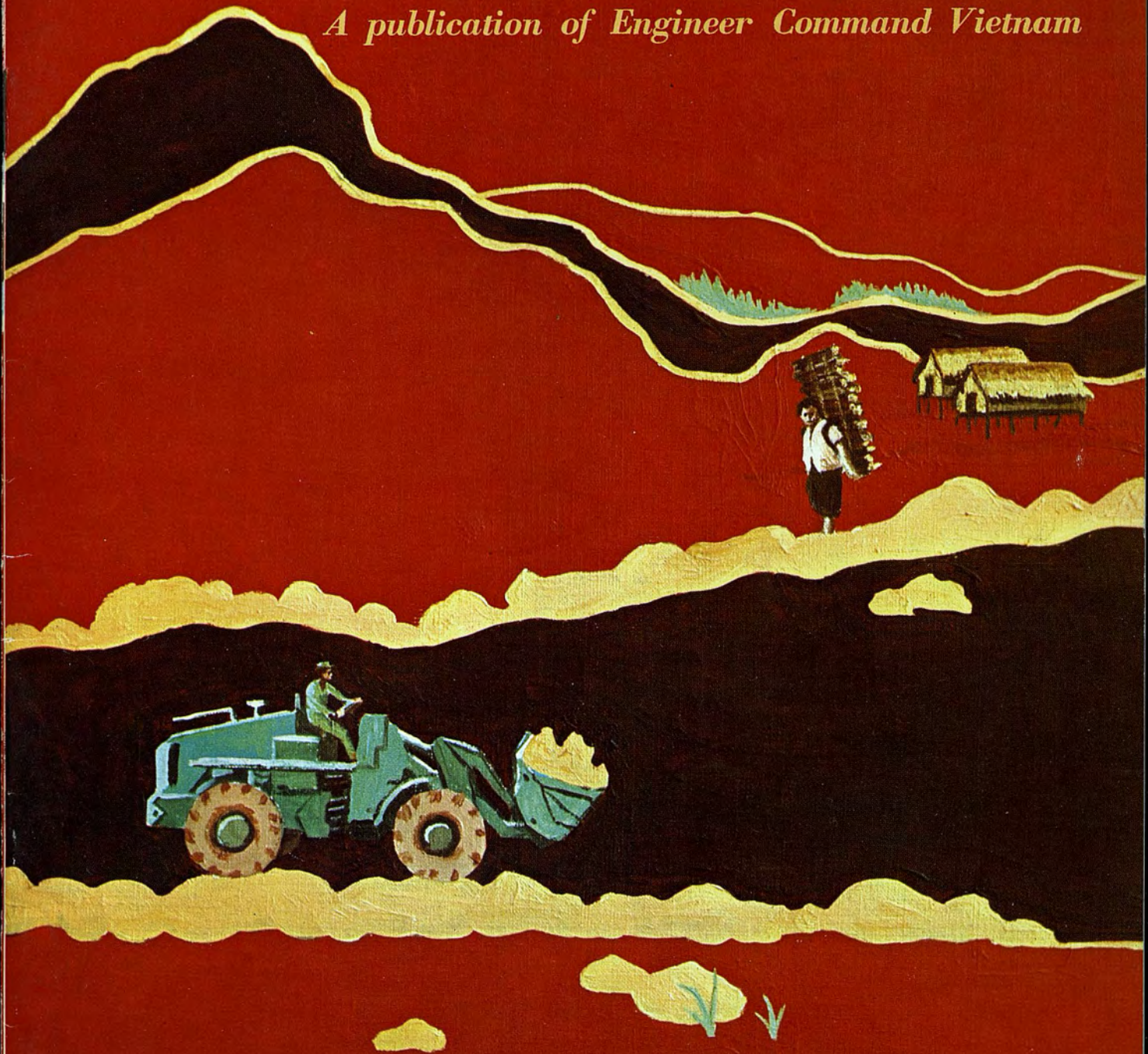


# THE KYSU'

Fall  
1970

*A publication of Engineer Command Vietnam*









# THE KYSU'

The U.S. Army Corps of Engineers is one of America's oldest military organizations. Its primary mission is to provide combat support to our fighting Army.

Army Engineers were first in action among U.S. Forces in WWI, and were first ashore at Normandy in WWII. Engineer troops have played a significant role in every battle and campaign in which the Army has engaged—from Bunker Hill to the jungles of Vietnam.

Their important contributions in past conflicts, including the construction of camps, bases, roads, bridges and fortifications, are again proving invaluable in our efforts to bring peace and stability to the Republic of Vietnam.

SP4 Charles Keagle  
EDITOR

ON THE FRONT AND BACK  
COVER: Artist Dennis Baccheschi lends  
his talents to the covers of the fall issue  
of the KYSU'.

The KYSU' is an authorized publication of Engineer Command Vietnam. It is published quarterly by the 26th Public Information Detachment, APO San Francisco 96491.

The views and expressions in the KYSU' are not necessarily those of the Department of the Army.



A Quarterly Publication Of  
Engineer Command Vietnam  
VOL. 2 NO. 3

## 2 Roads to Peace

Staff Sergeant Matt Glasgow shows the effects of the 20th Brigade's road building program and how the Vietnamese people are finally returning to their homes—over the Roads to Peace.

## 6 New View of Cambodia

Specialist Four Rex Rutkoski reports on the completion of New Bu Prang, a Special Forces-advised camp in the Central Highlands.

## 10 The Land We Live On

Lieutenant Colonel Margaret Jebb explains the functions of the Real Estate Division and tells how we obtain the land we occupy in the Republic.

## 12 Thrust into Cambodia

Engineers provided invaluable assistance during the allied offensive in Cambodia last May and June. Staff Sergeant Matt Glasgow presents a summary of Engineer operations during that offensive.

## 19 Bridge Over Troubled Water

At Bong Son, the 18th Engineer Brigade has replaced the obsolete French-built railroad bridge with a sleek, steel stringer bridge. First Lieutenant John Gamble and Specialist Five Newell Griffith give their impressions of the contrast between what has been and what will be in Vietnam.

## 21 The Mini Units

Engineer detachments in Vietnam receive little recognition, but the support role they play is extremely important. Specialist Four Charles Keagle relates the story of the U.S. Engineers' mini units.

## 25 Way to Vietnamization

With more U.S. troop withdrawals planned in the near future, increased emphasis has been placed on Vietnamization. Specialist Five Peter Elliot records the progress of the ARVN's road construction program on QL-1.

Major General Charles C. Noble, Commanding General  
Brigadier General Kenneth B. Cooper, Deputy Commanding General  
First Lieutenant Robert Mayne, Information Officer  
First Lieutenant Christopher Beall, Press Officer  
Specialist Four Charles Keagle, Editor





## Roads to Peace

### 20th Brigade Road Construction



Wong

By Staff Sergeant Matt Glasgow

During the past decade, tens of thousands of Vietnamese were forced to stand by helplessly as the claws of war raked away their homes, crushed their independence, and slashed hideous scars into their memories. Reluctantly at first, then more rapidly as the strife became more intense, they fled homes and farms inherited from scores of ancestors. In no place was the exodus more marked than in the swampy Mekong Delta and the jungles of the Third Military Region, where nearly 75 percent of the nation's 17 million people live.

In the years following the Communist's 1964 operations in this region, whole families uprooted themselves overnight to escape terrorized hamlets.

