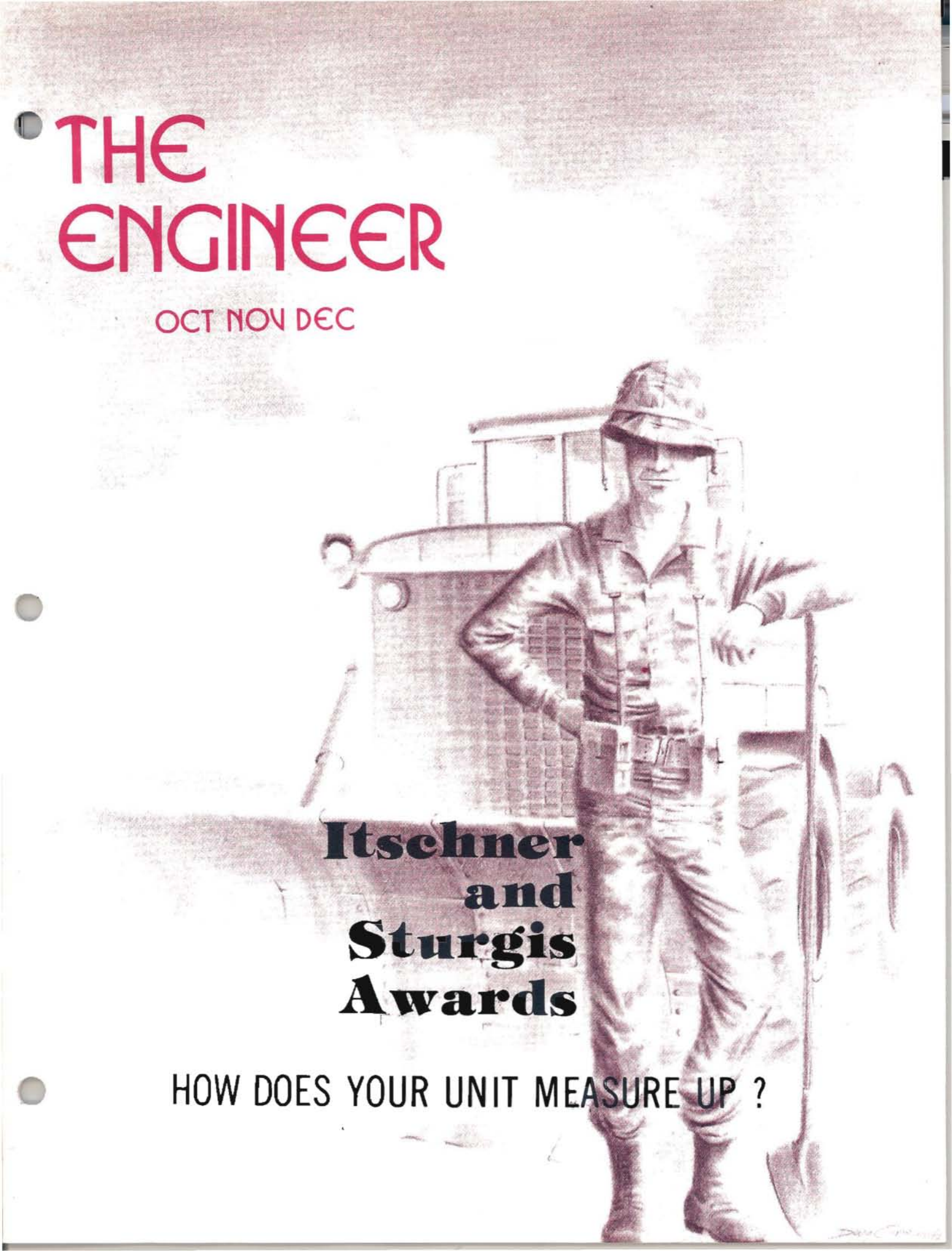
THE ENGINEER

OCT NOV DEC



Itschner and Sturgis Awards

HOW DOES YOUR UNIT MEASURE UP ?

United States Army
Engineer School
Fort Belvoir, Virginia

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THE ENGINEER

OCT NOV DEC

VOLUME 7 NUMBER 4 1977

FEATURES

DEPARTMENTS

THE WHITE HOUSE

WASHINGTON

National Engineers Week
February 19 — 25, 1978

In a year that marks the two hundredth anniversary of George Washington's call for formal education in engineering, the traditional observance of National Engineers Week takes on added significance. I extend warm greetings to all the members of the National Society of Professional Engineers who sponsor this annual event.

The creativity and hard work of America's engineers have been instrumental in every phase of our national development. Engineers helped build human settlements in a hostile land, to unite people across vast distances, to develop farms and factories to provide the necessities of life and to create agricultural and industrial systems that now support this country and contribute to the economic and social well-being of a good part of the world.

The need for such creativity and productivity continues today. But it also takes on new aspects which enlarge the challenge to the engineer. Because of the previous growth he has helped to provide, the engineer must now bridge the gap between our resources and expectations with ever-greater efficiency and care. He must help us to use our resources in the most productive ways, with increased emphasis on reducing waste and minimizing the possibility of any harmful impact on the environment.

In this era of concern for conservation and continued need for economic growth, we look more than ever to the engineer — to his knowledge, skill and ingenuity — in the continuing task of building a viable economy and a healthy society.

All of us should welcome this opportunity to salute our country's engineers and to express appreciation for their pivotal role in ensuring our national well-being.

Jimmy Carter

Letters to the Editor

Stop 12

Dear Sir:

Having served in three engineer battalions and been associated with the operations of several others, I have become convinced that the traditional engineer battalion headquarters staff organization needs to be **changed.** Changing the organizational structure of a military unit is not new to most career Army officers. In fact, in many organizations "reorganizing" is a continuing process and all too often changes are made just for the "sake of change." However, when it is shown that there is a problem within a military organization we should not hesitate to make a change. I believe most combat engineer battalion commanders will agree in principle with my proposal for it offers a solution to an organizational conflict that now exists in the engineer battalion headquarters.

As I see it, here is the PROBLEM!

Battalion staff functions generally follow the guidance provided in FM 101-5, in that the battalion executive officer performs functions similar to those of a Chief of Staff. In addition, he **may** be, and usually is, the second in command. Other staff officers (S1, S2, S3, and S4) have duties similar to their higher level counterparts; i.e., Assistant Chiefs of Staff. The organizational conflict in a combat engineer battalion staff is between the two main staff officers, the executive officer and the operations officer (S3), both authorized Major positions. The executive officer, as second in command and in charge of coordinating staff activities, oversees)rates the operations officer. I do not believe it is sound military practice to have one Major rate another. Perhaps this is a minor problem, but depending on the personalities involved, it can be a significant problem and adversely affect the operations of the battalion and the career of the officers involved.

There is another conflict caused by the general staff type organization at the battalion level. My experience is that in combat operations the battalion commander's righthand man is not the executive officer, but in fact, is the operations officer. The sphere of the operations officer's responsibilities is where the action takes place; and with guidance and orders **directly** from the commander, the operations officer insures that the battalion's missions are being accomplished. Where is the executive officer when operational discussions are taking place between the battalion commander, the S3 and the company commanders? Usually he is in the battalion trains area coordinating vital service support activities. Therefore, it is not uncommon that the second in command is left out of the daily operational aspects of the battalion. Is this logical if he is the one designated to assume command in the absence of the battalion commander? I believe it is illogical and action should be taken to correct this deficiency.

I have seen battalion commanders overcome this organizational malady by assigning the senior Major as the S3 and therefore, the second in command. This works great for operations, but how would you like to be the executive officer, performing functions as a "Chief of Staff," and have a member of your staff senior to you and being rated by the battalion commander?

Well, this is the PROBLEM, as I see it.

Basically, the staff officer functional duties remain the same, but I have now solved the previously described conflict between the two Majors by creating two Executive Officer positions, Operations and Support, with each executive officer having his own functional staff responsibilities. Here are some of the significant advantages of this battalion headquarters organization:

- The second in command would be the XO (Operations), who is generally the most qualified staff officer to take command during combat operations if the need arises.
- The staff would already be organized for combat operations, in which an engineer battalion usually has a forward and rear CP.
- The XO (Operations) would have direct authority to integrate engineer intelligence activities into his operational plans. No longer would he have to COERCE the S2 or go through the executive officer in order to utilize the reconnaissance resources of the S2.
- The Operations Center would be more responsive to company commander's requests for engineer equipment support by having the Engineer Equipment Platoon directly under the XO (Operations).
- It balances the span of control between the three key people in the battalion headquarters, the commander and both executive officers.
- The current Assistant S3 (Captain position) would have greater stature as a coordi-

nating staff officer. (Long overdue since he is usually one of the "sharper" captains in the battalion).

- Each of the XOs would be authorized to sign correspondence "FOR THE COMMANDER," thus giving the battalion commander greater assurances of professional outgoing correspondence and relieving him of many routine administrative duties.

The obvious disadvantage is the commander is now required to resolve conflicts between his two executive officers. Realistically, this is not new for there generally has been a subtle conflict between these two majors on the battalion staff. However, I believe the nature and magnitude of staff actions/decisions at the battalion level are not so complicated that the battalion commander will be capable of resolving after receiving professional recommendations from his two XOs.

I recommend engineer battalion commanders use the flexibility given in paragraph 3-14, FM 101-5, which states "The TOE for each type of unit specifies the unit's staff organization and composition. However, within authorized personnel limitations, the unit commander may organize his staff in accordance with his particular needs." Personally, I can't wait to put this organizational concept into effect!

MAJ VICTOR O. DEWEY
HQ, Central Treaty Organization,
Ankara, Turkey

ENGINEER TRACKED VEHICLE CREWMAN MOS 12F

The US Army Engineer School initiated a proposal to establish a MOS for Engineer Tracked Vehicle Crewman (MOS 12F). Crews of the following items of equipment will be affected: Combat Engineer Vehicle (CEV), Armored Vehicle Launched Bridge (AVLB), and Armored Personnel Carrier (APC) in Engineer units.

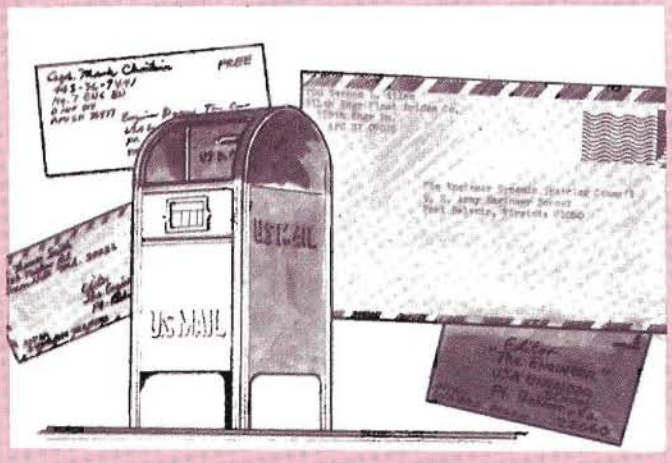
The proposal is currently being coordinated with major commands (MACOM) and being considered by the Department of the Army (DA).

To date, US Army Military Personnel Center (MILPERCEN) has given "tentative concurrence to the proposal to facilitate planning activities. A final decision is expected in April 1978.

THE ENGINEER

I dig the holes and cut the grass
I am an Engineer
I rake the leaves and set the chairs
I am an Engineer
I survey the land and make the maps
I am an Engineer
I make the roads and clear the track
I am an Engineer
When you need implacements, dams, and mine fields . . . call me
I am an Engineer
I lay the bridges that troops will cross
I am an Engineer
I have endured through time and seasoned with age
I am an Engineer
I have crossed the deep blue seas and reached into space
I am an Engineer
In love and hate, in Peace or War . . .
I am an Engineer
Male and female, private or general
I am an Engineer
And when I'm dead, let it be said . . .
I AM AN ENGINEER

POEM
BY
SFC Samuel S. Ramseur, Junior



ENGINEER DIRECTIONS

LIEUTENANT COLONELS:

ABOUT BECOMING AN O-6

First: Congratulations to each officer recently selected for promotion to Colonel, AUS. We wish the best to each of you!

