

Enhancing Water Quality

By Stewart L. Udall
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During the past two years this nation has taken one giant step toward clean water. We have been carrying out the very complex job of setting standards of quality for all interstate and coastal waters.

IN 1965 Congress realized that water pollution had reached proportions which defied piecemeal efforts. Pollution had to be attacked on a comprehensive river-wide, statewide and nationwide basis to ensure the entire country abundant clean water. So Congress passed the Water Quality Act of 1965, and without one dissenting vote. This act required water quality standards to be set as the cornerstone of the systematic approach to pollution control.

This Congressional action meant that the states, through extensive public hearings, had to determine the uses to be made of hundreds of miles of interstate and coastal waterways. Waters could be set aside for recreation and aesthetics, public water supplies, fish, other aquatic life and wildlife, agriculture and industry, and, in many instances, for combinations of several of these uses.

But this was just the beginning of the task. The states also had to establish specific quality criteria, such as the amount of oxygen that must be present in streams, to permit the desired uses. In addition the states had to set schedules for building waste treatment plants and other facilities that were going to be needed to clean up the water to the specified levels.

Lastly, the states had to provide a plan for enforcing these new rules and objectives for cleaner water. Taken together it was a formidable undertaking.

During the preparation of the water quality standards, the Federal Government, especially the Federal Water Pollution Control Administration, endeavored to provide as much assistance and guidance as possible to the states.

When the states completed action on the standards, they submitted them to the Department of the Interior for Federal approval as required by the law. This department has had the challenging job of determining if the standards could effectively clean up and protect our nation's water.

More than three-fourths of the states' standards have been approved to date, and the remainder are under review.

From the outset, the importance of federal-state-local cooperation has been evident. Without this teamwork all the objectives and the means for reaching these goals outlined in the water quality standard might remain just unfulfilled promises to the American people.

And the people have grown weary of more promises. They want to see their streams and rivers clean again, they want to fish and swim again where pollution has forbidden it. Also, they want the remaining clean streams and lakes protected from pollution.

12 So as a nation we must take the second giant step in



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We must carry out those programs that will meet the water quality standards. We cannot delay, times does not stand still. While we construct new treatment plants and upgrade existing facilities, our population and economy grow and keep generating more wastes. We must, therefore, run very fast if we expect to keep up with current growth, plus remove our accumulated backlog of unbuilt waste management facilities.

Generally, the states have said that it would take from three to seven years to build the waste treatment plants and institute the other pollution controls necessary to translate the water quality standards into cleaner waters. These facilities will cost billions of dollars. Estimates range from \$8 to \$20 billion for cities alone. In 1966 Congress passed the Clean Water Restoration Act authorizing several billions of dollars worth of Federal funds over the next few years to help municipalities pay for the construction of waste treatment works. Congress is considering legislation now that will make our Federal construction dollars work even further for clean water.

We have mapped the course to clean water by setting water quality standards. We know what citizens and industry and government must do to prevent pollution and when they must do it. Now as a team we must follow that map. I am convinced we can. I am convinced we will have cleaner and more useful streams and lakes and coastal waters.

Defoliation—A Controversial U.S. Mission in Vietnam

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ON 22 April 1915, the German Army staged a chlorine gas attack against the French infantry not far from Ypres in Belgium. A breeze wafted a yellow-green cloud of deadly gas toward the French trenches, killing 5000 and leaving thousands more with damaged lungs for the rest of their lives.

Out of this brutal act of war was born an international repugnance against the use of chemicals in battle.

Despite this world-wide horror, American fliers are today engaging in continual acts of chemical warfare against the Viet Cong—dumping defoliation chemicals on the Communists' croplands and hiding places in an effort to strip the bushes and trees of their leaves, killing vegetation and permitting American planes and troops to see who they are trying to kill.

Is the defoliation program chemical warfare? A debate rages.

Early in the Vietnam war, State Department Intelligence Chief Roger Hilsman, who later became Assistant Secretary of State for Far Eastern Affairs under John F. Kennedy, wrote that, "Defoliation was just too reminiscent of gas warfare. It would cost us international political support, and the Viet Cong would use it to good propaganda advantage as an example of Americans making war on the peasants."