On foot, by Lambrettas, in ox-carts, on incredibly ancient buses and even in sampans, the rural peasants straggled into Saigon, Can Tho, Tan An, and other provincial capitals. With them came only the most meager of provisions; rice, a cook-

ing pot, and perhaps a treasured photograph, faded with age. Many lived with relatives; the less fortunate in makeshift huts of cardboard, tin, bamboo—anything available. Despite rampant disease and poverty, and even though they were refugees in these nearly alien cities, they stayed rather than face slaughter at the hands of the dreaded Viet Cong.

Then, in 1969, the flood of broken people slowed to a mere trickle. By late that year the refugee tide began to reverse itself. Now, in ever-increasing numbers, the victims of pillage and horrors past are returning to reassemble the shambled remains of life as it once was.

Although many events have created this dramatic transition, the most obvious and tangible is a massive road building project dubbed "Roads to Peace" by Brigadier General Edwin T. O'Donnell, whose 11,000-man 20th Engineer Brigade has undertaken the project. Under his direction, the brigade is engaged in construction of more than 1,000

miles of prime highway and secondary roads that will form an arterial network between virtually every population center south of the Central Highlands, from Cambodia to the sea.

As construction progresses, new upgraded and re-aligned sections of national highways are opening the area for resettlement. At one such opening, a 12 kilometer stretch of National Highway 4 completed near Vinh Long recently, a ribbon-cutting ceremony was held. Heading the delegation of Vietnamese dignitaries was Prime Minister Tran Thie Khiem, who commented in his speech; "Roads, as this, help us to help ourselves develop and reach self-sufficiency. In order to fully use this section of road, we must keep it up and . . . guard against the sabotage work of the communists. This we will do . . . we must struggle to achieve our goals."

As vowed, there, and at each newly linked village and hamlet, Regional Forces and Popular Forces have



established posts to provide security against enemy harassment. Each section completed brings still another source of security; enemy attacks-in-force are seen beforehand and dealt with by the Army of the Republic of Vietnam (ARVN) units, which can now reach embattled hamlets in minutes.

With the completion of this 12-kilometer section of National Highway 4, the Saigon Government came another step closer to the realization of a long-sought goal. When completed, the highway will connect the northern and southern extremes of the country to provide, in conjunction with National Highway 1, a secure means of rapid surface transportation spanning the length of the country.

As each piece of the network is fitted into place, bringing security to the area, former inhabitants return from exile to begin life anew. With the influx of people, commerce expands rapidly, and the newly-opened roads become crowded with the resultant traffic.

Once the returning refugee is settled, the system of bridges and byways connecting the major population centers becomes even more important. Access to rice mills, markets and storage areas mean a departure from the former life in which farmers usually produced only enough to meet immediate needs. In Tan Long hamlet the difference between the two ways of life lies in a narrow 15-foot bridge over a nameless canal. Of greater significance than the material gain involved is the fact that the bridge is a constant reminder that the government cares. More than six miles of bridges have been erected in the canal-and-waterway-laced Delta region under the Roads to Peace project.

Further north, in the Mekong Delta province of Long An, the third phase of Roads to Peace, tactical roads, is bringing new life to hamlets that have dwindled to near extinction. Connected in the past by little more than muddy ruts, mine craters and mangled bridges, the hamlets have long offered easy conquests to

terrorists and VC rice collectors. With the aid of the 9th Division's 3rd Brigade, almost all of the province's 420 kilometers of secondary roads have been refilled, reshaped, crowned, packed, and topped with an all-weather surface known as laterite. In addition, about 80 bridges have been replaced or repaired.

Today, enemy activity has been reduced to an unparalleled low. Three-wheeled Lambrettas are plying the interior of the province with regularity. Produce and poultry are being taken to nearby markets by people who, until recently, had not seen the market in nearly six years. In one Long An hamlet, near Binh Phuoc, the influx of former inhabitants also meant the resumption of formal education when the schoolmaster returned to rebuild his house after several years. He also intends to start the community's first hospital.

Sometimes the Roads to Peace project reaps unexpected, subsidiary rewards. Such was the case after work began in the opening of a

*Thanks to the 20th Brigade's road building program, people are now able to leave the cities and return to their homes and farms in the country.*



Wang



*Regional and Popular Forces established posts to provide security against enemy harassment along the Roads to Peace.*



Wang



forest-lined section of QL-20 designed to connect with the Second Military Region border. Even before the road could be completed, Vietnamese lumberjacks were using it to reach the virgin forest to start logging operations to provide badly needed lumber for the nation's rebuilding effort. Other examples of unexpected gains include new villages and farms.

"On QL-13 and a lot of other places you can see new hamlets and villages popping up all over the place. It seems that almost everywhere we put roads, they put villages," said Staff Sergeant Gerald R. Young, a 20th Brigade road inspector who frequently travels to road construction sites during and after operations. "Last week I was out on one of our projects—the dozers were just clearing away the jungles from the sides of the road (a procedure designed to prevent ambushes). Today I went back out, and there is a village standing there. I couldn't believe it! It was just as if it had grown right out of the ground ... there's no telling where they all

came from," he added.

What do the people think of Roads to Peace? A 20th Engineer Brigade reporter posed this question, through an interpreter, to a person he met along QL-4.

A weathered-looking farmer, Nguyen Phoc Loc, stopped his knee-deep work in a roadside rice-paddy to answer: "The old road was in such poor condition that it was difficult for people to carry their rice to Can Tho. We owe a lot of thanks to the courage and hard work of the Americans."

Although this massive engineering project is uplifting standards of living and aiding in the pacification effort, its most important impact is less evident.

The same roads that bring the Vietnamese out of his hamlet-sized world, are bringing the nation to him. As a result, for the first time in centuries, the people of Vietnam are developing a deep sense of national unity. With it a new people are emerging from the cauldron of war—over the Roads to Peace. (1)

*Instead of producing only enough to meet immediate needs, farmers can now travel to the market centers to sell their goods.*

*A Vietnamese lumberjack secures timber in preparation for hauling over the new roads.*