Second: Publication of promotion lists usually causes those of us still looking ahead to ponder over the "key to success." Most of us manage to come up with some type of perception as to just what we should do and where we should do it. Frankly, after reviewing the career patterns of the selected officers, it is clear that there are as many paths to success as there are officers who are successful. The trends on career patterns that do exist for the selected officers are noted briefly below.

- Each and every job, regardless of where it is or what it is, is performed in an outstanding manner. Boards seem to recognize that officers can't always govern what job they have — only how well they do the job.

- A clear pattern of seeking responsibility is evidenced. The officers who, at any job, grab the ball and run with it, do emerge and their files will show it.
- Successful officers make certain they complete the highest level of military schooling possible. If not selected to attend a course they enroll in nonresident instruction — they do not wait for the chance to pass them by.
- Success can come to an Engineer through the development of a strong alternate specialty as well as by following the traditional command path. OPMS is working and will no doubt be playing an even more important role in the future.

Third: If you want to discuss the above in more detail, and how it applies to your individual situation, please call or write your assignment officer.

MAJORS:

GENERAL

1. Current and good photographs, preference statements and accurate data on your record brief are very important documents in your official and career management files. Of special interest is a current physical with the date and profile entered on the ORB. If you failed to take a physical on the proper date (age 31, 35, 39, 41, 43 . . .) you should get a physical on the next correct date even though it has only been one or two years.

2. Current Army policy is to keep CONUS-to-CONUS moves down to a minimum. Priority requirements (Washington area, Army Readiness Regions, ROTC/USMA) are filled by CONUS-to-CONUS moves in some cases. Otherwise, a move is made only from "must move" positions (CGSC, completion of 3 years in ROTC, USMA and ARRS, 4 years on the DA Staff, completion of an overseas tour, etc).

3. If you have not submitted a preference statement or the one on file is outdated, an assumption is made that you have no firm preferences. Attempts are made to telephone each officer before assignment, however, it is not always possible to track down everyone's telephone number. You should submit a preference statement approximately nine months before completing your current tour; include your duty telephone number.

CGSC

Congratulations to those of you that were selected for CGSC level schooling. The competition was keen.

CAPTAINS:

GRADUATE CIVIL SCHOOLING:

1. Selection to attend graduate civil schooling is highly competitive. In addition to the eligibility criteria outlined in AR 621-1, an officer must also possess the following general qualifications:

- Completion of the Engineer Officers Basic and Advanced Courses.
- An outstanding record of performance in the troop environment, to include successful company command.

2. Graduate study is limited to academic disciplines for which the Army has validated educational requirements. For Engineer Officers, those academic disciplines currently available for gradute study are generally limited to:

- Civil Engineering
- Topographic Sciences (includes Geodesy and Photogrammetry)
- Nuclear Physics/Nuclear Effects (supports an alternate specialty)
- Operations Research and Systems Analysis (supports an alternate specialty)
- Automatic Data Processing (supports an alternate specialty)

COMPANY COMMAND:

1. Ideally, an officer should serve 15-18 months continuously as a company commander. Company command tours can be longer or shorter than this period depending on the needs and desires of the local commander. Engineer Branch policy is that an officer should serve **at least** 12 months of **continuous** company command to adequately demonstrate his ability to lead and manage troops. In a 12-month period, a company commander should face the normal cyclical challenges — ARTEP, AGI, etc.

2. Because opportunities for command are dependent upon the variety of Engineer units and conditions within a command, Engineer Branch philosophy is "Command is Command" and no special emphasis is given to the type of unit commanded nor to the location of the command. Primary emphasis is given to the manner of performance of the officer as a company commander.

LIEUTENANTS:

REMINDER: Upon promotion to First Lieutenant, you owe MILPERCEN an official photo (AR 640-30). Your official photo provides the "first look" at you by any DA Board so it is important that your appearance (uniform, personal grooming, awards and decorations) be at its best.

WARRANT OFFICERS:

APPOINTMENT VACANCIES ANNOUNCED. Watch for two new circulars that were recently distributed to the field. **DA Circular 601-73** outlines the FY 78 warrant officer procurement program, lists the specialties (MOS) in which vacancies are anticipated, and gives procedural guidance for submitting applications for initial appointment and/or call to active duty. Potential WO applicants and their counselors will find this circular a compendium of useful information. For warrant officers now on active duty, **DA Circular 601-72** outlines the Regular Army WO accession program for FY 78 and lists the MOS that are open to applicants seeking integration into the Regular Army. In view of the pending abolition of the Managed Tenure Program, all nonregular warrant officers who contemplate filing an application for RA appointment should consult this circular.

FOR ALL:

PROFESSIONAL DEVELOPMENT:

Since implementation of the dual-specialty Officer Personnel Management System (OPMS) concept began in November 1975, refinement of the system has continued in an effort to achieve the goal of developing the right number of officers with the right skills to meet current and future Army requirements.

This goal will be met only through concentrated effort and innovative programs since the professional development of officers — the development of professional attributes and abilities to meet the Army's needs through planned assignments and schooling — in a peacetime environment will be influenced strongly by fiscal constraints. MILPERCEN's Officer Personnel Management Directorate (OPMD) is assessing and assigning officers in accordance with the OPMS dual-specialty philosophy to meet field requirements — and in a manner that supports the professional development of individual officers.

The field commander, however makes the final assignment and supervises the performance of officers assigned to his units. Thus, commanders have a key role in the professional development of their assigned officers.

Commanders at all levels should become thoroughly familiar with DA Pamphlet 600-3, Officer Professional Development and Utilization, dated September 1977. This pamphlet describes OPMS philosophy and management practices and lists the elements of officer professional development. A professional development guide has been prepared for each specialty depicting developmental phases, illustrative assignment opportunities and professional education opportunities. Also included are commanders' responsibilities for ensuring maximum contribution from their officers while affording them adequate opportunity for continued professional development. The need for specialty development of assigned officers, particularly at the company grade level, is critical. Insofar as possible, MILPERCEN assigns an officer to a location where he will have an opportunity to develop expertise and become qualified in his primary specialty. However, the way commanders utilize their personnel assets has a significant effect on specialty development. Education, another principal

ingredient of professional development, is a continuing process and is not limited to the formal school environment. Although PCS constraints affect educational opportunity, progressional growth and knowledge are attainable through non-resident instruction, on-the-job training and individual study. There are numerous courses that support Army requirements and the needs and desires of individual officers. The officer professional education system is designed to permit officers to build upon achievements and experience. There are diverse paths to an education and no two individuals need follow the same path; even if they have the same specialties.

Educational counseling is available from professional development officers at MILPERCEN, local education centers, or service schools. Commanders should encourage their officers to continue their educational growth.

Stability guidelines limit HQDA's ability to program in detail the requisite assignments and schooling to qualify all company grade officers in a primary specialty and to begin forming the basis for qualification in a secondary specialty. Because a junior officer will seldom report to an assignment with all the expertise required by the particular duty position, commanders must become more involved in the professional development of their junior officers. They must provide the advice and counsel that will enhance career development and progression. The Army's need to be combat-ready dictates that the professional development of its officers is keyed to ensuring that they are properly trained to perform effectively in war.

The 111th Annual Engineer Dinner

Engineer officers should mark Friday, May 5, 1978 on their calendars as the date for the 111th Annual Engineer Dinner. The dinner will begin at 6:30 p.m. at the Fort Belvoir Engineer Mess.

Lieutenant General John W. Morris, Chief of Engineers, is expected to present the Itschner Awards for 1977. The Army Chorus elements of the U.S. Army Band, and the Old Guard Fife and Drum Corps and Color Guard will entertain as they have at past dinners.

In conjunction with the dinner, the Annual Castle Ball for officers, wives and guests will be held the following evening at the Engineer Mess. Theme of the ball will be, "Call to the Castle." Tickets prices will be announced soon. For reservations and further information write: Protocol Office, U.S. Army Engineer Center, Fort Belvoir, Virginia 22060 or call (703) 664-4300 (Autovon 354-4300). Retired engineer officers are especially encouraged to contact the Protocol Office to insure addresses are up to date.

Seating arrangements will be available for only 550 persons, so make your plans to attend now.

Engineer Personnel Management Contacts in OPMD:

— Colonels Division (DAPC-OPC-AE)
Engineer Assignments, LTC Lin Lufkin, x7871
— Lieutenant Colonels Division (DAPC-OPL-AS)
Engineer Assignments, LTC Thomas Fisher, x0423
— Majors Division (DAPC-OPM-A)
Engineer Assignments, MAJ Gary Woodham x8109
— Combat Support Arms Division (DAPC-OPF-E) (Company Grade)
Engineer Branch Chief, LTC Norman Kuklinski, x0650
CPT Assignments, MAJ Mike Foster, x0651
LTC Assignments, CPT Matt Dominy, x7434
— Warrant Officers Division (DAPC-OPW-AU)
Engineer Assignments, CW3 Frank Russell, x7837

NOTE:

Autovon line: Listed number preceded by 221-
If you cannot call, please write to the following address:

Commander
US Army Military Personnel Center
ATTN: (appropriate office symbol)
200 Stovall Street
Alexandria, Virginia 22332

Which Way Engineers?

COL Thorwald R. Peterson

The United States Army today faces a different challenge than it did just a short time ago. The change came rapidly on the heels of several events. First, military involvement ended in Vietnam; it had been an expansive effort that demanded our concentration and commitment. Second was the October, 1973, war in the Middle East. Though dramatically short and of local significance, that intense, exhausting conflict jolted the world into a realization of the nature of modern war, especially its devastating cost in tanks, planes and other material paid at a breathtaking rate. Third, perhaps most pertinent, the Soviet Union and its Warsaw allies have been relentlessly increasing their capacity to wage modern, mechanized land warfare.

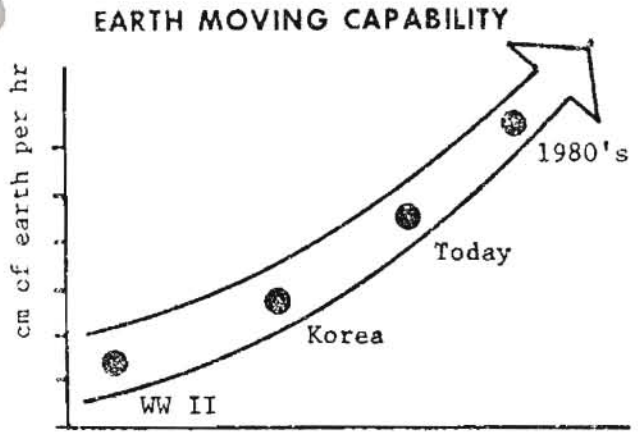
The times have called for a new look at:

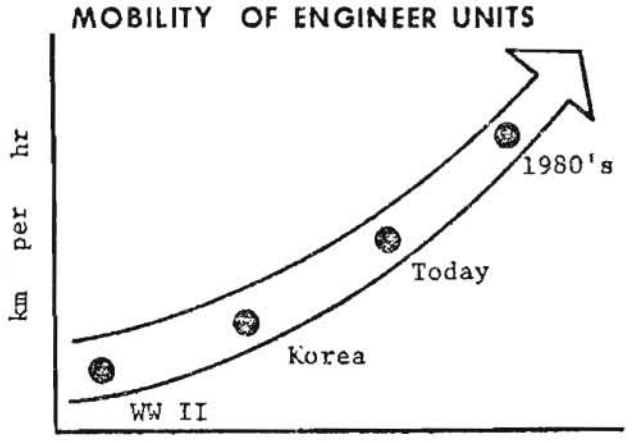
- What we expect to meet on the next battlefield?
- How we can overcome the challenge and win there?
- Which means of preparation are most enabling?

The whole Army is concerned with these questions. We have seen that weapons and machines of the past are inadequate to the task. Our enemy will be larger than we in number, and his new equipment, increasingly powerful, ever more effective. Our current tactics and techniques are being reassessed. We are reemphasizing that which continues to contribute, discarding the outmoded, and adopting the necessary changes to prepare our Army to fight and win in this new arena. Our objective is to "win the first battle," particularly the first battle in Europe against a technically capable and highly mechanized enemy. The former strategy of gearing up for the struggle is passed, for the fight may be over before we've coined the rallying slogan. The Army must be ready to win the initial engagement, and not look forward to a "turning point" sometime in the midst of the third campaign.