Despite his objections, however, the program began, and today it is one of the major military missions in Vietnam.

The chemicals being dropped are not deadly gasses designed to kill the population. Instead, they are more like

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weed-killers used by a suburban gardener. Agent *ge* is a 50-50 mixture of two commonly used defollients: 2, 4-D and 2, 4, 5-T used against heavy jungle crops. Agent *Blue* is a neutralized cacodylic acid used over tall elephant grass and heavy crop concentrations. Agent *White*, also known as Tordon 101, is a 50-50 mixture of unknown chemicals used in areas of high population. These agents are either herbicides which kill trees and broad leafed plants by literally causing them to grow themselves to death or defoliants which strip the leaves off the trees. The fliers say they are less toxic to people and animals. Men have been covered in them accidentally and suffered no ill effects. To prove this point, pilots dip their fingers into the vats of the chemicals and lick them off to display to correspondents they suffer no ill effects.

America's defoliation effort in Vietnam began modestly in 1961. Six C-123 transport planes, traditionally used in carrying soldiers, flew into South Vietnam from Clark in the Philippines and were outfitted with special tanks carrying 10,000 pounds of defoliant, enough to cover 100 acres.

These planes flew 60 flights in 1961 and 107 in 1962 as defoliation efforts continued. 17,000 acres were sprayed in 1962, and the program took off. During 1967, well over a million acres were sprayed and defoliation is now a \$71 million operation involving almost two dozen huge tankers. Advocates of the program say it is working. Native statistics certainly indicate that huge acreages of lands are being denuded of crops. South Vietnam harvested 49 million metric tons of rice in 1964 but will harvest 800,000 metric tons of U. S.-supplied rice in 1968.

AF 12th Air Commando Squadron Has the Mission

"Putting in a burn" is what defoliation pilots call a mission. Today, when the aim of aircraft designers go higher and faster, the Air Force's 12th Air Commando Squadron based at Bien Hoa is a paradoxical unit. Pilots seek to go lower and slower, because their mission is defoliation.

their muddy camouflage paint, these twin-engined planes are the most battered and filthiest in the Vietcong theater. Virtually every plane is covered with little big metal patches, each patch covering a Viet Cong bullet hole. The crews refer to their ships crudely, but logically, as "magnet asses" for the amount of enemy fire they draw. These C-123s were hit more than 1000 times each, a penalty for flying low and slow over enemy territory.

Each plane sports three spray booms, one on the tail, one on each wing, with jets on the boom spraying out chemicals over the ground below. The deadly chemicals will strip the dense jungle canopy that hides supply routes, ambush sites and base camps. By stripping the cover of the jungle from the enemy, it is possible to keep him under surveillance, forcing them to



Left: On the deck at less than 150 mph are C-123 Providers of the Air Commando Squadron, Bien Hoa Air Base, spreading defoliant over an enemy base camp thus exposing it to strikes by tactical air power. Right: Flying low and slow leaves no margin for failure so maintenance is king at Bien Hoa.

take more difficult routes, and keeping him on the move. As one pilot describes it, "We open up the jungle so the forward air controller can get a good look."

The flying done by the defoliant squadrons is among the most skillful and dangerous done by any combat air crews. The planes must come in at treetop height, approximately 150 feet off the ground, flying at less than 150 miles per hour. The ships lumber over flying in formations of three, each plane staggered one behind the other, flying the terrain, following the lay of the land, uphill and down valley, keeping the planes positioned just so to insure that the chemicals are spread evenly. Says Major Ralph Dresser, who has headed a defoliation squadron, "The pilots are all volunteers. You wouldn't stay in this business long if you didn't dig it. It gets a bit hairy."

Defoliation planes maneuver at barely 40 to 45 knots above stalling speed - that critical rate at which planes lose their ability to fly and plunge straight into the ground. Adding to the danger is the fact that the planes must bank as sharply as 60° at 150 foot altitudes. As the pilots put it, "We operate at all times on the ultimate edge of the airplane's performance envelope."