Wang



Wang



# New View of Cambodia

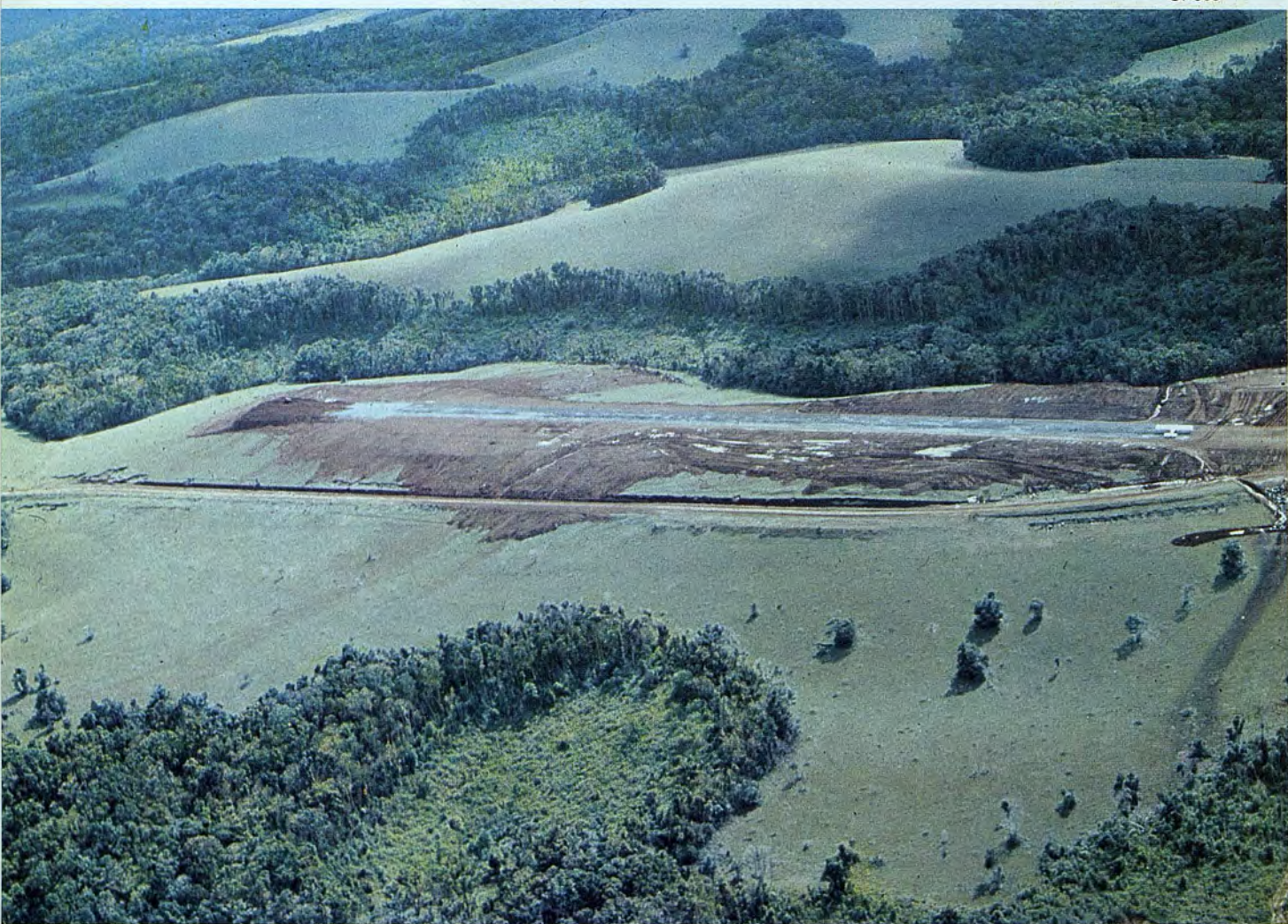
By Specialist Four Rex Rutkoski

"Spirited Bayonet" was the nickname for the operation that gave birth to a third generation Special Forces-advised Montagnard camp serving as an observation post along the Cambodian border in the Central Highlands of Vietnam.

Through four months of 12-hour days and seven-day work weeks, Delta Company of the 18th Engineer Brigade's 19th Battalion coordinated massive construction and supply efforts to build a secure base of operations at New Bu Prang.

Old Bu Prang was in the news last year when it withstood a 45-day siege from November 8 to December 23. During that period, 1,500 mortar rounds and rockets pounded the camp. The attack failed to dislodge Bu Prang's defenders, but every-

Grieco





thing above ground was destroyed.

American Special Forces decided to re-locate the camp and build something stronger in a better location. The plan was designed to cover three basic requirements: occupation of key terrain, an adequate air facility and access to a convoy supply route.

Since the primary mission of an outpost in that area is surveillance of the Cambodian border, a new site was chosen about 11 miles southeast of the old one and two and one-half miles from the border in Quang Duc

Province. Terrain problems that had prevented truck access to the old camp were solved by the move to the new position near National Highway 14. Increased air traffic could be handled on the 2,600-foot airstrip to be built there, large enough to accommodate C-123 cargo planes as well as helicopters.

New Bu Prang is the home of American Special Forces "A" Team advisors, Vietnamese Special Forces, and several hundred Montagnard soldiers with the Civilian Irregular Defense Group (CIDG) and their

families. The Montagnards are volunteers who trade their military services for supplies and a secure home for their women and children. Common to all of them is a hatred for the Communists, which makes them especially reliable soldiers.

At the beginning of February, the low hill that was to become New Bu Prang also became the home of Delta Company's Engineers. Second Platoon was first to break ground at the site. They set up a perimeter, built primary fortifications and dug foxholes. And while they endured the



*Engineers work to prepare lumber for shipment to Bu Prang. More than 2 million board feet were processed through this lumber yard at Cam Ranh Bay*



Grieco



sweat and dirt on their isolated hill-top, the other platoons were doing some equally important back-up work.

Company Commander Captain Raymond Gajewski sent his First Platoon to Gia Nghia, 80 miles west of Cam Ranh Bay, to repair two old French Eiffel bridges vital to the highway link with Bu Prang. The Eiffel bridge is a pre-fabricated steel panel structure similar to the Bailey Bridge now used by American Forces. After two weeks, the bridges were up to strength and the First Platoon convoyed to Bu Prang.

The Third Platoon stayed in Cam Ranh where they worked for 26 days cutting and pre-forming more than two million board-feet of heavy lumber for construction at the camp. The lumber was flown to Nhon Co, 10 miles from Gia Nghia, by C-130 cargo planes and from there by CH-

47 "Hook" and "Flying Crane" helicopters to Bu Prang.

Captain Gajewski described the actual construction at Bu Prang as a "typical Engineer project, starting off with a plan which is then expanded." Initially the men lived in fox holes, ate C-rations, and used a brook for bathing. Fifty-five gallon drums replaced the brook and were, in turn, replaced by showers in two of the compound's main bunkers.

New Bu Prang is an entire underground bunker complex with three to four-foot overhead fill cover. Surrounding the huge and vital Tactical Operations Center (TOC) at the heart of the compound are living/fighting bunkers, each big enough to house four CIDG families. Constructed with 12-inch timbers and tons of compacted soil cover, the bunkers should withstand anything the enemy can throw at them. The

fortifications occupy a perimeter six-tenths of a mile in circumference.

The TOC and its adjoining living quarters for American and Vietnamese Special Force advisors house the communications and administrative center of Bu Prang as well as kitchen and shower facilities. These three bunkers together cover more than 5,000 square feet of floor space. Four ammunition bunkers, a dispensary, warehouse, emergency TOC, and even an underground motor pool building complete the subterranean community.

For most of the construction of this solid complex the weather held and no major problems impeded its progress—not even enemy interference; even though the Engineers and their Allies were vulnerable to attack while living in foxholes during Tet, the traditional highpoint of VC/NVA activity.

The Engineers were fortunate in another respect—their resourcefulness in arranging a field mess that served hot meals. "Everybody told us it was impractical and that it couldn't be set up because we were in such a secluded area," said the company commander. He recalled the time a large convoy pulled into camp and the Mess Steward, Sergeant First Class Larry Shields, managed to feed more than 300 people, a big job for any field mess. Shield's normal work days lasted from four in the morning until eight at night.

Since there was so little to do off the job, what little free time the men had was a mixed blessing. During the day saws buzzed, scrapers rumbled along the new airfield and dozers gouged holes for the bunkers. An almost daily, and welcome diversion was the arrival of supply helicopters.

The Engineers got most of their construction materials, and their beer, by air.


But at night, when the day's activity had ceased, they could only retire to their bunkers and sleep. Building a bunker that's secure from attack also secures it against fresh air, so many men sat out nights until they felt like going to sleep.

Captain Gajewski instituted a "rest and relaxation" program, whereby a limited number of men, at various times, were able to spend a day and two nights in Ban Me Thuot doing their laundry and visiting the PX and clubs. There were also weekly religious services. The Palm Sunday celebration before Easter featured fresh, jungle-cut palm leaves.

These were reminders of home to men who would be staying at Bu Prang just long enough to build the

camp before they went on to other jobs in Vietnam, and then finally back to the States. But for the hundreds of Montagnards who are making their lives there, the mortar pits, mines, wire and bunkers are part of a permanent home—and Charlie may regret having them as neighbors.