As part of the combat arms team, Engineers play a role essential to success — a role that has increased in importance and emphasis in response to the very nature of the overall challenge. That role is knowledge of and reinforcement of terrain, to our advantage and to the disadvantage of the enemy. Our contribution to winning the first and subsequent battles is found in our three key mission capabilities; mobility, countermobility, and survivability. Our arm will see more significant changes in doctrine, equipment, and organization over the next decade than in most other systems of the Army. We have embarked on a new direction over a very broad front. The Engineers' first How to Fight Manual 5-100 (Engineer Combat Operations) which was recently distributed to the field shows the direction in which we are moving. Our goal is a greater contribution to the Combined Arms Team through the recognition of and by capitalizing on visible trends:

- Increased capability and survivability of Engineer construction equipment.
- Improved mobility commensurate with maneuver elements.
- Significantly increased rate of dispensing and clearing mines by division resources.
- Concentration forward in the main battle area.





We can move earth today much faster than previously. This indicates our rising ability to dig-in the divisional weapons systems, thereby enhancing survival of maneuver elements.

Mobility, too, is on the upswing. New developments will soon allow Engineers to move and fight side by side with other arms.

Perhaps the most striking progress will come in mine laying and minefield clearing. Whereas hand dispensing conventionally required large commitments of time and manpower and transportation, new mechanical and firepower delivery systems will cut these requirements dramatically. It used to take an Engineer company, for example, about eight hours to lay a minefield, 250 by 350 meters. New methods will reduce the time to minutes and the effort to that of one or two small crews. Engineers will become increasingly "doers," not just advisors for mine warfare.

There is a conscious effort modifying doctrine and organization to get more Engineers forward in order to increase immediate and local participation in the combat arms team. Greater forward concentration and normal association between engineer and maneuver units will enhance friendly mobility, counter enemy mobility more effectively and increase survivability of our forces.

The Engineer School is the primary source of direction for these needed new initiatives. The School

- Develops Engineer weapons systems, the tactics and techniques to use them, and the organization to accommodate them.
- Evolves doctrine for the best employment of Engineer resources in battle.
- Generates skillful soldiers and fosters high standards of performance throughout the U. S. Army by designing, implementing, disseminating, and evaluating Engineer training wherever Engineers serve. The School produces its own tools for this task including courses, manuals, training techniques, and performance tests — for export to the field as well as institutional use.

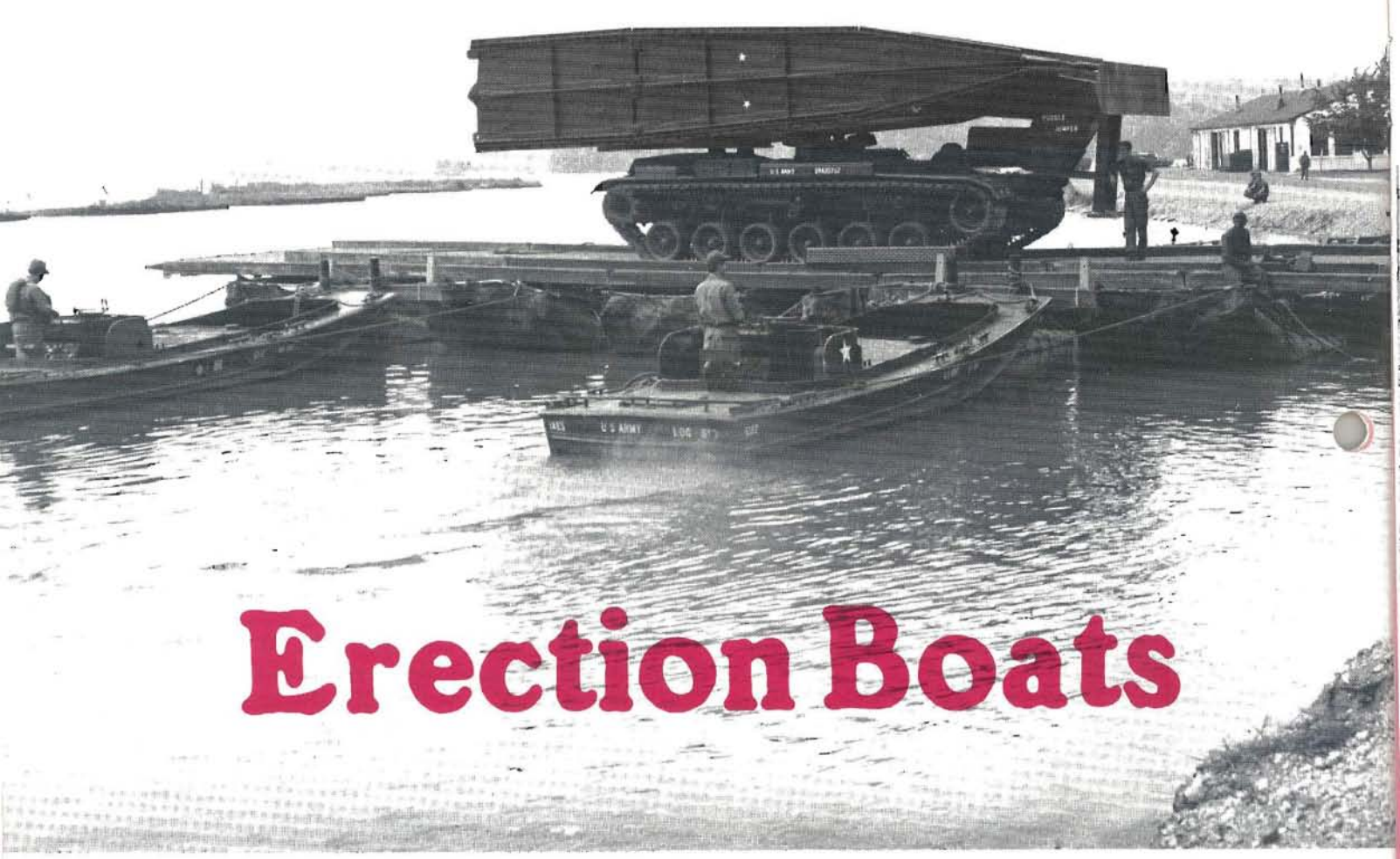
These three functions interrelate continuously. It is impossible, for example, to introduce new equipment into the Army without a careful development of the training, both individual and collective, required by the soldiers and units who will employ it. Similarly, there must be a concept that envisions how it enhances accomplishment of the mission and techniques by which it best serves. These constitute doctrine. That all three activities are pursued at Fort Belvoir is no accident. Collocation in an atmosphere of community effort promotes efficiency in the process and a mutually supportive harmony in the design of the whole.

In keeping with the tempo of the times, the Engineer School today is a scene of great activity. It is fully involved. The School's efforts are not on an isolated tangent, but according to the larger design established by TRADOC. A dynamism is at work. The motivation derives from the same source: the need to get ready, to get Engineers ready throughout the Army for the next battle which we *will* win.

All engineers whether in CONUS, USAREUR, Korea, or at any other of our far flung locations must do their part. The next few years are critical.

Colonel Thorwald R. Peterson presently is assigned as Director, Directorate of Combat Developments, US Army Engineer School, Fort Belvoir, VA. His previous assignments were, District Engineer, St Louis, Assistant Professor of Civil Engineering, US Military Academy. COL. Peterson is a graduate of West Point, he holds a Master of Science degree in Civil Engineering and Administration.

Bridge Erection Boats



Submitted by MERADCOM'S Marine & Bridge Laboratory Figure 1

One item in the Army's inventory of engineer equipment has been with us so long that we look upon it almost as a member of the family, or at least a very old friend. This item is, of course, the 27-foot Bridge Erection Boat. But, alas, as with all things, the expanding technologies and ever greater requirements dictate that the old move over and make way for the new. Although it has been an extremely dependable item, the Bridge Erection Boat is tethering on the brink of oblivion. This is brought about because of its excessive draft, its high cost and being very difficult to produce. The 27-foot Bridge Erection Boat, composed of two sections (Figure 1), was developed and introduced into the Army supply system in the early 1950's. High strength weldable aluminum alloys had not yet been introduced when this item was designed; therefore, the boat utilized thousands of rivets in its construction which made it very difficult to automate because of its complicte configuration, and was very expensive to build. At the time, 2½-ton trucks were used in the bridge

companies which brought about the two-piece boat configuration because of weight limitations; this also added to the manufacturing costs. In addition to the above, the new Ribbon Bridge has a very shallow draft in the water and this just about dictates the demise of the old boat. The boat's configuration, coupled with its complicated tunnel arrangements, skegs for rudder supports, propeller protection, etc. gives the 27-foot boat a draft of approximately 42 inches. When we consider that the new Ribbon Bridge has an unloaded draft of only 5 inches, we can appreciate how the boat detracts from the bridge's maximum potential.

In May 1975, a project was initiated to come up with a new boat which would be compatible with the Ribbon Bridge. It was specified that the new boat shall be a standard commercial or a modified commercial item. Numerous standard boats of other NATO nations had been tested; none had been found satisfactory to fully meet the require-

Figure 2

Figure 3

ments. It was determined that two types of boats had good potential for meeting the requirements; these being water-jet propelled for one and standard shallow draft propeller-driven for the other. We decided to procure test items of each type and run tests to determine their adequacy. We finalized very rigid requirements for the boats and prepared the works and services to go out on contract for the two types of boats. The boats were fabricated by the contractors and the first articles were received in June 1977 and delivered to TECOM for development tests. The propeller-driven boat is shown in Figure 2 and the water-jet propelled boat is shown in Figure 3. The boats will be tested by the US Army Test and Evaluation Command and the user. Tests will be carried out at Aberdeen Proving Ground and Fort Belvoir, VA for slow water use and then the boats will be shipped to a site on the Missouri River at Granite City, IL, for fast water tests. These tests are scheduled to be completed in April 1978.

Assuming the new boats prove successful and superior to the old boats, type classification (TC) will be accomplished 2d Quarter Fiscal Year 1978.

TACTICAL PROBLEM

You are the platoon leader from the divisional engineer battalion (mechanized) in direct support of a mechanized infantry heavy task force. The task force has been organized into three company teams with a mix of tanks and TOW missile systems. The task force has been given a defend in sector mision, part of which is shown on the sketch map (Figure 1). Intelligence estimates predict an attack by an OPFOR motorized rifle regiment in six hours. The task force commander has directed you to concentrate your efforts on countermobility tasks in support of his weapons systems, TOW — range — 3000 m, Tank range approx. 2000 m, DRAGON range — 1000 m.

The terrain in the task force sector is wooded and the REISART River is 60 meters wide, 3.2 meters deep and flows at 3 meters/second.