Skimming over the trees at these slow speeds, the C-123s are a really juicy target for the enemy. Nevertheless, morale of the unit is high. If there is one territory they don't like, it is the Mekong Delta. The Delta is flat and VC gunners can see the ships coming for miles. They have plenty of time to draw a bead and squeeze off a string of rounds at the planes. The pilots sometimes come in so low that their propellers leave a white wake on the water of the rice paddies. Despite the danger, casualties have

been surprisingly low.

"We are the most hated outfit in Vietnam," says one crew member. "Only We Can Prevent Forests" is the squadron's unofficial motto. For many months, the squadron code-named itself Ranch Hand because of its close involvement with Vietnamese crops.

Lt. Colonel Charles Cusenbary, a senior pilot from Sonora, Texas describes some of the flying activity involved in a typical Ranch Hand mission.

"We usually get up about 4:30 a.m. We try to get out on spraying missions early in the morning, while the dew is still on the crops. That's when the defoliants are the most effective.

"Our group is extremely close-knit. We eat breakfast together, fly together, debrief together. You can spot us quite easily by the purple scarves we wear. We were given these by General Ky, and the purple is reminiscent of the color of some of the defoliants we drop. Our squadron's symbol is the Chinese character for purple which we consider lucky because it has 13 brush lines.

"Most of the time we fly out of Bien Hoa and DaNang, but we respot the aircraft depending upon where the monsoons are blowing at various times of the year. We've been in and out of just about every airfield that can handle these C-123s.

"Technically our call sign is 'Hades' because someone else has now officially been given "Ranch Hand" for a mission code name. But we ignore that in the air. We refer to ourselves as "cowboys" and over the radio you can usually hear us slinging the lingo back and forth, 'Take her down, Cowboys,' or 'Turning into you, Cowboy.'

"Ranch Hand is a seven day a week, two missions a day affair. Each mission lasts about an hour and twenty minutes, but we're pumping chemicals for four minutes only. We fly with fighter escort. Sometimes the jets will go in just ahead of us and suppress any VC they might see. And, if we pick up ground fire, we signal the location by a smoke bomb and they woosh right down to zap the guys who are shooting at us. What we try to do is to discourage the VC from shooting at us by letting them know they are going to be hit by jet rockets, bombs, and machine gun fire right away.

"Each ship has a three man crew. The ships are armored as well as they can be and the engineer sits aft in an armored box. He is the one who throws the grenade if we get shot at.

"As soon as we finish a mission, we fly back to the base and the ground crews run the planes through what we call the Elephant Walk, quickly refueling the ships and filling them up with chemicals again, one after another, so we can hop back into the cockpit and take them off for the second run of the day. I can't praise the crews on the ground too highly. They really take a lot of pride in their work and get the job done as quickly and efficiently as possible.

"Most of us fly in jungle fatigues and we usually have an M-16 or .38s in the cockpit with us in case we go down and have to fight our way clear of the Viet Cong. We wear helmet and chest armor to protect us against small-arm hits. Every pilot is strapped in so if he is hit he won't fall onto the controls and dive the ship down into the trees 150 feet below.

"There is real team work in the flying since no one man can do the entire job at such low altitudes. We worked it out so that the pilot flies the plane while the copilot adjusts the power settings. All our pilots are able to fly both the left-hand seat and the right-hand seat and we interchange often. No man is ever relegated consistently to the copilot's seat on the right.

14 "I guess you can say we're hot-shots after doing so much of this low level flying. It is true that we do fighter

type breaks over the field when we come in to land all our parking area. The Corral to carry on with Ranch Hand image, and while the planes go to Corral, we debrief ourselves, and very strenuously crit each part of the mission. There is a real sense of professionalism in this group and we work on it very hard.