Reviewing the Bu Prang experience, Captain Gajewski remarked, "The fields, trees and rolling hills of Bu Prang reminded me a lot of home. It's real nice, quiet country. In fact, I wouldn't mind living out there."

From the camp's elevated position one can look across the green rolling hills into Cambodia, so beautiful that it's easy to forget what brought the captain and his men there in the first place. 







Stevens



Stevens



U.S. Army Photo

## The Land We Live On

By Lieutenant Colonel Margaret Jebb

Have you ever wondered how we obtained the land our major installations are built on or who secured the hotels and villas where MACV assistance teams and other military personnel live? If you are like most people, you tend to take what luxury your fire support base or installation offers for granted.

The Real Estate Division (RED) of the United States Army Engineer Command Vietnam (USAECV) at Long Binh is constantly at work locating and leasing the property for U.S. military personnel located throughout the Republic. To get the job done, RED has established offices throughout the country at Can Tho, Saigon, Nha Trang and Da

Nang, or Fourth through First Military Regions respectively.

The build-up of American troops necessitated leasing property in Vietnam because of the lack of military posts and quarters.

Not all lands are leased; some involve special arrangements with the Vietnamese Government providing tracts of land rent-free.

This rent-free land, called Land Use Concurrence, comprises over 1,000 sites on which fire support bases, rock crusher sites, storage depots, and installations having office space, hospitals and billeting areas for military and civilian personnel are built.

Even if most property is rent-free

the RED's biggest job remains leasing the hotels, villas and warehouses which provide shelter for American troops and equipment from Hue to Rach Gia. Housing in leased facilities varies from small houses or villas in remote towns housing advisory teams or other small units, to large hotels in Saigon which house hundreds of U.S. troops. In some cases, all private property in a certain area is rented and converted into a compound, which provides better security.

Individual homes and hotels are especially susceptible to sabotage and terrorist attack. During the last year, the Annapolis, Ky Son, Wabash, Louisiana, North Pole, Rex and





*Officers living at BOQ #1 in Saigon are provided the luxury of a swimming pool.*



*MACV advisors occupy this attractive lease in Dalat.*

Plaza Hotels, all BEOs and BOQs in Saigon, have been the target of terrorist explosions.

When rented property is no longer necessary it is returned to the owner. The U.S. assumes liability for damage done to the premises by its U.S. occupants. The owner, however, must assume liability for war, fair wear and tear, weather and structure related damages.

Since July 1967 to June 1970 the number of leases dropped from 871 to 408. One example of this lease reduction program is Move Out of Saigon Expeditiously (MOOSE), which is re-locating personnel at Di An and Long Binh.

Deeply involved in the re-location, termination, and renewal of leases is the Real Estate staff, which is composed of lease negotiators and lawyers who are not members of the Judge Advocate General Corps. These men insure that each contract entered into safeguards the interests of the United States Government and provides the necessary facilities required by the requesting unit.

Land Use Concurrence is obvi-

ously the preferred way of obtaining property for Free World Forces, since it saves money. In order for a unit to obtain a Land Use Concurrence the requesting unit sends a description of the property through the Real Estate Division to MACV, who in turn secures the approval of the Joint General Staff, Vietnam, for use of the land. When the land is no longer needed the United States gives formal notice to the Vietnamese Government and turns the territory over to them for their use.

Like many staff jobs the Real Estate people work long hours in a job that requires not only an expertise in knowledge of contracts and other technical areas but demands that a person be a "public relations man." The staff from RED must deal with MACV, the U.S. Embassy and the Vietnamese Government. The job is a demanding one, but transactions which might easily become mired in legal technicalities are avoided, and the credit must go to the staff of the RED for the land we live on. ●





Bernstein

## Thrust Into Cambodia

By Staff Sergeant Matt Glasgow

**T**onight, American and South Vietnamese units will attack the headquarters for the entire Communist military operation in South Vietnam. This key control center has been occupied and controlled by North Vietnamese and Viet Cong for five years in blatant violation of Cambodia's neutrality."

Within hours after President Nixon's statement, the Army of the Republic of Vietnam was moving into the Parrot's Beak, and entire

U.S. Divisions were proceeding into the Fishhook to carry out the orders of the Commander-in-Chief—to clean out major enemy sanctuaries in Cambodia border areas. With the lead elements of the 80,000-man operation, 32,000 of them U.S., went Engineers of the 20th Brigade.

For the road-building and land-clearing Engineers, the dramatic eight-week operation was to hold 56 brutal days of clock-racing construction, vast caches and complexes—

and combat.

To the north, east, and south of the Fishhook, what had been a series of insignificant dots in the jungles became strategically crucial staging areas as 79th Group Engineers launched an around-the-clock fight to upgrade and maintain them. The names "Loc Ninh" and "Bu Dop" were hitting newspapers throughout the world while the 31st Battalion repaired deteriorating runways, and built logistic facilities at both air-



strips in the midst of pounding C-130 landings and one-a-minute helicopter takeoffs. Beneath the Fishhook, a similar operation was taking place. Engineers of the 588th Battalion were plowing and plying two more bases, Katum and Thien Ngon, into condition to support full-scale combat support operations.

Badly needed main supply routes over long-unused roads were being forged from Tay Ninh and An Loc, when heavy 11th Armored Cavalry Regiment (ACR) and 25th Infantry Division tanks began rumbling towards the border. To accommodate them, QL-22 was opened to Krek by the 588th, and QL-13 was cleared to the border by 31st Battalion Engineers.

Twenty-six men of Company C, 31st Engineer Battalion became the first Engineers to reach Cambodian soil May 5, when a bridge, destroyed near Memot by a stunned and retreating enemy threatened to prevent an 11th ACR encirclement of a suspected sanctuary. After combat assaulting into the dense undergrowth, the GIs shook the ground and jungle with thunderous explosions as the mangled bridge and thick foliage lining the ravine were cleared away. As they worked, the first of three bridge sections, pre-assembled in Quan Loi by the 79th Engineer Company, was dangling below a skycrane, enroute to the 60-foot gap. After working in waist-deep mud and fighting the skycrane's hurri-

cane-like winds most of the day, the team wrestled the last of the bridge pieces into place.

### THE ROAD TO MEMOT

The following day Alpha Company, 588th, crashed through the jungled border south of Memot on borrowed Rome plows. Behind the plows, earth moving equipment was gouging out a road that would lay the western portion of the Fishhook open to U.S. armor and facilitate the overland evacuation of fantastic quantities of captured NVA war materials already being found.

As the unit moved through first muck, and then incredibly stubborn and tangled vegetation, enemy sniper attacks increased. Next came opportunity, then fortune. Natural deposits of laterite, needed to give the road an all-weather surface, were discovered and excavated. Then the unit hit upon two bunker complexes, the first to be found by the 20th Brigade Engineers. The Engineers found rice, livestock, weapons, and an estimated 10,000 pounds of medical supplies.

Toward the end of the 22 kilometers of driving construction the unit was reinforced by Engineers from the 595th Engineer Company. Together, they pushed through to Cambodia Highway 7 and Memot—completing the tactical link far ahead of schedule.