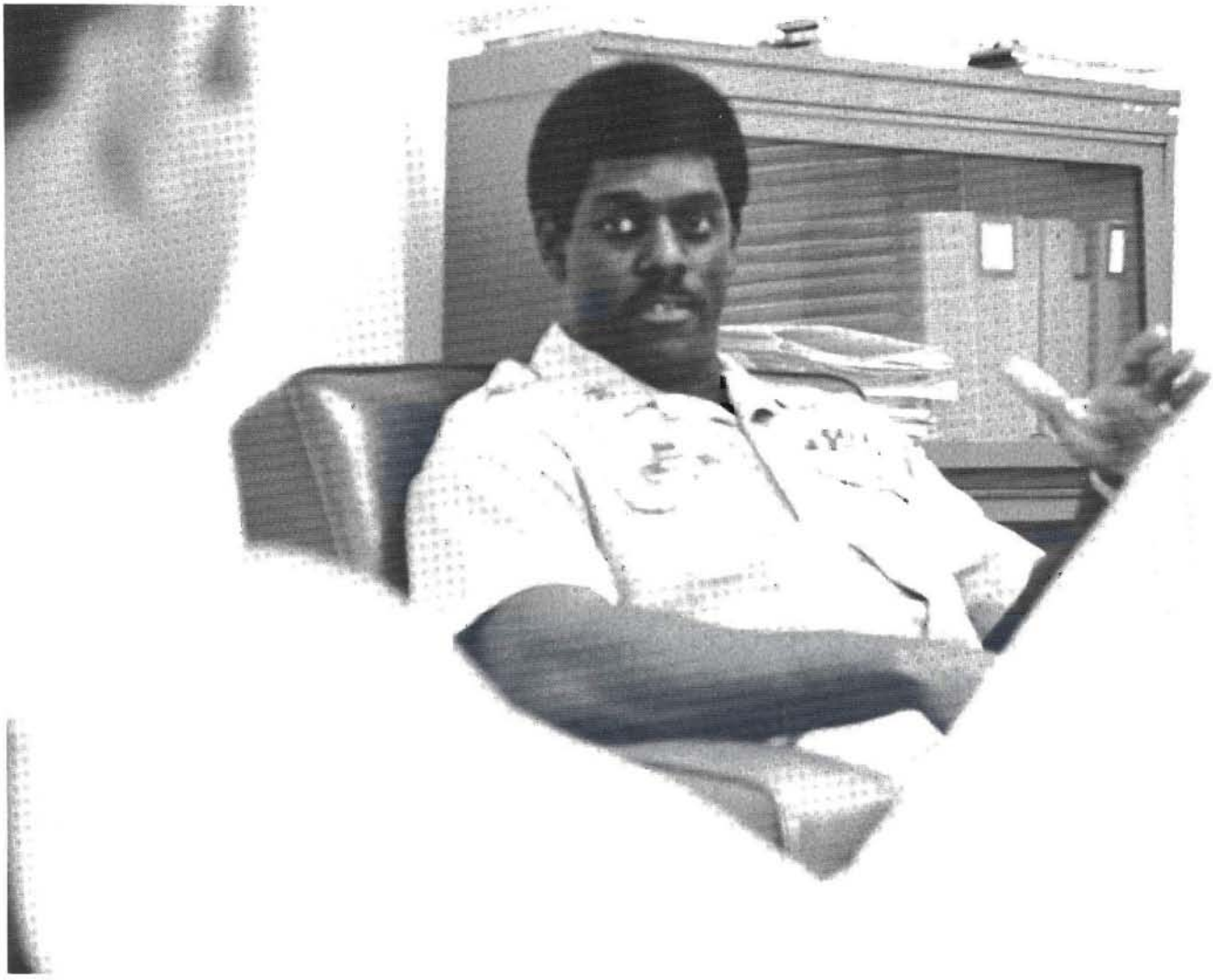
Your available equipment and resources include:

- Two medium dozers and two 2½ cubic yard bucket loaders, capable of digging two hundred meters of antitank ditch in one hour, when working as two teams.
- One M-57 mine dispensing system, capable of laying four hundred meters of antitank minefield in one platoon hour.
- Sufficient demolitions for one each two-lane bridge in two squad hours, and one road crater in two squad hours.
- Sixteen battery volleys of 155mm artillery delivered antitank mines (each two volleys can create a minefield 250m by 350m).

What obstacle would you recommend to the task force commander?

(Answer on Page 28)

Effective Counseling



Chaplain John H. Reed

Problem: How can professional engineers with training in the techniques and philosophy of counseling be effective counselors?

Solution: The following three suggestions will give you the keys to "effective counseling."

First: You must understand the role of a counselor. A counselor is not a person who has the responsibility of solving his client's problems! Rather, a counselor is a catalyst. He is that kind of person who will cause a reaction in the other person's mind and emotions so the latter can take the necessary action and resolve the conflict. What are the characteristics of the counselor who can be a positive catalyst causing constructive response? The characteristics are: being accepting, understanding, objective, and secure within oneself, being a good listener, being a person who can con-

front the client with reality, declare his own values without imposing them on the client, and able to establish rapport and maintain it throughout the relationship. The key area is that the client must solve his own problem, using his own resources. The counselor, acting as friend and catalyst can help the client in this process.

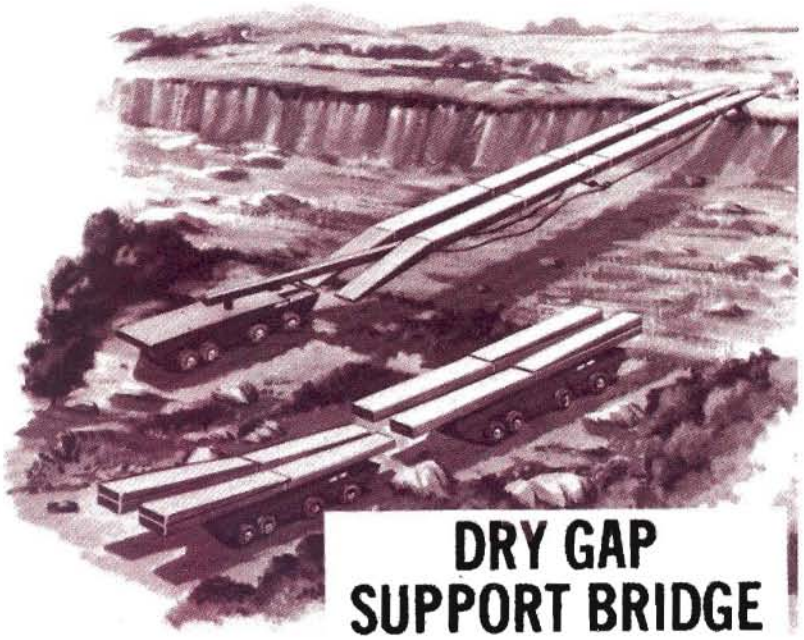
Second: Every counselor should have a basic strategy or goal in mind when a person comes to him for assistance. The strategy I have found workable is fourfold: (1) Determine the core problem. This is about 80% of the work of a counselor. Once you have identified and focused upon the root problem, then you can proceed with the other three steps. To determine the core problem, the best technique is the use of listening skills, i.e. the use of open-ended questions (designed to draw out the person) and the use of reflection techniques of content and feelings. The reflection technique enables the client to verbalize the situation and his resultant feelings which need to be expressed. (2) You are then in the position to problem solve by explaining the variety of alternatives open for resolving the conflict. It is important that you look at the alternative courses of action together, but allow the client to make the decision. There will be times when a client will choose a course of action in which you will not agree. At this point you must be willing to let your client have the freedom to fail, provided the action is not detrimental to his health or that of others. (3) The third step is one of commitment to the course of action he has chosen. These actions should be specific and attainable. Not only does this commitment put the person into the active role of working out his problem, but it also reinforces the fact that he alone has the responsibility for his actions. He will have to live with the consequences of his action, whether good or bad. As the client leaves your counseling session he should be aware of three things: the core problem, the specific course of action he has selected from a variety of alternatives, and that he is responsible for his actions. He should also know and feel that you are always ready to help him further — whether it means changing to a different course of action, or reinforcing the one he has chosen. Moreover, he should know that you hold him responsible for all of his behavior. (4) The fourth step is the follow-through. Make another appointment with the client after a reasonable amount of time for checking on his progress. This gives the client the feeling that you are genuinely interested in him, and it also provides him some external motivation to work on his commitment.

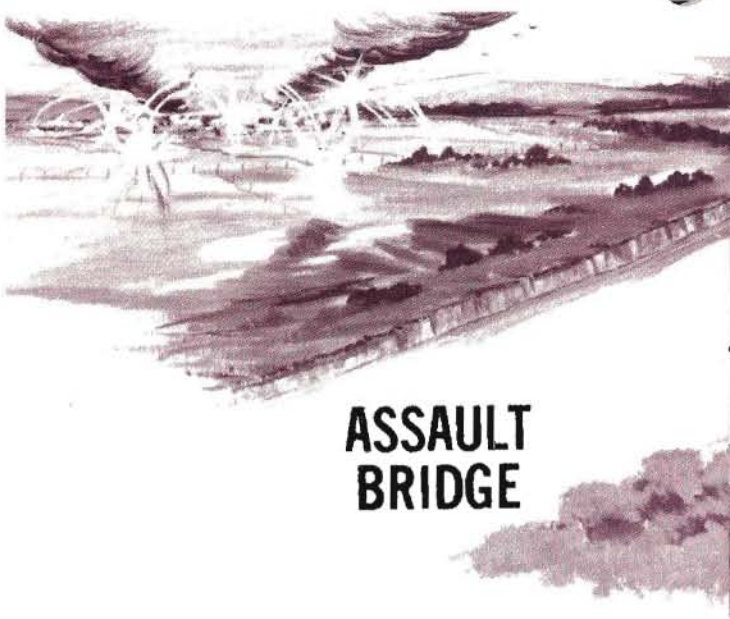
Third: The effective counselor knows his limitations. None of us have the wisdom and and resources to handle all problems. You must know your limitations and be aware of the resources available for assistance. Once you have identified the client's problem and you feel he is going to need more help than you are prepared to give him, then refer him to a source which has the expertise to be of help. If he does not want to be referred, then you should continue to work with him the best you can. If he does go to the referred source, make sure you follow through by checking with your client and the progress he is making. This gives him the reassurance that you are indeed concerned about him and you will continue to maintain that good relationship as his leader. An effective counselor is one who knows his role, has a basic strategy in the counseling process, and knows his limitations and is willing to get outside help when appropriate. These simple thoughts should give you direction and confidence in your role as counselor.

I conclude this article with a one word concept — *relationship!* If you maintain a good working relationship with those who come to you for assistance, you will succeed. These three steps only provide guidelines in the relationships you develop. Without a relationship of mutual trust and respect, the above actions will be for naught. Today the leader needs to be an effective counselor. It takes work, but it pays off.

Chaplain Reed was an instructor in the Command Leadership Department with the Department of Combined Arms USAES. He graduated from the Chaplain Advance Course at Fort Wadsworth in 1973. Chaplain Reed is presently at the California Family Study Center, working towards his Masters in Family Counseling.

Bridging for





Submitted by MERADCOM'S Marine & Bridge Laboratory

If Elliot Gould had had access to the bridges currently being planned for Allied use in the 1980's, he could have kept Michael Caine and the British troops on time, saving Operation Market Garden, but forcing a change in the title of a recent hit movie.

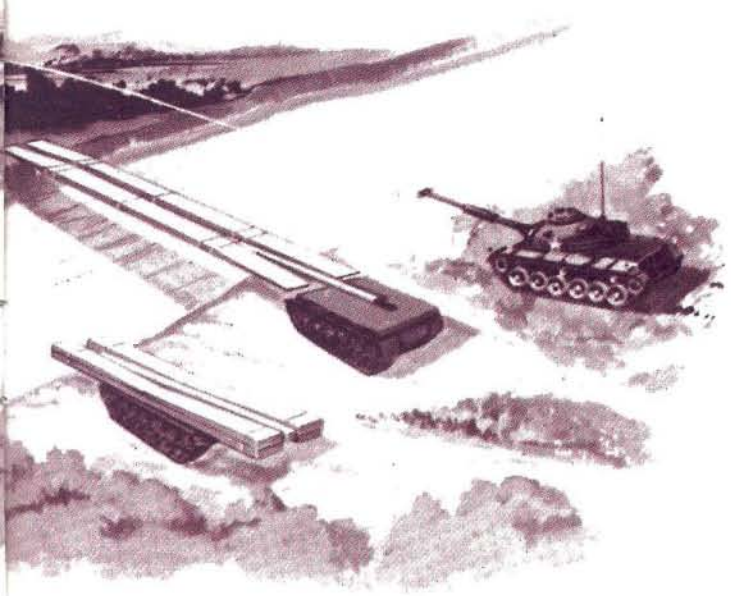
Bridging has already improved considerably since World War II and the days of the Bailey Bridge, with the development by the British of the Medium Girder Bridge and U.S. development of the Mobile Assault Bridge, Scissors Bridge and Ribbon Bridge. Now, the U.S., West Germany and Britain are working together to develop a full family concept of standardized wet and dry gap and assault bridges using common components. American participation in the effort is the responsibility of the U.S. Army Mobility equipment Research and Development Command (MERADCOM), Ft. Belvoir, Va. This is the same command that developed the Mobile Assault, Scissors and Ribbon Bridges and a cable reinforcement kit for extending the span of the British Medium Girder Bridge.

