray aircraft flying daily. One aircraft has been shot down, but the crew was recovered.

9. COORDINATION MEETINGS: Whenever a project is initiated, it starts with a coordination meeting at the province capital between the Province Chief, MACV Chemical Officers, Vietnamese military personnel and Ranch Hand aircrews. The FAC's working that target area are also invited, and after the meeting the Ranch Hand aircrews like to get the FAC's thinking on intelligence, weather, winds, temperatures, best time to hit the target, and the location of any friendlies. The initial discussion with the FAC goes a long way toward the success of the mission, and we encourage the FAC's to make it to the meeting if called upon to do so. The meetings usually terminate at a little social hour at the Province Chief's villa.

10. PROBLEMS: All of our aircraft are camouflaged except one. Thus Cowboy flight will be very difficult to see for the fighters and the FAC. Once you have us in sight, try to keep us in view or it may be difficult to reestablish visual contact. Once the spray is turned on its no problem as the spray comes out like a white cloud. Ranch Hand discourages discussion of the rendezvous and target coordinates over the radio unless there has been a pertinent change since the frag was submitted. The general rule on this one is: let Cowboy flight initiate any radio transmissions regarding target coordinates. During the spray run, the Navigator sits between the pilots on a parachute placed on the radio panel, as it won't be possible to change radio frequencies once the run has commenced. Also, while on the run, it's important that only urgent transmissions be made, otherwise, calls reporting ground fire and aircraft emergencies may be blocked out. As a FAC working "Trail Dust", your help and patience will go a long way toward the success of the Ranch Hand Defoliation Mission.