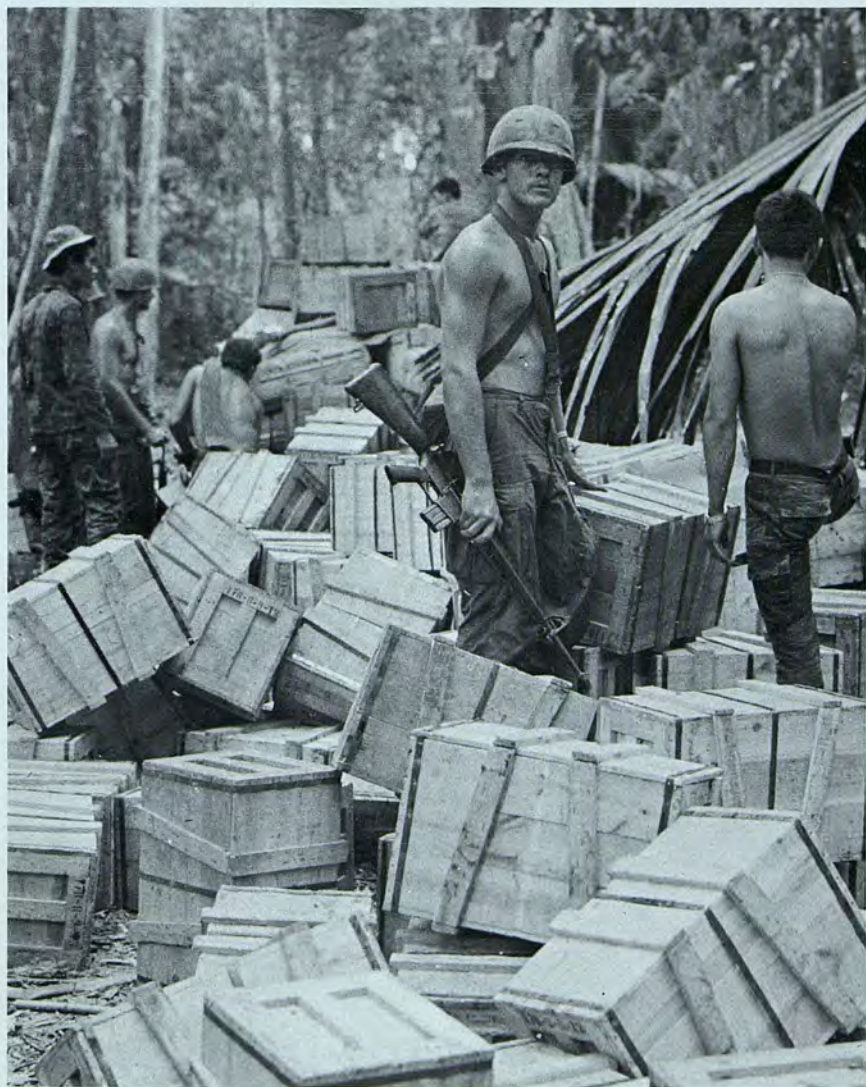
### CITY CACHE ROAD

While the road to Memot was inching through the jungle, an element of the 31st Battalion was building its way to Snoul via Highway 13. Between and around the two points, Air Force bombers and F-104s were bombarding the enemy with more than 200 sorties daily, as ground forces probed for complexes and caches. And then the word was received that "The City" had been found, concealed under bamboo and triple-canopy jungle, 14 miles down a jungle footpath leading from Highway 13.

Initial plans to use 1st Cav helicopters to remove the enemy stores were discarded after several square miles of weapons and munitions had been unearthed by day's end. An urgent request was relayed to the 31st to build an access road to "The City."

At first Company C of the 31st and the 557th Engineer Company were dispatched to the foot of the

*The Cambodian push uncovered tons of supplies.*



Huntington









Bernstein

*Engineers prepare explosives that will clear the twisted wreckage of a blown bridge.*

trail to begin ripping a narrow channel through the 100-foot trees and gnarled, wrist-thick vines.

With a D7E dozer in the lead, and a hovering helicopter keeping the men on course, Rome plows widened the swath while road construction equipment brought up the rear. Late that day, a land train of grimy, insect-bitten Engineers broke through the trees at one side of the cache. The 14-mile "City Cache Road" lay open behind them. Even with their 5-ton trucks, it was several days later when the last of the several-thousand-ton cache was hauled away.

## BATTLE ROAD II

With the drive to clear out "The City" in progress, another 31st Battalion unit began sweeping up QL-14A—later dubbed Battle Road II—to reach Bu Dop and the Cambodian border. Although beleaguered by sniper fire and land mines, the convoy managed to push within 500 meters of the border by nightfall. After a few hours of sleep in a hastily constructed night defensive position, they linked up with 11th ACR tanks at daybreak to spearhead towards what would become Fire Support Bases (FSBs) Brown and Myron. Stopping at the border they bridged a murky stream with a 60-foot dryspan and clattered into Cambodia.

## FIRE SUPPORT BASE ANN

Two companies from the 92nd Engineer Battalion worked to com-

plete projects near Tay Ninh to support operations inside Cambodia. Company B finished two projects within FSB Ann; building a bypass around the airfield and building a logistical resupply area there.

Oddly, the road from Tay Ninh into Cambodia ran straight down the airfield runway. Creating the bypass around the road eliminated the possibility of an incoming plane meeting a convoy traveling down the road in the opposite direction, an event which never happened.

Next, the Engineers, aided by part of Company C of the 92nd and part of the 362nd Engineer Company, built an easily accessible area for Chinook helicopters picking up and delivering supplies. The 150 by 250-foot site was covered with peneprime to increase durability.

Meanwhile, Company D of the 92nd finished restoring and maintaining two roads, one north of Tay Ninh and the other northwest of there. Both were important for transporting supplies, men and equipment into and out of Cambodia.

## ROCK ISLAND EAST

A couple of days, one fire support base, one dryspan, and a culvert down Highway 14 later, "Rock Island East" was discovered near the highway by elements of the 12th Cav, and the 31st Engineers were again called upon to help evacuate tons of enemy supplies and equip-

ment. After carving a road through five kilometers of jungle, immediate back-haul operations began.

As the calendar turned to the month of June, the pending monsoon threatened to wipe out hastily constructed roads and temporary bridges. Company B of the 588th began a rain-racing, laterite-repaving project that saved TL-4 south of Katum for later use as an evacuation route during the withdrawal. At the same time, Company B, 36th Engineer Battalion, working near the Parrot's Beak with an element of the 40th ARVN Engineer Group, was replacing a dangerous old French-built bridge on LTL-29 to keep that important supply link open to traffic in both directions.

While hundreds of Engineers were learning to adapt to the rain, inch-long ants, and a steady diet of red dust, the 66th Engineer Topographic Company was having adjustments of its own to make. As the only map-producing facility in Vietnam, the unit worked day and night to meet issue requirements for as many as 90,000 maps in a day.

## CLEARING WITH THE CAV

Two full land clearing companies—the 60th and the 984th—entered the Fishhook, June 4, to support 11th ACR operations near FSB Colorado. The Plowmen were to meet with the heaviest resistance encountered by the Engineers in Cambodia.



The 984th's Rome plows, despite enemy efforts, netted 13,000 pounds of medical supplies during their first two days of jungle hacking, and the 60th uncovered 50 bunkers containing 20 tons of rice.

Two days later the 60th battered its way into a hospital complex. As the Engineers began an investigation of the bunker complex, they were met face-to-face with a group of VC—and a five hour battle.

The combat Engineers fought back with pistols, M-16s and M-60s, as 11th ACR tanks established a perimeter around the Rome plows. Air strikes and artillery were called in on the enemy position, while the battle raged on for most of the day. The huge complex was found to contain facilities for an estimated 500 patients.

The 60th's Plowmen met what had to have been their roughest day on June 9, but it ended with a surprise for the enemy. Advancing upon a suspected complex, one Rome plow after another was jarred by freshly laid mines. After a total of 21 mines, one of the front plows took a direct hit from an enemy rocket-propelled grenade, and a hail of small arms fire raked the column. But the plow operators continued to fight, raising their blades and charging the attackers. Seeing this, the badly shaken enemy force fired several rocket-propelled grenades against the lead plow and then scattered.