The basic bridge system for the Bridging in the 1980's program uses the same superstructure in all three roles and was designed at MERADCOM by engineers in the Command's Marine and Bridge Lab. The bridge is designed to span gaps of 30 meters with the capability of being reinforced to 50 meters by the use of a reinforcing kit and consists of three primary components: a seven-meter center section; a seven and a half-meter ramp section; and a one-meter connection section.

Designed as an integral part of the bridge system, the reinforcing kit is transported and launched with the bridge allowing rapid deployment during bridge launching. High strength Kevlar will be used for the tension element of the kit to give minimum weight and ease of handling.

To obtain the required spans and to hold the weight of the bridge to a minimum, an investigation is underway on the use of an aluminum matrix composite material for selected structural components. These components will be incorporated into the system as their development progresses. For launcher/transporters, the same launching mechanism is used in all three roles. A wheeled chassis transporter is used in the dry and wet support roles and, because of the requirement for crew protection, an armored tracked chassis transporter will be used for the assault role.

One transporter/launcher, wheeled or tracked, can transport and launch up to a 30 meter bridge. Bridges from 30 to 50 meters require two transporters. Spans beyond 50 meters will also require the use of special supports.



WET GAP SUPPORT BRIDGE

the 1980's

An integral trestle-type pier is used for rapid construction of a dry support bridge under semi-assault conditions. The pier is attached to and launched out at the far end of the bridge where it is lowered to bear on the bottom of the stream. The next launcher moves out over the pier and launches its span, completing the bridge in a leap frog fashion. For more permanent support bridges, a pier mounted on a standard amphibious vehicle is used. The bridge is launched out to bear on the pier using the same leap frog pattern as with the trestle pier arrangement. Two approaches are being investigated for adding floatation components to the dry support superstructure for wet bridging. Only one approach will be selected for final development.

In one, continuous floating supports are provided to accomplish a span similar to the Ribbon Bridge. The second approach is a float spaced at approximately 30 meter intervals. The dry support superstructure spans between the discrete floats. The bridge has a roadway width of approximately four meters and supports such heavy combat equipment as the M60 tank and M88 tank retriever. A 30 meter dry or assault bridge can be erected in three to five minutes, a 40 meter dry support bridge in approximately 15 minutes and a 50 meter dry support bridge in approximately 25 minutes. The wet support bridge can be constructed at approximately 20 feet per minute and is rapidly convertible to rafts. Because the system will vastly reduce the time and manpower required for bridging operations, it is intended to replace all existing military bridging used by troops to provide assault and tactical support.

MERADCOM, through its own in-house efforts and a contract with Pacific Car and Foundry of Renton, Wash., is designing and building components of the system to verify the feasibility of certain features prior to final development.

The bridge has been designed and is under fabrication. The design of the wheeled transporter/launcher and the launching mechanism is essentially complete with materials being produced for fabrication. Projected completion for these components is mid-FY 78 with testing scheduled for completion in September 1978. Since this is a cooperative effort, West Germany and Britain are also designing, fabricating and testing certain components. Test results from all three nations will be evaluated and a decision made in April 1979 as to which results will be used for guidance during final development.

Development should start during the third quarter of FY 80. The system is expected to be operational by mid-1988.

New Solution to an Old Problem

Submitted by MERADCOM'S Marine & Bridge Laboratory

From the very beginning of the use of cannon fire in an indirect fire mode, there has been a need for the gunner to know where a reference azimuth. In the recent past the reference, which has been "North," was determined by the use of large, expensive, time consuming north seeking gyrocompasses. At present two contracting methods are used to provide the forward observer with a reference azimuth: the north-seeking gyrocompass and the lensatic compass. In the first case, time to obtain a stabilized azimuth and instrument cost are sacrificed for accuracy, while in the second case accuracy is sacrificed for ease in obtaining azimuth. The north-seeking gyrocompass provides heading accuracies of + .25 mils. However, when mounted in a tracked vehicle, movement and

possible leveling problems make its use very difficult. It takes 6 to 20 minutes of gyro stabilization before a reading can be obtained. The lensatic compass permits the user to obtain a reading instantly after leaving the vehicle to remove any vehicular magnetic biasing effects. This instant reading is obtained at the expense of heading errors of + 2 to 3 degrees and of converting the reading from magnetic to grid north.

A new technique shows promise as a solution to requirement for speed and accuracy. This article presents the results of one field test relating to this new technique and one developmental system. Vehicle heading can now be obtained with speed and accuracy from a magnetic heading device called the Platform Orienting System (POS)-406 (Figure 1).

In January 1976, tests were conducted on the POS-406 mounted in an M113A1 armored personnel carrier (Figure 2) at Fort Hood, Texas. These tests were conducted by the US Army Engineer Topographic Laboratories (USAETL) with the Modern Army Selected Systems Test, Evaluation and Review (MASSTER) and equipment developer support. Tests were performed to determine the effects of (1) variable magnetic loads and (2) random areas on the POS-406 accuracy.

Essentially, the test consisted of driving an M11A1 vehicle around circles 10 meters in diameter. The azimuth of the line from the center of any one circle to an object approximately 10 kilometers away was determined using a north-seeking gyro compass. There was an inherent (bu predictable) error between measuring the azimuth to the distant reference object from the center of the circle and measuring it from a point on the circumference of that circle (i.e., using a theodolite on the vehicle top while it was at any point on the circumference of that circle). This is referred to as the modulation error and it amounts to + 0.5 mils maximum.

Due to limited available test time, test runs were made both day and night. At night a directional gyro, housed in the vehicle, was used as the reference instead of the theodolite. The gyro drift raft of 0.2 degrees per hour caused an insignificant error since the total number of readings could be made around most random circles typically within 5 minutes (or an error or + 0.3 mils).

Two types of tests were conducted: the variable load test and the random area tests. The variable load test consisted of changing the vehicle's magnetic loading through various configurations and measuring the heading with both the POS-406 and theodolite at each 30° interval. Measurements were made after the following load changes from a normally closed vehicle: (1) ramp closed, (2) a roll of barbed wire added, (3) barbed wire removed and helmets introduced in vehicle, (4) helmets removed and ramp opened, and finally (5) ramp closed. The random area test consisted of determining various 10-meter diameter test circles at randomly located areas at Fort Hood. Heading measurements were taken at 30-degree intervals with the POS-406, the theodolite, and the directional gyro. Data resulting from the tests is shown below:

Table I. Variable Load Test Data

Load Description	Std Dev 1 (mils)	Mean $\bar{x}$ (mils)
Ramp closed	3.2	5.1
Barbed wire added	6.2	4.6
Remove barbed wire & add helmets	3.0	5.0
Remove helmets & open ramp	3.7	4.6
Close ramp	3.2	5.3

Table II. Random Area Test

Random Areas	Std Dev 1 σ (mils)	Mean $\bar{x}$ (mils)
Using theodolite as a reference		
Area 1a	2.9	5.7
Area 1b	3.3	11.5
Using gyro as a reference		
Area 1a	3.8	7.5
Area 1b	4.1	8.4
Area 1b (repeated	1.9	5.8
Area 2	3.6	6.9
Reference circle	3.5	5.2

Table I shows that the standard deviation varied from 3.0 to 6.2 mils. For all cases, with the exception of the added barbed wire case, the error is 3.7 mils or less, and if the open ramp is not included, the error is 3.2 mils for the 1-0 standard deviation. The mean error merely shows the misalignment of the POS-406 with the longitudinal axis of the vehicle and can be reduced in value by a later alignment or calibration.

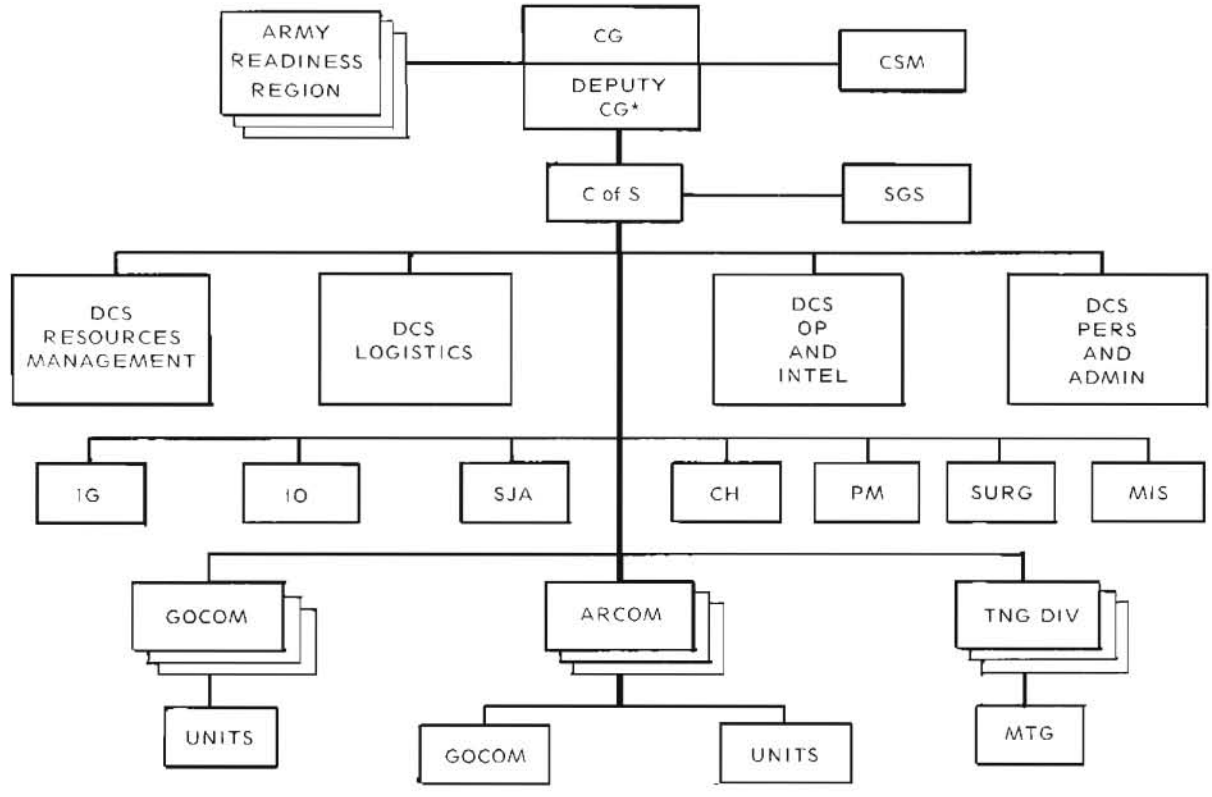
Table II shows the standard deviation varying from 1.9 to 4.1 mils for all areas.

The time required to read the POS-406 in all cases was 2 to 3 seconds after the read button was depressed.

The POS-406 has demonstrated sufficient speed and accuracy in providing vehicle heading to warrant its inclusion along with the gyroscopic north-seeker type for consideration in future forward observer vehicle design and development.

What's an Army Readiness Region ?

MAJ C. J. Schexnayder



*Deputy CG also commands ARR collocated with army HQ

Fig. 1.

No, its not a Top Secret location where the troops are kept on Red Alert for the next conflict. Army Readiness Regions (ARR) are extensions of CONUS Army Headquarters (Fig 1), and its commander acts as the CONUS deputy commander for training and readiness of Reserve Component (RC) units within his region. The ARR's came into being under the STEADFAST reorganization of 1973. Nine Regions in the three US Armies, each commanded by an Active Army Major General, were established with the primary mission of improving RC readiness.

