

- Restore and/or construct dikes around the site perimeter to prevent surface run-off from entering the excavation.

- Close all openings and penetrations in the structures exposed to winter elements. Sites still lacking permanent covers (access hatches, etc.) were provided with temporary wooden lids or other covers.

- Place suitable temporary loose fill around the structures (Fig 1) to provide drainage away from the immediate foundation areas. This was placed loosely and the surface compacted.

- Pump excess water out of the excavation (Fig 1). The sites were graded to drain to a readily accessible sump or sumps with pumping to be performed on an intermittent basis as required.

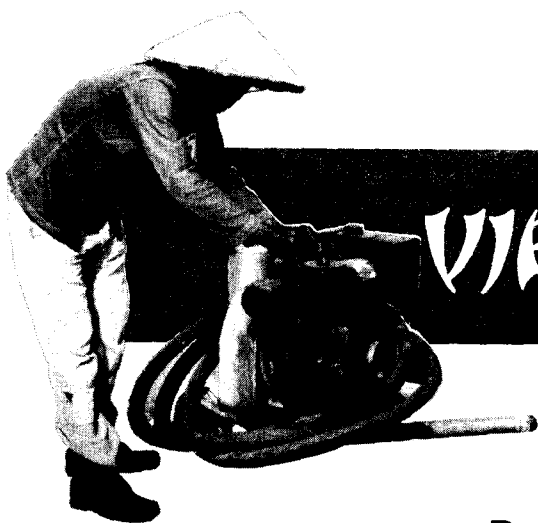
A water table was encountered at elevations ranging from above the structure foundation level to a few feet below that level. While the amounts of water encountered were small and easily removed, it was proper to assume that moisture would exist in these sites during the course of the winter season. The depth of fill to be applied was designed to keep the frost line above the structure foundations. However, the possibility remained that, during freezing periods of long continuous duration, some foundation freezing could occur through the reinforced concrete structure itself. To insure against this possibility it was decided that temporary electric heat lamps would be installed inside of the closed structures. A 10-KVA transformer was mounted at each site using heat lamps, thermostats and required wiring. The heat lamps were directed toward the floor or inverted area of each of the major structures. Where a suspended floor existed, the radiant heat was

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mounted below the suspended floors. A thermostat control was mounted several feet above the level of the heat lamps. The thermostat was set to cut the heat off when it sensed a surrounding heat temperature of 40°F. The total wattage of the heat lamps was 5000W per site and was based upon the amount of fill being placed to provide drainage away from foundations plus the fact that all openings would be closed tightly. Weekly inspections were performed to replace burnt-out bulbs and to check the system.

Following the winter protection task, a spring "house-cleaning" project was implemented to prepare for construction and permanent backfill. An analysis of weather history, weather forecasts and existing ground conditions was made to determine when the winter protection should be abandoned. Then all temporary fill was removed and the permanent backfill operation was resumed. We believe that the extra effort spent in implementing the winter protection plan saved the Government much time and money which would have been spent had the plan not been used.



## VIETNAM REPORT No. 4

*Vietnam Report No. 4 consists of news releases and photos originating from Hq 7th AF, Saigon.  
The Editor*

### **Pleiku Civil Engineers Have 20-Fold Construction Increase**

**Pleiku (7AF)**—Air Force Civil Engineers at the expanding Pleiku Air Base have experienced a 20-fold increase in engineering and construction.

"When I got here 10 and a half months ago," explains Maj Donald R. Reaves, of Big Springs, Tex., the Base Civil Engineer, "we had seven projects on the board. Now we have 140.

"In the States," the Major continues, "about 7% of the

CE workload is new construction or alteration, but here it's about 7% maintenance and 93% new construction."

The 84 military members and 128 Vietnamese civilians currently in the Civil Engineer department constructed or supervised construction of 145 buildings during the past year, providing 130,000 square feet of floor space.

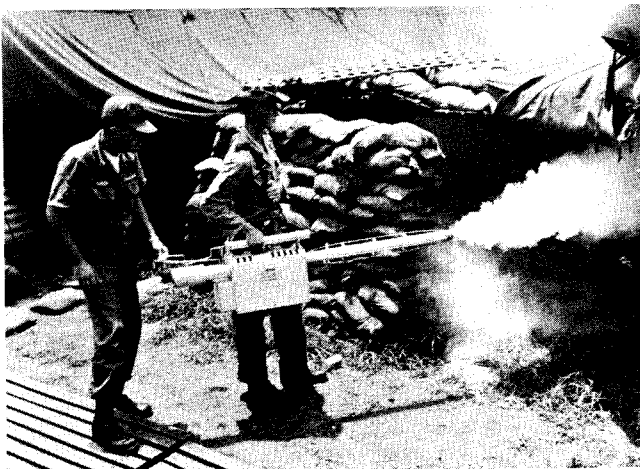
At the same time they planned and built, or supervised  
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# VIETNAM

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**REFRIGERATION:** Airman 2/c Paul Kessler, a refrigeration specialist tests a cooler at the Pleiku Air Base.