Meanwhile, the 984th was experiencing their share of enemy contact. Entering an area that had "about 40 buildings . . . that looked like Stateside barracks," they barely had time to look around before the enemy attacked in force. Said one Engineer; "Charlie hit us with everything he had, and we gave it right back to him. Then it started getting dark, and we were going to have to start back, so we called in an air-strike on the place and left."

Starting from another direction, the Plowmen hacked their way back into the area on the following day. Near the enemy village the lead plow was hit by a rocket-propelled grenade. AK-47 fire, with its peculiar cracking sound, came from concealed positions in two directions at once. Engineer M-16s and machine guns ripped into the jungle; 11th ACR .50 calibers tore down whole trees. Colored smoke was popped, and

after pulling back a hundred meters, F-104s pounded the enemy position and B-52s later flattened the sanctuary. The next day, under orders, the 984th pulled back to FSB Colorado to prepare for the long trip home.

On June 24, with over 500 bunkers and 110 hootches to their credit, the two 62nd Engineer Battalion land clearing companies returned to Vietnam, as the 31st Engineers closed FSBs Myron and Brown. Finally, after assisting in the withdrawal of 11th ACR and 1st Cav units, on

June 28 the 31st dismantled the 70-foot bridge spanning the QL-14A border stream.

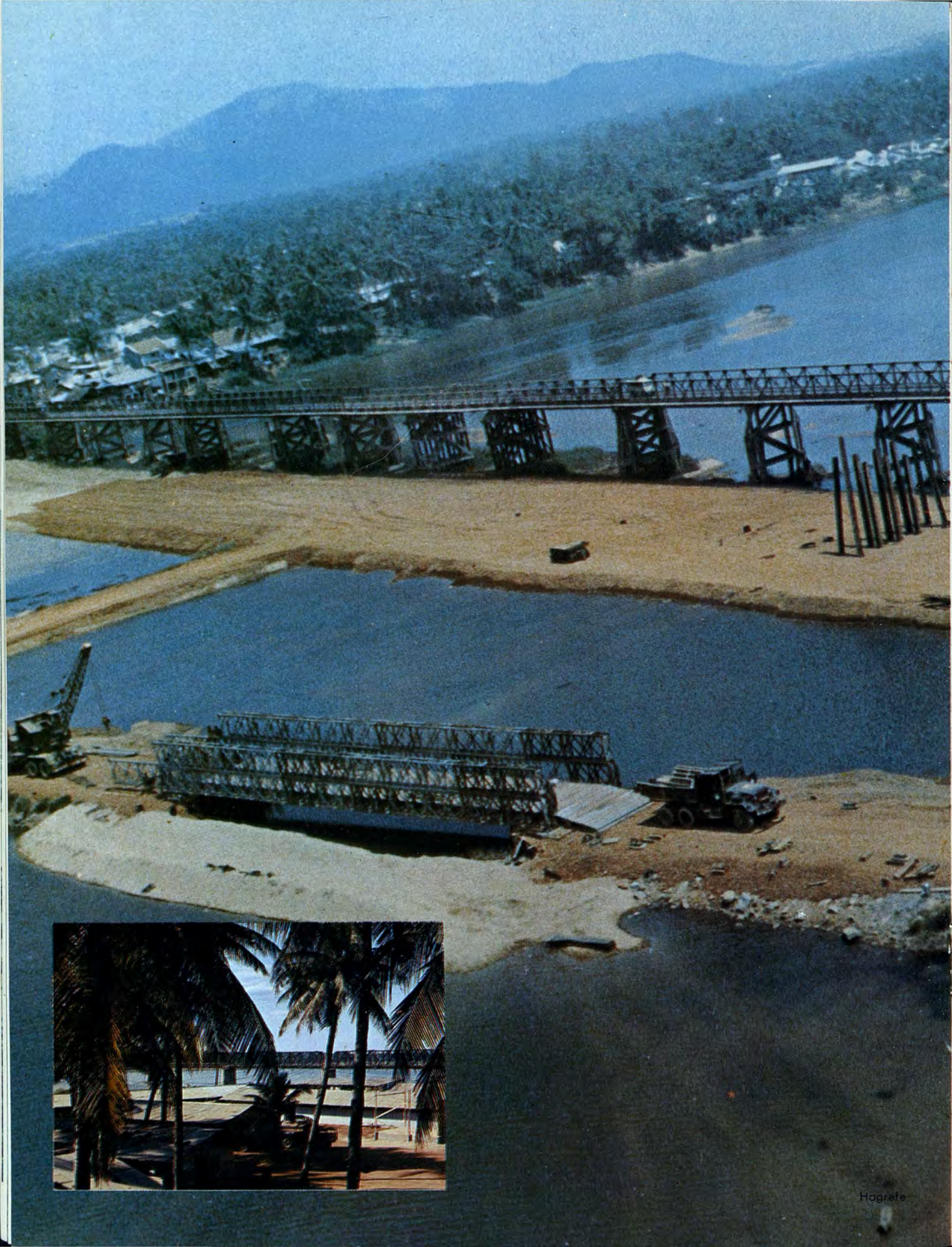
Mud-splattered convoys and long columns of noisy tanks streamed out of Cambodia over TL-4 on June 29. Engineers had played an invaluable support role—without their efforts, infantry operations would have been hindered. Engineers not only helped to guarantee the continuance of our troop withdrawal program, but also assisted in buying time for the South Vietnamese to strengthen themselves against the enemy. 🇺🇸

*Sweat and hard work was the name of the game for GIs involved in the Cambodian operations.*



Bernstein







# Bridge Over Troubled Water

By First Lieutenant John Gamble and Specialist Five Newell Griffith

Driving smoothly down the wide, black ribbon of National Highway QL-1, one is quickly impressed by the success with which U.S. Army Engineer highway operations have opened the Republic of Vietnam to political and economic growth. To those who remember the crumbling pavement and ruts that scarred this road not too many years ago, its strong surface seems a revolutionary development.

The days of creeping convoys and intermittent civilian traffic are nearly past for QL-1, but problems remain that can still frustrate the most patient drivers. As traffic flow increases on upgraded sections, bottlenecks develop at critical points. Usually these spots are where the

highway crosses a natural obstacle like a river.

At Bong Son, 30 miles north of Qui Nhon, the road crosses the Lai Giang River. Here the old French-built steel panel railroad bridge was decked over to carry one-way vehicular traffic. That meant taking turns on a narrow right of way, waiting for hours while someone tried to get his disabled truck off the bridge.

When higher priority projects had been finished, the 18th Engineer Brigade turned to the problem of eliminating the slowdown at Bong Son. Special requirements for that kind of job make bridge building a difficult task in which the necessary concentration of material and equipment dictates careful planning.

In the case of the Bong Son project, part of the planning involved a delicate piece of social engineering. When the 84th Engineer Battalion was tasked with the bridge mission, Bravo Company and the 536th Engineer Detachment, the units responsible for construction, built and moved into a new home at the job site, Camp Smith.

The proposed location of the camp was in a grove of some 300 coconut trees on the bank of the Lai Giang, and plans called for removal of a number of the trees to accommodate an orderly arrangement of buildings. Yet the trees represented not only a major portion of the Bong Son hamlet's economy but also items of considerable sentimental value to

*The officers' quarters at Bong Son were designed to accommodate coconut trees through the eaves.*



Varney



the villagers. One elderly woman explained that she had planted a row of four trees there, one for each of her children.