The ARR organization replaced most of the RC advisor system that existed before the '73 reorganization. Removing most of the battalion-level advisors was a very significant aspect of STEADFAST. The action seems to conflict with the mission to provide more "hands-on" training assistance to RC units. However, RC units needed help in many different areas, maintenance, administration, supply, training of individual soldiers, weapons training, and tactics. The average battalion-level advisor just did not have the expertise to give the type of help needed in such a wide

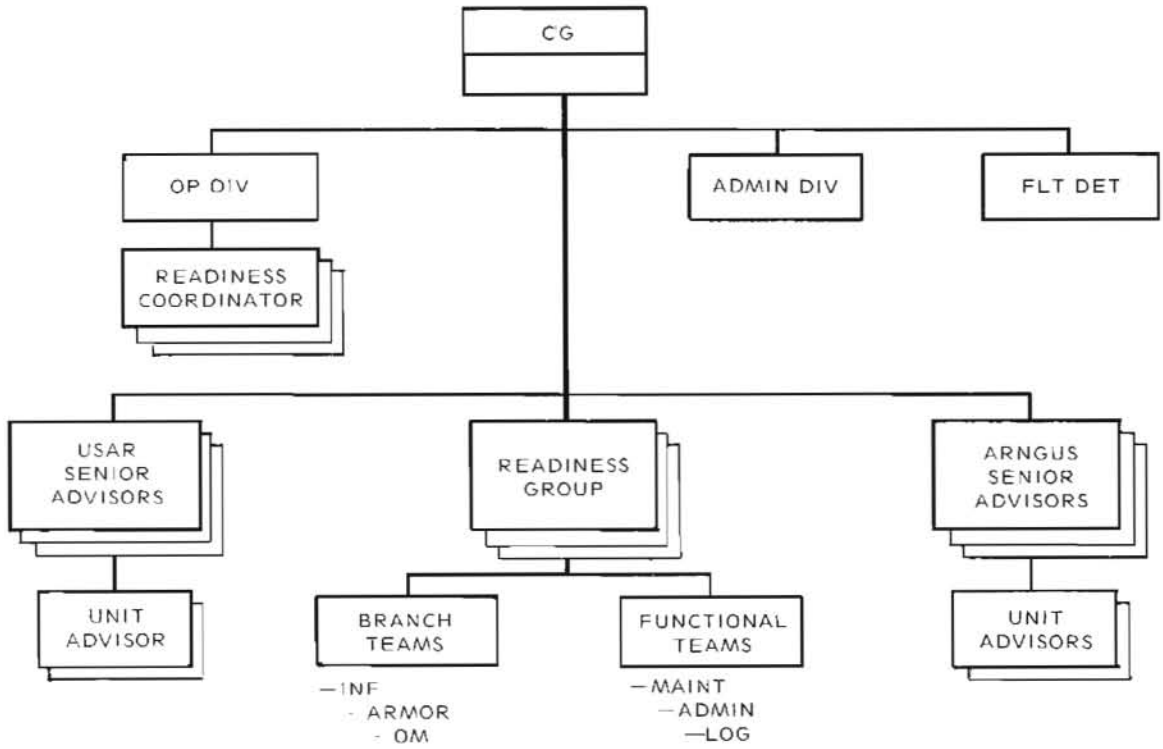


Fig. 2

variety of areas. He would be good in several fields but find himself over his head in many others. Under the Army Readiness Region Organization (Fig 2) a RC commander has a complete pool of advisor talent in all areas which is located at a single source.

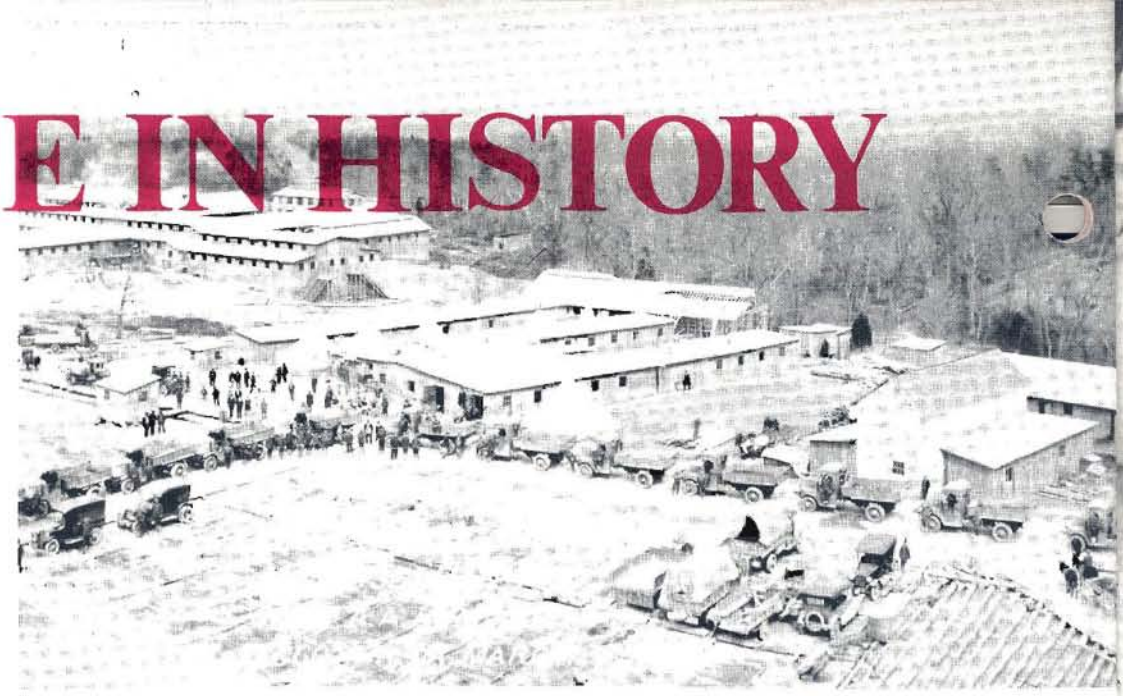
So what has all this reorganization really accomplished for the RC command back at his home town unit 250 miles from the nearest active Army post? During Active Training in 1975 the evaluator for Company B, 205th Engineer Battalion (Const) Louisiana Army National Guard gave the unit high marks for its construction skills but questioned its tactical ability. On return to home station the commander studied the evaluator's comments and decided there were many tactical areas the unit had not trained on in several years. The next quarters training schedule included landmine warfare, obstacle construction and reconing. The next problem was who would conduct the training and where would the support materials come from? The Battalion Operations and Training Specialist suggested Army Readiness Region VII's Readiness Group, Engineer Team could conduct the classes. The Battalion S4 tried to order the necessary practice mines and concertina wire. No mines could be located, but enough wire came in for the whole battalion to train. The Engineer Team was contacted directly about the problem in securing mines and they immediately went to work. Drill Saturday came around and up drove the Engineer Team in a 2½-ton vehicle loaded with everything necessary for "hands on" landmine warfare training. With the team conducting the class NCO's could remain with their squads and platoons instead of having to give the instruction.

The instruction began with a classroom orientation period. Then one platoon went out behind the armory and actually laid in a minefield. At the same time the other platoon was laying a minefield out front. After lunch the platoons switched and practiced breaching the others' field. The training was a success because unit integrity was maintained, the men learned by doing and the efforts of Region VII's Engineer Team in locating and providing the necessary materials, many of which they left with the unit for future use.

This RC Battalion has learned where to look or call for training assistance. Advice on writing new SOP's, help at the range during training on new weapons, classes at the company level on maintenance, advisors with active training, helping squad leaders impliment ARTEP training are just some of many ways Region VII's Engineer Team has helped the 205th Engineer Battalion, CBT HVY. Are your units putting their Readiness Group's teams to work?

MAJ. C. J. Schexnayder is the S-3, 205th Engr. Bn. CBT HVY, Louisiana Army National Guard. He has served as a Tactical Officer, Assistant Project Officer and Project Engineer both in CONUS and Thailand. He is a graduate of EOAC and C&GS, and is presently enrolled in the Air War College. He holds a BCE and MS degrees in Civil Engineering from Georgia Institute of Technology, and is a registered professional engineer in Louisiana. He works as an Area Engineer with a Hammond, La. construction company.

A TIME IN HISTORY



Lawrence P. Greyson

Prior to the time of America's declared independence, there was little need for a school of engineering in the colonies. The military requirements that existed, such as those during the French and Indian War, were met by engineers educated in England who served in the British Army or by colonists who served under them. The engineering needs of a civilian nature, which were reflective primarily of hand-craft technology, were met largely by ingenious or industrious men who were self-educated. With the beginning of war, however, America's requirement for qualified engineers became critical.

Shortly after assuming command of the continental forces on June 15, 1775, George Washington advised Congress that the army labored under numerous disadvantages, including "a Want of Engineers to construct proper Works and direct the Men." He continued "I can hardly express the Disappointment I have experienced on this Subject; the skill of those we have being very imperfect." Washington's concern, which he voiced on numerous occasions over the next few years, was shared by many other colonial leaders, including John Adams and Henry Knox.

The lack of a sufficient number of engineers in the army persisted throughout the Revolutionary War, and almost all of those who served as engineering officers were of foreign birth and education. It was recognized that most of these men would return to their native countries when the war ended. America required engineers, not only for the immediate military needs, but also to meet the future requirements of a civilian population when the nation would be independent and developing. These were the conditions and sentiments of the times when the army established winter quarters at Valley Forge, on December 20, 1777.

Shortly after encamping, Brigadier General Louis Duportail , a French volunteer who was serving as Chief of Engineers, drew up a plan for the establishment of an engineering corps as a permanent part of the Continental army. His plan dated January 18, 1778, called for the formation of enlisted men into companies of sappers headed by officers, and proposed that the companies might serve as a school of apprenticeship for the men. On January 28, Washington endorsed Duportail's plan and recommended to Congress that an engineering department be organized. This was done by a Resolution of Congress on May 27, 1778, as part of a general organization plan for the army. The engineering department was established with three companies, each to contain 1 captain, 3 lieutenants and 68 enlisted men, with the requirement that "These companies to be instructed in the fabrication of field works . . . The commissioned officers to the skilled in the necessary branches of mathematicks."

Washington readily complied with the resolution, stating in the General Orders issued at Valley Forge on June 9 that:

> "Three Captains and nine Lieutenants are wanted to officer the Companies of Sappers: As this Corps will be a school of Engineering it opens a Prospect to such Gentlemen as enter it and will pursue the necessary studies with diligence, of becoming Engineers and rising to the Important Employments attached to that Profession as the direction of Fortified Places &c. The Qualifications required of the Candidates are that they be Natives and have a knowledge of the Mathematicks and drawing, or at least be disposed to apply themselves to those studies. They will give in their Names at Head-Quarters."

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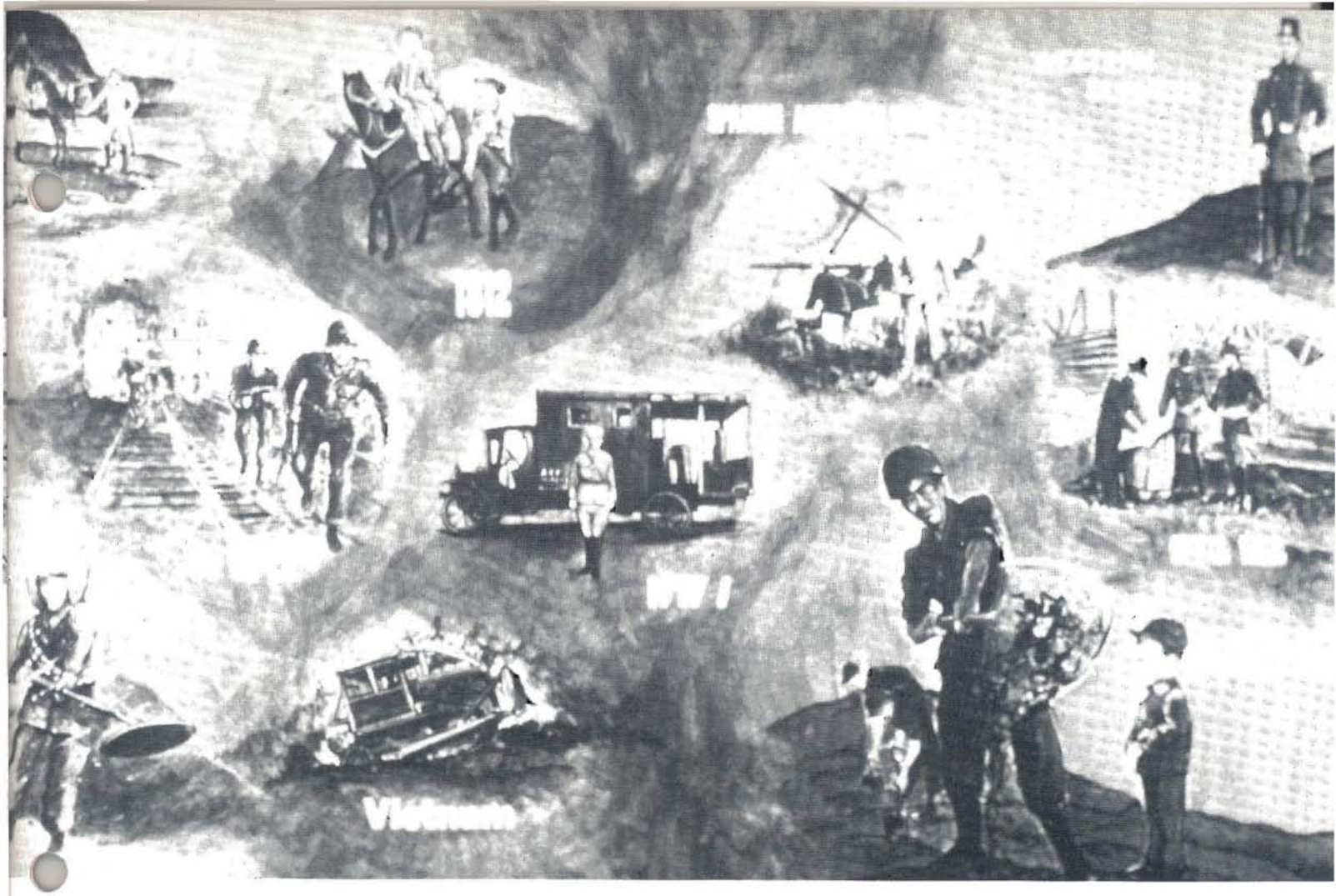