**PEST CONTROL:** Airman 1/c Arturo Garcia and Airman 2/c R. Griffin use a "fog" machine to rid bunker of mosquitoes.

the building of a new airfield, a security fence requiring the use of five miles of wire, six and a half miles of roads, a rifle range with 12 firing points, a control tower, 20 aircraft revetments, 12 ammunition revetments, and a con- tonment area. "Master plans for work of this scope normally go through the Pentagon," Reaves commented. "here, however, we were told 'Do it!' and we 'did it!'"

The tasks were handled while maintaining other diver- sified functions such as the fire department, water and electrical systems, power production and pest control.

Among the fire department's chores are inspection and maintenance of the base's arresting barriers, which are checked five times a day to make sure they can give air- craft a safe emergency stop.

## Striper Borrowed From Clark AB

A three-man Control Center, under T/Sgt Lonnie Richie of Philadelphia, Pa., gives out the work assignments and keeps the work flowing evenly.

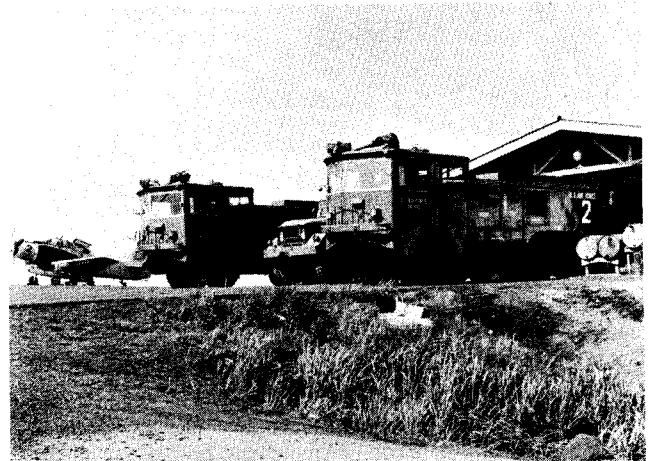
The largest single section, as far as manpower is con- cerned, is Pavement and Grounds, a unit of the Mainte- nance and Repair function.

Equipment operators and laborers supervised by T/Sgt Henry C. Guyer, Phoenix, Ariz., must, among other jobs, keep the grass cut down around fence-lines for security as well as for snake and pest control.

Pleiku became the first base in Vietnam to have centerline road stripes when the section put a traveling paint striper, borrowed from Clark Air Base in the Philip- pines, to use on roads and runways.

Base defense is also in the CE's field. During the past year approximately two million sand bags were filled and distributed throughout the base for bunker buildings. Additionally, perimeter bunkers ringing Pleiku, designed and built by CE men, are rated highly by visiting security and law enforcement officials who say these bunkers are the best of their type in the country.


The biggest problems now facing Civil Engineers are the shortages of power and water. Generators—designed for



**FIRE PROTECTION:** AF Firemen also maintain the arresting barrier which stops aircraft from overrunning runway.

use as back-up—are now prime power sources, and communications facilities get first call on available power. Pumps and lines used for water transmission from nearby Lake Bien Ho were built for a much smaller complement of men, and it is necessary to shut the water off at many locations several times a week while the supply is built up. Larger pumps and lines are a pending project for the Civil Engineers.

The Maintenance and Repair branch, directed by S/MSgt Robert L. Mackay, of Grand Haven, Mich., is what Reaves calls his "bread and butter" operation. Located here are the plumbing, sheet metal, carpentry, painting, refrigeration and air conditioning and liquid fuels shop. Preventive maintenance is also in evidence, with teams making minor repairs to save a major overhaul later.

The dining hall and officer and enlisted clubs get a lot of attention, since the morale factor is always kept in mind by CE's leaders. "Even though they may not exactly be CE's responsibility, we take care of a lot of little jobs when we have the material and know-how to accomplish them," Reaves said. 