It was easy to see that cuts could be more easily made in the plans than in the coconut grove, and the 24 buildings of the Camp Smith compound were made to fit the space available between the trees. In some instances this resulted in tin roofs sprouting trunks. Several young trees stood in the way of necessity and were transplanted.

With their ecological system relatively undisturbed, several species of birds and bats continue to inhabit the trees much as they did prior to the arrival of the Engineers. The villagers who harvest the crops there frequently treated the Americans to fresh coconut on work breaks.

When they started work on the new bridge, Bravo Company and the 536th Engineer Detachment were faced with the prospect of having to fabricate and place 161 giant, four and one-half ton steel stringers to support a 1,635-foot long roadway. Forty-foot steel beams arriving at the job site had to be cut and spliced to 60-foot lengths in order to fit into 60-foot spans.

Pile driving began in the first week of February, and by May the vertical steel beams were topped with concrete caps. Then began the job of lifting the 60-foot stringers by crane and welding them into place. The stringers were welded to sole plates that rest on bearing plates set into the surface of the concrete caps. Protection from temperature-induced expansion and contraction is provided by the free sliding action of the sole plate over the bearing plate.

Once the stringers were in place a team of Engineers moved in to weld diaphragms. These are steel braces which, welded at right angles to the stringers, make the bridge resistant to lateral force. Without them, the lateral stress of heavy traffic, cross winds, or shifts in the piling might collapse the bridge.

Five hundred and thirty-five diaphragms had to be cut at the job site and lifted into place. Welders from the 536th Detachment built a small, moveable wooden platform that rested on the lower flanges of adjoining stringers so they could sit or stand with relative ease as they

worked 25 feet above the ground.

The Bong Son Bridge began to take shape when pre-cast concrete slabs were set down on the stringers to build a roadway base. Prefabricated by Bravo Company at the Camp Smith compound, the big slabs, weighing more than six tons, were hauled to the bridge by trailer where a decking crew and crane lifted them into place. Four hundred

and eighty-nine slabs went into the completed structure.

Topped with a two-lane asphaltic concrete roadway, hand rails, and lighting, the new Bong Son Bridge stands in marked contrast next to its worn predecessor and the coconut economy of the neighboring hamlet. The bridge represents the contrast between what has been and what will be in Vietnam. (C)

*An Engineer operates a pile driver at the bridge site.*



U.S. Army Photo



## The Mini Units



## with the Maxi Missions

By Specialist Four Charles Keagle

A small unit of skilled Engineers was assigned a relatively simple task of building a mess hall. However, the structure was to be erected on the summit of Nui Ba Den, a mountain providing sanctuaries for both U.S. and VC forces. In addition to the enemy threat, the mountain lacked suitable access roads—a problem that was solved only after the Engineers became airmobile.

Soldiers assigned to Engineer detachments in Vietnam often face

similar problems in their day-to-day operations. Detachments are found anywhere from the DMZ to the lower Cambodian border and their jobs range from maintaining generators for infantrymen to building a berm complex for the Green Berets. They are small units, but their support missions are of vital importance to U.S. efforts in Vietnam.

Engineer detachments in Vietnam are composed of three types; water supply, fire-fighting, and utilities

units. Water supply detachments are responsible for the installation and operation of separate water purification installations, while fire-fighting units have capabilities to establish organized fire protection and prevention programs. The utilities detachments provide personnel and equipment for maintenance of all types of utilities at various installations throughout the Republic.

An important utilities detachment in the Republic is the 507th Engineer





*A Chinook helicopter airlifts ready-mix concrete to the summit of Nui Ba Den.*

U.S. Army Photo

Detachment located at Long Binh. Last March the 507th was assigned the task of building a mess hall on the summit of Nui Ba Den, an outpost accessible only by air. Before construction could begin, however, a large concrete pad had to be poured and the Engineers faced a problem of transporting ready-mix concrete to the summit.

Lieutenant Colonel Edgar J. Mixan, commanding officer of the 507th, solved the problem by calling in Chinook helicopters to transport the cement. The tremendous wind blasts created by the Chinook made the cement harden extremely fast and Engineers worked at a strenuous pace to prevent the concrete from hardening in lumps. One week after the concrete was poured, the mess hall was completed.

In addition to the mess hall at Nui Ba Den, the 507th recently completed a major upgrade job at Bear Cat by replacing tents with sea huts. At the Di An airfield, the unit constructed a new road from the airfield to the fire station which cut travel time by

five to six minutes—just enough to possibly save a life.

"Flexibility is the key word when we speak of Engineer detachments," remarked Lt. Col. Mixan. "If I need, say, 10 electricians for a particular project, I can pick them from detachments within and under the 507th."

In addition to their own responsibilities, the 507th has under its supervision seven other detachments. The 531st Engineer Detachment recently completed two lengthy 346-foot long field laundry buildings at Long Binh. The new buildings replace the old tent-covered facilities, which often resembled a giant mudbath. Included in the construction were 54,000 board-feet of lumber and over 9,000 man-hours of labor.

Also under the supervision of the 507th is the 82nd Engineer Company (Water Supply), the only water supply company in Vietnam. The 82nd's support role for infantry operations has been vital. At Nui Ba Den, the Engineers keep the 25th Infantry Division supplied with purified rain water. The water specialists make

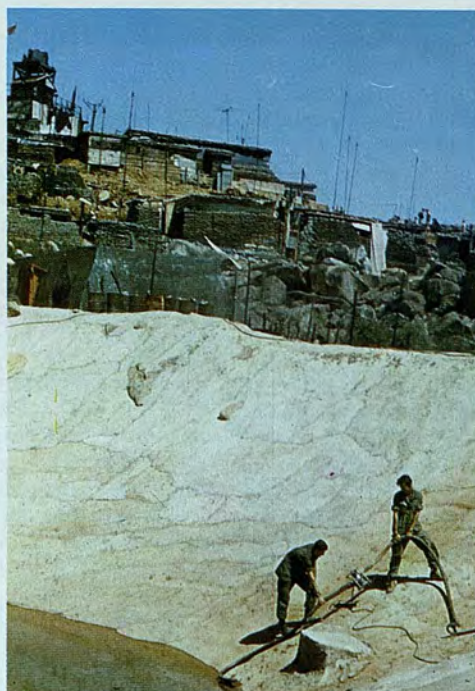
good use of a nearby spring while providing the 199th Light Infantry Brigade with potable water at Nui Cha Chen. "We've drawn water out of every place from a spring to a stagnant swamp," indicated First Lieutenant Tommy D. Coffman, executive officer of the 82nd.

Besides the 507th and its subordinate units, other Engineer detachments in Vietnam are also playing valuable support roles. Providing all-important electrical power for the 173rd Airborne Infantry Brigade at Landing Zone (LZ) English is the 46th Engineer Detachment (Utilities). The 46th was formed early this year and was promptly faced with the problem of building their own billets and work shops. They were given a building site, some lumber and a few tools and proceeded from there to complete the primary construction of seven buildings in 21 days. "We worked day and night in order to have a place to work and live," explained 1LT Andrew C. Sossong, commanding officer of the 46th.





Stevens



Brauer

*"Flexibility is the key word when we speak of Engineer detachments."*



Keagle



U.S. Army Photo



Keagle



Men of the 46th perform maintenance on all generators at LZ English in addition to doing odd jobs ranging from distributing penneprime to repairing damaged VIP trailers. The 46th also constructed the 173rd's Tactical Operation Center (TOC), the nerve center for infantry operations.

A neighbor of the 46th at LZ English is the 96th Engineer Detachment (Fire-Fighting). Composed of six men, the detachment's main responsibility is providing fire-fighting capabilities at the airfield. They also respond to calls from the post area and the nearby village.