WW2
WW1
Vietnam


WILLETS
POINT

The need and sentiment for educating engineers in the United States was clearly present at this time, although almost a quarter of a century would pass before a formal school of engineering would be established. In the winter of 1778, General Knox, while camped at Pluckemin, N.J., estabished "an academy where lectures are read in tactics and gunnery." For the decade following the end of the war in 1783, numerous people, including Washington, Hamilton, Randolph, Knox, Duportail, Baron von Steuben, L'Enfant, Benjamin Lincoln and Timothy Pickering, both of who served as Secretary of War, and numerous others, stressed the need for officers trained in engineering and the need to establish a military academy. George Washington, in his Presidential message of October 25, 1791, advocated the establishment of a military academy, which actually commenced at West Point in 1794. The academy, in which much of the instruction was devoted to fortifications, continued until April 1796, when a fire destroyed the barracks. On March 16, 1802, an Act of Congress stationed the Corps of Engineers at West Point to constitute the Military Academy, which has continued to the present day. The engineers and cadets at the Academy were made available for such duty and service as the President of the United States might direct, thus allowing them to perform works of a public as well as a military nature. This availability was in keeping with the sentiment expressed in 1800 by James McHenry, the Secretary of War, that "We must not conclude that service of the engineer is limited to constructing fortifications. This is but a single branch of the profession; their utility extends to almost every department of war; besides embracing whatever respects public buildings, roads, bridges, canals and all such works of a civil nature."

The Military Academy as originally established was loosely organized, operated on meager resources, and had no definite or consistent system of instruction, examination or length of study. It was only as a result of the appointment of Sylvanus Thayer at the time a captain in the Corps of Engineers, as Superintendent in 1817 that the academy developed. Following a trip to France to study its educational system, Thayer arranged the cadets into four annual classes, divided the classes into sections requiring weekly reports, developed a scale of marking, attached weights to the subjects in the curriculum necessary for graduation, instituted a system of discipline and an honor code, and set a standard of high achievement. These characteristics have remained with the academy until the present time, and formed the pattern for technical education in America.

Alden Partridge, who was the first person to hold the title of professor of engineering in the United States and served as acting Superintendent at West Point, resigned from the army in 1818 and established the American Literary, Scientific and Military Academy at Norwich, Vermont. This institution, which later became Norwich University, was the first civilian school of engineering in the country. In 1824, the Rensselaer School was established and eleven years later granted the degree of civil engineer for the first time in America and Great Britain.

From these initial acts, engineering education in the United States has grown until today there are almost 295,000 graduate and undergraduate students studying engineering on a full-time basis, and an additional 47,000 students studying part-time, at 289 institutions of engineering. In addition, there are some 58,000 full-time students and almost 20,000 students studying part-time at 119 institutions that offer programs in engineering technology.

As a single event, George Washington's call for a school of engineering is but a minor footnote in history. Taken, however, in a larger context as part of a continuing series of events, it is an act by the Commanding General of the Continental Army and future first President of the United States, recognizing the importance of engineering education to meet the needs of an independent and soverign nation. The celebration of the 200th anniversary of the call, scheduled for June 9, 1978, at Valley Forge, will be formal testimony by the engineering profession to the foresight of George Washington and a reaffirmation of the continuing importance of engineering education to the future of America.

On April 29, 1812, a Congressional Act set further provisions for the Military Academy, including establishing the position of "Professor of the art of engineering in all its branches." One of the most influential persons to occupy the position was Dennis Hart Mahan, who was appointed in 1832. His pioneering efforts in the preparation of text books on engineering subjects did much to break this countries dependance on the translation and republication of European works.

Lawrence P. Greyson, who received a Ph.D. in Electrical Engineering from the Polytechnic Institute of Brooklyn, is Chief of the Technological Applications Divisions of HEW's National Institute of Education. A past Vice President of ASEE and Vice Chairman of the Educational Activities Board of IEEE, he is active in applying technology, particularly communication satilites, to education as well as innumerous domestic and international aspects of engineering education.

BRIDGING THE GAP

CHAMPVA ELIGIBILITY

About 200,000 dependents and survivors of veterans have applied for Civilian Health and Medical Programs of the Veterans Administration (CHAMPVA), according to VA officials.

Similar to the DOD civilian health care program (CHAMPUS) for eligible active duty, retired members and their families, CHAMPVA is also a cost-sharing program. CHAMPVA pays a share of the usual and customary charges for approved health-care services from private physicians, community hospitals or other authorized providers of care.

Eligibility for CHAMPVA is limited to spouses and children of veterans with a permanent service-connected total disability. Also eligible are surviving spouses and children of a veteran who died as a result of a permanent service-connected disability or had a permanent service-connected total disability at the time of death.

Excluded from the CHAMPVA program are dependents and survivors of veterans who are eligible for CHAMPUS or Medicare.

For authorized inpatient care, CHAMPVA pays 75 percent of the charges of the hospital and professional personnel. For outpatient care, the first $50 is paid by the beneficiary each fiscal year. When claims are submitted for two or more beneficiaries of a family, the deductible is $100. After the deductible is paid, CHAMPVA pays 75 percent of the remaining charges. The family members pays the balance.

Applications for CHAMPVA benefits should be made to the nearest VA hospital or outpatient clinic. Eligible beneficiaries will be given appropriate identification and information on procedures for filing claims, say the VA officials.

MORE ON OE

Several Army groups are being studied to determine their most useful roles in Organizational Effectiveness (OE). DA civilians and the Reserve Components are among the groups under study.

Recognizing that "Total Army" participation in OE programs is necessary, personnel officials from DA and major commands set out to lay the groundwork for that participation during a three-day conference here last month.

OE, which is basically a thorough critique of a unit's mission, equipment, organization and people, is designed to improve these four areas and make them work together better.

Currently, OE staff officers are Army officers who attend a 16-week course on how to make OE work. They're taught to recognize and recommend solutions for virtually all management problems.

"We recognize that senior NCOs are more familiar with many NCO and enlisted areas than are most officers. Civilians make up one third of the Army and they're an equally important part. The extension of OE to the Army Reserve and National Guard forces is part of the 'Total Army' program," a DA official explained.

While OE officials are studying the roles that NCOs, civilians and the Reserve Components should play, they will be looking into what training these groups should receive to fill their roles. Some recommendations made at the conference included special training programs that could begin graduating enlisted soldiers and civilian employees in about two years.

HOMEBASING: ASSIGNMENTS IN KOREA

Some soldiers scheduled for tours in Korea will not receive homebase and advanced assignments prior to departure, DA officials announced.

Since early this year soldiers in grades of E-5 to O-5 have received assignment instructions for return to their current posts or to the installations where they will be assigned upon return from Korea. Assignments are usually made 18 to 24 months before the soldier's return from Korea.

Military Personnel Center (MILPERCEN) officials can no longer give advance instructions to all soldiers because of changing requirements anticipated by the planned withdrawal of most soldiers from Korea.

Officials said that soldiers assigned to Korea will be able to retain military family housing as provided by the homebase assignment policy and soldiers in Korea will receive assignment instructions as soon as possible before returning to CONUS.

PIPELINE.

ITSCHNER AND STURGIS AWARD PREPARATION FOR CALENDAR YEAR 1977

Now is the time to start planning and preparing for the Itschner and Sturgis Award nominations. The Emerson C. Itschner Award is awarded by the Society of American Military Engineers (SAME) to the engineer company which best symbolizes the character, mission and performance of the Corps of Engineers. The award, presented annually at the Engineer Dinner at Ft. Belvoir, is named in honor of LTG Emerson C. Itschner, a former Chief of Engineers and past president of the society.

One of the aims of the award is to promote leadership in junior officers and to foster "espirit" in company sized engineer units. For the purpose of the competition, company sized units include all engineer numbered and lettered or headquarters companies, separate or belonging to a battalion, brigade, group or larger organization, and activated under a TOE/TDA. In the past, the award was limited to active duty units. In 1974, the competition was expanded, providing separate awards for both National Guard and Reserve Units.

The Samuel D. Sturgis Award is awarded by the (SAME) to an active Army enlisted member in recognition of outstanding contributions to military engineering, by demonstrated technical and leadership ability. This award is also presented annually at the Engineer Dinner in honor of LTG Samuel D. Sturgis, A former Chief of Engineers.

For the purpose of the competition, the individual should be classified in one of the following career management fields or military occupational specialities while performing the service for which recommended: 12 Combat Engineering, 35E (Special Electrical Devices Repairman), 51 (General Engineering), 52 (Power Production), 62B (Engineer Equipment Repairman), and 81 (Topographic Engineering and Map Reproduction). The narrative description should emphasize the individuals contribtuion to military engineering. The term "military engineering" may be literally interpreted to include troop or contract construction, maintenance, facilities engineering, combat engineering, engineer training, management/supervision of engineer activities, or other engineer support.

Although the designation of a single winner from a field of highly qualified finalists is a difficult chore at best, the Itschner and Sturgis Award Selection Committee would like to see more units and enlisted members compete for these awards. The key to turning out a winner, in addition to having the qualifying credentials, is to adequately document the unit's activities and the enlisted members contributions over the course of a given calendar year.

The annual presentation of this coveted award provides a means of revitalizating the competition and renewing the challenge. How does your unit stand against the others? You can find out in 1978.

ASSOCIATE DEGREE PROGRAM

Soldiers can now earn an associate degree in management or general studies under a program sponsored by the Servicemen's Opportunity College (SOC), beginning this fall. College credit for military schooling and experience and transfer of credit between 32 colleges are available under the SOC Associate Degree Program. The program, for example, gives seven credit hours to an 11B10 (Infantryman) and additional credit for higher skill levels. When the soldier is transferred to another major installation, his credits are transferred to a participating institution, allowing his education to continue uninterrupted.

Credit is also given to soldiers for successful completion of College Level Examination Program (CLEP), U. S. Armed Forces Institute (USAFI) and Defense Activity for Non-Traditional Educational Support (DANTES) courses.

An associates degree is available by completing a maximum of 65 semester hours. No more than 15 semester hours need to be completed by attending on-campus courses.

Tuition assistance, financing 75 percent of education costs, is available through education centers and 100 percent financing is available to qualified GI Bill recipients.

PIPELINE.

ON-DUTY HIGH SCHOOL STUDY AXED

Army funding and use of duty time for high school education ended on Sept. 30 for most soldiers.

As a result of Congressional directives, the Armed Forces can no longer fund or provide authorized absence to attend educational courses not related to job skills.