"Of the 55 pilots flying Ranch Hand right now, 25 are colonels or higher and 35 are majors. In other words we've got the most senior pilots we can get doing this. We realize it is critical and we want to do it right. interesting, that the new men tend to drive themselves harder than the old-timers. They fly lower than we do, they fly too close to the plane in front of them. I guess it is over-compensation. They are very eager and trying to show that they can handle this very tricky flying as good as the old-timers. Our crews are highly educated. A number have doctorates and there are quite a few men with masters degrees among us. I'd have to say this is an educated squadron."

Mission Continues to be Controversial

Despite the obvious dedication of the crew members to the job, there can be no doubt that defoliation continues to be a controversial effort. The Soviet Union has been making propaganda hay out of it, *Isvestia* reporting that "The Pentagon has marked the beginning of the New Year by an unprecedented action: the use of chemical weapons." *Isvestia* adds that U. S. airplanes are defoliating jungles and concludes, "The Air Force even started to destroy by poisonous gas the crops on the peasants' fields in the regions where dissatisfaction is spreading."

American military men counter that defoliation is less bloody way of foiling the enemy than killing him. "What's the difference between denying the Viet Cong rice by destroying it from the air," they ask, "or by sending in large numbers of ground forces to prevent the enemy from getting it? The end result's the same; on the first method takes far less men."

Great efforts are taken to make sure the chemicals aren't sprayed on the crops of friendly villagers. Says Colonel Cusenbary, "Each project has to be approved by the Province Chief, by MACV, the U. S. Embassy and we don't go out on any mission that hasn't been approved at least eight days in advance."

The villagers are warned that their lands are going to be sprayed by pamphlet. Reads a typical broadsheet dropped from airplanes, "The Government of the Republic of Vietnam has adopted the use of defoliants which will ruin your rice crop and other crop plants in the field. This has been necessary as your rice fields are located in the areas supplying food to the Viet Cong. However, you should not be disappointed as the Government will compensate for damage done to your rice crop. Meanwhile, the Government will at all times help evacuate you to other places with food, lodging and clothing provided until the next harvesting season, if you so desire."

Dale Thorngren with AID in Vietnam reports that the Viet Cong capitalize on peasant discontent when these pamphlets are dropped. He says, "VC propaganda convinces farmers that defoliants are to blame for sicknesses of both poultry and animals. The Government of Vietnam and the United States are getting a black eye as a result, and we are losing the support of the villagers."

To get money back from the Government in reimbursement for crops destroyed, the simple Vietnamese peasant has to go through a seven-step process. Usually the cash involved ends up in the pockets of the unscrupulous province chiefs. One correspondent quoted farmer Ong Trung Ty who said sadly, "The farmers here call it the medicine from the sky. It is the biggest agricultural problem in this province. It is especially bad along the canals

large roads where the defoliant is sprayed often catch the troops are afraid of an ambush. Unfortunately, farmers like to grow their fruits and vegetables along canals and roads so that they can get them easily to market. The paper work for reimbursement is too difficult for the farmers. Besides, the province chief tells me he can't get the money from Saigon. Some people say that is corrupt and that he keeps the money for himself." Even the purely military experts are somewhat divided the effects of defoliation. Colonel Serong, the senior Australian representative in Saigon has been quoted as saying that defoliation actually aids the Viet Cong amhers—because if the vegetation was close to the road it was not wiped away by chemicals, those who were bushed could take cover more quickly. When it is covered, the guerrillas have a better field of fire.

Civilian experts with a deep interest in peace have been particularly incensed by the defoliation program. The board of directors of America's largest scientific organization has said that on the basis of available information, it did not share the confidence of the Department of Defense "that seriously adverse consequences will not occur as a result of the use of herbicidal chemicals in Vietnam." The board expressed particular concern about use of herbicides containing arsenic.

The Army replies, "Great care has been taken to select (i-crop target) areas in which most harm would be due to the Viet Cong and the least harm to the local population. In some instances the local inhabitants, who have been forced to grow food for the Viet Cong, have requested that the herbicides be used. The Government of Vietnam has taken precautions to care for non-combatants whose food supplies have been affected . . . This is not chemical or biological warfare, nor is it a precedent for that. It is in actuality a relatively mild method of putting pressure on a ruthless enemy who has no compunctions about the murder of women and children, as well as men, and about the torture and mutilation of captives."