The 96th has one very important piece of equipment—a 500-gallon fire truck. Not only is it essential in their work, but it also provides potable water for drinking and cooking purposes. The truck's hose also

provides a makeshift shower.

"We have no way of getting enough potable water here at the airfield other than with the truck," mentioned Specialist Four David A. Suchy. "But with our portable 500-gallon tank, we really don't mind the inconvenience."

Detachments in the Republic have proven to be extremely mobile, as well as flexible. The 213th Engineer Detachment (Utilities) was called into Fire Support Base (FSB) Bau Xu last April to build a berm complex for a Special Forces unit. While working under hostile conditions, the Engineers completely revamped the camp's entire defensive structure. The improved defensive system makes the camp more secure with less troops, thus giving the Green Berets a chance to perform normal offensive operations outside the perimeter.

The berm also helps protect the civilians, schools and religious structures within the perimeter.

During the berm construction all supplies were airlifted to the 213th at FSB Bau Xu. Even then, a barrage of artillery fire was laid on a nearby hill in order to keep the enemy occupied long enough to allow a helicopter to land.

Detachments do not always have the most pleasant jobs, and are often asked to work under somewhat less than ideal conditions. The units are small in numbers, but usually contain highly-skilled and versatile personnel. They're seldom noticed, but the role they play is extremely important—they are the "biggest little" Army team in Vietnam today. ☉

*A member of the 213th Engineer Detachment operates a front loader during a berm construction project at Bau Xu.*



Stevens



# Paving the Way to Vietnamization

By Specialist Five Peter Elliot

Aspirant Nguyen Ngoc Quynh, an officer candidate in the Army of the Republic of Vietnam (ARVN), pushed his glasses higher on the bridge of his nose and peered at the glistening blue-black primer being spread over the road base. He knelt at the shoulder of the road and examined the granite and laterite foundation.

Shifting the rock-soil mixture from hand to hand, Aspirant Quynh talked road construction and geology.

"We have a great problem getting enough quality rock from the quarries we're using. There is too much dust. It causes problems with our foundations and asphalt mix. That is why we are redoing this section of road."

"You see, only 20 percent of the rock is usable," added Quynh. "The rest crumbles under the compaction rollers. A stable base is hard to get. After we paved the first time, the asphalt became wavy and cracked. This time it will be right."

Aspirant Quynh was standing on National Highway (QL) 1. His unit, the 52nd Battalion of the 5th ARVN Engineer Group, is reconstructing and paving 65 kilometers of this archaic French roadway which crosses the length and width of South Vietnam from Parrot's Beak of Cambodia to the historic city of Hue.

Aspirant Quynh is responsible for the quality of the rock and asphalt used on QL-1, and when he talks about soil analysis, he sounds like the expert he is. He holds a Master's Degree in Geology from Saigon University.

The project began in January, two months after President Nixon ushered in Vietnamization. It is an entirely Vietnamese project (except for a few



Wang





*An ARVN Engineer operates a dozer along QL-1.*

Wang

advisors)—the first of its kind. It is the bedrock of Vietnamization.

The 52nd Battalion consists of five companies, all trained with the help of the 159th Engineer Group, 20th U.S. Engineer Brigade. They operate their own asphalt plant and run the Nui Le quarry with minimal assistance from the 46th Engineer Battalion of the 159th Group. For all purposes, they do it all—surveying, dirt and rock work, bridge building and paving.

Most of the 52nd's officers, including Major Phan Ba Quy, the battalion commander, have received training in the States at Fort Belvoir, Va.

The section of 65 kilometers of QL-1 under construction by the 52nd runs from the village of Gia Ray, 16 miles east of Zuan Loc, to the border between the Third and Second Military Regions.

The ARVNs are having difficulties with the project, but that is to be expected. Modern construction techniques differ drastically from the French macadamization they have practiced for decades. But Aspirant Quynh says, "experience is a hard but sure teacher."

Closely associated with Vietnamization is Brigadier General Kenneth B. Cooper, deputy commanding general of the United States Army Engineer Command, Vietnam (Provisional).

"The Vietnamese Engineers are assuming more responsibility for the LOC program all the time," General Cooper said, "and have shown they can build roads to the same quality we can. The QL-1 project is indicative of this."

Certainly, the ARVN Engineers are experiencing difficulties on QL-1, just as we have, but not insurmountable ones. The basic principles of road building are not difficult. For highly technical advice the ARVN Engineers can get special assistance as we do, from firms like Quinton-Budlong."

"When they come to Vietnam most of the U.S. Army Engineers are inexperienced in road construction," continued General Cooper. "But our young officers and men learn quickly and do extremely well. The ARVN Engineers have one advantage over us in that they'll have the same men working on the roads for several years."



Reconstruction along QL-1 is well underway, but the effects of Asian weather hamper progress. Only three miles were paved before the monsoons struck.

"We can do little at this time of the year but pack the road base and place what culverts and bridges are needed," Aspirant Quynh said.

He pointed out a chart on his office wall. On it he kept track of the daily rainfall. "There have been over 200 millimeters (about eight inches) of rain in July alone," Quynh said. "From October to May, we average less than six inches total rainfall. There's our problem."

Travel on QL-1 beyond the paving of the 52nd is a trial. The dirt road is as narrow as a mountain fire lane and just as rough. Speeds over 20 MPH are inconceivable.

But at least it can be traveled. Two



Glasgow

*Monsoon rains have hampered progress on the Vietnamese road building project.*



Elliot

*An ARVN gives instructions to a bridge-building crew on QL-1.*

years ago any trip down QL-1 was made by armored convoy. The region is still considered a VC area. Their attacks are sporadic at best, but they do menace the road.

At mid-day on July 19, a bus from Saigon was stopped by a VC unit and a toll exacted from its passengers. Several young men on the bus were taken into the jungle by the VC and haven't been heard from since. That's the way it is in rural Vietnam. But will it stay that way? Aspirant Quynh thinks not.

"This has been a Viet Cong controlled area since French colonial times," Quynh said. "The new road means progress for the area. It will be secure within two years. Where the roads go, VC influence diminishes."

Timber is the sole product of the land east of Xuan Loc, but the region has great agricultural potential. All that is lacking is a catalyst. The 52nd ARVN Engineer Battalion is providing that catalyst as they pave QL-1.

Farming follows the roads—it is natural. Farmers need a means to take their products to market and in turn get necessary supplies. They require a stable environment in which to work as well. A sound road allows rapid troop reinforcement, dissuading insurgent activity.





Elliot

*Except for a few advisors offering minimal assistance, the QL-1 project is being handled completely by ARVN Engineers.*

Most importantly, roads mean money crops. Rapid transportation gives farmers the opportunity to grow perishable produce—vegetables, fruits and poultry, and get them fresh to the market place. These are profit items and the flow of monies from them engenders commerce throughout the areas where they are grown. An affluent rural Vietnam is a solid buffer against the Viet Cong.

General Cooper has this to say

about road building pacification. "Although quantitative evidence is hard to come by, everyone agrees that the national highway system is essential to pacification, including economic development. We also have to be sure that a strong secondary road program compliments the LOC program."

Lines of Communication Restoration has been the name of the game for the Army Engineers once operation support requirements are

taken care of. Now the ARVNs are taking over road construction. They have a large stake in these roads, which can mean safety and well being for the soldiers' families.

Aspirant Nguyen Quynh understands what the national highway system can mean for South Vietnam. He is a proud man and one idea prevades his conversation—"We must do the work ourselves." And that is what Vietnamization is all about. ☐