Off-duty funding of high school programs will continue after the September 30 deadline for soldiers outside of the U. S. and for those who entered the Army in 1977 and are enrolled in the Veterans Education Assistance Program. Eligible soldiers who entered the Army before 1977 may pay for high school or college study with the GI Bill.

Last year, 65,000 soldiers were enrolled in on-duty high school education programs. But as a result of Congressional guidelines, only job skill-related courses may be funded during duty hours. The Congressional guidance also directed a review of Army policies which restrict promotions above the grade of E4 to persons without high school educations.

GI BILL: TUTORS

Uncle Sam is in the tutoring business, the Veterans Administration reminds veterans enrolled in college under the GI Bill.

Without being charged against the veteran's basic educational entitlement, free tutoring help is available to make sure veterans get the most from their college training, VA officials said.

The government did not pay for tutorial assistance for World War II and Korean conflict veterans, but under present law VA will pay as much as $65 a month for such help up to a maximum of $780.

Tutorial benefits are not only available to veterans and active duty service members who are studying under the VA's Dependents' Educational Assistance Program, but also to widows, widowers, spouses and children.

Eligibility depends upon the amount of time school is attended and if those veterans and service members attending school have a deficiency in a subject required in an approved program of education, VA officials said.

Applications should be made on VA Form 22-19904 within a year of the tutoring and should be submitted to the VA regional office which maintains the veteran's claim folder. Applications should be certified by the school.

JOB BOOKS

Certain soldier supervisors will be getting their first look at the U. S. Army's Job Books this month, report U.S. Army Training and Doctrine Command officials. The books are designed to fit their specific job specialties.

The Job Books hitting the field are the first of 400 different manuals covering 35 career management fields. They are for Armored Reconnaissance Specialists, Armor Crewmen and Field Artillery Cannoneers.

Job Books will allow supervisors to make frequent checks on the individual soldier's proficiency. They cover critical tasks in both job specialty as well as those skills needed for battlefield survival.

Supervisors are encouraged to use Job Books as they become available during lulls in training and daily work, TRADOC officials noted. Commanders, supervisors and, most of all, the individual soldiers benefit from its regular use.

LEADERSHIP COURSE

A Primary Leadership Course (PLC) has been developed for E-4s and E-5s in non-combat MOSs.

The PLC, designed to train junior enlisted soldiers in combat support and combat service support leadership and supervisory skills, will be taught at major installations beginning in January 1978 with some courses not starting until March.

The resident courses will last three to four weeks, depending on local policy. Other non-resident, self-paced courses for Guardsmen and Army Reservists will be available late next year.

The PLC, developed by the Army Administration Center, is equivalent to the combat arms Basic NCO Course and the Primary NCO Course. PLC is the first such course being offered to non-combat arms troops since most NCO Academies were closed to support personnel several years ago.

PLC will also be accompanied by promotion points upon graduation.

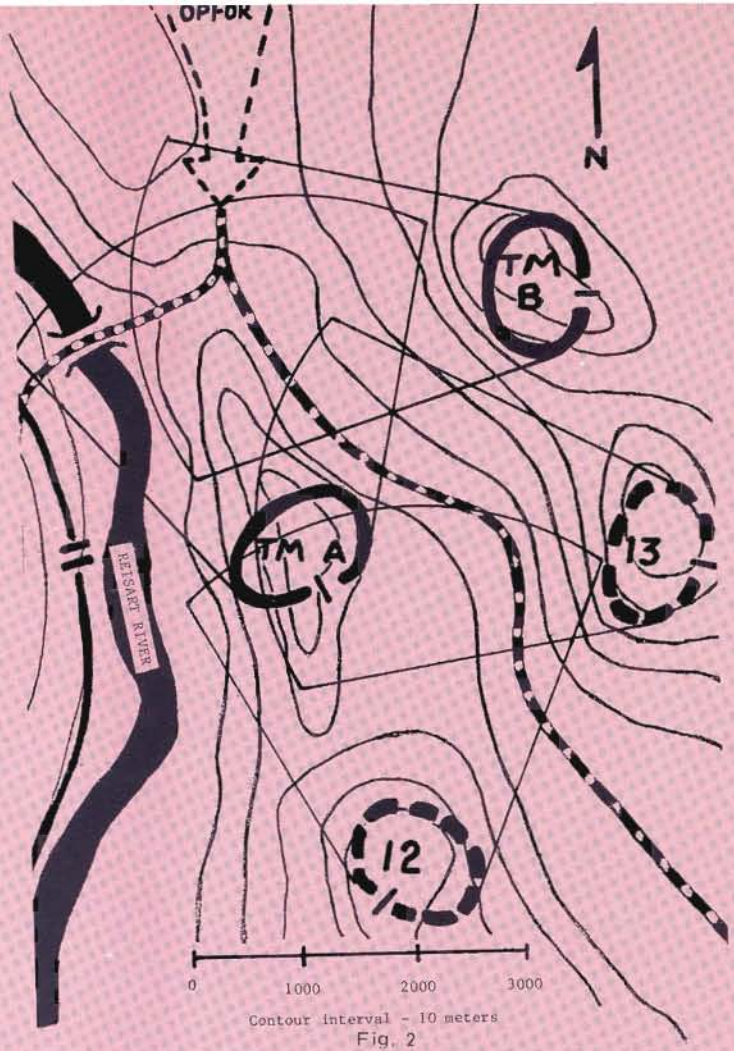


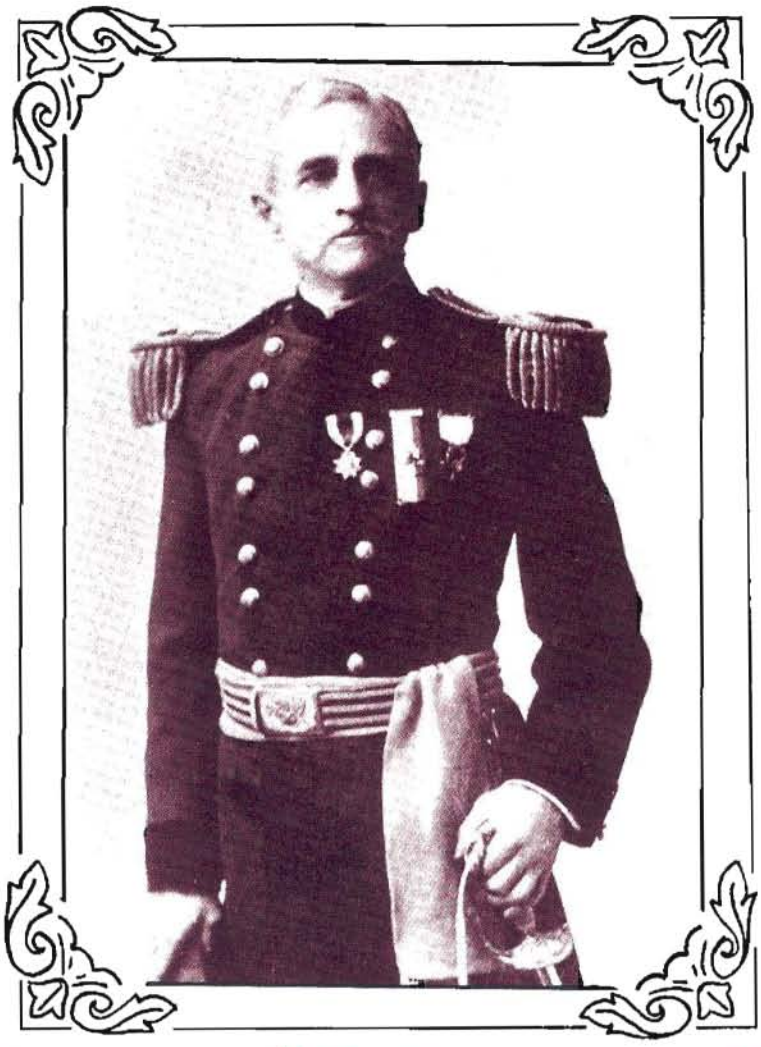
Fig. 2

Fig. 3

SOLUTION TO TACTICAL PROBLEM

The existing obstacle of the river, since it cannot be forded without snorkel kits, will canalize the enemy into the task force commanders proposed engagement areas. This must be assured by destroying the bridge (target #2001) on the west boundary with the expenditure of two squad hours.

The eastern portion of the sector is the main tank avenue of approach. It must be divided into cells in depth. A helpful aid to planning obstacles is to determine the fields of fire of the antitank weapons in each battle position (Figure #2). Obstacles should then be placed 200-300 meters inside the maximum effective range of these weapons. This will maximize the combat multiplier of our weapons systems and increase our survivability. The commander will place less DRAGONS and more Tanks in Team B sector; and more DRAGONS and less Tanks in Team A sector. The TOW can be used to good advantage in both sectors. Obstacles have been placed within the platoon's capability in Figure 3. A total of 18 squad hours is available. The bulk of this effort supports the initial positions and initial killing zone. The latter can also be supported by Team B's first alternate position, number 13. The initial road crater (2002) forces the OPFOR off the road and is within TOW range of position A and B (2 squad hours to construct). Two 800m minefields (#2003 and #2004) (two platoon hours each), are within tank gun and TOW ranges of positions A, B and 13, a tank ditch (#2005) will consume the available equipment hours. If possible, point minefields should be placed by the infantry around the tank ditch with the engineers providing technical assistance (1 NCO). The same unit could also provide local security during the actual digging of the antitank ditch. Four 8-volley artillery delivered minefields are planned. Only two of these can be used, or all four at a lower density (4-volley). They add depth, support the weapon systems, and prevent the OPFOR from by-passing our other obstacles if their limits become known. All are placed approximately within the fields of fire of one or more of the three weapon systems and battle positions. When the company teams must move to alternate positions, additional obstacles will have to be constructed with new or existing assets. All delays on the road and in the open terrain keep the enemy longer in our gunners "windows" thus increasing the attrition rate of the enemy. The decrease in the enemy's mobility also enhances friendly survivability to the maximum.



CHIEF'S BRIEFS

Brigadier General John W. Barlow was born in New York June 26, 1838. He was graduated from US Military Academy, Class 1861. He was first commissioned in the Artillery, but transferred to the Engineers in July 1862.

He served throughout the Civil War and was brevetted a Lieutenant Colonel for his gallant service in the Battle of Nashville, December 1864.

From 1870 until 1874 he was General Sheridan's Chief Engineer in the Military District of Missouri. During this period he made scientific explorations of the headwaters of the Missouri and Yellowstone. His detailed reports became guides for explorers.

Barlow's civil works activities extended throughout the United States until May 2, 1901 when he was commissioned Brigadier General and appointed Chief of Engineers. The next day May 3, 1901, he retired from the Army after 40 years of service.

He died February 27, 1914, at Jerusalem, Palestine at the age of 75.

EDWARD B. RUSSELL
Curator
US Army Engineer Museum

". . . this is a slab from the poplar that those fine engineers cut down in 41½ minutes on the morning of 21 August 1976 . . ."

General Richard G. Stilwell, USA Retired, in an address given to the Engineer School Officers and noncommissioned officer students on September 23, 1977, presented BG Charles J. Fiala, the Assistant Commandant, a slab of wood of historic significance.

"You may recall on the 18th of August, North Korea killed two of my officers. A despicable, outrageous, unprovoked, premeditated murder. You may remember that three days later, with the personal approval of the President of the United States, my command, alerted and reinforced, moved back into Panmunjon, the Joint Security Area. Loaded for bear were we to meet any resistance to cut down the damn tree that occasioned those murders in the first place. The Second Infantry Division, now earmarked for withdrawal from Korea, was very much the keen cutting edge of that whole operation. And the real cutting edge, literally and figuratively, was a detachment of the Second Engineer Battalion, armed only with chain saws . . . We reckoned that that big old tree would take 40 minutes to fall, — the engineers did it in 41½ minutes in actual practice. They burned out most of their saws they brought with them, but came away from there very proud as well they might be. I flew up to see that small band — those troopers, dirty, grimy, sweat from head to foot, stood very tall . . ."

General Stilwell, the former Commander in Chief, United Nations Command Korea and Commander of the Eight US Army, came to the Engineer School to address the students and faculty as the holder of the General Douglas MacArthur Academic Chair of Military Science.

This plaque is on permanent display in the Engineer Museum.