## ATC's Prime BEEF Team X

*"No Room For Specialists," Says Team Chief*

**Nha Trang (7AF)**—"There's no room for specialists on an Air Force Prime BEEF team," is the considered opinion of Capt Demetrios A. Armenakis, Chief of Air Training Command Prime BEEF Team X.

Captain Armenakis' 29-man team has just completed a 75-day tour at Nha Trang which yielded the base six new airmen dormitories, a 9,300 square foot office building and the beginnings of a utility building for the base fire department.

"When I was given this team," the 30-year-old Captain

from Shreveport, La. said, "I took inventory, and I had what looked like a well-balanced team—three electricians, three plumbers, 12 carpenters and 10 concrete men.


"As soon as we started working, it was obvious that this wouldn't work for several reasons. We didn't need plumbers because we weren't installing any plumbing and I didn't have enough men to let the electricians sit around and wait until the frame was up."

Armenakis' team was originally scheduled for Nha Trang but was diverted to Da Nang to build two airman dormitories.

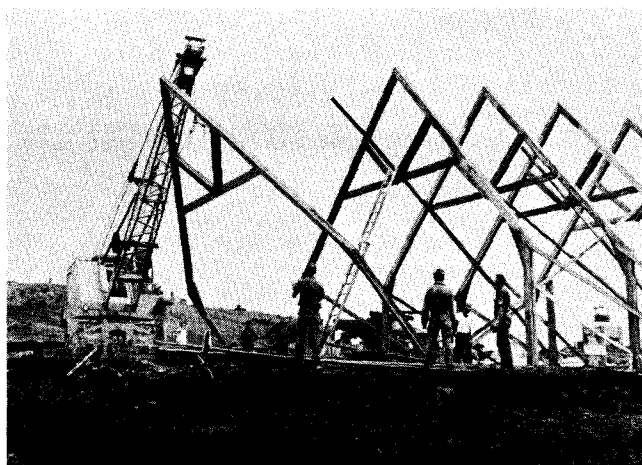
"That's where we worked out our problems," he said. "Everybody pitched in and somehow we managed to get the first building up. I had a talk with my NCOs and they began watching everybody to see what each man did best. When we started the second building up there, we formed three crews, each with a tech sergeant in charge. M/Sgt Ernest R. Atkins of Valley Head, Ala. was NCOIC."

First on the job was the site preparation crew headed by T/Sgt Willie Walker of Lackland AFB, Tex., a heavy equipment operator. This crew prepared the surface, built and set forms and poured the concrete slab on which each Prime BEEF building is constructed. In the meantime, the other two crews were pre-cutting studs and joists for their part of the job.

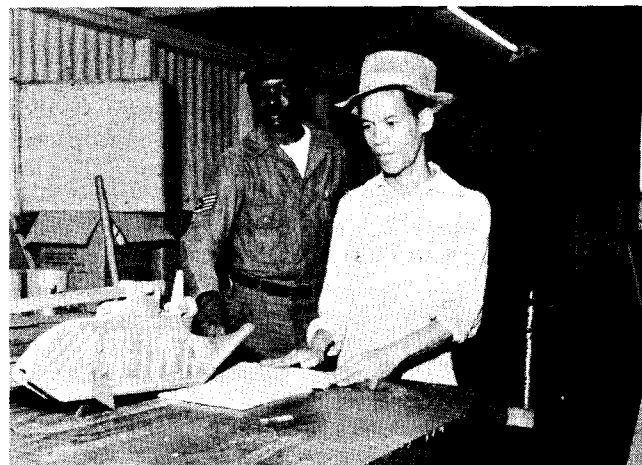
Following site preparation, the 'first framing crew' set the base plates, wall studs, flooring for the second story and all framing below the roof. Finishing work, including roofing, electric wiring, roof trusses and outer walls were the responsibility of the 'second framing crew.' "We found that journeymen in the building trades can usually do an acceptable job in just about any type of construction work," the Captain said. "One crew foreman (T/Sgt Richard J. Gabe, Randolph AFB, Tex.) was a plumber and another (T/Sgt Lester F. Mitchell, Lackland AFB, Tex.) was an electrician, yet both swung a pretty mean hammer.

"There were a lot of surprising things about this tour," the Captain said. "We found that as we went along we got the work done faster with the quality increasing as things got easier." 

Note: All photos used here are official Air Force photos cleared for release by MACV.



CONSTRUCTION: Crane operator lifts arch into place during construction of base chapel.



CARPENTRY: NCOIC Sylvester Ruffin checks a native workman's progress on a plywood cutting project.