As a defense for its actions, the military points to the report of the Midwest Research Institute which concluded that there were no clear indications of long-term damage as a result of the wide-spread aerial spraying to strip Vietnamese war zones of foliage. Critics of this report, which took four and a half months to accumulate, say that has some glaring loopholes, however. Chief criticism seems to be that it was prepared solely on the basis of reviews and the researching of scientific literature. No on-the-spot investigations or field trips were made by personnel of the Kansas City research firm.

And so the debate rages. Meanwhile, brave men in ready, shot-at ships continue, day in and day out, to do one of the dirtiest and most dangerous jobs of the Vietnam war.

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Opinions On U.S. Election In Vietnam

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The Presidential election campaign may shape up as bitter and confusing to most Americans, but it's brought a sigh of relief to most top South Vietnamese government officials. Many South Vietnamese officials felt that one or both major U.S. parties would soften the present U.S. stand on bombing to capitalize on the growing antipathy toward the

war. But when both Nixon and Humphrey refused to back away from President Johnson's firm resolve not to deescalate the bombing without some reciprocal concessions from the North Vietnamese, Saigon was almost jubilant.

Giving equal pleasure to the South Vietnamese was the failure of either party to adopt a proposed plank in their platforms that would have called for a coalition government between communists and South Vietnamese. The results of the conventions prompted South Vietnamese President Nguyen Van Thieu to tell his people flatly, "I would say the Americans are not here in Vietnam to surrender to the Communists."

With the elections over, South Vietnamese officials expect the Vietcong to continue to step up attacks on the south, especially around Saigon. Thieu is convinced the Communists will keep the pressure on until after the elections. U.S. political experts have mixed feelings over how renewed fighting might influence the outcome of the election. Some see increased fighting as a sign that Johnson's policies are a failure, others claim Johnson's policies are the only way to keep the fighting from raging out of control.

In Saigon, most officials seem to favor Humphrey. Senate vice chairman Hoang Xuan says, "Humphrey can bring peace with honor for South Vietnam. Humphrey is very close to President Johnson. He will continue to apply Johnson's policies." Another top official predicts Humphrey will win and end the war by first wringing some secret concessions from the Hanoi government at the Paris peace table. However, it is generally believed in Saigon that regardless of who wins the November election the Communists will wait till after that time to make any concessions, preferring to wait to see who they'll be dealing with over the next four years.

In Paris, U.S. Ambassador W. Averell Harriman is not so pessimistic about getting some agreements on deescalation out of Hanoi before the election. Harriman concedes that the Communists "haven't shown any disposition to be hurried." But the ambassador adds, "and yet I don't think—I am not convinced that they want to wait until after the election." Still the betting in Washington is that nothing will happen till after elections.

The big hang up remains the bombing of North Vietnam. Harriman admits the Communists during the peace talks have been "preoccupied with this idea of getting the U.S. to end all the bombing of North Vietnam without any commitment on their side." So far, President Johnson has flatly refused to halt the bombing on those terms. But in recent months the Hanoi government has said without specifics that it would deescalate in return for a bombing halt.

Harriman now believes that the Hanoi government would reciprocate in deescalation if the bombing stopped. He says, "I think they now recognize they would have to do something. They have told too many people that something good would happen. So they have got, in a sense a commitment to other people." This growing belief among U.S. negotiators that Hanoi would respond to a bombing halt is being watched closely. It could be the first hint that President Johnson will try a bombing halt based on this feeling.

There is also some softening among U.S. military officials to the standard Pentagon line that the bombing is essential to U.S. military strategy. Some senior officers now feel there is no real military need for the bombing. They believe that better strategic bombing along the Laotian border and from the demilitarized zone south would accomplish as much as thrusts into North Vietnam.

All this talk is strictly private. Chairman of the Joint Chiefs of Staff, General Earle G. Wheeler, has been consistent in supporting heavy bombing of North Vietnam. He 15